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Agriculture, Fisheries and Conservation Department

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Strategic Feasibility Study on the Development of Wetland Conservation Parks System Under the Northern Metropolis Development Strategy

Study Report

October 2024

SUMMARY

With high ecological and landscape values as well as cultural and social significance, wetland habitats across the Northwest New Territories have long been recognised as an important natural asset for Hong Kong. They provide a key feeding resource for migratory water birds, support a diversity of other wildlife species, support the aquaculture / agriculture industry which provides employment and locally produced food for Hong Kong, mitigate the impacts of climate change and extreme weather events by storing water and controlling flood, as well as provide eco-education, and eco-recreation / tourism opportunities.

The Strategic Feasibility Study on the Development of the Wetland Conservation Parks System (WCPs System) (hereafter referred to as “the Study”) was undertaken to provide recommendations on the development of the WCPs System proposed under the Northern Metropolis Development Strategy (NMDS), which comprises existing conservation areas^a and five new Parks, namely Nam Sang Wai (NSW) WCP, Sam Po Shue (SPS) WCP and Hoo Hok Wai (HHW) WCP, Hong Kong Wetland Park Expansion Area (HKWP Expansion Area) and Sha Ling/Nam Hang Nature Park (SL/NH NP). The Study aims to establish a comprehensive profile of the existing conditions of the fishponds and wetlands in the WCPs System Study Areas, delineate the boundaries of the proposed Parks, formulate a strategic overall implementation plan for the WCPs System, evaluate the environmental capacity achieved through the establishment of the WCPs System, thereby providing a basis to guide further necessary and detailed studies for the development of individual Parks.

Upon conducting extensive baseline reviews covering current uses, planning and land administration matters, ecological conditions, aquaculture activities and ecological education and recreation facilities in the WCPs System Study Area, analysing key issues and opportunities in implementation, and taking into consideration the views and suggestions received from the general public and stakeholders during two stages of public engagement exercises, the final recommendations of the Study are set out below for the Government’s consideration.

1. Feasibility of the WCPs System

With a wide array of existing ecological, aquacultural, educational and recreational resources within the Study Areas, **the development of the WCPs System is considered feasible and worthwhile**. With proper planning and design, the WCPs System could provide significant opportunities for enhancing ecological value of the wetlands concerned, promoting modernisation of the aquaculture industry as well as providing educational and recreational facilities for public enjoyment. At the same time, the development of the WCPs System **could also create environmental capacity** for the development of the Northern Metropolis, by enhancing natural habitats and other environmental conditions, increasing fisheries resources, as well as providing the Northern Metropolis with a unique scenic wetland landscape which sees the co-existence of conservation and development, and offering eco-education and recreation opportunities for the public.

2. Phasing of Development of the WCPs System

Given the vast area and scale of the WCPs System, it is recommended to **develop the WCPs System in phases**, such that the planning, design and monitoring on construction of the Parks, and impacts on stakeholders (e.g. fishpond operators and land owners) could be thoroughly considered and properly managed. **SPS WCP is recommended to be the first Park to be developed**. Furthermore, each Park is also recommended to be developed in phases, taking into consideration each Park’s positioning and functions, existing ecological value, land status as well as construction requirements, etc.

^a Mai Po Nature Reserve, Hong Kong Wetland Park and Long Valley Nature Park.

3. Positioning and Functions of the Parks

To achieve and balance the multiple functions of the WCPs System^b, each Park is recommended to **achieve dual functions of ecological conservation and modernisation of aquaculture at varying degrees**. In addition, based on their respective existing conditions, each Park is recommended to have its own **specific positioning and functions**, so that the Parks could complement each other to form a comprehensive WCPs System.

4. Boundaries, Conceptual Plans and Management Options of the Parks

The boundaries of the Parks have been generally delineated with reference to a set of delineation criteria including the area of wetland habitats, ecological value, level of aquaculture activities, committed, planned and proposed development projects, current land uses, land status and lot boundaries etc. The SL/NH NP proposed in the NMDS is recommended to be incorporated into the adjacent HHW WCP to allow more holistic planning and efficient management of wetland conservation in the area.

Conceptual plans of the Parks have also been formulated, with broad zoning delineations including **Biodiversity Zone, Eco-friendly Aquaculture Zone, Fisheries Enhancement Zone and Visitor Zone**.

Management options in cooperation with different parties are recommended to be adopted at the different zones within the Parks, depending on the functions and operational needs of the relevant zones, while the **Government is recommended to oversee the overall management of the whole WCPs System**, providing guidance to and coordinating the management of different zones by different parties. Three management options, and the broad zones on which these management options could be adopted, are recommended as follows:

- (i) Direct Management by Government Departments, e.g. in Biodiversity Zones and Visitor Zones (e.g. eco-education and eco-recreation facilities);
- (ii) Collaboration with Non-Governmental Organisations (e.g. in Biodiversity Zones and Eco-friendly Aquaculture Zones), Local Communities (e.g. eco-recreation facilities such as eco-lodge and leisure fish farm in Visitor Zones), and Agriculture and Fisheries Associations (e.g. in Eco-friendly Aquaculture Zones and Fisheries Enhancement Zones); and
- (iii) Public-Private Partnership in collaboration with private landowners or private sector/company (e.g. eco-recreation facilities such as eco-lodge and leisure fish farm in Visitor Zones).

5. Development of the SPS WCP

The SPS WCP is recommended to be the first Park to be developed with the theme “Biodiversity and Aquaculture in Harmony” and an area of about 338ha of area to be established (with existing offsite wetland compensation areas of about 10ha in Lok Ma Chau to be incorporated into the SPS WCP, adding up to about 348ha in total in size). This is because its proposed location is situated along the core section of the flight path for migratory birds, in close proximity to the Mai Po Nature Reserve and other wetlands, and has large areas of productive fishponds. Establishing this Park first can protect the flight path for migratory birds as a matter of priority, while creating synergy with the existing conservation areas, thereby conserving the wetland ecosystem in the Deep Bay area more effectively, facilitating the modernisation of aquaculture industry, promoting scientific research on aquaculture, as well as providing eco-education and eco-recreation facilities and experiences for public enjoyment. At the same time, the Park can also compensate for the ecological and fisheries resources

^b The functions of the WCPs System as stated in the NMDS include:

- (i) Conserving the ecological value of the wetlands and safeguarding the integrity of the wetlands system;
- (ii) Developing modernised aquaculture industry to create more job opportunities for the agriculture and fisheries industries;
- (iii) Promoting scientific research on aquaculture to facilitate the upgrading and transformation of the agriculture and fisheries industries; and
- (iv) Providing ecological education and recreational facilities for the public.

impacts arising from the development of San Tin Technopole, in order to achieve no-net-loss in ecological function and capacity of the wetland concerned.

For the SPS WCP to achieve the compensatory function required under the approved Environmental Impact Assessment Report for San Tin Technopole, there is a need for the SPS WCP to be established on Government-controlled land. Where private land is involved, the Government may exercise its statutory power to resume the land. Since a relatively large area of private land within the SPS WCP would have to revert to the Government for conservation purpose, to help manage Government's expenditure attributable to compensation for resumption, the Government will, before invoking the resumption power, also explore possible schemes to incentivise private land owners to voluntarily surrender their land in the SPS WCP area to the Government, such as allowing the land value of the surrendered land to be deducted from land premium in land exchange / lease modifications for project being / to be pursued by the same land owners elsewhere.

It is recommended to **develop the SPS WCP in phases**, with the land located at the northwestern portion of the Park identified as the first phase to be established, followed by the land spanning the eastern and southern portion of the Park. This phasing approach prioritises conservation of the major avifauna flightline corridor connecting the Deep Bay wetlands to the HHW area, creating synergy with the Mai Po Nature Reserve. It is targeted to complete Phase 1 of the SPS WCP by 2031, and the full completion of the whole Park before or by 2039.

According to the recommended Conceptual Plan for the SPS WCP, the majority of the Park area is recommended to be managed as an "Eco-friendly Aquaculture Zone" with management measures focusing on ecological enhancement, while also implementing modernised aquaculture technologies in the fishpond habitats for eco-friendly aquaculture. Other areas include a "Biodiversity Zone" with diverse wetland microhabitats and restricted access focusing on ecological enhancement, a "Fisheries Enhancement Zone" for introducing facilities and techniques for adopting high-density pond fish culture operations, and a "Visitor Zone" with eco-education and eco-recreation facilities such as outdoor classrooms, eco-lodge, nature trails and bird hides, etc.

6. Development of the Other Proposed Parks in the WCPs System

The HKWP Expansion Area (about 224ha^c), NSW WCP (about 397ha^c), and HHW WCP (including SL/NH area) (about 277ha) are proposed to be developed with the themes "**Wetlands for Learning**", "**An Eco-tourism Paradise**" and "**A Rural Retreat**", respectively. As for the implementation of these remaining three Parks, the Government is recommended to take into consideration the final recommendations of the Study, draw from the experience of planning and establishing the SPS WCP, and review in due course the necessary study work for these Parks, including conducting further detailed studies on investigation, design and construction.

^c These park areas refer to the maximum possible areas. For detailed discussions, please see **Sections 4.2.2.1, 4.2.4.1, 4.2.4.2, 4.2.5.1 and 4.2.5.2.**

**REPORT OF THE STRATEGIC FEASIBILITY STUDY ON
THE DEVELOPMENT OF WETLAND CONSERVATION PARKS SYSTEM UNDER THE
NORTHERN METROPOLIS DEVELOPMENT STRATEGY**

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List of Abbreviations

| Abbreviation | Full Title |
|---------------------|--|
| Action Agenda | Northern Metropolis Action Agenda |
| AFCD | Agriculture, Fisheries and Conservation Department |
| AFFS | Accredited Fish Farm Scheme |
| AMO | Antiquities and Monuments Office |
| “CA” | “Conservation Area” |
| CCO | Countryside Conservation Office |
| CEDD | Civil Engineering and Development Department |
| CMP | Conservation and Management Plan |
| C&D | Construction and Demolition |
| CP | Country Park |
| DC | District Council |
| DP | Designated Project |
| “DRCH” | “Drainage Channel” |
| DSD | Drainage Services Department |
| EA | Ecological Area |
| ECF | Environment and Conservation Fund |
| ECR | Eastern Connection Road |
| EEB | Environment and Ecology Bureau |
| EIA | Environmental Impact Assessment |
| EIAO | Environmental Impact Assessment Ordinance |
| EP | Environmental Permit |
| EPD | Environmental Protection Department |
| FCA | Frontier Closed Area |
| “GB” | “Green Belt” |
| “G/IC” | “Government, Institution and Community” |
| GLA | Government Land Allocation |
| HCMP | Habitat Creation and Management Plan |
| HHW | Hoo Hok Wai |
| HKPSG | Hong Kong Planning Standards and Guidelines |
| HKWP | Hong Kong Wetland Park |
| HKWP Expansion Area | Hong Kong Wetland Park Expansion Area |
| HSITP | Hong Kong-Shenzhen Innovation and Technology Park |
| I&T | Innovation & Technology |
| KTN | Kwu Tung North |
| LandsD | Lands Department |
| LCSD | Leisure and Cultural Services Department |
| LFS | Lau Fau Shan |
| LMC | Lok Ma Chau |
| LMC EEA | Lok Ma Chau Ecological Enhancement Area |
| LSPS | Land Sharing Pilot Scheme |
| LVNP | Long Valley Nature Park |
| MA | Management Agreement |
| MPNR | Mai Po Nature Reserve |
| MTL | Ma Tso Lung |
| NDA | New Development Areas |
| NGOs | Non-Government Organisations |
| NMDS | Northern Metropolis Development Strategy |
| NNCP | New Nature Conservation Policy |
| NOL | Northern Link |
| NP | Nature Park |

| Abbreviation | Full Title |
|---------------------|--|
| NSW | Nam Sang Wai |
| NT Cycle Track | New Territories Cycle Track |
| NTM | Ngau Tam Mei |
| NTN | New Territories North |
| NWNT | Northwest New Territories |
| “O” | “Open Space” |
| “OU” | “Other Specified Uses” |
| “OU(CDWEA)” | “Other Specific Uses” annotated “Comprehensive Development and Wetland Enhancement Area” |
| “OU(CDWPA)” | “Other Specific Uses” annotated “Comprehensive Development and Wetland Protection Area” |
| “OU(CDWRA)” | “Other Specific Uses” annotated “Comprehensive Development to include Wetland Restoration Area” |
| “OU(WCP)” | “Other Specified Uses” annotated “Wetland Conservation Park” |
| OVT | Old and Valuable Trees |
| OWCAs | Offsite Wetland Compensation Areas |
| OZPs | Outline Zoning Plans |
| PBGs | Permitted Burial Grounds |
| PE | Public Engagement |
| PlanD | Planning Department |
| PN | Pak Nai |
| PPP | Public-Private Partnership |
| RAS | Recirculating Aquaculture Systems |
| RC | Rural Committee |
| “REC” | “Recreation” |
| The Report | Report of the Strategic Feasibility Study on the Development of Wetland Conservation Parks System Under the Northern Metropolis Development Strategy |
| SAs | Special Areas |
| SAIs | Sites of Archaeological Interest |
| SL/NH NP | Sha Ling/Nam Hang Nature Park |
| SPS | Sam Po Shue |
| SSSIs | Sites of Special Scientific Interest |
| STT | Short Term Tenancy |
| ST Technopole | San Tin Technopole |
| TBT | Tsim Bei Tsui |
| TPB | Town Planning Board |
| TPB PG | Town Planning Board Planning Guideline |
| TPU | Tertiary Planning Unit |
| “V” | “Village Type Development” |
| VE | Village Environ |
| VRS | Voluntary Registration Scheme |
| WBA | Wetland Buffer Area |
| WCA | Wetland Conservation Area |
| WCPs | Wetland Conservation Parks |
| WSD | Water Supplies Department |
| WTW | Water Treatment Works |
| YLBF | Yuen Long Bypass Floodway |

1. INTRODUCTION

1.1 Background

- 1.1.1.1 With high ecological and landscape value as well as cultural and social significance, wetland habitats across the Northwest New Territories (NWNT) have long been recognised as an important natural asset for Hong Kong. They provide a key feeding resource for migratory water birds, support a diversity of other wildlife species such as Eurasian otters, support the aquaculture / agriculture industry to provide employment and locally produced food for Hong Kong, mitigate climate change and extreme weather events by storing water and controlling flood, as well as provide recreation / tourism opportunities.
- 1.1.1.2 Much of the wetlands in Hong Kong fall within the Northern Metropolis, including the internationally important Mai Po and Inner Deep Bay Ramsar Site spanning about 1500 hectares (ha). With rich and diverse habitats, ecological conservation is one of the main development objectives of the Northern Metropolis, with a view to achieving "co-existence of development and conservation" as well as creating a unique urban and rural landscape for the Northern Metropolis.
- 1.1.1.3 Currently, designation of conservation areas (e.g. Sites of Special Scientific Interest (SSSIs)), zoning under town planning regime and conservation programmes have been introduced to protect these wetlands. Notwithstanding that, the wetlands still face multiple challenges, including gradual degradation in their ecological value / function due to lack of conservation management, illegal development and fly tipping, etc. To proactively conserve these invaluable natural assets, it was proposed under the Northern Metropolis Development Strategy (NMDS) released in 2021 to develop a Wetland Conservation Parks (WCPs) System in the Northern Metropolis, comprising existing conservation areas¹ and five new Parks, namely Nam Sang Wai (NSW) WCP, Sam Po Shue (SPS) WCP and Hoo Hok Wai (HHW) WCP, Hong Kong Wetland Park Expansion Area (HKWP Expansion Area) and Sha Ling/Nam Hang Nature Park (SL/NH NP) for better conservation, restoration and management of the fishponds and wetlands. The proposed WCPs System also aims to create environmental capacity and achieve "Co-existence of Development and Conservation". Under the key action directions set out in the NMDS, the WCPs System will serve the following four major functions:
- (a) Conserving the ecological value of the wetlands and safeguarding the integrity of the wetlands system;
 - (b) Developing modernised aquaculture industry to create more job opportunities for the agriculture and fisheries industries;
 - (c) Promoting scientific research on aquaculture to facilitate the upgrading and transformation of the agriculture and fisheries industries; and
 - (d) Providing ecological education and recreational facilities for the public.
- 1.1.1.4 AECOM Asia Co Ltd. was commissioned by the Agriculture, Fisheries and Conservation Department (AFCD) to carry out this Consultancy Service to provide recommendations for taking forward the development of the WCPs System. The Consultancy Service's objectives are to establish a comprehensive profile of the existing conditions of the fishponds and wetlands proposed to be included in the proposed WCPs System, delineate the boundaries of the Parks, formulate a strategic framework and implementation mechanism for the WCPs System, evaluate the environmental capacity achieved through the establishment of the WCPs System, and provide a basis to guide further detailed and necessary studies for the development and management of individual Park. The Study Area of the Study is shown in **Figure 1.1**.

¹ Mai Po Nature Reserve, Hong Kong Wetland Park and Long Valley Nature Park

1.2 About this Report

1.2.1.1 The Report of the Strategic Feasibility Study on the Development of Wetland Conservation Parks System Under the Northern Metropolis Development Strategy (the Report) is organised into ten sections, including this introductory section. Other sections of the Report are as follows:

Section 2 – Provides baseline review of the Study Area

Section 3 – Identifies key issues to be addressed by the WCPs System

Section 4 – Delineates the proposed boundaries of the Parks

Section 5 – Provides conceptual planning and management of the proposed Parks under the WCPs System

Section 6 – Details the overall implementation strategy and timeline

Section 7 – Evaluates the environmental capacity for the Study Area

Section 8 – Undertakes Preliminary Technical Feasibility Assessment for the first WCP

Section 9 – Provides summary of the Public Engagement exercises

Section 10 – Summary

2. BASELINE REVIEW OF THE STUDY AREA

2.1 Introduction

- 2.1.1.1 The WCPs System Study Area (**Figure 1.1**) is located in the low-lying historic floodplains and intertidal estuarine areas of rivers draining into the Deep Bay, in the Northern Metropolis under development. While the Study Area is currently dominated by fishpond habitats, the original habitats in these areas would likely have been a mix of freshwater and intertidal wetlands, which were cleared for paddy fields as humans settled the area. Fish farming gradually evolved from rice farming, where shrimps were farmed at the water gateways to the paddy. Gradually, shrimp and fish farming came to dominate in this area; with records of fish farming in the area from the 1930's, reaching a peak in the 1980s.
- 2.1.1.2 By the 1990s, the ecological value of fishponds in the area had been recognised (Aspinwall & Co., 1997). At this time, reduced profitability of aquaculture due to cheap fish imports coincided with significant land use changes in the NWNT, with some areas of fishpond being converted to container yards, outdoor storage facilities and residential developments. With reference to the Fishpond Study (Aspinwall & Co., 1997), the Town Planning Board (TPB) promulgated the "Town Planning Board Guidelines for Application for Developments within Deep Bay Area under Section 16 of the Town Planning Ordinance (TPB PG-No. 12C)", adopting a "precautionary approach" with the principle of maintaining "no-net-loss" in the area and ecological function of wetlands when considering development proposals in the Deep Bay Area. A two-pronged approach to land use planning control is adopted in the area through the designation of Wetland Conservation Area (WCA) and Wetland Buffer Area (WBA) under TPB PG-No. 12C.
- 2.1.1.3 Major infrastructure works within the WCPs System include drainage improvement projects completed in the 1990s-2010s (e.g., Main Drainage Channels and Poldered Village Protection Scheme for San Tin, NWNT (in the SPS WCP Study Area) and transportation infrastructure works such as various upgrades to the Lok Ma Chau (LMC) border crossing and development of the LMC Spur Line and Station adjacent to the SPS WCP and HHW WCP Study Areas. To address ecological impacts associated with these works, some areas of fishpond and other habitats within the WCPs System Study Area have been converted to compensatory areas with high ecological value. The majority of the SL/NH NP Study Area is now managed as a compensatory area, as well as some areas of the SPS WCP, HHW WCP and NSW WCP Study Areas.
- 2.1.1.4 While the Study Area still remains a largely rural landscape, there are a number of current / committed developments within / adjacent to the Study Area as follows:
- The Hong Kong-Shenzhen Innovation and Technology Park (HSITP) at the Loop occupies about 87ha, bordering Shenzhen River to the north and located to the immediate northwest of the HHW WCP. The Loop will be a hub for supporting Innovation & Technology (I&T) development. The project will be implemented in two phases, with the first phase providing Gross Floor Area of 1 million square metres. The first three buildings in Phase 1 (two wet labs and a talent accommodation building) will be completed progressively from end 2024 onwards.
 - The San Tin Technopole (ST Technopole) is located at the heart of the Northern Metropolis, strategically positioned to be a hub for clustered I&T development. Together with the HSITP in the Loop, it will provide approximately 300ha of I&T land, which will effectively address the shortage of local I&T land supply, promote a more comprehensive development of the I&T ecosystem, and create synergy with the Shenzhen I&T Zone in close proximity. As a modern new development area, the ST Technopole will be a new community combining industrial development, ecological conservation and a livable environment. The Government plans to seek funding approval for the first batch of site formation and infrastructural works in Q4 2024, targeting to commence works by the end of the year.
- 2.1.1.5 In 2004, the Government promulgated the New Nature Conservation Policy (NNCP) to regulate, protect and manage natural resources that are important for the conservation of biodiversity of Hong Kong in a sustainable manner. Under the NNCP, 12 priority sites for

enhanced conservation were identified and two incentive schemes were introduced, namely the Public-Private Partnership Scheme (NNCP PPP Scheme) and Management Agreement (MA) Scheme, with a view to enhancing conservation of land under private ownership. Under the NNCP PPP Scheme, limited development can be carried out on the portion of the site which is ecologically less sensitive (known as Developable Portion). Landowners are, however, required to provide a lump sum contribution to the Environment and Conservation Fund (ECF) to generate recurrent income for supporting long-term conservation work for the ecologically more sensitive portion (known as the Conservation Portion) of the site. Before 2021, land owners participating in NNCP PPP Scheme shall retain land ownership of the Conservation Portion and appoint a conservation agent to apply for funding from the ECF regularly to carry out the required conservation work on the Conservation Portion. With effect from 6 October 2021, an additional option was provided to landowners in which they can choose to surrender the Conservation Portion to the Government for proactive conservation and management by the Government. Under this option, landowners are still required to provide a lump sum contribution to the Government that is sufficient to support the long-term conservation work for the Conservation Portion. To date, three potential projects have been proposed under the NNCP PPP Scheme and are located in the Study Area, situating at Fung Lok Wai, Yau Mei San Tsuen and Nam Sang Wai / Lut Chau respectively. Planning approval had been given to these three projects in 2013, 2016 and 2021 respectively. In particular, the developments at Fung Lok Wai and Nam Sang Wai / Lut Chau were formerly subject to legal proceedings which were completed on 4 September 2020 and 31 December 2021 respectively. The three projects would need to comply with the approval conditions of planning permission and other relevant statutory requirements including those under the Environmental Impact Assessment Ordinance (EIAO) before they can commence works.

- 2.1.1.6 The initiative of the WCPs System is a critical component of the broader NMDS. Formulated based on the Hong Kong 2030+, the NMDS takes into account our country's support for Hong Kong as underlined in the 14th Five-Year Plan, consolidates and expands the Northern Economic Belt under the HK 2030+. The Northern Metropolis will cover a total land area of about 30,000 ha including existing new towns in Tin Shui Wai, Yuen Long and Fanling / Sheung Shui and their neighbouring rural areas as well as New Development Areas (NDAs) at different planning and development stages, namely Kwu Tung North / Fanling North, Hung Shui Kiu / Ha Tsuen, Yuen Long South, ST Technopole and the New Territories North New Town.
- 2.1.1.7 The Northern Metropolis Action Agenda (Action Agenda) outlines the development positioning of four major zones in the Northern Metropolis (the High-end Professional Services and Logistic Hub, I&T Zone, Boundary Commerce and Industry Zone, and Blue and Green Recreation, Tourism and Conservation Circle), and the feature of their future development. The Action Agenda sets out targets including but not limited to ecological conservation and urban-rural integration through proactive conservation and restoration to increase environmental capacity of these areas. The Action Agenda also states that land would be reserved in the SPS WCP to promote the development of modernised aquaculture as well as scientific research on aquaculture, to help with the upgrading and transformation of the fisheries industry.

2.2 Environmental and Ecological Context

- 2.2.1.1 The environmental and ecological contexts have been reviewed as part of the baseline for the WCPs System, with results summarised in the following sections. Apart from the Study Areas of the five Parks, the Study Area for the review of baseline ecological conditions and other related resources also included a 500m Assessment Area extending from the Study Areas of the five Parks (restricted to areas within the Hong Kong SAR border), the Mai Po Nature Reserve (MPNR), Hong Kong Wetland Park (HKWP) and Long Valley Nature Park (LVNP) (**Figure 1.1** refers). The said review was conducted through desktop review, remote sensing data and site checks.

2.2.2 General Environmental Setting

- 2.2.2.1 The WCPs System Study Area has long been recognised for its ecological significance, and various sites of conservation importance are recorded both within and adjacent to the

five Parks. These include the Mai Po Inner Deep Bay Ramsar Site; Deep Bay Wetland outside Ramsar Site as Priority Site for Enhanced Conservation under the NNCP; WCA and WBA; various Conservation Areas (CA); various SSSIs; Special Area (SA); and Restricted Area (**Figure 2.1** refers). Other sites of conservation importance within the WCPs System include various avifauna breeding and roosting sites, as well as established avifauna flightlines connecting various breeding / roosting sites and foraging habitats throughout the WCPs System (**Figure 2.2** and **Figure 2.3** refer). There are also compensatory areas recorded within the WCPs System Study Area, which are created and managed to mitigate impacts to wetlands resulting from other development / infrastructure projects (**Figure 2.4** refers).

2.2.3 Important Habitats and Species

2.2.3.1 The WCPs System Study Area forms part of a broader wetland habitat that is of regional importance to migratory birds using the East Asian-Australasian Flyway, with tens of thousands of wetland birds overwintering in this area. The WCPs System Study Area also includes an important local north-east to southwest flight corridor that connects HHW WCP Study Area with other wetlands. It can thus be seen that the WCPs System Study Area has a very high ecological value in terms of its importance as habitats of avifauna.

2.2.3.2 Habitats across the WCPs System Study Area are dominated by actively managed, commercial fishponds. While being highly modified habitats with low vegetation diversity and often poor water quality, these ponds provide an important foraging habitat for wetland avifauna including ardeids and large wading birds, cormorants, ducks, grebes, gulls and terns, rails and coots and shorebirds. These include notable species of conservation importance such as Black-faced Spoonbill *Platalea minor*.

2.2.3.3 Fishpond habitats are also of importance to other wildlife, particularly mammals, with records of Eurasian Otter *Lutra lutra* from the SPS WCP and HHW WCP Study Areas (and historically SL/NH NP Study Area). Other species of conservation importance recorded in the WCPs System Study Area include herpetofauna (Burmese python *Python bivittatus*, Chinese cobra *Naja atra*, Chinese soft-shelled turtle *Pelodiscus sinensis*, Three-banded box turtle *Cuora trifasciata*, Two-striped grass frog *Hylarana taipehensis*, fish (Rose bitterling *Rhodeus ocellatus*, Rice fish *Oryzias curvinotus*), and invertebrates (e.g., Bent-winged firefly *Pteroptyx maipo*; *Somanniathelphusa zanklon*, Four-spot midget *Mortonagrion hirosei*, Mangrove skimmer *Orthetrum poecilops poecilops*).

2.2.3.4 Apart from fishponds, other wetland habitats recorded in the WCPs System Study Area include watercourses, mangroves, marsh, seasonally wet grassland (**Figure 2.5A** to **Figure 2.5E** and **Figure 2.6** refer). In addition, compensatory areas were also recorded within the WCPs System Study Area, with over half of these (six) wholly or partially within the SPS WCP Study Area (**Figure 2.4** refers).

2.2.3.5 Other than wetland habitats, another notable habitat in the WCPs System Study Area is woodland / plantation. Much of this is mixed woodland dominated by exotic species such as *Leucaena leucocephala* and *Mikania micrantha*, although smaller patches of *fung shui* woodland were recorded from some areas, with limited records of plant species of conservation interest such as incense tree *Aquilaria sinensis*. Habitats of lower ecological interest recorded from the WCPs System Study Area include shrubland / grassland, agricultural land and urbanised area (**Figure 2.5A** to **Figure 2.5E** and **Figure 2.6** refer).

2.2.4 Conservation Management

2.2.4.1 Various habitats within and near the proposed five Parks are currently managed for conservation, including the MPNR, HKWP, LVNP, and compensatory areas. For many existing areas managed for conservation, a key strategy adopted is to provide a diversity of wetland habitats (e.g., freshwater marsh, reedbeds, open ponds, intertidal mangrove / mudflats) to support diverse communities. To facilitate these goals, regular management of water levels, sediments and vegetation is required. Other common management approaches include provision of nest boxes, control of exotic, invasive species, and in some cases, stocking of wetland habitats with 'trash-fish' to enhance feeding resources for piscivorous wetland birds.

2.2.4.2 In addition to habitats primarily managed for conservation, two projects under the MA Scheme are in place within the WCPs System Study Area, namely the ‘Hong Kong Got Fishpond Eco-fishpond MA Scheme’, and the ‘Fishpond Conservation Scheme in Ramsar Site’. These projects are funded by the Government, and organised by local Non-Government Organisations (NGOs) working with commercial fishpond operators to enhance the ecological value and sustainable management of fishponds.

2.3 Aquaculture Activities

2.3.1.1 Aquaculture activities have been reviewed as part of the baseline, covering Study Areas of the five Parks as well as the MPNR, HKWP and LVNP (**Figure 1.1** refers). The results are summarised in the following sections.

2.3.2 Total Number and Area of Ponds

2.3.2.1 Across the WCPs System Study Area, the SPS WCP has the greatest area of ponds (approximately 342ha), followed by the NSW WCP (approximately 299ha). Among the five Parks of the WCPs System, the HKWP Expansion Area has the highest proportion of ponds (approximately 75% of the HKWP Expansion Area Study Area), followed by the NSW WCP (approximately 66% of the NSW WCP Study Area). The HKWP and LVNP only have about 29% and 3% of their areas occupied by ponds respectively.

2.3.3 Category of ponds

2.3.3.1 Based on the information provided by AFCD and the results of site checks, ponds are classified into one of three categories according to their primary function, as summarised in **Table 2.1**.

Table 2.1 Pond Categories and Their Descriptions

| Pond Category | Description |
|-------------------|--|
| Fishpond | Ponds that may be used for aquaculture or recreational purposes. |
| Conservation Pond | Ponds that are primarily managed for conservation purpose. |
| Others | Ponds that are of uncertain status / purpose. |

2.3.3.2 Within the WCPs System Study Area, most of the ponds fall under the “Fishpond” category (approximately 66%), followed by “Others” and “Conservation Pond” categories with approximately 25% and 9% respectively. In particular, the SPS WCP Study Area has the largest area of “Fishpond” among the proposed Parks, occupying approximately 74% of all the pond area within the SPS WCP Study Area.

2.3.3.3 Ponds that fall under the “Conservation Pond” category were recorded in the Study Area of four Parks (i.e. the SPS WCP, NSW WCP, HHW WCP, and SL/NH NP), with the SPS WCP Study Area having the largest area of “Conservation Pond” among the proposed Parks and almost the entire SL/NH NP Study Area being “Conservation Pond”.

2.3.3.4 Ponds that are not for aquaculture or recreational purposes or managed as conservation ponds are all grouped under the “Others” category.

2.3.4 Fish farming activities and cultured species

2.3.4.1 It has been noted that the majority of functioning fishponds within the WCPs System Study Area adopted polyculture, where a combination of species such as bighead carp (*Hypophthalmichthys nobilis*, 大頭鱧), grass carp (*Ctenopharyngodon Idella*, 鯪魚), common carp (*Cyprinus carpio*, 鯉魚), silver carp (*Hypophthalmichthys molitri*, 鱒魚), tilapia (*Oreochromis mossambicus*, 福壽魚) and grey mullet (*Mugil cephalus*, 烏頭) are reared in the same pond to optimise space and feed utilisation, whereas some fishponds practiced monoculture, rearing species such as grey mullet, tilapia, whiteleg shrimp (*Litopenaeus vannamei*, 白蝦) and Australian freshwater crayfish (*Cherax quadricarinatus*, 澳洲淡水龍

蝦). Fishponds practicing polyculture have been decreasing over the past decades, with some farmers switching to more profitable shrimp farming.

2.3.5 Pond Infrastructure and Operations

2.3.5.1 In general, pond fish farmers within the WCPs System Study Area practised traditional open pond farming. No sophisticated bird deterrent structures were observed during site checks, and water control is largely achieved with hoses and portable pumps. Some farmers used other equipment such as aerators, PVC Pipe / wooden feeding frames, as well as automatic fish feeders (**Figure 2.7** refers). Different types of aerators were used with sprinkle aerators commonly deployed for fish culture (often with multiple aerators in a single pond), while wheel aerators were used in shrimp culture.

2.3.5.2 Some fishponds were observed possessing more substantial water control systems in which water pipes buried along pond bunds were used to connect ponds and provide an overflow to adjacent drainage channels, preventing flooding. Wood and concrete sluice gates were also observed between ponds, primarily in NSW WCP Study Area, enabling management of water flow between adjacent ponds. Large cylindrical tanks for aquacultural use were observed next to the fishponds near the south-eastern side of the Loop at HHW WCP Study Area and near Shan Pui at NSW WCP Study Area, potentially for freshwater storage (**Figure 2.7** refers).

2.3.5.3 Storage units / containers (as well as some residential temporary structures) were commonly recorded throughout the WCPs System Study Area. Typically each pond has an average of two associated structures.

2.3.6 Aquaculture Operation Details

2.3.6.1 Based on on-site interviews, Hong Kong fish farmers generally import fry and fingerlings from the Mainland and Taiwan, as there is no supply available in Hong Kong. The ponds are stocked in spring, and the fish are reared for eight to twelve months until they reach marketable size. Pellet feed is a commonly used fish feed, with some farmers supplementing this with bread or biscuits. Despite the higher cost, peanut cake is also used for higher quality fish such as fatty grey mullet (黃油烏頭). Fishpond operators also feed grass cut from pond bunds to grass carp.

2.3.6.2 When fish are ready to be harvested, fish farmers may lower water levels in the fishponds using portable pumps, then harvest the fish using nets / buckets. The fish are transported by truck to markets in Yuen Long. Farmers also perform a full-drain of the ponds once every two to three years to sterilise the ponds with sunlight. Ponds can also be dredged as required after the bottom soil has dried out: the accumulated sediments are redistributed with a bulldozer to allow organic material to oxidise, then dredged out to remove nutrient load, restore pond depth and maintain fishpond volume. The dredged material is often used to restore pond bunds.

2.3.6.3 For shrimp culture, pond fish farmers usually import 1cm fry from the Mainland or Thailand as there is no local supply in Hong Kong. The shrimp fry are stocked in early spring, typically twice a year, and are reared for about three to four months until they reach marketable size (10-12cm length and 10-15g weight). Peanut cake and pellet feed are used to feed the shrimps. Shrimps are sometimes cultured with fish to control organic matter and microorganisms in the water, which improves water quality and provides nutrients for the fish.

2.3.6.4 The level of technological advancement of pond fish farming in Hong Kong is relatively low. As mentioned above, the industry primarily relies on traditional method of fish farming and basic equipment, lacking incorporation of the latest technologies and modernised techniques to improve production efficiency and sustainability. Additionally, the potential for development and sustainability of pond fish culture in Hong Kong can be described as low considering the pond fish farming industry demonstrates a lack of notable progress and encounters multiple obstacles that hinder its advancement, including limited land availability and urbanisation, aging of operators, and lack of people interested in joining the

industry. The absence of initiatives specifically aimed at promoting the sustainability of fish farming and the livelihoods of operators further hinders progress. Without advancements in farming technologies, equipment, and production efficiency, pond fish farmers may struggle to improve their productivity and profitability.

2.3.6.5 Despite the limitations and challenges to advancement and development, there are still opportunities for improvement and potential development for the industry. Increasing interest in adopting modernised aquaculture technologies indicates a willingness of local operators to explore more advanced practices. Modernised aquaculture can optimise resource utilisation, minimise environmental impact, improve product quality, enhance economic returns, and create new employment opportunities. It can improve the environmental sustainability and social economy of aquaculture activities, subsequently contributing to the overall development of the industry in the long run. Modernised aquaculture is potentially suitable for Hong Kong and can be considered in the WCPs System.

2.3.7 Management Initiatives

2.3.7.1 There are various schemes or programmes managed by the Government or NGOs to provide support to the pond fish culture industry or fishpond habitat management. Descriptions of each programme / initiative are shown in **Table 2.2**.

Table 2.2 Summary of Supporting Programme / Management Initiatives

| Scheme Programme / | Details | Status of Participation |
|---|--|---|
| Voluntary Registration Scheme (VRS) for local pond fish farms | <ul style="list-style-type: none"> Implemented by AFCD since 2007 To understand culture activities of local pond fish farms and promote good aquaculture practices to fish farmers | <ul style="list-style-type: none"> SPS WCP Study Area has the largest area of fishponds participating under the VRS |
| Accredited Fish Farm Scheme (AFFS) | <ul style="list-style-type: none"> Implemented by AFCD since 2005 To promote the competitiveness of local aquaculture farms and their products To provide quality and safe aquaculture products to the public | <ul style="list-style-type: none"> Around 15% of fishponds (by area) within the WCPs System Study Area are registered under the AFFS SPS WCP Study Area has the largest area of fishponds participating under the AFFS All fishponds under the AFFS are also registered under the VRS |
| Fish Health Inspection Programme | <ul style="list-style-type: none"> Implemented by AFCD since 1996 To conduct regular inspections of fish farms to help detect disease outbreaks early To provide pond fish farmers with advice on good husbandry techniques and disease prevention measures | <ul style="list-style-type: none"> All fishponds registered under the VRS and AFFS within the WCPs System Study Area |
| MA Schemes (Within/Outside of the Ramsar Site) | <ul style="list-style-type: none"> Funded by the Countryside Conservation Funding Scheme under the Environment and Ecology Bureau (EEB) and managed by an NGO since 2012 Conserving the integrity of wetlands and ecological value of fishponds in Deep Bay Area through cooperating with pond fish farmers in fishpond habitat management, public education, scientific study and local fishery promotion Pond management: Drain-down and reprofiling of fishponds | <ul style="list-style-type: none"> Around 84% of fishponds (by area) within the WCPs System Study Area are registered under the MA Schemes SPS WCP Study Area has the largest area of fishponds participating under the MA Schemes, followed by the Study Area of NSW WCP and HHW WCP. All fishponds registered under the VRS in the MPNR are engaged under the MA Schemes. |

2.4 Ecological Education and Recreation Facilities

2.4.1.1 The ecological education and recreation facilities across the WCPs System has been reviewed as part of the baseline for the WCPs System, with details summarised in the following sections. Apart from the Study Areas of the five Parks, the Study Area for the

review of ecological education and recreation facilities also included a 500m Assessment Area extending from the Study Areas of the five Parks (restricted to areas within the Hong Kong SAR border), the MPNR, HKWP and LVNP (**Figure 1.1** refers).

2.4.1.2 The overall distribution of ecological education and recreation facilities across the WCPs System Study Area is summarised in **Table 2.3** and shown in **Figure 2.8**. Among the five new Parks, SPS WCP Study Area has the most cultural heritage resources and general education facilities, where NSW WCP Study Area has the most ecological education facilities, HHW WCP Study Area has the most existing recreation facilities and attractions, Study Area of HKWP Expansion Area has the most hiking trails and cycling tracks. SL/NH NP is very limited in related resources.

Table 2.3 Distribution of Different Types of Education and Recreation facilities across the WCPs System

| | SPS WCP | | HKWP Expansion Area | | NSW WCP | | HHW WCP | | SL/NH NP | | MPNR | HKWP | LVNP |
|--|-------------------|-----------------------------|---------------------|-----------------------------|-------------------|-----------------------------|-------------------|-----------------------------|-------------------|-----------------------------|------|------|------|
| | Within Study Area | Within 500m Assessment Area | Within Study Area | Within 500m Assessment Area | Within Study Area | Within 500m Assessment Area | Within Study Area | Within 500m Assessment Area | Within Study Area | Within 500m Assessment Area | | | |
| Education Facilities | +++ | +++ | ++ | ++ | ++ | ++ | + | + | - | + | ++ | + | ++ |
| Recreation Facilities and Attractions | +++ | ++++ | ++ | ++++ + | ++++ + | ++ | ++++ ++++ + | ++ | - | + | - | ++++ | +++ |
| Supporting and Visitor Friendly Facilities | + | +++ | ++ | ++++ | ++ | +++ | ++ | ++ | - | - | + | ++++ | ++++ |

Notes:

- Number of “+” represents the type of relevant facilities present within the area.
- Four types of education facilities are present in the Assessment Area, namely ecological education, fisheries education, agriculture education and cultural and heritage education.
- Nine types of recreation facilities and attractions are present in the Assessment Area, namely ecotourism, farming activities, fish farming activities, adventurous experiences, photographic spots, hiking trails, barbeque and picnic, camping and glamping sites as well as sports venues, playgrounds and parks.
- Four types of supporting and visitor friendly facilities are present in the Assessment Area, namely accessibility, eatery and supply, family supporting services and barrier-free facilities.
- For example, of the four types of education facilities, the Study Area of HHW WCP only provides ecological education facilities, so it’s a single “+” for the Study Area of HHW WCP.

2.4.2 Ecological Education Facilities

2.4.2.1 Aside from the existing large scale ecological education facilities of MPNR, HKWP and the LVNP to be established, most existing ecological education facilities were located within the NSW WCP. These facilities were concentrated in the NSW area, being either managed by Government departments or funded by management initiatives. Ecological education facilities identified in the SPS WCP include the Drainage Services Department’s (DSD) San Tin Polder which has an exhibition panel and a self-guided tour route. The Ecological Area (EA) situated in the Loop is within the HHW WCP Study Area, and is primarily a compensatory wetland but can be considered for limited educational guided visit in the future provided that the visit would not cause significant disturbance to the EA (CEDD, 2019).

2.4.3 Recreation Facilities and Attractions

2.4.3.1 Apart from recreation facilities and attractions provided by the existing HKWP and the LVNP to be established, most recreation facilities and attractions were identified within the Study Area of HHW WCP. These included facilities managed by the Leisure and Cultural Services Department (LCSD), such as basketball court and children’s playgrounds and the Lok Ma Chau Lookout, as well as several privately-owned facilities.

2.4.3.2 The Study Areas of SPS WCP and the HKWP Expansion Area also have recreation facilities and attractions including LCSD managed facilities such as parks and children’s

playgrounds, as well as some privately-owned facilities. For the privately-owned facilities, the ones that were recorded in the SPS WCP Study Area include farming related attractions, whereas attractions in the Study Area of HKWP Expansion Area are related to leisure fishing.

- 2.4.3.3 The Study Area of NSW WCP has the highest number of privately-owned facilities supporting a range of recreation activities, such as leisure fishing, photo taking, transportation and picnicking.

2.4.4 Hiking Trails and Cycle Tracks

- 2.4.4.1 There are two government trails within the WCPs System Study Area: the Nam Sang Wai River Education Trail managed by DSD (which runs along the Nam Sang Wai Portion of NSW WCP); and the D4: Lok Ma Chau – Ho Sheung Heung trail managed by LCSD (which begins near the LMC Public Transport Interchange then runs along the southern boundary of the Study Areas of SPS WCP and HHW WCP, then continues southward towards Ho Sheung Heung and LVNP). There are also various unofficial trails which pass through the WCPs System Study Area. These include a route from Long Ping Station and Tsim Bei Tsui, passing through Fung Lok Wai; a route connecting Tsim Bei Tsui and Mong Tseng Wai via the knoll of Kwai Shan; and various footpaths cutting across Kai Shan (all within / adjacent to the HKWP Expansion Area Study Area). Apart from these routes, there are also various trails which start at LMC Public Transport Interchange and pass through the range of hills / knolls south of HHW WCP Study Area (e.g. Tit Hang Shan and She Leng) to reach Ho Sheung Heung. There are also several footpaths to Sandy Ridge within the SL/NH NP Study Area. Locations of these trails / paths are shown in **Figure 2.9**.

- 2.4.4.2 The New Territories Cycle Track Network (NT cycle track) managed by Transport Department, connects Ma On Shan and Tuen Mun (**Figure 2.9**). Part of the track passes through Castle Peak Road – Yuen Long and San Tin Highway, close to the Study Areas of SPS WCP and NSW WCP. The proposed HKWP Expansion Area is also close to Tin Shui Wai which has a comprehensive cycling network. No cycle tracks were identified for the Study Areas of HHW WCP and SL/NH NP.

2.4.5 Existing Supporting and Visitor Friendly Facilities

- 2.4.5.1 Existing supporting and visitor friendly facilities were mostly identified at the large-scale facilities of MPNR and HKWP, with few resources identified in other areas of the WCPs System Study Area. Particularly the SL/NH NP Study Area has no supporting and visitor friendly facilities within / adjacent to the Study Area given its remote location.

- 2.4.5.2 Public transport is available for the Study Areas of SPS WCP, NSW WCP (except Lut Chau) and HKWP Expansion Area given the close proximity of these areas to San Tin, Mai Po Tsuen area, Yuen Long Town and HKWP respectively. Public transport to the Study Area of HHW WCP is limited. Availability of parking space is relatively better in general for these Parks except the Study Area of NSW WCP, given its limited space with most habitats still maintained as fishponds.

- 2.4.5.3 For other visitor friendly facilities, restaurants and toilets are found within / adjacent to the Study Areas of the five Parks except that of SL/NH NP. In general, all Parks lack supporting and visitor friendly facilities due to the rural nature of the Study Area.

2.4.6 Cultural Heritage Resources

- 2.4.6.1 Cultural heritage resources were only identified in the Study Areas of the SPS WCP, HHW WCP and SL/NH NP, with most being identified at the SPS WCP. Declared monuments were also only found in the SPS WCP Study Area, comprising the Man Lun Fung Ancestral Hall and Tai Fu Tai Mansion. Most of historical buildings recorded in the Study Area of SPS WCP are located within the San Tin area.

- 2.4.6.2 MacIntosh Forts were identified within three of the Parks' Study Area, namely SPS WCP, HHW WCP and SL/NH NP. Three out of the total of seven MacIntosh Forts are within the WCPs System Study Area.

2.5 Current Land Uses, Planning and Land Administration Matters

2.5.1.1 The relevant planning policies, existing land uses, committed and planned developments, other land matters including land status and presence of unauthorised developments and/or activities were identified for the WCPs System Study Area as part of the baseline. The results are summarised in the following sections.

2.5.2 Legislative Framework and Administrative Planning Guidelines

2.5.2.1 Statutory protection is in place for designation of areas for protection or controlling incompatible development in Hong Kong. Legislative frameworks relevant to the land in the WCPs System Study Area include:

- Town Planning Ordinance (Cap. 131);
- Country Parks Ordinance (Cap. 208);
- Country Parks and Special Areas Regulations (Cap 208A);
- Wild Animals Protection Ordinance (Cap. 170); and
- EIAO (Cap. 499).

2.5.2.2 Alongside statutory protection, administrative planning guidelines are also in place to guide planning and development in Hong Kong as follows:

- Town Planning Board Guideline (TPB PG) No. 12C on Application for Development Within Deep Bay Area under Section 16 of the Town Planning Ordinance; and
- Hong Kong Planning Standards and Guidelines (HKPSG).

2.5.2.3 The applicability of relevant existing legislative frameworks for managing / regulating the WCPs System, including designating the Parks as protected areas under the Country Parks Ordinance or as restricted areas under the Wild Animals Protection Ordinance, as well as under other administrative mechanisms (i.e. by way of Government Land Allocation (GLA)) have been reviewed.

2.5.3 Statutory Planning

2.5.3.1 The proposed WCPs System Study Area falls within the boundaries of 10 Outline Zoning Plans (OZPs)² as summarised in **Table 2.4**. **Figure 2.10** presents the land use zonings on the relevant OZPs. Overall, the WCPs System Study Area is mostly situated within conservation-related zonings such as “CA”, “GB”, “SSSI” and some “Other Specified Uses” (“OU”) annotated for conservation related land use. Among all Parks, Study Area of SL/NH NP has the highest proportion of conservation-related zonings (~4ha, 100%), followed by Study Areas of HKWP Expansion Area (~234ha, 97%), HHW WCP (~286ha, 88%), NSW WCP (~389ha, 85%) and SPS WCP (~420ha, 73%).

Table 2.4 The OZPs covering the WCPs System Study Area

| WCPs System | OZP |
|-----------------|--|
| Sam Po Shue WCP | <ul style="list-style-type: none"> • Approved Mai Po and Fairview Park OZP No. S/YL-MP/8 • Approved San Tin Technopole OZP No. S/STT/2 |

² Minor portions of the NSW WCP fall within the adjoining approved Yuen Long OZP No. S/YL/27. Similarly, minor portions of the Study Area of HKWP Expansion Area fall into three adjoining OZPs, namely draft Tin Shui Wai OZP No. S/TSW/17, approved Yuen Long OZP No. S/YL/27 and approved Ping Shan OZP No. S/YL-PS/20. However, the history and characteristics of these OZPs are not discussed in detail as only a minor portion of the Study Areas fall within these OZPs.

| WCPs System | OZP |
|----------------------|---|
| HKWP Expansion Area | <ul style="list-style-type: none"> Approved Lau Fau Shan & Tsim Bei Tsui OZP No. S/YL-LFS/11 Draft Tin Shui Wai OZP No. S/TSW/17* Approved Yuen Long OZP No. S/YL/27* Approved Ping Shan OZP No. S/YL-PS/20* |
| Nam Sang Wai WCP | <ul style="list-style-type: none"> Approved Lau Fau Shan & Tsim Bei Tsui OZP No. S/YL-LFS/11 Approved Mai Po and Fairview Park OZP No. S/YL-MP/8 Approved Nam Sang Wai OZP No. S/YL-NSW/8 Approved Yuen Long OZP No. S/YL/27* |
| Hoo Hok Wai WCP | <ul style="list-style-type: none"> Approved San Tin Technopole OZP No. S/STT/2 Approved Ma Tso Lung and Hoo Hok Wai OZP No. S/NE-MTL/3 Approved Lok Ma Chau Loop OZP No. S/LMCL/2 |
| Sha Ling/Nam Hang NP | <ul style="list-style-type: none"> Approved Man Kam To OZP No. S/NE-MKT/4 |
| MPNR | <ul style="list-style-type: none"> Approved Mai Po and Fairview Park OZP No. S/YL-MP/8 |
| LVNP | <ul style="list-style-type: none"> Approved Kwu Tung North OZP No. S/KTN/4 |
| HKWP | <ul style="list-style-type: none"> Draft Tin Shui Wai OZP No. S/TSW/17 |

Remarks: Information presented in the table is based on OZPs gazetted as of October 2024

* Indicates that only a minor portion of the proposed Parks fall within the concerned OZP

2.5.4 Existing Land Uses

2.5.4.1 The WCPs System Study Area generally has a rural character with a mixture of fishponds, mangroves, agricultural land, shrublands and village / rural settlements. In particular, for each of the five Parks, over half of its Study Area is dominated by mangroves, fishponds, or water bodies. Study Area of HKWP Expansion Area has the largest area (about 90%) covered by mangroves, fishponds or water bodies, with some shrublands and grasslands near the southern boundary, as well as patches of woodland. Both SPS WCP and HHW WCP Study Areas are predominately rural in character, with mangroves, fishponds, or water bodies being the most common land uses, and intermixed with agricultural land, village / rural settlements, vegetation and brownfield sites. Mangroves, fishponds or waterbodies also dominate NSW WCP, with some brownfield operations clustered near the eastern tip of its Study Area and some village / rural settlement falling within the Study Area of the NSW WCP. The broad land uses across the WCPs System Study Area are tabulated in **Table 2.5** below.

Table 2.5 Existing Broad Land Uses Across the WCPs System Study Area

| Broad Land Use | SPS WCP | | HKWP Expansion Area | | NSW WCP | | HHW WCP | | SL/NH NP | |
|--|-----------|----|---------------------|----|-----------|----|-----------|----|-----------|----|
| | Area (ha) | % | Area (ha) | % | Area (ha) | % | Area (ha) | % | Area (ha) | % |
| Villages / Rural Settlement | 11 | 2 | 1 | <1 | 2 | <1 | 3 | 1 | 0 | 0 |
| Brownfield and Industrial Land | 17 | 3 | 1 | <1 | 6 | 1 | 0 | 0 | 0 | 0 |
| Government, Institutional and Community Facilities | 1 | <1 | 0 | 0 | <1 | <1 | 2 | 1 | 0 | 0 |
| Agricultural Land | 1 | <1 | 1 | <1 | 1 | <1 | 0 | 0 | 0 | 0 |
| Mangroves / Ponds / Water Bodies | 454 | 80 | 216 | 90 | 333 | 73 | 260 | 80 | 3 | 64 |
| Shrubland and Grassland | 26 | 5 | 4 | 2 | 11 | 2 | 13 | 4 | 1 | 33 |
| Woodland | 1 | <1 | 5 | 2 | 15 | 3 | 15 | 5 | 0 | 0 |
| Others (Roads, burial grounds, drainage channels, vacant land) | 59 | 10 | 13 | 5 | 88 | 19 | 32 | 10 | <1 | 2 |

| Broad Land Use | SPS WCP | | HKWP Expansion Area | | NSW WCP | | HHW WCP | | SL/NH NP | |
|-------------------|------------|------------|---------------------|------------|------------|------------|------------|------------|-----------|------------|
| | Area (ha) | % | Area (ha) | % | Area (ha) | % | Area (ha) | % | Area (ha) | % |
| Total Area | 572 | 100 | 240 | 100 | 456 | 100 | 324 | 100 | 4 | 100 |

Remarks: Due to rounding, figures presented may not add up

2.5.5 Land Status

2.5.5.1 With reference to the Lot Index Plans, the proposed Parks all comprise both Private and Government Land, while MPNR, HKWP and LVNP are wholly on Government Land. Some areas within the proposed Parks are also allocated by the Government to either government departments or private entities through Government Land Allocations (GLAs) or Short Term Tenancies (STTs) respectively. The land status of the WCPs System Study Area is summarised in **Table 2.6** and shown in **Figure 2.11**.

Table 2.6 Land Status of the WCPs System Study Area

| Study Area | Approximate Study Area (ha) | Private Land within the Study Area | | Government Land within the Study Area | |
|---------------------|-----------------------------|------------------------------------|----|---------------------------------------|-----|
| | | Area (ha) | % | Area (ha) ¹ | % |
| SPS WCP | 572 | 318 | 56 | 254 | 44 |
| HKWP Expansion Area | 240 | 118 | 49 | 122 | 51 |
| NSW WCP | 456 | 185 | 41 | 271 | 59 |
| HHW WCP | 324 | 175 | 54 | 149 | 46 |
| SL/NH NP | 4 | <1 | 13 | 4 | 87 |
| MPNR | 372 | 0 | 0 | 372 | 100 |
| HKWP | 62 | 0 | 0 | 62 | 100 |
| LVNP | 37 | 0 | 0 | 37 | 100 |

Note:

¹ Government Land includes unallocated Government Land, as well as Government land allocated through GLAs and STTs, etc.

Remarks: Due to rounding, figures presented may not add up

2.5.6 Relevant Committed and Planned Development

2.5.6.1 As the WCPs System Study Area covers a vast area, some committed and planned developments inevitably interface with the Study Area (**Figure 2.12** refers), including the ST Technopole and HSITP at the Loop; New Territories North (NTN) New Town; Ma Tso Lung (MTL) ; Kwu Tung North (KTN) NDA; Ngau Tam Mei (NTM); Lau Fau Shan (LFS), Tsim Bei Tsui (TBT) and Pak Nai (PN) Areas; Fanling North NDA; projects under Land Sharing Pilot Scheme (LSPS), potential projects under the NNCP PPP Scheme and other planning applications.

2.5.6.2 The SPS WCP Study Area has a close interface with the ST Technopole, in which the wetland habitats of the former can provide environmental capacity to support the phased development of the latter. Viewing from a broader context of the entire Northern Metropolis and the Hong Kong-Shenzhen Circle, the coordinated developments of ST Technopole and SPS WCP can help sustain the ecological function and ecosystem of the wetlands in the area, and harmoniously integrate the planned housing, industrial development and community services with the surrounding natural environment through careful planning.

2.5.6.3 Other committed and planned developments which are in the immediate vicinity of the WCPs System Study Area include MTL as well as LFS TBT and PN areas. As MTL is situated immediately to the south of HHW WCP Study Area and would potentially act as a key intersection for HSITP, their interrelationship will need to be taken into account. Similarly, the study area for LFS TBT and PN area, which is located immediately to the west and overlaps with the HKWP Expansion Area Study Area, will be taken in consideration. The planning of the LFS TBT and PN areas and the HKWP Expansion Area should be coordinated to create synergy and ensure that the shoreline along the proposed

Coastal Protection Park, and overall natural environment is conserved as part of a greater ecosystem within the whole Northern Metropolis.

2.5.6.4 Other than NDAs and comprehensive developments in the Northern Metropolis, there are also committed and planned transport infrastructure projects which may have interface with the WCPs System, including the planned Northern Link (NOL) Main Line, proposed NOL Spur Line, NOL Eastern Extension, Northeast New Territories Line, Northern Metropolis Highway as well as the Eastern Connection Road (ECR) (Transport and Logistic Bureau, 2023). The alignment and design (underground / above-ground) of these transport infrastructures are still under planning and shall be taken into consideration during the next stage of further studies of the corresponding Parks, as they may have an impact on the planning of the relevant Parks.

2.5.6.5 There are three potential projects under the NNCP PPP Scheme which fall within the Study Areas of SPS WCP, NSW WCP and HKWP Expansion Area respectively, details of the said projects are presented below:

- Proposed Comprehensive Residential Development at various Lots in D.D 104 near Yau Mei San Tsuen, Mai Po, Yuen Long (Site area: about 8ha)
- Proposed Comprehensive Development with Wetland Enhancement at Nam Sang Wai and Lut Chau (Site area: about 179ha)
- Proposed Residential Development with a Wetland Nature Reserve at Fung Lok Wai Yuen Long, N.T. (Site area: about 80ha)

2.5.6.6 While some of the committed and planned developments do not fall within the WCPs System Study Area, these developments were still considered in this Study as it is anticipated that the WCPs System would benefit future residents and workers in the committed and planned NDAs, in terms of providing eco-education and eco-recreational facilities, etc.

2.5.7 Socio-economic Conditions

2.5.7.1 Socio-economic conditions in the WCPs System Study Area were assessed with reference to the 2016 Census data, whereas the projection and forecast data are based on the Projections of Population Distribution 2021 – 2029 compiled by the Working Group on Population Distribution Projections.

2.5.7.2 The WCPs System Study Area is sparsely populated, with the proportion of the population aged 65 or over being generally higher compared to the district and territorial averages. In terms of household structures, the proportion of larger household sizes (i.e. 6 members or above) is higher than the district and territorial averages. For housing, the proportion of the population in temporary housing in the vicinity of HHW WCP and SL/NH NP is significantly higher than then the district and territorial figures, accounting for about 3% of the territorial total.

2.5.7.3 The working population of the Tertiary Planning Units (TPUs)³ covering the WCPs System ranged from about 41% (LVNP) to 51% (NSW WCP), which is generally lower than the corresponding district and territorial levels. The proportion of population who are professionals, managers and associate professionals was generally higher in the TPUs covering NSW WCP and MPNR, resulting in a higher median household income (about HKD 22,625) compared to the territorial average (HKD 19,500). Unskilled labours generally range approximately between 23% to 27% for the concerned TPUs.

³ For town planning purpose, the whole territory of Hong Kong is divided into 291 Tertiary Planning Units (TPUs) by the Planning Department, where each of the TPU is identified by a unique three-digit number (C&SD, 2016). Some of the WCPs System Study Areas fall into more than one TPU. In some cases, however, only a small portion of the Study Area fall into these adjoining TPUs. To avoid double counting, only TPUs which cover the majority of the Study Area are considered to provide a more accurate representation. The WCPs System Study Area is covered by 9 TPUs.

- 2.5.7.4 In terms of occupation by industry, the portion of population in the Study Area involved in sectors such as transportation, storage, postal and courier as well as miscellaneous are higher than the district and territorial levels. On the other hand, the percentage of population in the Study Area involved in four sectors (i.e. accommodation and food services; information and communications; financing, insurance and real estate; and professional and business services) are largely below the district and territorial levels. With the exception of TPU 620S, less than 1% of the working population in TPUs covering SPS WCP, NSW WCP, HKWP Expansion Area and LVNP are skilled agricultural and fishery workers or involved in occupation which are not classifiable. Such proportions are similar to the district and territorial levels.
- 2.5.7.5 It is expected that the population, labour force and working population pattern will be subject to significant changes upon the completion of the NDAs in the Northern Metropolis area. The economic/industry positioning of these NDAs would alter the current occupation composition, driving a higher proportion of population working in professional jobs. Committed and planned developments within the Northern Metropolis area would likely attract more people to live and work in the area. Increases in population from 2019 to 2029 in Yuen Long and North District are expected to be 9% and 34% respectively, higher than the expected 5% population increase on the territorial level.

3. KEY ISSUES TO BE ADDRESSED BY THE WCPs SYSTEM

- 3.1.1.1 To facilitate the formulation of strategic-level planning of the overall development of the WCPs System, key issues, opportunities and constraints were identified and analysed during and with reference to the baseline review in **Section 2**. These key issues and analysis are summarised in **Table 3.1**.
- 3.1.1.2 After taking into consideration all relevant key issues, opportunities and constraints, it is concluded that the development of the WCPs System is both feasible and worthwhile. The WCPs System would create opportunities to better improve, enhance and protect the ecological connectivity and ecological function of habitats across the Study Area. It would help to preserve traditional fish farming, promote modernised technologies that can achieve sustainable increases in fisheries yield and quality and promote scientific research on aquaculture. Substantial opportunities are also available to expand high quality eco-education and eco-recreation facilities and programmes across the WCPs System.
- 3.1.1.3 A major issue to be addressed in developing the WCPs System is the significant amount of private land within the Proposed Park Boundaries, which implies significant resources involved in resumption of private land, as well as the Government land currently subject to STTs and GLAs.. There is a need to explore other feasible means of land acquisition apart from land resumption, as discussed in **Section 5.7**.
- 3.1.1.4 There is also a need to further explore whether the Government should rely on existing administrative planning guidelines, or any new or existing legislative framework, for the management of the future WCPs System (a brief overview set out in **Section 2.5.2**). A more detailed analysis of the pros and cons of each option is discussed in **Section 5.7**.

Table 3.1 Key issues, Opportunities and Constraints Identified for the WCPs System

| Key Issues | Opportunities | Constraints |
|---|---|---|
| Environmental and Ecological Context | | |
| Threats to Ecological Resources | - | Disturbance and fragmentation impacts from brownfield sites, village, recreational area, main road, carpark, utilities, and railway (Figure 3.1 refers); exotic and invasive species (Figure 3.2 refers); climate change threats including sea level rise, extreme storm events, and accompanying wave and tidal surges; committed, planned and proposed development projects which might cause disturbance, create pressure, pollute or destroy the ecological resources and habitats. |
| Synergy with Surrounding Areas of Conservation Significance | The WCPs System overlaps with and is adjacent to various areas of recognised conservation importance including Mai Po Inner Deep Bay Ramsar Site, Deep Bay Wetland outside Ramsar Site as Priority Site for Enhanced Conservation under NNCP, HKWP, LVNP, compensatory areas, proposed Coastal Protection Park, Lam Tsuen Country Park and the WCA, WBA, CA, SSSIs etc. Through suitable planning and operation of the proposed WCPs System, it could create conservation synergy with the surrounding areas of recognised conservation importance. | - |
| Interfacing Issues with Committed, Planned and Proposed Developments | - | There are several development projects overlapping with the WCPs System Study Area including ST Technopole, the planned NOL, the proposed LFS, TBT and PN NDAs, the LSPPS in Ho Chau Road, Yuen Long near Tung Shing Lei, the Proposed Major Road Project and the Proposed Northern Metropolis Highway from the “Hong Kong Major Transport Infrastructure Development Blueprint”, ECR and PPP Scheme (Figure 2.12 refers). The interface of these projects with the proposed WCPs System will require careful planning and coordination to minimise conflicting objectives. |
| Internal and External Connectivity | The internal ecological connectivity of SPS WCP, HHW WCP, NSW WCP and HKWP Expansion Area is relatively good, although some fragmentation is caused by factors such as fencing, infrastructure and proposed developments. But the connectivity between the SPS WCP and HHW WCP Study Areas is affected by existing infrastructure (LMC border crossing area) as well as the planned ST Technopole. The internal connectivity of the SL/NH NP is affected by the Lo Wu Station Road, which cuts the area in half and it is relatively isolated from the rest of the planned WCPs System. The WCPs System is externally connected to various areas of recognised conservation importance, careful planning of the Parks could potentially enhance internal and external ecological connectivity and maintain bird flight paths through the WCPs System. | |
| Enhancement of Altered Habitats | Within each of the Parks, there is a sizable portion of relatively degraded habitats including urbanised areas and filled ponds. These areas could provide potential benefits if they are retained for building visitor centre/other recreational facilities, or restored to increase the ecological and/or aquaculture value of the WCPs System through proactive management | - |

| Key Issues | Opportunities | Constraints |
|--|---|---|
| | (Figure 3.3 refers). | |
| Aquaculture Activities | | |
| Preservation of Traditional Pond Fish Farming Practices and Culture | Generally, pond fish farms in the NWNT area only account for less than 5% of the total freshwater fish consumption in Hong Kong per annum. With challenges like an aging workforce, labour shortage and change in consumers' preference, the industry has a declining profitability. Thus, preservation of traditional fishing farming and <i>gei wai</i> shrimp farming method becomes difficult, and the culture and tradition may disappear in the near future. Establishment of the WCPs System presents an opportunity to enhance the productivity of fishponds and quality of fish through developing modernised aquaculture industry as well as promoting relevant scientific research, while balancing the need for preserving the tradition of fish farming. | |
| Socio-economic Issues of Relocation and Compensation | | Concerns over insufficient compensation, implementation, and land resumption timetable of the WCPs System were expressed by fishpond operators. The lack of investment in modernised technologies and equipment due to high investment cost, coupled with uncertainties surrounding land ownership and relocation, also deters fishpond operators from establishing new facilities. Establishing a communication channel / mechanism to resolve conflicts between government authority and affected fish farmers, as well as minimising the direct impact on fish farmers' livelihoods during the transition and relocation period are crucial for implementation of the WCPs System. |
| Roles and Engagement of Local Community and Stakeholders | After the implementation of the WCPs System, there will be different roles created in relation to the operation of the Parks, such as fishpond tenants, service contractors, compensatory wetland operators, eco-education and eco-recreation activities providers, etc. Some of these roles could potentially be allocated to fish farmers / local community within the Study Area to effectively involve stakeholders under operation of the WCPs System. | Concerns on the management mode of the WCPs System were expressed by various stakeholders. While different stakeholders may have different expectations / requests in relation to the WCPs System, various management options would be explored to meet stakeholders' expectation while not compromising the major functions of the WCPs Systems. |
| Opportunities of Sustainable Development through Modernised Aquaculture | Introduction of modernised, sustainable aquaculture practices involving application of advanced technologies, scientific knowledge and efficient management practice on intensive high-density aquaculture, which could increase the efficiency and productivity of fishponds and quality of fish produced, optimise resource utilisation, minimise environmental impact, enhance economic returns, and create new employment opportunities. Sustainable aquaculture development can also create a brand identity for the WCPs System, creating demand for its high quality sustainable produced fish products. By capitalising on these opportunities, the WCPs System can become a hub of innovation and excellence in pond fish farming, further driving industry-wide modernisation and growth. | |
| Promotion of Scientific Research | Designation of modernised aquaculture area could also encourage scientific research by enabling focused studies that may accelerate scientific | |

| Key Issues | Opportunities | Constraints |
|---|--|--|
| Aquaculture | progress and innovation in aquaculture, fostering collaboration and knowledge exchange, providing dedicated research infrastructure, facilitating long-term monitoring, and informing evidence-based policies. Possibilities of potential collaboration and research opportunities with nearby development with ST Technopole and HSITP can be considered. | |
| Ecological Education and Recreation Facilities | | |
| Accessibility, Infrastructure and Transportation | | Public transportation, carparks, road infrastructure and visitor-friendly facilities such as toilets, restaurants, stores, and barrier-free facilities are limited within the Study Area of the five Parks. It will be a constraint to the deliver the functions of WCPs System to provide quality eco-education and recreation facilities without suitable upgrades and provision of the supporting infrastructure and facilities. That said, the future development of the NDAs (such as ST Technopole and HSITP at the Loop) near the Parks could improve the accessibility of the Parks, given that NDAs would be complemented by new transport infrastructures. |
| Create Synergy with Other Local and Non-local Eco-tourism and Recreation Facilities: | There are numerous existing eco-tourism and recreation facilities within and in the vicinity of the WCPs System Study Area. These existing facilities could be further enhanced, and new attractions / activities may also be developed to enrich the eco-recreation resources of the WCPs System. | The WCPs System has to be planned to incorporate existing and new facilities with a clear and unified brand positioning. Connectivity among the existing and new facilities should be carefully planned, taking into account adjacent planned developments. |
| Well Established Resources | The WCPs System Study Area already supports a number of established and well-known attractions and facilities. The HKWP, together with MPNR, already offer popular and diverse eco-education, tourism and recreational programmes, providing successful examples that are of reference value for devising attractive and popular programmes within the WCPs System. Co-ordinated planning and enhancement of these facilities can efficiently enhance the WCPs System overall. | |
| Spacious Rural Setting: | The WCPs System Study Area is very large, offering ample space to create new resources / facilities (e.g. recreational fishing) in a unique rural / natural setting that would not be feasible in other parts of Hong Kong. As regards cultural heritage resources, a number of declared monuments and historical buildings are identified in SPS WCP, HHW WCP and SL/NH NP. Official heritage trails and guided tour linking all these cultural heritage resources or even linkage with other ecological education and recreation facilities could be designed. | A key objective of the overall WCPs System will be enhancing existing environmental capacity, in terms of ecological function, aquaculture productivity and other key ecosystem services. Development of new eco-education, tourism and/or recreational facilities and programmes could potentially pose adverse impact on environmental capacity. Careful planning and design for the type, location, scale and operation mode, etc. of the facilities and programmes will be required to minimise potential impacts. |
| Active Fisheries Resources: | There are numerous Registered Fish Farms under the AFCD AFFS scattered throughout the WCPs System. The AFFS is a voluntary scheme | Consideration should be given to avoid disturbance to ecologically sensitive resources. |

| Key Issues | Opportunities | Constraints |
|---|---|---|
| | to assist local fish famers to increase the competitiveness of their aquaculture products and to provide quality and safe aquaculture products to the public. Adding eco-recreation activities to this programme under the WCPs System could be explored to showcase the practice of local pond fish culture. | |
| Inactive Fishponds: | A number of inactive / abandoned fishponds are scattered across the WCPs System. Apart from resumption for aquaculture operations, restoration of these fishponds located at the fringe of the Parks for eco-education / eco-recreation could be considered under the WCPs System. | - |
| Extensive Connection by Hiking and Cycling: | Alignment of hiking trails and cycle tracks should be planned to link cultural heritage resources, existing / planned eco-recreation facilities / attractions and open space. The possibility of creating trails / cycle tracks linking the entire proposed WCPs System as well as similar facilities in adjoining committed, planned and/or proposed development areas could be explored. | The WCPs System falls within various zones on statutory plans. Depending on the land use zoning on which the intended development falls into, prior planning approval from the TPB or amendments to the OZP might be required which could be a time consuming process. |
| Measures to Encourage Visitation and Re-visitation | The most important part of encouraging visitation and re-visitation to the WCPs System will be to provide high quality visitor facilities and diversified programmes, including developing separate themes for each of the Parks, as well as diverse activities / events throughout the year. Offering loyalty programs or membership packages can encourage revisitation and increased spending. | - |
| Current Land Uses, Planning and Land Administrative Matters | | |
| Land Resumption Process | - | All of the proposed five Parks include large areas of private land, thus the resumption of these areas will be a very expensive and time-consuming process. Additionally, there are some Government land within the proposed Parks which are currently allocated as STTs or GLAs. Termination and clearance of STTs and GLAs would be required for acquiring the concerned Government land for establishing the Parks. Furthermore, some Private Lots at the Study Area periphery fall partly within the Study Area boundary. Consideration is required to determine if the Park boundaries should be delineated in a way to exclude or include partially or wholly the entire Private lot. |
| NNCP PPP Scheme Projects and Ongoing Large Scale Planned and/or Proposed Development | Potential synergies with existing and planned recreational facilities (e.g. hiking trails / cycle tracks) from interfacing developments, such as the NT Cycle Track Network which connects Yuen Long and Sheung Shui / Fanling and could potentially connect to KTN NDA and MTL, and the DSD River Education Trail and cycling track, should also be taken into consideration. | Three potential projects under the NNCP PPP Scheme fall within the Study Areas of the SPS WCP, NSW WCP and HKWP Expansion Area. Other than these projects, there are several on-going large-scale planned and/or proposed developments in close proximity (e.g. planned ST Technopole, MTL) and comprehensive developments from approved and ongoing |

| Key Issues | Opportunities | Constraints |
|--|---|---|
| | | <p>planning applications. The interfacing issues between the planned developments and the proposed Parks require close liaison between the responsible parties to ensure the layout and/or the facilities proposed within the planned developments are compatible with the functions of the proposed Parks.</p> |
| <p>Interference with Existing OZP Zonings and other Land Use</p> | <p>-</p> | <p>A large portion of the proposed WCPs System falls within conservation-related zones such as “CA” and “SSSI”, as well as areas zoned “OU(CDWEA)”, “OU(CDWRA)” or “OU(CDWPA)”. While there is a general presumption against development on land falling within the “CA” and “SSSI” zones, developments within these “OU” zones should comply with the ‘Town Planning Board Guidelines for Application for Developments within Deep Bay Area under section 16 of the Town Planning Ordinance’ (TPB PG-No. 12C).</p> <p>With reference to the relevant OZPs, small portions of the Study Area of the WCPs System intersect with areas currently zoned “Village Type Development” (“V”) on the OZP. These “V” zones are situated mainly at the western portion and southwestern tip of the Study Areas of the HKWP Expansion Area as well as the southern portions of the NSW WCP and SPS WCP (Figure 2.10 refers). These “V” zones would be excluded from the proposed Park Boundaries.</p> <p>Developments should not encroach on Permitted Burial Grounds (PBGs). PBG No. YL/1 is located in the western portion of the Study Area of the HHW WCP south of the Ha Wan Tsuen while part of PBG No. YL/63 falls within the Study Area of the HKWP Expansion Area.</p> <p>The Frontier Closed Area (FCA) covers parts of the Study Areas of the SPS WCP, HHW WCP and SL/NH NP. As access to the FCA requires a Closed Area Permit, facilities or developments intended for public access should be avoided in these areas.</p> |
| <p>Designation / Regulation of WCPs System under Ordinances / Legislation</p> | <p>Different options of existing legislative framework such as designation of the Parks as SAs in accordance with the Country Parks Ordinance, designation as Restricted Areas in accordance with the Wild Animal Protection Ordinance, or imposition of development control through the Town Planning Ordinance, or making a new ordinance can be explored for managing and regulating the areas to be delineated as the Parks. However, some existing ordinances may have certain incompatibility with the functions and proposed activities in the WCPs System, as some ordinances may impose certain restrictions on activities allowed in the Parks.</p> | |
| <p>Needs of Future Population</p> | <p>With the development of the Northern Metropolis (e.g. planned ST Technopole and MTL), the population of Yuen Long and North Districts is</p> | <p>-</p> |

| Key Issues | Opportunities | Constraints |
|--|--|-------------|
| | <p>expected to grow significantly in the coming decade, and there could also be changes to the age cohort of the future population. Promoting scientific research on conservation, aquaculture activities, etc. in the WCPs System would create job opportunities for future residents in the area. In addition, the proposed Parks could provide recreational outlets / open space to support the future population</p> | |
| <p>Conserve Areas with High Biodiversity and Areas of Ecological Importance</p> | <p>The establishment of WCPs System would help to protect the wetlands from unauthorised developments, pond filling and deterioration of the environment.</p> | <p>-</p> |

4. DELINEATION OF BOUNDARIES OF THE PARKS

4.1 Introduction and Delineation Criteria

4.1.1.1 A key objective of the Study is to delineate the boundaries of the proposed Parks under the WCPs System within the Study Area (as shown in **Figure 1.1**). Delineation criteria were formulated to provide a clear decision-making framework, with a view to ensuring that the proposed Park areas can effectively perform the four major functions of the WCPs System. Additionally, the delineation criteria would also take account of and minimise potential conflicts with existing and proposed zoning, land uses, as well as existing, planned and committed developments within and adjacent to the WCPs System Study Area. Finally, the delineation criteria would rationalise proposed Park boundaries to facilitate future management and administration of the Parks.

4.1.1.2 To facilitate understanding of the delineation process, terms and definitions used are summarised in below **Table 4.1**.

Table 4.1 Definition of the Terminology Used for Boundary Delineation under the Study

| Terminology | Definition |
|------------------------------|--|
| Study Area | <ul style="list-style-type: none"> Refers to WCPs System Study Area as shown in Figure 1.1 |
| Proposed Park Boundary/ies | <ul style="list-style-type: none"> Refers to the new Park boundaries proposed under the Study, after consideration of the Stages 1 and 2 Delineation Criteria |
| Brownfield Site | <ul style="list-style-type: none"> Refers to formerly agricultural land / fishponds in the New Territories which has been transformed into various operations and uses, such as industrial, storage, logistics and parking uses (PlanD, 2019) |
| Private Lots | <ul style="list-style-type: none"> Refers to private land properties listed under the lot index plan as at September 2022 |
| Conservation Related Zonings | <ul style="list-style-type: none"> Refers to Statutory Land Use Zonings relating to protection of natural landscape and habitats as defined in Ch.10 of HKPSG, in which developments would be regulated. This include but are not limited to “SSSI”, “CA”, “GB” and various “OU” relating to wetland restoration, enhancement and protection. |

4.1.1.3 Due to the vastly different existing land uses within the Study Area of each Park and scale of factors, a two-stage delineation process was adopted, with **Stage 1 Criteria** generally prioritised over **Stage 2 Criteria**. Stage 1 Criteria allow for relatively clear-cut decisions on whether certain areas should be included or excluded from Proposed Park Boundaries. The Park Boundaries preliminarily outlined after considering Stage 1 Criteria were then fine-tuned using Stage 2 Criteria together with consideration of the four major functions of the WCPs System, which were subject to a case-by-case review. Stage 1 and Stage 2 Criteria are summarised and detailed in **Table 4.2** below.

4.1.1.4 **Stage 1 Criteria** – primarily consist of existing, planned and committed developments (and associated compensation requirements if any) that interface with the Study Area. Other Stage 1 Criteria include specific land use zoning under statutory plans, existing land uses, and facilities within the Study Area that should be excluded from the Park Boundaries. Maintenance of overall ecological connectivity across the WCPs System was also considered.

4.1.1.5 **Stage 2 Criteria** – various factors are used to refine the boundaries derived from the Stage 1 delineation process. Some factors are relatively straightforward to be incorporated into the delineation process, such as all Government Land as well as the existing wetland habitats and sites of high ecological value within and on the periphery of the Study Area of each Park can be included in the Proposed Park Boundaries. On the other hand, some other factors / scenarios, such as inclusion / exclusion of private lots that lie on the periphery of the Study Area of each Park in / from the Proposed Park Boundaries, require review on

a case-by-case basis.

Table 4.2 Summary of WCPs System Boundary Delineation Criteria

| No | Criteria | Description | Rationale |
|-------------------------------------|---|--|--|
| Stage 1 Delineation Criteria | | | |
| 1.1 | Existing, Committed and Planned Developments | <ul style="list-style-type: none"> Areas to be excluded from the Proposed Park Boundaries include existing, committed and planned developments | The existing, committed, and planned developments located within the Study Area with varying development intensity would not be compatible with the four major functions of the WCPs System, for example high-density residential/commercial developments. Thus, these developments would be excluded from the Proposed Park Boundaries. The preliminarily proposed alignments of the Eastern Connection Road, NOL Spur Line and Proposed Northern Metropolis Highway also fall partly within Proposed Park Boundaries. However, considering that these developments are still at an early design stage of study / planning and their exact alignments are not yet available / finalised, interface with these projects would not be considered under this Study. The next stage of detailed studies for the Parks should take into account any interface issue with these developments when more information becomes available. |
| 1.2 | Holistic Wetland Conservation Management for Intra-Connectivity within the WCPs System | <ul style="list-style-type: none"> Incorporate isolated, small areas of wetland habitats with ecological value into adjacent Proposed Park Boundary's for inter-collective management | There are some small wetland habitats that are physically isolated from the larger Deep Bay wetlands (i.e. those in the SL/NH NP Study Area and ponds isolated by the Kam Tin River and Shan Pui River in the NSW WCP Study Area). These wetland habitats are currently supporting / can provide support to wetland dependent species and would contribute towards maintaining ecological connectivity of the entire area. It is therefore recommended these smaller wetland habitats should be incorporated into the adjacent Proposed Parks, such that the wetland conservation work and ecological connectivity of the entire area can be planned and managed in a more holistic manner |
| 1.3 | Specific / Special Sites | <ul style="list-style-type: none"> Permitted Burial Grounds (PBGs) | PBGs are designated area for burial of deceased indigenous villagers of the New Territories managed by the Home Affairs Department (Office of The Ombudsman, 2015). Burial grounds are potentially subject to human disturbance from grave sweeping activities as well as risk of hill fires, and would not be compatible with the four functions of the WCPs System. Thus, PBGs would be excluded from the Proposed Park Boundaries. |
| | | <ul style="list-style-type: none"> Sites of Archaeological Interest (SAIs) | SAIs are areas of potential cultural significance / value identified by Antiquities and Monuments Office (AMO), which are of varying degree of significance or potential and not equivalent to declared monuments (AMO, 2012). SAIs are managed by the AMO and development on these areas shall be avoided as far as possible. In addition, conservation of archaeological heritage in form of <i>in-situ</i> preservation of the archaeological remains is considered as first priority under worldwide practice (AMO, 2022). With consideration of <i>in-situ</i> preservation and that the SAIs would not be compatible with the four functions of the WCPs System, SAIs would be excluded from the Proposed Park Boundaries. |
| | | <ul style="list-style-type: none"> Site of Special Scientific Interest (SSSIs) | SSSIs are land or marine-based sites due to their biological and/or geological significance (AFCD, 2023). The designation of SSSI is essentially an administrative tool to alert governmental departments of the scientific significance of these areas and the need for conservation to be considered when proposed activities occur at or near these sites. |

| No | Criteria | Description | Rationale |
|-----|---|--|---|
| | | <ul style="list-style-type: none"> <li data-bbox="412 304 757 331">• Frontier Closed Area (FCA) <li data-bbox="412 667 689 694">• Government Facilities | <p data-bbox="938 231 2172 288">SSSIs located within the Study Areas would be included in the Proposed Park Boundaries if such inclusion would contribute to major functions of the WCPs System.</p> <p data-bbox="938 304 2172 488">FCA was designated by the Frontier Closed Area Order (Cap. 245A) to provide a buffer zone to help law enforcement agencies maintain the integrity of the boundary between Hong Kong and Mainland and to combat illegal immigration and other cross boundary criminal activities (PlanD, 2010). Most of the FCA is located along the periphery of the Study Areas, and is separated from larger portion of the Study Area by the border fence. Furthermore, these areas are of relatively low ecological value, and are currently managed by the Hong Kong Police Force and DSD.</p> <p data-bbox="938 504 2172 651">As inclusion of these areas would not contribute significantly to the four functions of the WCPs System, and would result in additional management and administrative complexities, the FCA (to the north of the Boundary Control Fence) would be excluded from the Proposed Park Boundaries unless it falls within areas which are designated as CAs and/or are ecological mitigation areas for planned / committed developments.</p> <p data-bbox="938 667 2172 826">Government Facilities within the Study Areas and at the periphery would be excluded from the Proposed Park Boundaries if the concerned facilities are (i) incompatible with the four functions of the WCPs System and (ii) not required for supporting the future operation / management of the Parks.</p> <p data-bbox="938 770 2172 826">All government facilities which are related to infrastructure or utilities provision (e.g. pumping stations) would be excluded from the Proposed Park Boundaries for ease of management of the future Parks.</p> |
| 1.4 | Village Type Development (“V”) on OZP | <ul style="list-style-type: none"> <li data-bbox="412 842 911 932">• Areas zoned as “Village Type Development” (“V”) Zone under Outline Zoning Plans (OZPs) | <p data-bbox="938 842 2172 963">The planning intention of “Village Type Development” (“V”) Zone is broadly to designate villages (including recognised villages, if applicable) and areas of land considered suitable for village expansion. These areas, which generally tend to be of low ecological value, would be subject to human disturbance and generally not compatible with the four functions of WCPs System.</p> <p data-bbox="938 979 2172 1066">In addition, including areas zoned as “V” in the Proposed Park Boundaries may also jeopardise land available for development of Small Houses by indigenous villagers. Objection from the local rural communities would be expected.</p> <p data-bbox="938 1082 2172 1139">As such, areas zoned as “V” on the respective OZPs would be excluded from the Proposed Park Boundaries.</p> |
| 1.5 | Existing and Committed Mitigation Wetlands | <ul style="list-style-type: none"> <li data-bbox="412 1152 911 1305">• Areas required for environmental (i.e., ecological and fisheries) offsetting as part of the existing and abovementioned development projects to be included in the Proposed Park Boundaries. | <p data-bbox="938 1152 2172 1273">Some areas within the Study Area have been committed as mitigation wetlands to offset impacts resulting from other developments. Such areas, which are / will be managed by Government departments, are for conservation purpose which are compatible with the functions of the WCPs System, thus could be included in the Proposed Park Boundaries as appropriate.</p> <p data-bbox="938 1289 2172 1367">Areas of mitigation wetlands, which are not / will not be managed by Government departments would be excluded from the Proposed Park Boundaries to avoid complication or interference with existing administration and management practices, and regulatory commitments.</p> |

| No | Criteria | Description | Rationale |
|-------------------------------------|--|--|---|
| Stage 2 Delineation Criteria | | | |
| 2.1 | Ecological Value and Connectivity | <ul style="list-style-type: none"> Wetland habitats and sites of high ecological value identified within the Study Areas Connectivity with existing protected areas and intra-connectivity within the WCPs System Key ecological corridors identified within the Study Areas | <p>Existing wetlands (including marshes, actively managed fishponds and abandoned ponds) and sites of high ecological value (e.g., established egrettries and bird roosts) within and on the periphery of the Study Areas would be considered for inclusion in the Proposed Park Boundaries.</p> <p>Terrestrial habitats located at the fringe of the Study Areas would be excluded from the Proposed Park Boundaries to tally with the major functions of the WCPs System.</p> <p>The key avifauna flight corridor linking Mai Po, SPS WCP and HHW WCP would be included in the Proposed Park Boundaries, including the 'bottleneck area' comprising the Ecological Area (EA) at the Loop, Shenzhen River meander and adjacent fishponds in the HHW WCP.</p> |
| 2.2 | Brownfield Sites and Areas of Unauthorised Developments | <ul style="list-style-type: none"> Brownfield sites | <p>The inclusion / exclusion of brownfield sites in / from the Proposed Park Boundaries would be considered on a case-by-case basis, with reference to:</p> <ul style="list-style-type: none"> The location of the brownfield site (sites in the interior of the Study Area would generally be included in the Proposed Park Boundary, whereas those on the periphery would be considered for exclusion) If conducive to potential future uses within the WCPs System (where a brownfield site is required / considered appropriate for conversion to another use that will support the four functions of the WCPs System, such as construction of visitor centre, indoor Recirculating Aquaculture Systems (RAS) fish farms, and aquaculture facilities etc.), it will be considered for inclusion in the Proposed Park Boundaries (See also Criteria No. 2.6) |
| 2.3 | Other Statutory Land Use Zonings | <ul style="list-style-type: none"> Isolated patches of areas zoned "CA", "DRCH", "GB", "G/IC", "REC", "OU(CDWRA)", "O(1)", "OU(CDWPA)", "OU(Helicopter Landing Pad)", "SSSI" at the periphery of the Study Areas' boundaries, as well as Village Environs (VEs) which might fall within conservation zones including "SSSI", "CA", "CPA", "GB" and various "OU" relating to wetland restoration | <p>The treatment of isolated patches of area under different zonings on the periphery of the Study Areas' boundaries would be considered on case-by-case basis, such as:</p> <ul style="list-style-type: none"> Inclusion in the Proposed Park Boundaries where the existing land use, zoning and habitats are aligned with the four functions of the WCPs System (i.e., areas zoned as "CA" that support wetland habitats) provided that practicability of long-term daily management would not be a concern Exclusion from the Proposed Park Boundaries where the existing land use zoning, and habitats are not aligned with the four functions of the WCPs System (i.e. "OU" (Helicopter Landing Pad)) |
| 2.4 | Aquaculture Activities and Potential | <ul style="list-style-type: none"> Fishponds under different categories | <p>Fishponds with existing aquaculture activities within the Study Area would be included in the Proposed Park Boundaries. Other fishponds within the Study Area with high potential for converting into fishponds for aquaculture or conservation would also be included in the Proposed Park Boundaries.</p> |
| 2.5 | Existing Road | <ul style="list-style-type: none"> Existing road under management by other Government Departments. | <p>Existing road within the Study Area that are under management by other government departments would be excluded from the Proposed Park Boundaries, and remain under management by the same government department.</p> |
| 2.6 | Existing and | <ul style="list-style-type: none"> Existing facilities relevant to the four | <p>Facilities such as the Fishpond Education Kiosk at NSW WCP Study Area would be included in the</p> |

| No | Criteria | Description | Rationale |
|-----|---|---|--|
| | Potential Ecological Education, Fisheries Production and Recreation Facilities | functions of the WCPs System <ul style="list-style-type: none"> • Existing facilities irrelevant to / incompatible with the four functions of the WCPs System • Areas required for new facilities and necessary supporting infrastructure for aquaculture activities, ecological education and recreation activities within the WCPs System. | Proposed Park Boundaries. Facilities such as children’s playgrounds on the periphery of the Study Area would be excluded from the Proposed Park Boundaries as these facilities are not conducive to providing the four functions of the WCPs System. Suitable areas on the periphery of the Study Area that are required for provisions of new facilities (e.g. visitor centre) or infrastructure (e.g. footpath) would be included within the Proposed Park Boundaries. |
| 2.7 | Land Status and Lot Boundaries | <ul style="list-style-type: none"> • Government land within the Study Area • Private lot that are cut by the preliminary Park Boundaries outlined after consideration of Stage 1 Criteria. | Government land within the Study Area would be included in the Proposed Park Boundaries as far as possible. Private lots that are divided by the preliminary Park Boundaries outlined after consideration of Stage 1 Criteria may be included (wholly), excluded (wholly) or the delineation may be kept as it is. The treatment of each private lot would be made on a case-by-case basis, considering: <ul style="list-style-type: none"> • Whether a small portion or a significant portion of the private lot is within the Study Area’s boundary; • Current land use of the lot • Ecological value of the lot • Aquaculture activity and potential of the lot • Whether the inclusion / exclusion of the lot would result in a more reasonable and smooth Proposed Park Boundary that would facilitate future operation, management and maintenance |

4.2 Delineation of the Boundaries of the Parks

4.2.1.1 Proposed Park Boundaries were delineated according to Stage 1 and Stage 2 criteria for all the Parks, as shown in **Figures 4.1 to 4.4** and described in the following sections.

4.2.2 Area for Potential Inclusion

4.2.2.1 As stipulated in **Section 2.1.1.5** above, there are three potential NNCP PPP Scheme projects located within the Study Area of the WCPs which had obtained planning approval, and are at different stages to comply with the approval conditions of planning permission and other relevant statutory requirements including those under the EIAO. On the other hand, one of the requirements of the NNCP PPP Scheme is that the developers are required to submit a Conservation and Management Plan (CMP) outlining implementation details and estimated annual recurrent costs to ensure the long-term maintenance and management of the Conservation Portion. The CMP (or a plan of similar nature and purpose but in different name) is usually an approval condition of the planning permission of potential projects in relation to the NNCP PPP Scheme as well, which is subject to the satisfaction of the Director of Agriculture, Fisheries and Conservation / Town Planning Board. In vetting the CMP to be submitted by the project proponents for the three potential NNCP PPP Scheme projects in future, it is recommended that the EEB / AFCD ascertain with the developers whether they would opt for the “Additional Option” of the scheme under which the Conservation Portion would be surrendered to the Government, or the “Original Option” of the scheme under which the Conservation Portion would remain under the project proponent; and seek to ensure the CMP to be implemented for the Conservation Portion is compatible with the objectives and functions of the relevant Park. Meanwhile, it is recommended that the areas of the three potential projects under the NNCP PPP Scheme shall be identified as “area for potential inclusion” under the delineation process for the Parks. The inclusion / exclusion of these project areas shall be subject to further detailed studies of the corresponding Parks, progress of the potential projects as well as discussions with relevant stakeholders such as the project proponents.

4.2.3 SPS WCP

4.2.3.1 The Proposed SPS WCP Boundary is shown in **Figure 4.1**. The Park includes about 338ha of area to be established and 10 ha of existing Offsite Wetland Compensation Areas (OWCAs) in Lok Ma Chau, adding up to 348ha in total. The calculation of the above proposed area **has excluded** the potential NNCP PPP Scheme project in Yau Mei San Tsuen.

4.2.3.2 The Yau Mei San Tsuen potential NNCP PPP Scheme project covers an area of approximately 8ha sandwiched between Palm Springs to the northeast and Fairview Park to the southwest and mainly comprises abandoned fishponds which are under succession into grassland / shrubland habitat, and isolated ponds at the south-eastern tip. If the area of the Yau Mei San Tsuen project is considered to be suitable / feasible for inclusion into the SPS WCP on top of the 348ha of size proposed to be established in **Section 4.2.3.1** above in future after further detailed study, the concerned area could be restored into wetland habitats.

4.2.4 HKWP Expansion Area

4.2.4.1 The Proposed HKWP Expansion Area Boundary is shown in **Figure 4.2**. The Park's maximum area would be about 224ha, including “area for potential inclusion” as illustrated in **Section 4.2.4.2**.

4.2.4.2 For the area of the Fung Lok Wai project which is a potential project under the NNCP PPP Scheme that is identified as “area for potential inclusion”, it is approximately 80ha, comprising mainly open ponds habitats with unknown management status. If the area of the Fung Lok Wai project is considered to be suitable / feasible for inclusion in the HKWP Expansion Area in future after further detailed study, the concerned area could be enhanced for eco-friendly aquaculture.

4.2.5 NSW WCP

4.2.5.1 The Proposed NSW WCP Boundary is shown in **Figure 4.3**. The Park's maximum area would be about 397ha, including "area for potential inclusion" as illustrated in **Section 4.2.5.2**.

4.2.5.2 For the area of the Nam Sang Wai / Lut Chau project which is a potential project under the NNCP PPP Scheme that is identified as "area for potential inclusion", it is approximately 179ha, comprising mainly marsh habitats in Nam Sang Wai and fishpond habitats in Lut Chau. If the area of the Nam Sang Wai / Lut Chau project is considered suitable / feasible for inclusion in the NSW WCP in future after further detailed study, the concerned area could be enhanced as ecological habitats and/or eco-friendly aquaculture.

4.2.6 HHW WCP (including SL/NH area)

4.2.6.1 The Proposed HHW WCP (including SL/NH area) Boundary is shown in **Figure 4.4**. The Park's total area would be about 277ha, including about 4ha in the SL/NH area. The SL/NH NP as proposed in the NMDS is recommended to be incorporated into the adjacent HHW WCP to ensure that the wetland conservation work and ecological connectivity of the entire area can be planned and managed in a more holistic manner and to optimise administration efficiency, given that the SL/NH NP has a very small area compared with the other Park and that 90% of its area is existing mitigation wetland currently managed by AFCD.

5. CONCEPTUAL PLANS AND MANAGEMENT OF PARKS UNDER THE WCPs SYSTEM

5.1 Introduction

5.1.1.1 Conceptual plans for each of the Parks under the WCPs System have been developed. The Park areas have been divided into different zonings taking into consideration the Proposed Park Boundaries delineated⁴ (**Section 4** refers), the proposed themes and functions of the Parks, as well as the principle of minimising ecological impacts.

5.2 Proposed Themes of the Parks

5.2.1.1 According to the NMDS, the proposed WCPs System aims to ‘create environmental capacity’ for the Northern Metropolis and ‘achieve co-existence of development and conservation,’ with individual Parks achieving multiple functions at varying degrees, including ecological conservation, modernisation of aquaculture industry, as well as eco-education and eco-recreation which will also provide a unique scenic wetland landscape for the Northern Metropolis. Specific positioning and functions are recommended for each of the Parks, so that they may complement each other to form a comprehensive WCPs System, as described in the following sections.

5.2.1.2 The general theme for the SPS WCP is ***Biodiversity and Aquaculture in Harmony***. In this Park, the existing framework of fishponds would largely be maintained, but zoned, modified / restored and managed to enhance the ecological capacity of the area, promote biodiversity by adopting eco-friendly practices in operating the fishponds and promote the modernisation of aquaculture practices in which modernised technologies would be utilised to enhance productivity of ponds and their operation efficiency. Ecological Linkage between existing ecological resources such as MPNR and compensatory wetlands would be preserved and enhanced, while the established avifaunal flight path would also be protected. Visitors would also have an opportunity to learn about Hong Kong’s history of freshwater fish farming; understand how conservationists, local farmers and scientists are collaborating to restore the industry while protecting and enhancing important biodiversity resources; and purchase sustainably raised fish products.

5.2.1.3 The general theme for the HKWP Expansion Area is ***Wetlands for Learning***. In this Park, the existing framework of fishponds would largely be maintained. Apart from enhancing ecological capacity and promoting modernised aquaculture practice, the Park will focus on providing eco-education experience for the public through leveraging wetland habitats as an immersive educational tool and devising innovative education activities / programmes. Through suitable planning, the HKWP Expansion Area can be linked with the nearby existing HKWP to create synergy in providing eco-education as well as cater for larger numbers of visitors, enhancing the attractiveness of both Parks.

5.2.1.4 The general theme for the NSW WCP is ***An Eco-tourism Paradise***. In this Park, the existing framework of fishponds and reedbed habitats would largely be maintained, but zoned and managed to enhance the ecological capacity of the area as well as promote the sustainable modernisation of aquaculture practices. This Park also aims to provide eco-recreation for public enjoyment through capitalising on the existing popular and iconic tourism attractions to be maintained where possible and adding new visitor facilities and eco-tourism attractions such as bird hides, cycling and walking trails in the ecologically less sensitive southern portion of the Park.

5.2.1.5 The general theme for the HHW WCP (including SL/NH area) is ***A Rural Retreat***. In this Park, the existing framework of fishponds would largely be maintained, but zoned and managed to enhance the ecological capacity of the area as well as promote the sustainable modernisation of aquaculture practices. The eastern area of seasonally wet grassland / marsh habitat would be converted into wet agricultural land to diversify habitats and create

⁴ As detailed in **Section 4.2.2.1**, under the boundary delineation process, the potential projects under the NNCP PPP Scheme have been identified as “area for potential inclusion”, where the inclusion / exclusion of these areas shall be subject to further detailed study of the corresponding Parks, progress of the projects, as well as discussions with relevant stakeholders such as the project proponents. These areas will be shown in the conceptual plans as “area for potential inclusion” and are not formulated with broad zonings.

synergy with the nearby LVNP. Rural activities such as leisure farming may be provided for visitors to enjoy a rural lifestyle and idyllic rural landscape.

5.3 Proposed Zoning of the SPS WCP

5.3.1 Conceptual Plan

5.3.1.1 The conceptual plan for SPS WCP is shown in **Figure 5.1**. The proposed SPS WCP needs to enhance the wetlands and fishponds to compensate for ecological and fisheries impacts resulting from the development of ST Technopole. Regarding ecological compensation, approximately 253ha of fishponds will serve a dual purpose of ecological conservation and eco-friendly aquaculture with suitable utilisation of modernised aquaculture techniques. Also, approximately 35ha of enhanced freshwater wetland habitats are proposed to be created to compensate for other freshwater wetland loss. As regards fisheries compensation, another 40ha of fisheries enhancement area will be used for development of modernised aquaculture with intensive aquaculture systems and operations with high productivity. These compensation requirements have been considered in the development of the conceptual plan, which divides the proposed SPS WCP into four zones, as described below.

Biodiversity Zone

5.3.1.2 Approximately 35ha enhanced freshwater wetland habitats are proposed to be created and managed as the Biodiversity Zone in the SPS WCP. The Biodiversity Zone is proposed to be of restricted access to minimise human disturbance, with various wetland habitat types created to support wildlife communities. Some preliminary indicative locations for these enhanced freshwater wetland habitats are proposed in **Figure 5.1**, and would be confirmed in further detailed studies.

5.3.1.3 Approximately 10 ha of pond habitat running across the northern portion of the proposed SPS WCP, which are currently existing wetland mitigation areas managed by AFCD, is proposed to be managed as Biodiversity Zone as well. This can strengthen ecological linkage between Mai Po in the west and existing compensatory wetlands in the east, as well as provide better linkage with the proposed HHW WCP (including SL/NH area) further to the east. There are also opportunities to convert some tidally connected areas in the FCA east of the MPNR to *gei wai*, to further enhance the diversity of habitats in the proposed SPS WCP as well as the diversity of wildlife species supported therein. Access to the area could be restricted to minimise human disturbance.

Eco-friendly Aquaculture Zone

5.3.1.4 A total of around 253ha is proposed to be managed as the Eco-friendly Aquaculture Zone. Ponds in this Zone will be mainly managed for biodiversity enhancement and eco-friendly aquaculture. With modernised aquaculture technologies and advanced eco-friendly aquaculture technologies, fisheries production could be maintained together with food production for wildlife in the Zone.

Fisheries Enhancement Zone

5.3.1.5 An area of around 40ha is proposed to be managed as Fisheries Enhancement Zone. These ponds are proposed to be located close to the ST Technopole with more limited ecological potential, and in proximity to the AFCD Fisheries Research Centre which will be located at Ha Wan Tsuen within ST Technopole area. The ponds in this Zone can potentially be developed for high-density and modernised aquaculture production. The exact location of the Fisheries Enhancement Zone would be confirmed during the next stages of detailed studies.

Visitor Zone

5.3.1.6 A small area (about 10ha) at the south of Lin Barn Tsuen, which includes an existing brownfield site, is proposed to be managed as Visitor Zone named “Gateway to the Wetlands” to provide visitor experience including a visitor centre with facilities such as outdoor classrooms, shops and restaurants, etc.. The proposed area of the Visitor Zone is not ecologically sensitive, and is close to the developed area, so as to avoid and reduce any ecological impact during the construction and operation of these facilities. Its exact location would be confirmed during the next stages of detailed studies.

5.3.2 Specific and Related Facilities

5.3.2.1 Specific facilities to be provided in the proposed SPS WCP could include:

- Visitor centre, outdoor classrooms, bird hides, open space, eco-lodge, shops, weekend markets, restaurants, and nature trails, etc. to provide visitors with enjoyable eco-education and eco-recreation experiences, as well as exposure to traditional aquaculture practices within the Park. Other supporting services such as mother’s room, barrier-free facilities and public toilets would also be provided to ensure easy accessibility to the Visitor Zone. The proposals on facilities of the SPS WCP will be further studied and designed during the next stage of detailed studies.

5.3.2.2 Other related facilities include:

- The proposed AFCD WCP Wetland Management Office of about 0.3ha located within the ST Technopole (and connected with the Visitor Zone) would serve as a visitor access point for the SPS WCP. Nature trails would be established from this Office connecting the area of Mai Po, Lin Barn Tsuen and SPS, with bird hides to be provided along the trails. The trails would be designed to enable the visitors to enjoy traditional fishpond farming scenery, while learning about wetland ecology. Eco-education and eco-recreation facilities would be carefully planned and designed during the next stage of detailed studies to enrich visitor experiences while minimising potential disturbance or ecological impact.
- The proposed AFCD Fisheries Research Centre of about 6ha located within the ST Technopole would provide indoor and outdoor aquaculture facilities and laboratories facilities, etc. The Fisheries Research Centre can promote aquaculture research and modernisation of the industry, enhancing the quantity, quality, and value of local fisheries products in the long run.

5.4 Proposed Zoning of the HKWP Expansion Area

5.4.1 Conceptual Plan

5.4.1.1 The conceptual plan for HKWP Expansion Area is shown in **Figure 5.2**. Extensive area of fishpond and mangrove habitats within the Park would be managed as Biodiversity Zone with limited access for ecological conservation, while a portion of fishpond is proposed to be managed as Eco-friendly Aquaculture Zone to serve the dual purpose of ecological conservation and eco-friendly aquaculture with suitable utilisation of modernised aquaculture techniques. Being physically connected to the existing HKWP, the HKWP Expansion Area could provide enriched eco-education experience by designating the connecting area as Visitor Zone to create synergy effect. Recreational fishing facilities and Field Centre could also be provided. The details of the proposed zones are described below.

Biodiversity Zone

5.4.1.2 The area east of Mong Tseng Wai, the northwestern portion of Fung Lok Wai, as well as the area south of the HKWP, is proposed to be managed as Biodiversity Zone of about 81ha. The large tidal pond overgrown with mangroves at Tsim Bei Tsui would be converted to *gei wai* to enhance ecological value. Boardwalks and an observation tower can be

considered in the *gei wai* at Tsim Bei Tsui with limited access. Planting as well as bird hides can be provided along the Border Road facing the wetlands to reduce disturbance and enhance visitor experience. Limited visitor facilities (e.g., pavilion, toilets, food stalls) can also be provided at the junction of Deep Bay Road and the Border Road. However, the overall access to the area could be restricted to minimise human disturbance.

Eco-friendly Aquaculture Zone

- 5.4.1.3 The mainly actively managed ponds at the southeastern portion of the park in Fung Lok Wai is proposed to be managed as Eco-friendly Aquaculture Zone of about 40ha. Ponds in this Zone are proposed to be mainly managed with modernised aquaculture technologies for biodiversity enhancement and eco-friendly aquaculture. The existing pond structure and layout would largely be maintained, with modernised aquaculture practices supported to improve sustainable production.

Fisheries Enhancement Zone

- 5.4.1.4 After reviewing the existing ecological conditions and aquaculture activities in the proposed HKWP Expansion Area, the chance of incorporating a Fisheries Enhancement Zone with high-density and productivity is considered as low.

Visitor Zone

- 5.4.1.5 Ponds that are semi-active or with uncertain status, located to the south of Mong Tseng Tsuen, the area immediate south, as well as the area immediate northeast of the HKWP are proposed to be managed as Visitor Zone of about 23ha. Some of the ponds to the south of Mong Tseng Tsuen can be considered for recreational fishing, the area south of the HKWP currently includes approximately 1.2ha of disturbed land of low ecological and landscape value that can potentially be used for development of a Field Centre, while the area northeast of the HKWP can potentially be used to provide more eco-education and recreation facilities for visitors experience.

5.4.2 Specific Facilities

- 5.4.2.1 Specific facilities in the proposed HKWP Expansion Area could include:
- Ponds to the south of Mong Tseng Tsuen could potentially be considered for recreational fishing, with provision of supporting facilities such as shops and food stalls.
 - A Field Centre could potentially be developed at an area south of the HKWP to create synergy with the existing HKWP. Eco-education facilities including a laboratory, lecture room, accommodation, canteen and landscaped gardens would be included to support multiple-day field visits for students. Adjacent areas of wetland can be used as a basis for learning for students of different ages. While the area northeast of the HKWP can potentially be used to provide more eco-education and recreation facilities for visitors experience. Other supporting services such as mother's room, barrier-free facilities and public toilets would also be provided to ensure easy accessibility to the Visitor Zones.

5.5 Proposed Zoning of the NSW WCP

5.5.1 Conceptual Plan

- 5.5.1.1 The conceptual plan for NSW WCP is shown in **Figure 5.3**. With existing aquaculture activities within the Park, most area is proposed to be managed as Eco-friendly Aquaculture Zone to serve the dual purpose of ecological conservation and aquaculture with suitable utilisation of modernised aquaculture techniques whereas some area would be managed as Fisheries Enhancement Zone for development of high-density aquaculture. Areas of limited accessibility would be managed as Biodiversity Zone with limited access for ecological conservation, and areas located in proximity to existing recreational resources would be managed as Visitor Zone where recreational facilities could be provided. The

details of the proposed zones are described below.

Biodiversity Zone

- 5.5.1.2 A total of about 31ha Biodiversity Zone with restricted access is proposed to be provided in the proposed NSW WCP. This would include ponds within and to the west of the Yuen Long Bypass Floodway (YLBF) Engineered Wetland, and the abandoned ponds on the estuarine island in the Shan Pui River which can be considered for management as *gei wai*, as they are already tidally influenced through two channels (one in the north and one in the south). To facilitate management and maintenance works on the isolated island within the Park area, a footbridge can be considered linking the island to the east of Fung Lok Wai (i.e. the eastern side of the HKWP Expansion Area). The overall access to the area could be restricted to minimise human disturbance.

Eco-friendly Aquaculture Zone

- 5.5.1.3 The existing stretch of mainly actively managed ponds in Tai Sang Wai and the northwest portion of Pok Wai Road area, as well as ponds in the eastern portion of NSW and south of Chung Hau Yu Man San Tsuen is proposed to be managed as Eco-friendly Aquaculture Zone of about 171ha. The ponds in this Zone would be managed by largely maintaining existing pond structure and layout, with modernised aquaculture practices to improve sustainable production and enhance ecological capacity.

Fisheries Enhancement Zone

- 5.5.1.4 The ponds and area at the eastern portion of Pok Wai Road area is proposed to be managed primarily as Fisheries Enhancement Zone. These ponds are close to the Wing Kei Tsuen and San Tin Highway with higher disturbance. Some filled land are also recorded in the area, which can potentially be developed for high-density aquaculture production. The exact location of the Fisheries Enhancement Zone would be confirmed during the detailed design studies, in which part of the area in the Eco-friendly Aquaculture Zone (as discussed in **Section 5.5.1.3**) would then be re-allocated as the Fisheries Enhancement Zone.

Visitor Zone

- 5.5.1.5 A total of about 16ha Visitor Zone is proposed to be provided at the southern portion of the proposed NSW WCP, including the southern tip of both Pok Wai Road area and NSW area (adjacent to the bridge at the junction of Ho Chau Road and NSW Road). These two areas at the southern fringe of the Park are adjacent to the Yuen Long Highway, thus having limited ecological potential. With the existing leisure fishing farm in the Pok Wai Road area, the area can be considered for conversion to recreational fishing ponds.
- 5.5.1.6 Eco-tourism programme could be considered in the ponds to south of the YLBF Engineered Wetland with provision of a Visitor Centre and area managed for recreational activities (e.g. outdoor sports and group activities). Existing recreational facilities such as cycling track on the peripheral of NSW area would be maintained. To further develop on the existing track, a circular cycling and walking trail could be completed around NSW, utilising the existing NSW Road in the north, east and west, and constructing a new trail in the south to enhance visitor experience. Details on the specific facilities will be discussed below.
- 5.5.1.7 An iconic green bridge over the San Tin Highway can be considered to link the southeastern corner of the NSW WCP with the "CA" zone in Kam Tin North OZP and Lam Tsuen Country Park (CP). This would act as a hiking route as well as facilitate the movement of wildlife from the upland areas in the CA / CP and the Park.

5.5.2 Specific Facilities

5.5.2.1 Specific facilities in the proposed NSW WCP could include:

- Ponds at the southern portion of Pok Wai Road area can be considered for recreational fishing. Supporting recreational facilities such as shops, food stalls and open space can be provided in the area.
- The proposed Visitor Centre south of the YLBF Engineered Wetland could include recreational facilities such as camping area, picnic area, shops / restaurants, adventure playground / outward bound facility, cycle hire and car park to provide a range of recreational options for visitors. Other supporting services such as mother's room, barrier-free facilities and public toilets would be provided to ensure easy accessibility to the Visitor Zones.
- Shelters, snack stalls and food trucks can also be provided along the existing track on the peripheral of NSW area and newly constructed trail connecting the track at the south.

5.6 **Proposed Zoning of the HHW WCP (including SL/NH area)**

5.6.1 Conceptual Plan

5.6.1.1 The conceptual plan for HHW WCP (including SL/NH area) is shown in **Figure 5.4**. Remote areas along the Shenzhen River would be managed as Biodiversity Zone with limited access for ecological conservation. Some of the area with existing aquaculture practices would be managed as Eco-friendly Aquaculture Zone to serve the dual purpose of ecological conservation and aquaculture with suitable utilisation of modernised aquaculture techniques whereas some of the area would be managed as Fisheries Enhancement Zone for development of high-density aquaculture. Habitats that could subject to higher level of disturbance in both HHW and SL/NH areas are proposed to be managed as Visitor Zone for ecological education / recreational facilities. The details of the proposed zones are described below.

Biodiversity Zone

5.6.1.2 The northern portion of the proposed HHW WCP (including the OWCA under the Lok Ma Chau Loop project) and the EA in the Loop would be managed as a Biodiversity Zone of about 103ha with restricted access. The ecologically enhanced pond habitats in these areas are located further away from other potential sources of disturbance. A "T" shaped patch of plantation at the eastern end of the HHW WCP can be enhanced to create a freshwater swamp habitat given the potential that adjacent pond areas are hydrologically connected with the Shenzhen River.

5.6.1.3 Most of the SL/NH area of about 4ha would be managed as a Biodiversity Zone, with existing management of the mitigation ponds maintained. The southern marsh habitat would be maintained and enhanced by improving water supply and hydrological connectivity with the adjacent development area. Consideration can be given to tree planting of the hillsides adjacent to the SL/NH area. The overall access to the whole Biodiversity Zone could be restricted to minimise human disturbance.

Eco-friendly Aquaculture Zone

5.6.1.4 The core area in the centre of the proposed HHW WCP (including fishponds and the seasonally wet grassland / marsh / reedbed habitat) would be maintained as an Eco-friendly Aquaculture Zone of about 139ha. Ponds in the Eco-friendly Aquaculture Zone will be mainly managed with modernised aquaculture technologies for biodiversity enhancement and eco-friendly aquaculture, whereas seasonally wet grassland / marsh habitat would be converted into mixed (predominantly wet) agricultural land.

Fisheries Enhancement Zone

- 5.6.1.5 The strip of ponds to the southeast of the Loop, adjoining the proposed AFCD Fisheries Research Centre would be managed as Fisheries Enhancement Zone, for developing intensive aquaculture systems and operations with high density and productivity, adopting technologies such as RAS. The exact location of the Fisheries Enhancement Zone would be confirmed during the detailed design study, in which part of the area in the Eco-friendly Aquaculture Zone (as discussed in **Section 5.6.1.45.6.1.1**) would then be re-allocated as the Fisheries Enhancement Zone.

Visitor Zone

- 5.6.1.6 The eastern portion of the proposed HHW WCP (about 31ha) and southeast portion of the SL/NH area (about 1ha) would be managed as Visitor Zone of about 32ha in total. The Visitor Zone would include a Visitor Centre located on recently disturbed, abandoned agricultural land south of the previous Border Road, to the northwest of Liu Pok. This location provides convenient access to visitors from the previous Border Road, which also forms part of the Hiking Trail "D4 from Lok Ma Chau to Ho Sheung Heung. A new trail can potentially be constructed from the Visitor Centre to the MacIntosh Fort at MTL, which lies approximately 200 – 300m southwest of the Visitor Centre.
- 5.6.1.7 The "T" shaped plantation at the eastern end of the proposed HHW WCP would be converted into freshwater swamp habitat. Given its location at the fringe of the Park, an iconic observation tower can be constructed in this area to provide a focal point for visitors. Eco-education programmes related to farming experience can also be developed for the HHW WCP utilising the wet agricultural land as mentioned in **Section 5.6.1.4**. To form a comprehensive visitor experience, walking and cycling trails can be constructed linking the Visitor Centre, D4 trail and observation tower. Details on the specific facilities will be discussed below.
- 5.6.1.8 The southeast portion of the SL/NH area, which consists of marsh / reedbed habitats of limited ecological potential, would also be managed as Visitor Zone to provide some visitor facilities to enhance visitor experience. Given the limited public access to the SL/NH area along the Lo Wu Station Road, access could be provided through the Sandy Ridge I&T development area to the east. A footpath from the development area can be constructed northwest along the fringe of the marsh area, then looping around the southern compensatory pond. Public access to this Visitor Zone would be controlled / restricted by relevant Government departments for open access, where members of the public can visit the Zone for nature appreciation.
- 5.6.1.9 Under the Approved Ma Tso Lung and Hoo Hok Wai OZP No. S/NE-MTL/3, there is an approximately 9ha patch of hillside to the south of the proposed HHW WCP zoned as "Other Specified Uses" annotated "Eco-lodge" ("OU (Eco-lodge)"), which is outside the Study Area of the HHW WCP. Zoning of this area is intended to provide for sustainable-based tourism in the form of an eco-lodge for development of low-rise, low-density resort-type accommodation. No planning applications or proposed amendments for that zone have been submitted in this area at the moment but there is potential for synergy with the WCPs System.

5.6.2 Specific Facilities

- 5.6.2.1 Specific facilities in the proposed HHW WCP (including SL/NH area) could include:
- A Visitor Centre in the proposed HHW WCP area that includes facilities such as outdoor classroom, agriculture experience area and food stalls. Other family supporting services such as mother's room, barrier-free facilities and public toilets would be provided to ensure easy accessibility to the Visitor Zones.
 - A comprehensive trail can be constructed to connect the Visitor Centre to the MacIntosh Fort at MTL, D4 trail as well as the observation tower. The observation tower could serve as a mini-indoor classroom with exhibition boards introducing the importance of wetland habitats, whereas the trails can serve as part of a self-guided

eco-education programme with provision of bird hides and signage along the trail.

- A boardwalk in the Visitor Zone in the SL/NH area that can potentially be built in the marsh habitat. A small gazebo or other shelter can be provided for visitors near the adjacent Sandy Ridge area.

5.7 Development and Management Options for the WCPs System

5.7.1 Modes of Development and Operation

Development Options

- 5.7.1.1 The means for acquiring the land required for the development of the WCPs System is briefly discussed in **Section 3.1.1.3** above. In gist, land resumption would ensure that the Government has a greater control over the implementation progress through applicable administrative and statutory procedures. This option is particularly useful for the case of SPS WCP, which has a definite and required timeframe for completion (see **Section 8.6**). However, significant resources would be involved, given the vast size of private land required to be resumed for the Parks under the WCPs System.
- 5.7.1.2 There is thus a need to explore other feasible models of land acquisition apart from land resumption. For example, there are currently three potential projects under the NNCP PPP Scheme which had obtained planning permission within the Study Areas of SPS WCP, HKWP Expansion Area and NSW WCP, and are at different stages of development. As stipulated in **Section 4.2.2.1** above, in vetting the CMP to be submitted by the project proponent for the three potential NNCP PPP Scheme projects in future, it is recommended that EEB / AFCD ascertain with the developers in particular whether they would choose the “Additional Option” under the NNCP PPP Scheme introduced in 2021, which will involve surrendering the Conservation Portion to the Government, and consideration can then be given to including these portions of land concerned as part of the relevant Parks with suitable modification suiting the four functions of the WCPs system.
- 5.7.1.3 Given that for the SPS WCP to achieve the compensatory function required under the approved EIA Report for San Tin Technopole, there is a need for the SPS WCP to be established on Government-controlled land. Where private land is involved, the Government may exercise its statutory power to resume the land. Since a relatively large area of private land within the SPS WCP would have to revert to the Government for conservation purpose, to help manage Government's expenditure attributable to compensation for resumption, the Government will, before invoking the resumption power, also explore possible schemes to incentivise private land owners to voluntarily surrender their land in the SPS WCP area to the Government, such as allowing the land value of the surrendered land to be deducted from land premium in land exchange / lease modifications for project being / to be pursued by the same land owners elsewhere.

Management Options

- 5.7.1.4 To identify management options that could be adopted for the WCPs System, existing approaches in managing wetland habitats / other conservation areas in Hong Kong were reviewed. Additionally, Mainland and overseas case studies were conducted, including Wenzhou Wetlands in China, Suncheon Bay in South Korea, the Broads National Park in the United Kingdom, and Larch Sanctuary in Canada. From this review, three general management options were recommended for the management of the WCPs System, namely direct management by Government departments; collaboration with NGOs, local communities, and agriculture and fisheries associations; and public-private partnership. Depending on the functions and operational needs of the different zones in the Parks, a mixed use of different management modes may also be considered.
- 5.7.1.5 **Option 1: Direct Management by Government Departments**, such as the existing management practices at HKWP, where AFCD oversees the management of the Parks and employs contractor(s) to assist in carrying out management and/or maintenance works. This management option could be adopted in Biodiversity Zones and Visitor Zones (e.g. for eco-education facilities).

5.7.1.6 **Option 2: Collaboration with NGOs, Local Communities, and Agriculture and Fisheries Associations**, would be similar to management practices adopted in the MPNR. The Government could formulate a park regulatory framework and collaborate with different organisations with experience and expertise relevant to the objectives and functions of the Parks for the management of the Parks according to the said framework. This option received some support during the Public Engagement (PE) exercises conducted under the Study. This management option could be adopted across different Zones⁵.

5.7.1.7 **Option 3: Public-private Partnership**, would involve Government to collaborate with private land owners or other private sector / company to manage the Parks. This option could take various forms. For instance, one form could involve private landowners proposing land use recommendations to the Government, on condition that the land use recommendations are compatible with and support the objectives and functions of the WCPs System, and can bring positive impacts to the long-term operation and management of the Parks. Another model that may be considered is conservation easement, which is an established conservation tool in North America but has yet to be implemented in Hong Kong. It refers to a voluntary legal agreement between a landowner and a Government agency or qualified conservation organisation⁶ that restricts the type and intensity of development that may take place on a property / land in the future. The conservation easements can be tailored to reflect the conservation goals of the landowner and of the Government or qualified conservation organisation, with the flexibility that the landowner retains ownership and rights to continue generating revenue from the land and/or develop certain parts of the land as long as this does not conflict with conservation goals. This management option could be adopted in Visitor Zones (e.g. eco-recreation facilities such as eco-lodge and leisure fish farms).

5.7.1.8 The pros and cons of each management option are summarised in **Table 5.1**. Some commercial elements (e.g., eco-lodge and other small-scale tourism facilities, recreational fishing, restaurants, farmers market, shops and field centre providing activities / tours) could be included in the proposed WCPs System to generate revenue to help support the management activities.

Table 5.1 Potential Management Options for the WCPs System

| Management Option | Pros | Cons |
|--|---|--|
| Direct Management by Government Departments | <ul style="list-style-type: none"> • Full and close control over management • Successful precedent in Hong Kong (HKWP) | <ul style="list-style-type: none"> • Significant resource implications for Government |
| Collaboration with NGOs, Local Communities, and Agriculture and Fisheries Associations | <ul style="list-style-type: none"> • Leverage expertise of NGOs, local communities and agriculture and fisheries associations in managing fishponds habitats • Socio-economic benefits to local communities • Successful precedent in Hong Kong (MPNR and MA Agreements) • Government's manpower resources can be streamlined | <ul style="list-style-type: none"> • Less control over management • The entities in local communities having expertise for implementing ecological conservation management measures could be limited |
| Public-Private Partnership | <ul style="list-style-type: none"> • Government's manpower resources can be streamlined | <ul style="list-style-type: none"> • Less control over management • The private land owners / private sector / company may not have experience / expertise in implementing ecological conservation management measures or managing fishpond habitats |

⁵For example, collaboration with NGOs could be adopted in Biodiversity Zones and Eco-friendly Aquaculture Zones, collaboration with local communities in Visitor Zones (e.g. for eco-recreation facilities such as eco-lodge and leisure fish farm), and collaboration with agriculture and fisheries associations in Eco-friendly Aquaculture Zones and Fisheries Enhancement Zones.

⁶Typically a land trust, which is a NGO established specifically to acquire land or conservation easements, and/or stewarding / managing land or conservation easements.

| | | |
|--|--|---|
| | | <ul style="list-style-type: none"> • No precedents in Hong Kong • Implementation may take some time in view of the need to study experiences of other jurisdictions and devise legislative amendments, etc, for conservation easement |
|--|--|---|

Management / Regulation Tool / Regime for the WCPs System

5.7.1.9 As discussed in **Section 2.5.2** and **Section 3.1.1.4**, the applicability of relevant existing legislative frameworks for managing / regulating the WCPs System has been reviewed. Utilising existing ordinances, including the Country Parks Ordinance / Country Parks and Special Areas Regulations, Wild Animals Protection Ordinance and Town Planning Ordinance, to manage / regulate activities within the area of the Parks could be an option, though subject to certain constraints and challenges due to the incompatibility of some of the requirements under the ordinances with the functions and proposed activities in the WCPs System. For example, under the Country Parks Ordinance / Country Parks and Special Areas Regulations, permits / licenses would be required for conducting common activities for the daily operations of the fish ponds (e.g. fish harvesting using nets, transportation of goods using vehicles, and weeding via grass burning on pond bunds, and selling of fish products); and under the Wild Animals Protection Ordinance, special permits would be required for accessing the Restricted Areas, thus highly restricting the eco-education / recreation activities that could be carried out.

5.7.1.10 On the other hand, the mechanism of GLA could be used as a land instrument tool in the short to medium-term for AFCD to manage the WCPs System according to the operational needs and uses permitted under the relevant OZPs. Longer-term, a new specific legislation may be an option to accommodate the diverse functions and activities in the WCPs System, and may potentially be also applicable to the LVNP and other land requiring proactive conservation. Details of the aforesaid mechanisms and approaches should be further explored and considered in the next stage of detailed studies of the individual Parks.

5.7.2 Proactive Management Measures

5.7.2.1 To enhance wetland habitats within the WCPs System, proactive management measures can be adopted for different wetland habitats as summarised in **Table 5.2**:

Table 5.2 Proactive Management Measures within the WCPs System

| Proactive Management Measures | |
|-------------------------------|---|
| Wetland Habitats | |
| Eco-enhanced Fishponds | <ul style="list-style-type: none"> • Increase in pond area and enhance connectivity • Physical modification of pond habitats to increase environmental carrying capacity • Managing and sequencing pond drain down across multiple ponds in the dry season to maximise feeding opportunities for avifauna and other wildlife • Removal of existing bird scaring devices at actively managed ponds • Stocking ponds with suitable prey items (i.e., trash-fish) for target wildlife species (may be considered as an enhancement measure to achieve higher enhancement value) |
| Freshwater Wetlands | <ul style="list-style-type: none"> • Create areas of shallow (100-300mm deep), permanently inundated areas with dense emergent and submerged vegetation • Create areas of open water with shallow margins and deeper central areas (up to 1.5m) • Create areas that could be maintained as seasonal wetlands, which would be inundated only during the wet season |
| Gei Wai / Intertidal Habitats | <ul style="list-style-type: none"> • Dredging of accumulated sediments and selective removal of vegetation to provide open intertidal habitats • Re-instate tidal water regime with repair / provision of water gates |
| Agriculture Land | <ul style="list-style-type: none"> • Restore abandoned agricultural land to active production • Create a diverse mosaic of habitat conditions (e.g., active, fallow, wet and dry agricultural land) • Adopt sustainable, low intensity management approaches to maximise value to wildlife |

| Proactive Management Measures | |
|--------------------------------------|---|
| Nullahs and Drainage Channels | <ul style="list-style-type: none"> • Management of riparian / emergent vegetation (especially Sonneratia) • Dredging of excess / polluted sediments • Water quality improvement measures • Provision of wildlife ramps / fish passage devices • Provision of artificial otter holts / avifauna nesting burrow |
| Fisheries Management | |
| General Management Principle | <ul style="list-style-type: none"> • Introduce modernised and intensive aquaculture facilities and techniques for adopting high-density pond fish culture operations • Allocate different pond areas for aquaculture and conservation management respectively |
| Mass Dieback of Fish | <ul style="list-style-type: none"> • Remove dead fish immediately to prevent outbreak of diseases • Monitor water conditions of the related fishponds • Test water quality parameters to determine appropriate control and remediation measures if the situation does not improve |
| Visitor Management | |
| Visitor Zones | <ul style="list-style-type: none"> • Proposed Visitor Zones identified in areas of disturbed land of limited ecological value and/or areas with existing recreational facilities located at the fringe of the Parks • Provision of education and recreational related activities within the Visitor Zones to confine visitation in less ecological sensitive areas and facilities easy management. |
| Visitor Control | <ul style="list-style-type: none"> • Control visitor numbers to minimise human disturbance • Restricted access in Biodiversity Zones which are of higher ecological value and sensitivity • Closely monitor visitor numbers and behaviours through means such as concentrating visitors in the designated Visitor Zone, or organising pre-arranged guided tours with limited visitor numbers • In some areas, issue of individual permits can be implemented • Use of different soft landscape features to control visitor activities and number and location of access points • Use of soft landscape features as physical barriers to screen out potential human disturbances |
| Visitor Accessibility and Facilities | <ul style="list-style-type: none"> • Provide new paths and boardwalks, as well as connections to existing paths and transportation system • Provision of supporting facilities and barrier-free facilities |
| Signage and Information | <ul style="list-style-type: none"> • Provide clear signages within Visitor Zones, area for potential eco-education activities as well as areas of restricted access • Use clearly visible and legible signage design |

6. OVERALL IMPLEMENTATION STRATEGY AND TIMELINE

6.1 Factors Affecting the Implementation Timeline

- 6.1.1.1 Considering the vast area and scale of the WCPs System, which originally spanned some 2,000 ha as proposed in the NMDS in 2021, it is recommended that the WCPs System be developed in phases, such that the planning, design and monitoring on construction of the Parks, and impacts on stakeholders (e.g. fishpond operators and land owners) could be thoroughly considered and properly managed.
- 6.1.1.2 The phased implementation of the WCPs System will also help to address or avoid various challenges and constraints including technical issues, financial burden and environmental impacts, as well as provide flexibility to accommodate uncertainty in certain developments (e.g., potential projects under the NNCP PPP Scheme) and opportunity to learn from previous Park development for better planning and design for the Parks to be developed later.
- 6.1.1.3 In determining the overall phasing of the WCPs System, factors that need to be considered include priorities for achieving the overall objectives of the WCPs System, relative ease of implementation, interface with other public and private projects, and stakeholder views and public sentiments.

6.2 Implementation Timeline for the Phased Development of the WCPs System

- 6.2.1.1 Based on the review conducted under the Study and consideration of the above factors, overall development priorities for implementation of the WCPs System are summarised in **Table 6.1**. It is recommended that SPS WCP be the first Park to be established, followed by HKWP Expansion Area, NSW WCP and finally HHW WCP (including SL/NH area). The proposed sequence is by no means definitive, and the Government may consider suitably adjusting it subject to any new developments.

Table 6.1 Priority for Implementation of the WCPs System

| Priority | Park | Rationale |
|----------|---------------------------|--|
| 1 | SPS WCP | <ul style="list-style-type: none"> ■ High priority to establish proactive conservation management with presence of relatively more degraded habitats. ■ Located at the core section of bird flight path with regional significance. ■ Creating synergy with the adjacent existing conservation areas to enhance biodiversity. ■ Playing an important role in the WCPs System in aquaculture industry with the largest area of commercial production fishponds. ■ Prioritising establishment of the Park could help promote modernisation of the aquaculture industry and delivering related scientific research with a view to transforming the industry. ■ Implementation programme to dovetail with that of ST Technopole. |
| 2 | HKWP Expansion Area | <ul style="list-style-type: none"> ■ Located adjacent to the existing HKWP with relatively well-developed transportation and supporting facilities. ■ Development of the HKWP Expansion Area can synergise with the adjacent HKWP to provide new educational facilities. ■ Covering wetland habitats such as commercial fishponds and <i>gei wai</i> which are not found in the existing HKWP. ■ Substantial area of the HKWP Expansion Area is already publicly owned (approximately 79%). |
| 3 | NSW WCP | <ul style="list-style-type: none"> ■ High priority to establish proactive conservation management with presence of degraded habitats. ■ Existing popular destination for local recreational activities, with large areas of fishponds and reedbeds, as well as attractions such as the Wedding Bridge and the NSW Ferry Service. ■ The Park can be developed to further promote eco-tourism (in the NSW area) as well as conserve ecological value of wetland habitats (in the Lut Chau area). ■ More than half of the area of the NSW WCP are publicly owned (approximately 70%). |
| 4 | HHW WCP (including SL/NH) | <ul style="list-style-type: none"> ■ Located at the eastern side of the WCPs System, with most area of the Parks located within the previous Frontier Closed Area, therefore subject to less disturbance with a lower development |

| Priority | Park | Rationale |
|----------|-------|--|
| | area) | <p>priority.</p> <ul style="list-style-type: none"> ▪ Only approximately 42% of HHW area is publicly owned. ▪ Dominated by a large number of small private land lots with complicated land ownership issue, thus additional time is required to sort out land-related issues. ▪ Unique and scenic wetland landscape with mosaic of wetland habitats, as well as being a popular hiking / biking spot. |

6.2.1.2 After the completion of this Study, the findings of the Study will be used as the basis to guide the Investigation Study of the SPS WCP which is targeted to commence within 2024. The construction of the SPS WCP is tentatively scheduled to commence in 2026/2027, and the first phase is aimed to be completed by 2031. The entire SPS WCP is expected to be fully completed before or by 2039. For the other Parks, Government could take into account the experience in the planning and establishing SPS WCP, as well as other relevant factors, to further consider and study the development plan of other Parks in a pragmatic and sustainable manner.

6.2.1.3 Wetlands within the areas of the Parks would be protected during the interim period prior to construction of the Parks through existing land use zoning (e.g., CA, SSSI, WCA / WBA designation) as well as the continuation of proactive conservation measures such as the conservation projects under the MA Scheme of NNCP. To prevent unauthorised developments and filling of land during the interim period, the Government would carry out prosecution using existing legislations, including Town Planning Ordinance (Cap. 131), Waste Disposal Ordinance (Cap. 354), and Land (Miscellaneous Provisions) Ordinance (Cap. 28), monitor and investigate using technologies such as drones, and prioritise processing such cases.

6.3 Phasing Sequence of Construction for Individual Parks

6.3.1.1 Given the large size of individual Parks to be established under the WCPs System, a phased approach in development would also be required in each individual Park. Factors that would affect the phasing to be considered during the detailed studies of the Parks include:

- Government Land should be prioritised over private land to allow sufficient time for land resumption / other arrangements to be put in place;
- Areas of conservation interest / with higher ecological functions should be prioritised to better conserve ecological connectivity;
- Time required for the design and construction of built structures; and
- Positioning, functioning and correlation with the four functions of the WCPs System in each Park.

7. EVALUATION OF ENVIRONMENTAL CAPACITY

7.1 Introduction

7.1.1.1 The creation, enhancement and regeneration of environmental capacity plays an integral part in creating capacity for sustainable growth (“Hong Kong 2030+”, PlanD, 2021). It is therefore crucial for the planning and development of Hong Kong as a whole to incorporate elements that contribute to environmental capacity, including elements that can enhance biodiversity / ecological value, mitigate / address climate change, and other environmental considerations.

7.1.1.2 Potential environmental capacity metrics that could be adopted to assess the performance of the WCPs System were studied. International case-studies were reviewed, including the Ramsar Technical Report No. 3 CBD Technical Series No. 27: Valuing wetlands: Guidance for valuing the benefits derived from wetland ecosystem services (De Groot *et al.*, 2006); the Dynamic Evaluation of Ecological Service Function Value of Qilihai Wetland in Tianjin (Chen *et al.*, 2020), and the Natural England Biodiversity Metric 4.0 (the Biodiversity Metric) (Natural England, 2023a&b). With reference to the international case-studies as well as the local Hong Kong context, a suite of 10 metrics were selected to assess the environmental capacity of the WCPs System, as detailed in **Section 7.2**. Using the selected metrics and methodology, a baseline of the WCPs System Study Area was established, this baseline was then compared with metric values estimated following implementation of the WCPs System.

7.2 Quantitative and Qualitative Metrics and Methodology for Evaluating the Environmental Capacity of the WCPs System

7.2.1.1 The 10 metrics (and methodology required to calculate each metric) identified to evaluate the environmental capacity of the WCPs System Study Area, are summarised in **Table 7.1**. These metrics take into consideration the four major functions of the WCPs System; the common usage of ecosystem services to value wetland habitats; data availability; and ease of understanding of the proposed metrics.

Table 7.1 Metrics Adopted to Calculate Environmental Capacity of the WCPs System

| Indicator No. | State Indicator | Rationale for Inclusion | Units Adopted | Rationale for units adopted |
|---------------|---|---|---|---|
| 1 | Habitat Value | Conserving the ecological value of the wetlands and safeguarding the integrity of the wetlands system is a key function of the WCPs System | Biodiversity Units | With reference to the United Kingdom Biodiversity Metric, change in Biodiversity Units can be assessed rather than changes in actual habitat areas or species abundance |
| 2 | Habitat Security | | Total area of wetland habitat under Permanent Pro-active Management | Ponds and other wetlands under private ownership and lack of management are at risk of abandonment, filling and other forms of degradation. |
| 3 | Habitat Connectivity | | Habitat corridors for key sensitive wildlife species | Overall habitat connectivity for key sensitive wildlife species in the Study Area will be maintained by preserving existing habitat corridors or re-provisioning/enhancing areas impacted by development. |
| 4 | Conservation of Breeding / Roosting Sites | | Number of active egrettries and avifauna roosting sites | Overall number of breeding / roosting sites in the Study Area will be maintained by preserving existing egrettries and avifauna day and night roosting sites or re-provisioning sites impacted by development |
| 5 | Fisheries Production | Developing modernised aquaculture industry to increase local fisheries production is a key function of the WCPs System | Production volume per year (tonnes) | Common unit for description of fisheries production. |
| 6 | Low-carbon Intensity Management | The WCPs System and the aquaculture operations therein should contribute to Hong Kong's Climate Action Plan 2050 | Kilogram of carbon dioxide per kilogram of fish produced | Aquaculture activities can sequester carbon and adoption of modernised aquaculture technologies will reduce operational carbon footprint by reducing feed and energy requirements and also providing more efficient aeration. |
| 7 | Water Quality | The enhancement measures and modernised aquaculture technologies implemented in the WCPs System should improve the quality of water discharge from aquaculture and reduce overall pollution loading | Water Quality in Active Fishponds and land-based aquaculture facilities | Adoption of modernised aquaculture technologies will improve water quality in active fishponds and land based aquaculture facilities |
| 8 | Flood Control | The development of the WCPs System should not increase flooding risk in the | Flood Storage Capacity | On one hand, there will be some loss in wetland habitats that serve water storage and flood control functions due to development of ST Technopole etc. |

| Indicator No. | State Indicator | Rationale for Inclusion | Units Adopted | Rationale for units adopted |
|---------------|-------------------|--|--|--|
| | | Study Area above baseline levels | | On the other hand, new development areas in the NM are designed to provide additional flood storage capacity through underground storage tanks and multi-use nature-based solutions. |
| 9 | Eco-tourism value | Providing ecological education and recreational facilities for the public a key function of the WCPs System. | No. of recreational visit / yr | New facilities will support more visitors |
| 10 | Education value | | No. of participants for educational visits and events / yr | New facilities will support more school / education tours etc. |

7.3 Evaluation of the Environmental Capacity of the WCPs System

7.3.1.1 Evaluation of environmental capacity covering the entire WCPs System Study Area have been carried out for before and after implementation of the WCPs System⁷. It is indicated that implementation of WCPs System would result in broad gains in environmental capacity.

7.3.1.2 After establishment of the WCPs System, there will be an overall increase in environmental capacity according to the metrics identified for the WCPs System (**Table 7.2** refers). Among the metrics, habitat connectivity would be maintained and substantial increase would be expected in habitat security, while the remaining 8 metrics would also have a general increase. Positive impacts on the carbon intensity of aquaculture, water quality improvement and maintenance of flood storage capacity could be achieved. There will also be opportunities to provide more ecological education and recreational facilities for the public.

Table 7.2 Summary of Evaluation of Environmental Capacity after the Establishment of the WCPs System

| Environmental Capacity Metrics | Indicative Magnitude of Change |
|---|--------------------------------|
| Habitat Value | ↑ |
| Habitat Security | ↑↑ |
| Habitat Connectivity | - |
| Conservation of Breeding/Roosting Sites | ↑ |
| Fisheries Production | ↑ |
| Low-carbon Intensity Management | ↑ |
| Water Quality | ↑ |
| Flood Control | ↑ |
| Recreational Opportunities | ↑* |
| Educational Opportunities | ↑ |
| Overall | ↑ |

Notes:

1. The number of arrows indicates the magnitude of change for the above metrics before and after the establishment of the WCPs System.
 2. Increase: ↑ ; Significant Increase: ↑↑
- * Indicative only, exact increase would subject to further analysis in the detailed studies

⁷ Areas for potential inclusion are excluded from the evaluation.

8. TECHNICAL FEASIBILITY ASSESSMENT OF THE FIRST WCP

8.1 Introduction

8.1.1.1 The SPS WCP will be the first Park to be developed under the WCPs System. This Park includes about 338ha of area to be established and 10ha of existing OWCA in Lok Ma Chau, adding up to about 348ha in total. The following sections outline a preliminary technical feasibility assessment for the SPS WCP. In sum, the assessment confirms that the SPS WCP development is technically feasible.

8.2 Project Scope and Description

8.2.1.1 The establishment of the SPS WCP aims to conserve habitats with ecological values, enhance biodiversity, protect the flight path for migratory birds, promote the development of modernised aquaculture, provide eco-education and eco-recreation facilities for public enjoyment, as well as increase the environmental capacity for the development of the Northern Metropolis. In particular, the SPS WCP is essential in providing the statutorily-required ecological and fisheries compensation for the ST Technopole project so as to meet the relevant requirements under the EIAO.

8.2.1.2 As stipulated in the Chief Executive's 2023 Policy Address, the Government will first establish the SPS WCP to enhance the ecological quality and biodiversity of the Northern Metropolis, and provide quality outdoor eco-education and recreation facilities for public enjoyment. Modernised aquaculture will also be introduced in the park.

8.2.1.3 Under this Study, the relevant information necessary to facilitate the preparation of a Technical Feasibility Statement for the establishment of the SPS WCP as the first Park to be developed under the WCPs System was compiled as follows.

8.2.1.4 The scope of the establishment of the SPS WCP comprises:

Investigation and Design Study

- (a) Delineating the boundary of the SPS WCP;
- (b) Preparing the detailed Habitat Creation and Management Plan (HCMP) of the SPS WCP, taking into account the approved EIA Report of ST Technopole;
- (c) Carrying out necessary technical assessments; and
- (d) Conducting detailed design of works in (e) below with associated site investigation works and supervision;

8.2.1.5 *Engineering works*

- (e) Undertaking the following works:
 - (i) Development of the SPS WCP including site formation, wetland enhancement / fishpond improvement works taking into account the approved EIA Report of ST Technopole, a "Gateway to the Wetlands" Tourist Hub with visitor centre, outdoor classrooms, shops and restaurants, visitor trails, infrastructure works for eco-lodge, basic lodging and storage units for fishpond operators, associated facilities and structures for both traditional and modernised aquaculture, other ecological education and recreation visitor facilities / activities of appropriate scale;
 - (ii) Construction of a WCP Management Office within ST Technopole;
 - (iii) Construction of a Fisheries Research Centre within ST Technopole;
 - (iv) Provision of associated engineering infrastructure works including roads, drainage, sewerage, waterworks, utility services and landscaping works; and

(v) Provision of associated environmental monitoring and mitigation works.

8.2.1.6 The SPS WCP should be implemented in phases to dovetail with the development timeframe of ST Technopole. It is targeted that the SPS WCP be commissioned by phases with its first phase to come into operation by 2031 and full completion before or by 2039.

8.3 Land Requirements

8.3.1.1 To take forward the development proposal of the SPS WCP, amendments were proposed to the relevant OZPs as approved by Chief Executive in Council in September 2024. The proposed SPS WCP mainly falls within an area zoned “Other Specified Uses” (“OU”) annotated “Wetland Conservation Park” (“OU(WCP)”) on the approved Mai Po and Fairview Park Outline Zoning Plan (OZP) No. S/YL-MP/8 (MP OZP), with the AFCD Wetland Conservation Park Management Office and AFCD Fisheries Research Centre located in areas falling within the “Government, Institution or Community (1)” (“G/IC(1)”) and “OU” annotated “Innovation and Technology” (“OU(I&T)”) zones respectively on the approved San Tin Technopole OZP No. S/STT/2 (STT OZP). The “area for potential inclusion” falls within areas zoned “OU(Comprehensive Development and Wetland Protection Area)” on the approved MP OZP.

8.3.1.2 All land use / development proposals within the SPS WCP should be in compliance with the Town Planning Ordinance and relevant OZP(s) in force.

8.3.1.3 Private lots are identified within the Proposed Park Boundary of the SPS WCP. The affected private lots could be resumed under the Lands Resumption Ordinance (Cap. 124) which sets out the legislative framework to facilitate resumption of private lot for public purposes.

8.3.1.4 Exact extent for site clearance including existing graves / urns will be assessed via site survey to be completed at the next stage of the SPS WCP. The existing graves / urns will be excluded from the footprint of the proposed SPS WCP Park boundary unless it is considered impracticable.

8.4 Development Constraints

8.4.1 Geotechnical Considerations

8.4.1.1 Based on the findings of the preliminary geotechnical appraisal, the proposed works are geotechnically feasible. During the investigation and detailed design stage, further site investigation at the proposed site will be carried out. All existing man-made slope features and natural terrain catchments identified will be studied and necessary slope works and hazard mitigation measures, if any, would be carried out. A Geotechnical Assessment will be carried out for the preferred development option at the investigation / preliminary design stage to define the scope and programme of necessary slope works and hazard mitigation measures, if any, to be carried out.

8.4.2 Disposal of Dredge Marine Mud

8.4.2.1 No dredging or excavation of marine mud is anticipated under the establishment of the SPS WCP. As for pond deposit, re-profiling of existing wetlands and fishponds will be carried out and all of the soil deposit will be re-utilized within the same development. Management measures for soil deposit from reinstated / enhanced fishponds and wetland habitats will be formulated in accordance with DevB TC(W) No. 6/2010 and Project Management Handbook (2022 Edition) Chapter 4 Section 4.1.3. Details are shown at **Section 8.4.10**.

8.4.3 Traffic Impact

8.4.3.1 The major proposed facilities under the establishment of the SPS WCP, such as “Gateway to the Wetlands” Tourist Hub, WCP Management Office and Fisheries Research Centre are connected to existing Tam Kon Chau Road, Castle Peak Road – San Tin, San Tin Highway, or new major roads planned under interfacing ST Technopole. Road connections

between external road networks and major proposed facilities will be carried out under the development. The detailed traffic impact to the external road networks due to the proposed development will be further studied at the next stage.

8.4.3.2 During the construction stage, construction traffic will be generated and will contribute to the traffic volume of existing roads such as local roads adjacent to the Project area, San Tin Highway, and new roads under ST Technopole. Appropriate measures such as temporary traffic arrangements, improvement measures and modification of road junctions will be provided to minimize the traffic impacts.

8.4.4 Air Ventilation

8.4.4.1 The structures involved in the SPS WCP mainly involves construction of low density and low-rise structures such as those within the “Gateway to the Wetlands” Tourist Hub, WCP Management Office, Fisheries Research Centre and basic lodging and storage units for fishpond operators, etc. Mitigation measures will be developed to alleviate any adverse air ventilation impact at the next stage of the development.

8.4.4.2 The proposed structures will be further designed in the next stage. HPLB & ETWB TCW No. 1/06 will be checked against to confirm the necessity conducting Air Ventilation Assessment for this Project.

8.4.5 Drainage

8.4.5.1 The SPS WCP is mainly located within the catchment boundary of San Tin Drainage Basin and its runoff discharges to the downstream of the Shenzhen River, while a small portion of area near Palm Springs falls into the catchment boundary of Yuen Long Drainage Basin. The SPS WCP consists of a large area of wetlands and fishponds which is an effective floodplain for various traversing watercourses associated with the downstream of the Shenzhen River. The area consists of numerous drainage channels and watercourses flowing through the SPS WCP to collect runoff from the upstream catchment area of the Shenzhen River.

8.4.5.2 Site formation works of the SPS WCP shall be carefully designed so as not to impair the inherent water storage and flood control function of wetlands and fishponds. Appropriate drainage systems such as cross road drainages and underground drains will be provided along the proposed works of the development. Therefore it is anticipated that the adverse drainage impact to existing drainage system induced by the proposed development is negligible. Site formation level of designated locations, such as “Gateway to the Wetlands” Tourist Hub, will be raised to reduce potential flooding risk.

8.4.5.3 Considering the low-lying site formation level of existing wetlands and fishponds and their locations being closed to the Shenzhen River, seasonal flooding due to high tidal events especially during wet seasons is anticipated. Construction works would be hindered during the construction stage for which sufficient time allowance shall be reserved according to the actual site conditions. A Drainage Impact Assessment will be conducted at the next stage to define the detailed scope and programme of the necessary drainage works to be carried out under the development.

8.4.6 Sewerage

8.4.6.1 It is anticipated that sewage will be generated from the proposed facilities including “Gateway to the Wetlands” Tourist Hub, WCP Management Office, Fisheries Research Centre, public toilets, and basic lodging units for fishpond operators, etc. Sewage will be collected and conveyed to the new San Tin Effluent Polishing Plant, and then undergo sewage treatment with tertiary treatment level, from which treated sewage effluent will eventually be discharged to Deep Bay. Subject to the sewerage network proposal to be agreed with Environmental Protection Department (EPD) and DSD, other sewage treatment facilities shall also be considered to receive sewage from SPS WCP for further sewage treatment.

8.4.6.2 A Sewerage Impact Assessment will be conducted at the next stage to define the detailed

scope and programme of the necessary sewerage works to be carried out under the development.

8.4.7 Water Supply

8.4.7.1 The proposed SPS WCP is located adjacent to the ST Technopole and fresh water will be supplied from NTM Water Treatment Works (WTW) and Sheung Shui WTW via the proposed service reservoir and the associated water supply network in the ST Technopole, or other water treatment works as agreed with Water Supplies Department (WSD). New fresh water supply network will also be constructed to connect the existing / new freshwater supply systems nearby.

8.4.7.2 Flushing water will be supplied from the proposed reclaimed water supply system of the ST Technopole or other flushing water supply as agreed with WSD. New flushing water mains will also be constructed to connect to the new reclaimed water supply systems of the ST Technopole project or other sources as appropriate.

8.4.7.3 A Water Supply Impact Assessment will be conducted at the next stage to define the detailed scope and programme of the necessary water supply associated works to be carried out under the development.

8.4.8 Utilities

8.4.8.1 There are existing power cables, telecommunication cables and gas mains surrounding the study area, mainly along the San Tin Highway, FCA and LMC Boundary Control Point. New connections of various utility installations including power supply, gas supply and telecommunication to existing networks will be necessary for the proposed development of the SPS WCP.

8.4.8.2 The Utilities Impact Assessment will be carried out at the next stage to investigate the impacts on the existing utilities and identify the reserve requirements for the future utilities services.

8.4.9 Interfacing Projects

8.4.9.1 Close coordination will be maintained with the following interfacing projects.

- Agreement No. CE 19/2024 (CE) – First Phase Development of the New Territories North – San Tin / Lok Ma Chau Development Node – Package 3 – Design and Construction
- Agreement No. CE 15/2023 (CE) – First Phase Development of the New Territories North – San Tin/Lok Ma Chau Development Node – Package 1 – Design and Construction
- Agreement No. CE 16/2023 (CE) - First Phase Development of the New Territories North – San Tin/Lok Ma Chau Development Node – Package 2 – Design and Construction
- Agreement No. CE 20/2021 (CE) - First Phase Development of the New Territories North – San Tin/Lok Ma Chau Development Node – Investigation
- Agreement No. CE 33/2021 (CE) Land Use Review for Ngau Tam Mei – Feasibility Study
- Agreement No. CE 46/2022 (CE) MTL Area and Other Sites in Kwu Tung North New Development Area and North District – Feasibility Study
- Development of Lok Ma Chau Loop – Main Works Package 1 – Site formation and infrastructure works

- Development of Lok Ma Chau Loop – land decontamination and advance engineering works
- Consultancy Study on Planning Review of Phase 1 of HSITP Consultancy Agreement No. CA/022
- Agreement No. CE 57/2011(DS) – Drainage Improvement at Northern New Territories – Package A – Drainage Improvement Works in San Tin (Remaining Works) – Investigation

8.4.10 Disposal of Construction and Demolition (C&D) Materials

8.4.10.1 Construction activities that generate excavated materials include earthworks, roadworks and foundation works etc. The excavated materials will be reused within the development as much as possible. Management measures will be formulated in accordance with DEVB TC(W) No. 6/2010 and Project Management Handbook (2022 Edition) Chapter 4 Section 4.1.3.

8.4.10.2 The exact extent of proposed site formation and engineering infrastructural works will be subject to detailed design. The generated C&D materials and dredged / excavated materials will be further estimated and investigated, and necessary measures will also be established at the next stage of the Project.

8.4.11 Existing Facilities

8.4.11.1 During the investigation stage, a survey will be conducted to determine any existing facilities within the study area. If any reprovisioning of existing facilities is considered necessary, the detailed scope and extent will be ascertained at the investigation and detailed design stage.

8.4.12 Heritage Impacts

8.4.12.1 Under the preliminary desktop study, MacIntosh Fort (Pak Hok Chau) is a grade 2 historic building identified in the vicinity of the study area. The Project scope / site boundary, particularly near MacIntosh Fort (Pak Hok Chau), cannot be ascertained at this stage. A checklist shall be submitted to AMO to seek their advice on whether a Heritage Impact Assessment is required for the establishment of SPS WCP at the next stage of detailed study.

8.4.12.2 Cultural Heritage Impact Assessment will be further reviewed if necessary to be conducted for the SPS WCP establishment in the investigation stage to assess the cultural heritage impacts arising from the development and corresponding mitigation measures will be proposed accordingly.

8.4.13 Tree Preservation

8.4.13.1 Reference is made to the Register of Old and Valuable Trees (OVT) and no such tree is found within the study area. One OVT located at Castle Peak Road – Tam Mi Section is found, which is approx. 500m away from the study area. The proposed development will take account of the tree protection zone of the concerned OVT or any possible adverse effect on the concerned OVT. Tree survey will also be conducted at the next stage of the development and tree transplantation / felling will be avoided as far as practicable.

8.4.14 Ecological and Fisheries Impacts

8.4.14.1 Existing wetlands and fishponds were identified within the study area. As the objective of the SPS WCP is to increase the environmental capacity for the development of the ST Technopole and promote the modernisation of the aquaculture industry, existing habitats and fisheries resources shall be maintained or enhanced as far as practicable. The adverse impacts to the existing habitats and fisheries resources within the study area are considered minimal.

8.4.14.2 Considering the close proximity of existing egrettries and the flight path of migratory birds, works restrictions or temporary works suspension may be required during certain seasons. As such, sufficient programme float shall be allowed in the construction programme. Habitat management measures such as fish stocking and fishpond maintenance shall also be considered to maintain the existing ecological value during the construction stage.

8.4.14.3 An ecological and fisheries impact assessment will be conducted to assess the potential ecological and fisheries impacts arising from the proposed development. Mitigation measures will be proposed not only to avoid, minimize or compensate for any significant adverse impact, but also bring improvement as far as possible to the existing habitats and fisheries resources within and in the vicinity of the SPS WCP.

8.5 Environmental Considerations

8.5.1.1 It is recommended that when the Government takes forward further detailed studies of the proposed SPS WCP and has more detailed proposals regarding the infrastructure and other facilities to be constructed, the EIAO implications should be ascertained. In particular, should any of the components of the development of the SPS WCP be found to be designated project(s), the established mechanism under EIAO should be followed to obtain environmental permit(s) for construction and operation of the concerned designated project(s) accordingly.

8.6 Project Programme and Implementation

8.6.1.1 SPS WCP would be developed in phases, with construction work to be commenced in 2026/2027 tentatively, and striving for completion of Phase 1 by 2031. SPS WCP is expected to be fully completed by 2039 or earlier.

8.6.1.2 To ensure suitable management is adopted for areas serving various functions in the SPS WCP, a mix of management options will be considered for different areas / zones of the SPS WCP, which will be further reviewed and decided under next stage of detailed studies of the Park.

8.6.1.3 A draft HCMP for the 288ha enhanced wetland (“HCMP for enhanced wetland”) has been prepared by the project proponent of the ST Technopole, and is available on the EPD website (https://www.epd.gov.hk/eia/register/report/eiareport/eia_3022023/EIA/Appendix/ch10/Appendix%2010.8.pdf). The draft HCMP for enhanced wetland informs the subsequent planning and design of the 288ha of habitats for ecological compensation within the SPS WCP by giving an overview of the habitats and ecological functions to be provided by the enhancement works in relation to impacts resulting from ST Technopole Project. General information on the management, monitoring and audit requirements (e.g. monitoring location, frequency and parameters of target species and habitat condition targets), design and construction considerations and methods (e.g. engineering, hydrology / drainage, soils, access, utilities, storage / supporting infrastructure) are provided within the draft HCMP. A detailed HCMP shall be submitted to the Director of Environmental Protection for approval no less than nine months before the pond filling works of the ST Technopole project. In the Investigation Study for SPS WCP, a HCMP for the whole 348ha of SPS WCP to be established should be prepared, which would cover the whole area of the SPS WCP, with reference to the HCMP for enhanced wetland prepared by the project proponent of the ST Technopole.

9. PUBLIC ENGAGEMENT EXERCISES AND FINDINGS

9.1 Introduction

9.1.1.1 Two rounds of Public Engagement (PE) exercises were carried out under the Study. Meetings with different stakeholders were conducted and the general public was invited to make written submissions, in order to collect their opinions and suggestions on the development of the WCPs System.

9.2 Details of Part 1 and Part 2 Public Engagement Exercises

9.2.1 Part 1 Public Engagement Exercise (January to February 2023)

Objectives

9.2.1.1 Part 1 PE exercise introduced the WCPs System and provided background information on the Study to stakeholders, so as to solicit stakeholders' initial views and suggestions.

Briefing Sessions and Meetings

9.2.1.2 Fourteen briefing sessions / meetings were conducted with stakeholders including green groups, green tourism sector, local agriculture and fisheries associations, District Councils (DCs), Rural Committees (RCs), real estate developers and MTR Corporation Limited in January and February 2023. Consultation material was developed to disseminate key information and guide discussions during the briefing sessions / meetings.

9.2.2 Part 2 Public Engagement Exercise (November 2023 to January 2024)

Objectives

9.2.2.1 Part 2 PE exercise aimed to allow further exchanges with stakeholders, and collect their and the general public's views on the preliminary recommendations on the development plan of the WCPs System, including the phased implementation strategy, positioning and functions of the Parks, management models, and proposed development plan of the first Park – SPS WCP. The collected views would provide reference for further detailed studies of the individual Parks in the next stage.

Briefing Sessions and Meetings

9.2.2.2 Ten briefing sessions / meetings were held in December 2023 and January 2024, where stakeholders including green groups, green tourism sector, local agriculture and fisheries associations, RCs, real estate developers, Advisory Council on the Environment Nature Conservation Subcommittee, and professional institutions were engaged. Additional meetings with four advisory / statutory bodies, namely Heung Yee Kuk, Advisory Committee on Agriculture and Fisheries, Legislative Council Subcommittee on Matters relating to the Development of the Northern Metropolis, and Yuen Long DC were also conducted after the Part 2 PE exercise period. Consultation materials (including PowerPoint slides and leaflets) were distributed during the briefing sessions / meetings.

9.2.3 Engagement of the General Public

9.2.3.1 Apart from the stakeholder briefing sessions / meetings, a dedicated webpage⁸ was set up under AFCD's website, on which the consultation materials were available for public information. Members of the general public could make written submissions by email during the Part 2 PE period.

⁸ https://www.afcd.gov.hk/english/conservation/con_wet/WCPS_SYSTEM/wcps_system.html

9.3 Summary of Findings Collected from Briefing Sessions and Meetings

9.3.1 Part 1 Public Engagement Exercise

9.3.1.1 Overall supportive comments were collected from Part 1 PE exercise briefing sessions / meetings. Common concerns / issues are summarised as follows.

- Management framework and capacity of the Parks, potential ecological impacts of modernised aquaculture,
- Development of ecological education / green tourism / recreation facilities under the WCPs System,
- The extent and timing of land resumption, as well as ex-gratia compensation rate for land resumption (Tier 1 or Tier 2),
- Future development of the aquaculture industry and promotion of modernised aquaculture, and
- Respecting and balancing the needs of different stakeholders such as private land owners, villagers, fishpond operators and other users.

9.3.2 Part 2 Public Engagement Exercise

9.3.2.1 Overall supportive comments were also received from Part 2 PE exercise briefing sessions / meetings. Common concerns / issues are summarised as follows.

- Reduction of the area of the SPS WCP and the potential impacts to the flight path and birds, balancing the Park's multi-functions, potential impacts of modernised aquaculture on the overall ecological environment, and the long implementation timeline of the Park,
- The need to respect the rights of land owners and indigenous villagers, as well as provide commercial and economic activities in the Parks, such as eco-tourism and leisure fish farms⁹,
- The extent and timing of land resumption, as well as ex-gratia compensation rate for land resumption (Tier 1 or Tier 2),
- Potential impacts on the aquaculture industry
- Details of the different management options and participation of various stakeholders such as green groups, villagers and local associations on agriculture and fisheries in the management of the Parks, and
- Intensive resources requirements and the need to have sustainable financial support, as well as future statutory protection of the Parks.

9.4 Summary of Findings Collected from Written Comments (Part 2 Public Engagement Exercise only)

9.4.1.1 Up to the end of Part 2 PE exercise period on 20 January 2024, a total of 96 public comments were received via email, five additional comments were received after 20 January 2024, which are also included in below analysis. Written comments were received

⁹ In this regard, it is noted that the Countryside Conservation Office (CCO) has formulated an inter-departmental working group to review and optimise the existing guesthouse licensing system and procedures for the operation of lodges or restaurants in remote villages. The guesthouse licensing facilitation initiative will provide a series of facilitation measures and relevant licensing requirements / procedural guidelines to assist future applications in remote villages. This task is expected to be completed in 2024-25. The Government may consider empowering CCO and other relevant department(s) to jointly study the applicability of the relevant enhanced licensing requirements and procedural guidelines in the WCPs System.

from the general public, green groups, other NGOs, as well as real estate developers / private land owners.

- 9.4.1.2 Of the total 101 submissions received, around one-third (35 submissions) were solely related to the ST Technopole. Among the 66 submissions that are related to the WCPs System, one submission expressed objection with no detail provided, nine submissions expressed support to the WCPs System with comments, while the remaining submissions provided comments on the development of the WCPs System only. Major comments include the reduction of the area of the SPS WCP, long implementation timeline, SPS WCP being characterised as a mitigation measure for the ST Technopole development, uncertainty of the public-private partnership management model discussed in **Section 5.7.1.7** above, boundaries of the rest of the Parks, land resumption time, and associated compensation arrangements, etc. Some submissions also suggested the Government to critically review the boundary delineation criteria, develop a comprehensive wetland regulatory framework for the WCPs System, maintain the integrity of the wetland system in the Deep Bay area, respect local pond fish farmers and preserve traditional pond fish culture skills and knowledge, etc.

9.5 Summary

- 9.5.1.1 In general, stakeholders and the general public supported the development of the WCPs System. With stakeholders from various sectors involved, the opinions collected cover different aspects, including ecological considerations for the Deep Bay wetlands, future development of the local aquaculture industry, positioning, functions and type of activities (ecological education, green tourism or recreation) to be carried out in the Parks, management model of the Parks, potential impacts to and involvement of private land owners / local villagers / other stakeholders in the management of the Parks. All comments / concerns have been taken into consideration where appropriate and further analysed in formulating the final recommendations for the WCPs System under this Study.

10. SUMMARY

10.1.1.1 A comprehensive baseline review has been undertaken for the Study Area of the WCPs System under the Study. The development of the WCPs System was considered feasible and worthwhile to enhance wetland ecosystem and connectivity as well as create environmental capacity for the development of the Northern Metropolis. With an established baseline profile and key issues identified, Proposed Park Boundaries, conceptual plans in consideration of the views collected from the public engagement exercises, potential management options as well as overall implementation strategy and timeline have been developed for the WCPs System and individual Parks. Suggested theme for each of the Parks and implementation sequence for the WCPs System are as follow:

Table 10.1 Suggested Themes and Proposed Implementation Sequence for the WCPs System

| WCPs System Implementation Sequence | Theme |
|--|---|
| 1. SPS WCP | Biodiversity and Aquaculture in Harmony |
| 2. HKWP Expansion Area | Wetlands for Learning |
| 3. NSW WCP | An Eco-tourism Paradise |
| 4. HHW WCP (including SL/NH area) | A Rural Retreat |

10.1.1.2 The Study also includes the technical feasibility assessment for the first Park, i.e. SPS WCP, which confirms that the SPS WCP development is technically feasible. The scope of the establishment of the SPS WCP has been developed under the Study and would be further reviewed under the next stage of detailed studies for the Park. It is recommended that the SPS WCP should be implemented in phases. This could prioritise conservation of the major avifauna flightline corridor connecting the Deep Bay wetlands to the HHW area, and create synergy with the MPNR. Establishment of the SPS WCP is targeted to be commissioned by phases with first phase to come into operation by the end of 2031 and full completion by 2039 or earlier.

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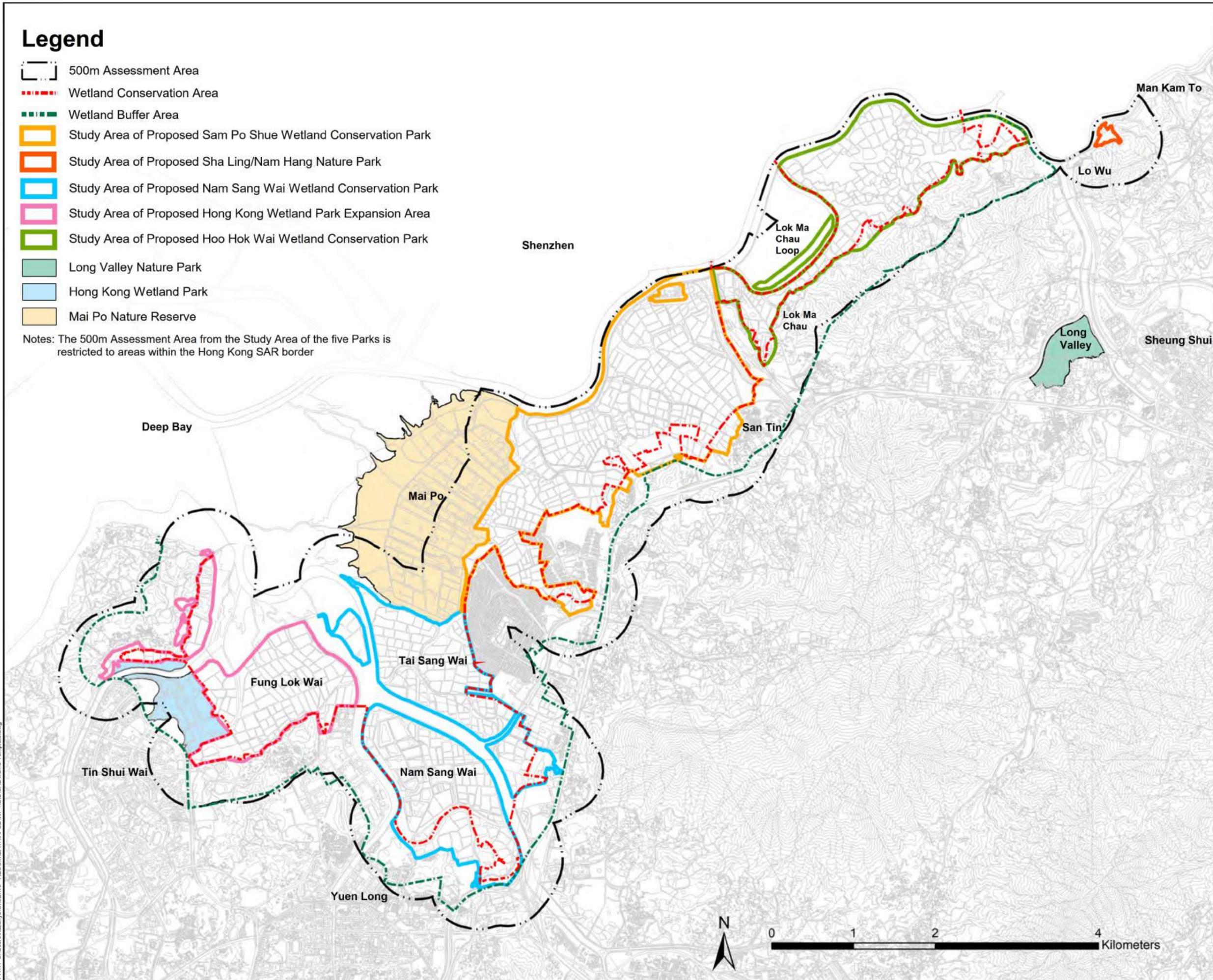
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Legend

-  500m Assessment Area
-  Wetland Conservation Area
-  Wetland Buffer Area
-  Study Area of Proposed Sam Po Shue Wetland Conservation Park
-  Study Area of Proposed Sha Ling/Nam Hang Nature Park
-  Study Area of Proposed Nam Sang Wai Wetland Conservation Park
-  Study Area of Proposed Hong Kong Wetland Park Expansion Area
-  Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
-  Long Valley Nature Park
-  Hong Kong Wetland Park
-  Mai Po Nature Reserve

Notes: The 500m Assessment Area from the Study Area of the five Parks is restricted to areas within the Hong Kong SAR border



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SCALE **DIMENSION UNIT**

KEY PLAN

PROJECT NO. **CONTRACT NO.**
 60691033 AFCD/CON/01/22

SHEET TITLE
 STUDY AREA AND
 ASSESSMENT AREA OF THE
 STRATEGIC FEASIBILITY STUDY

SHEET NUMBER
 60691033/SR/FIGURE 1.1



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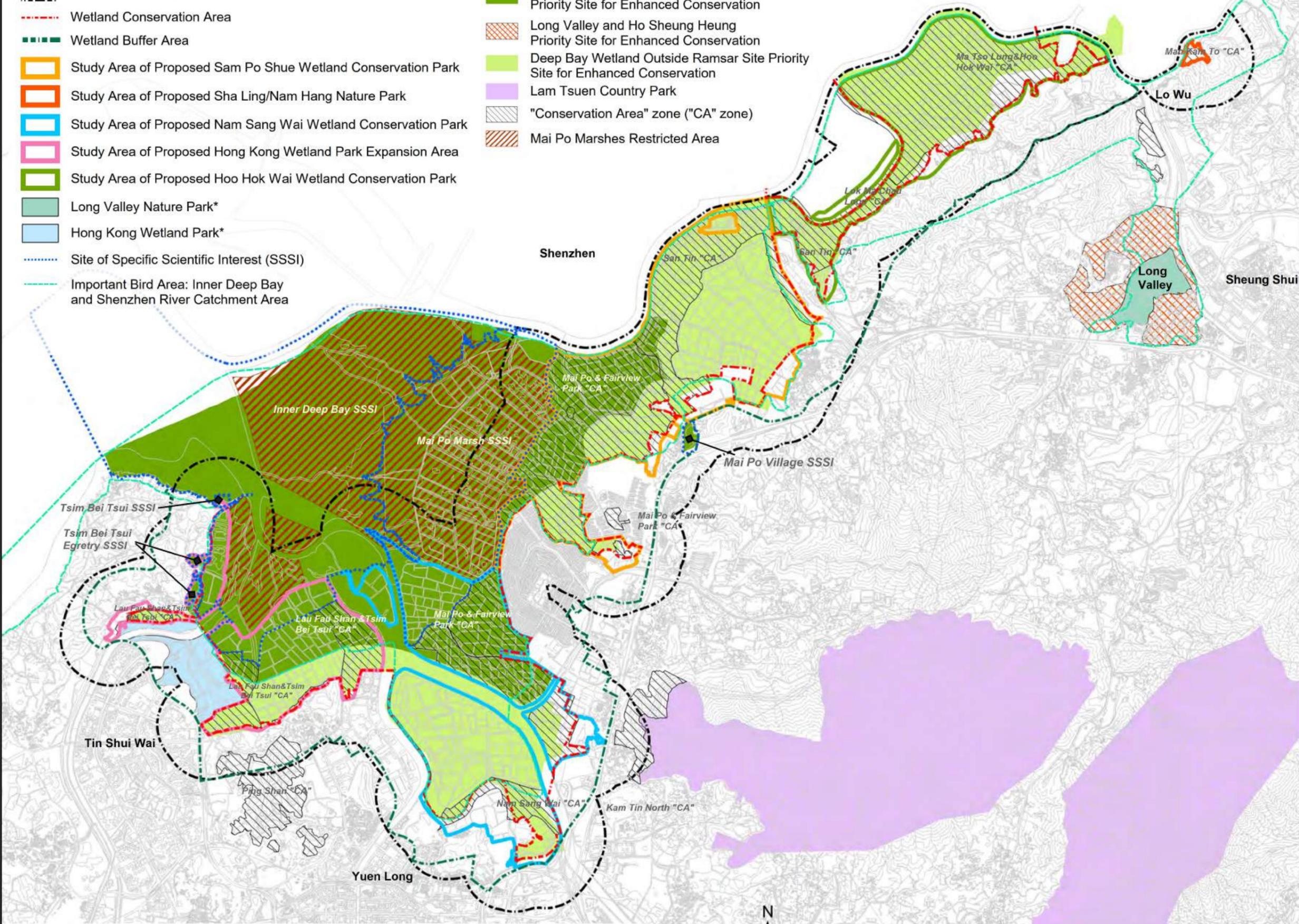
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Legend

- 500m Assessment Area
- Wetland Conservation Area
- Wetland Buffer Area
- Study Area of Proposed Sam Po Shue Wetland Conservation Park
- Study Area of Proposed Sha Ling/Nam Hang Nature Park
- Study Area of Proposed Nam Sang Wai Wetland Conservation Park
- Study Area of Proposed Hong Kong Wetland Park Expansion Area
- Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
- Long Valley Nature Park*
- Hong Kong Wetland Park*
- Site of Specific Scientific Interest (SSSI)
- Important Bird Area: Inner Deep Bay and Shenzhen River Catchment Area

- Mai Po Inner Deep Bay Ramsar Site & Ramsar Site Priority Site for Enhanced Conservation
- Long Valley and Ho Sheung Heung Priority Site for Enhanced Conservation
- Deep Bay Wetland Outside Ramsar Site Priority Site for Enhanced Conservation
- Lam Tsuen Country Park
- "Conservation Area" zone ("CA" zone)
- Mai Po Marshes Restricted Area

Notes:
 1. The 500m Assessment Area from the Study Area of the five Parks is restricted to areas within the Hong Kong SAR border.
 2. This Figure is extracted from Baseline Review on Ecological Conditions Working Paper and the "CA" zones reflect those as of January 2024.



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SHEET TITLE
 AREAS OF CONSERVATION IMPORTANCE IN THE WCPS SYSTEM

SHEET NUMBER
 60691033/SR/FIGURE 2.1

*Despite only part of the Hong Kong Wetland Park and Mai Po Nature Reserve falls within the 500m Assessment Area, these two areas, together with the Long Valley Nature Park, are assessed as a whole under the Study



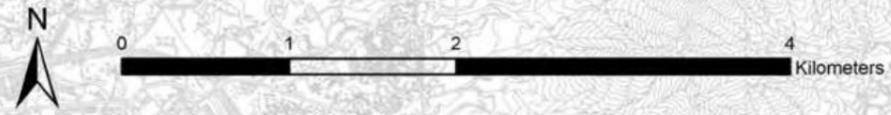
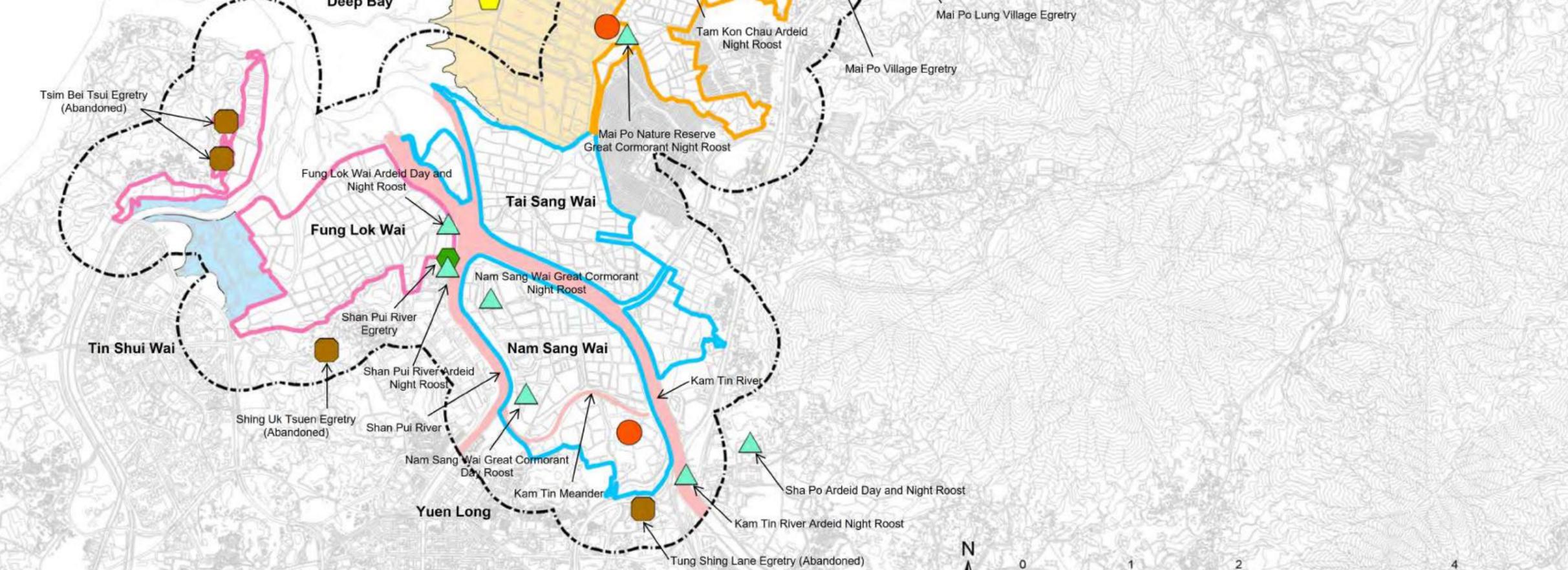
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Legend

- 500m Assessment Area
- Study Area of Proposed Sam Po Shue Wetland Conservation Park
- Study Area of Proposed Sha Ling/Nam Hang Nature Park
- Study Area of Proposed Nam Sang Wai Wetland Conservation Park
- Study Area of Proposed Hong Kong Wetland Park Expansion Area
- Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
- Long Valley Nature Park*
- Hong Kong Wetland Park*
- Mai Po Nature Reserve*
- Ecologically Sensitive Watercourse
- ▲ Approximate Location of Roosting Site of Avifauna
- Approximate Location of Active Egret
- Approximate Location of Abandoned Egret
- Approximate Location of Bat Roost
- ◆ Approximate Location of Collared Crow Roost
- Artificial Otter Holt

Notes: The 500m Assessment Area from the Study Area of the five Parks is restricted to areas within the Hong Kong SAR border



*Despite only part of the Hong Kong Wetland Park and Mai Po Nature Reserve falls within the 500m Assessment Area, these two areas, together with the Long Valley Nature Park, are assessed as a whole under the Study



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SHEET TITLE
AREAS OF OTHER ECOLOGICALLY SENSITIVE RESOURCES IN THE WCPS SYSTEM

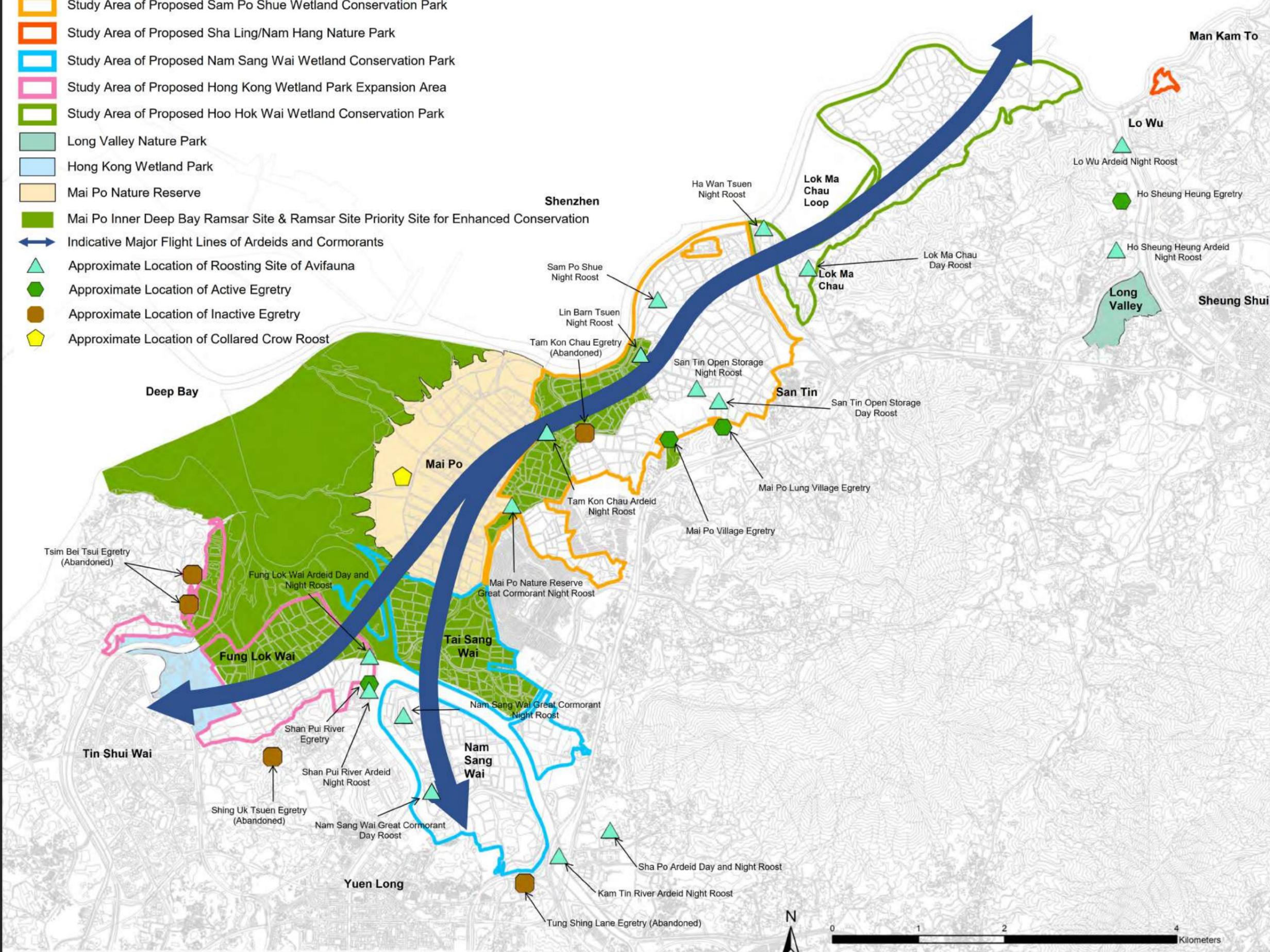
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Legend

- Study Area of Proposed Sam Po Shue Wetland Conservation Park
- Study Area of Proposed Sha Ling/Nam Hang Nature Park
- Study Area of Proposed Nam Sang Wai Wetland Conservation Park
- Study Area of Proposed Hong Kong Wetland Park Expansion Area
- Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
- Long Valley Nature Park
- Hong Kong Wetland Park
- Mai Po Nature Reserve
- Mai Po Inner Deep Bay Ramsar Site & Ramsar Site Priority Site for Enhanced Conservation
- ↔ Indicative Major Flight Lines of Ardeids and Cormorants
- ▲ Approximate Location of Roosting Site of Avifauna
- Approximate Location of Active Egret
- Approximate Location of Inactive Egret
- ◆ Approximate Location of Collared Crow Roost



Major Flight Line Source: Wetland Conservation Parks System proposed under the NMDS



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SHEET TITLE
 MAJOR FLIGHT LINE ACROSS THE WCPS SYSTEM

SHEET NUMBER
 60691033/SR/FIGURE 2.3

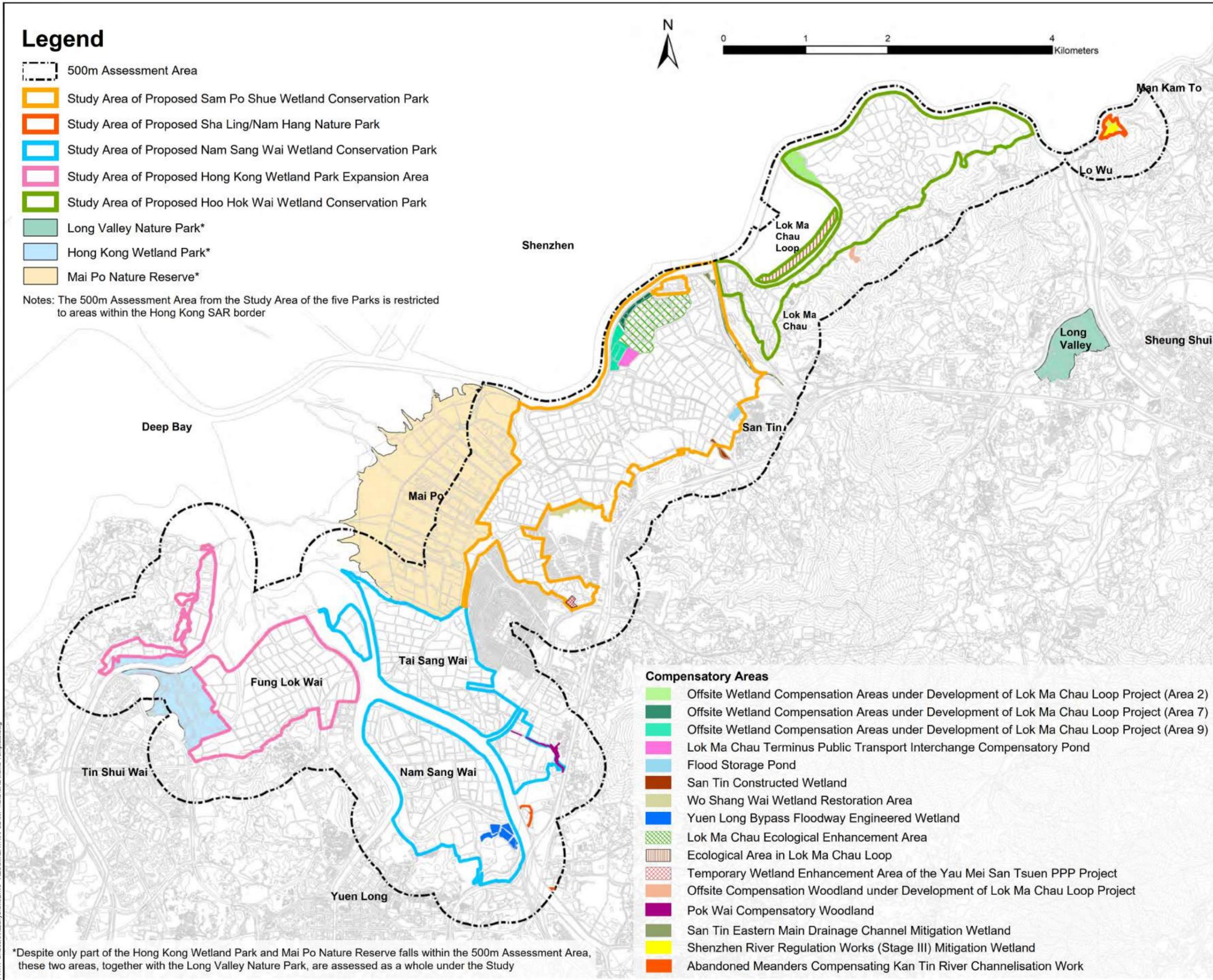
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Legend

- 500m Assessment Area
- Study Area of Proposed Sam Po Shue Wetland Conservation Park
- Study Area of Proposed Sha Ling/Nam Hang Nature Park
- Study Area of Proposed Nam Sang Wai Wetland Conservation Park
- Study Area of Proposed Hong Kong Wetland Park Expansion Area
- Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
- Long Valley Nature Park*
- Hong Kong Wetland Park*
- Mai Po Nature Reserve*

Notes: The 500m Assessment Area from the Study Area of the five Parks is restricted to areas within the Hong Kong SAR border



Compensatory Areas

- Offsite Wetland Compensation Areas under Development of Lok Ma Chau Loop Project (Area 2)
- Offsite Wetland Compensation Areas under Development of Lok Ma Chau Loop Project (Area 7)
- Offsite Wetland Compensation Areas under Development of Lok Ma Chau Loop Project (Area 9)
- Lok Ma Chau Terminus Public Transport Interchange Compensatory Pond
- Flood Storage Pond
- San Tin Constructed Wetland
- Wo Shang Wai Wetland Restoration Area
- Yuen Long Bypass Floodway Engineered Wetland
- Lok Ma Chau Ecological Enhancement Area
- Ecological Area in Lok Ma Chau Loop
- Temporary Wetland Enhancement Area of the Yau Mei San Tsuen PPP Project
- Offsite Compensation Woodland under Development of Lok Ma Chau Loop Project
- Pok Wai Compensatory Woodland
- San Tin Eastern Main Drainage Channel Mitigation Wetland
- Shenzhen River Regulation Works (Stage III) Mitigation Wetland
- Abandoned Meanders Compensating Kan Tin River Channelisation Work

*Despite only part of the Hong Kong Wetland Park and Mai Po Nature Reserve falls within the 500m Assessment Area, these two areas, together with the Long Valley Nature Park, are assessed as a whole under the Study



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COMPENSATORY AREAS IN
 THE WCPS SYSTEM

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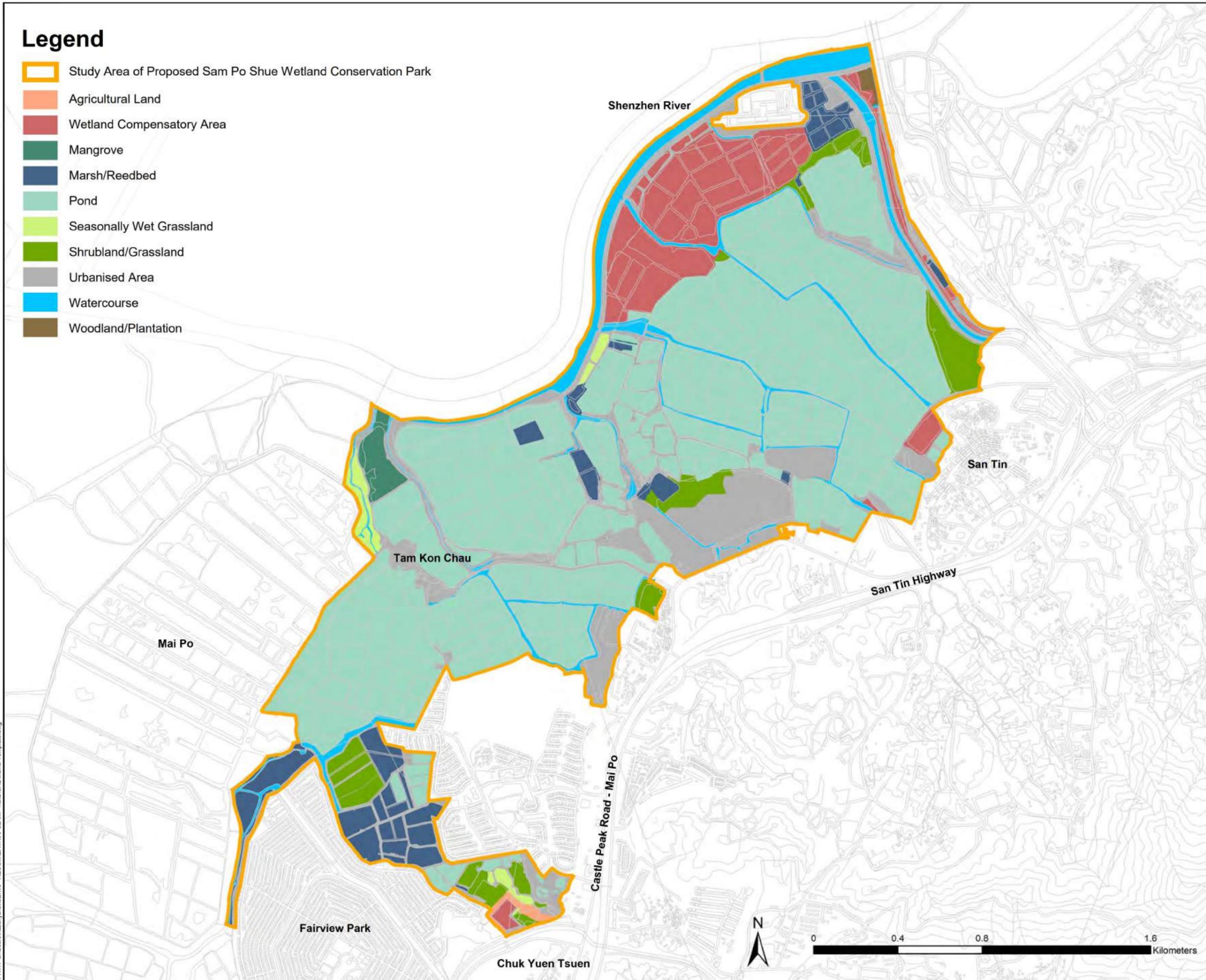
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Legend

- Study Area of Proposed Sam Po Shue Wetland Conservation Park
- Agricultural Land
- Wetland Compensatory Area
- Mangrove
- Marsh/Reedbed
- Pond
- Seasonally Wet Grassland
- Shrubland/Grassland
- Urbanised Area
- Watercourse
- Woodland/Plantation



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HABITAT MAP OF THE STUDY AREA
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SHEET NUMBER

60691033/SR/FIGURE 2.5A

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Legend

- Study Area of Proposed Hong Kong Wetland Park Expansion Area
- Agricultural Land
- Mangrove
- Marsh/Reedbed
- Pond
- Shrubland/Grassland
- Urbanised Area
- Watercourse
- Woodland/Plantation



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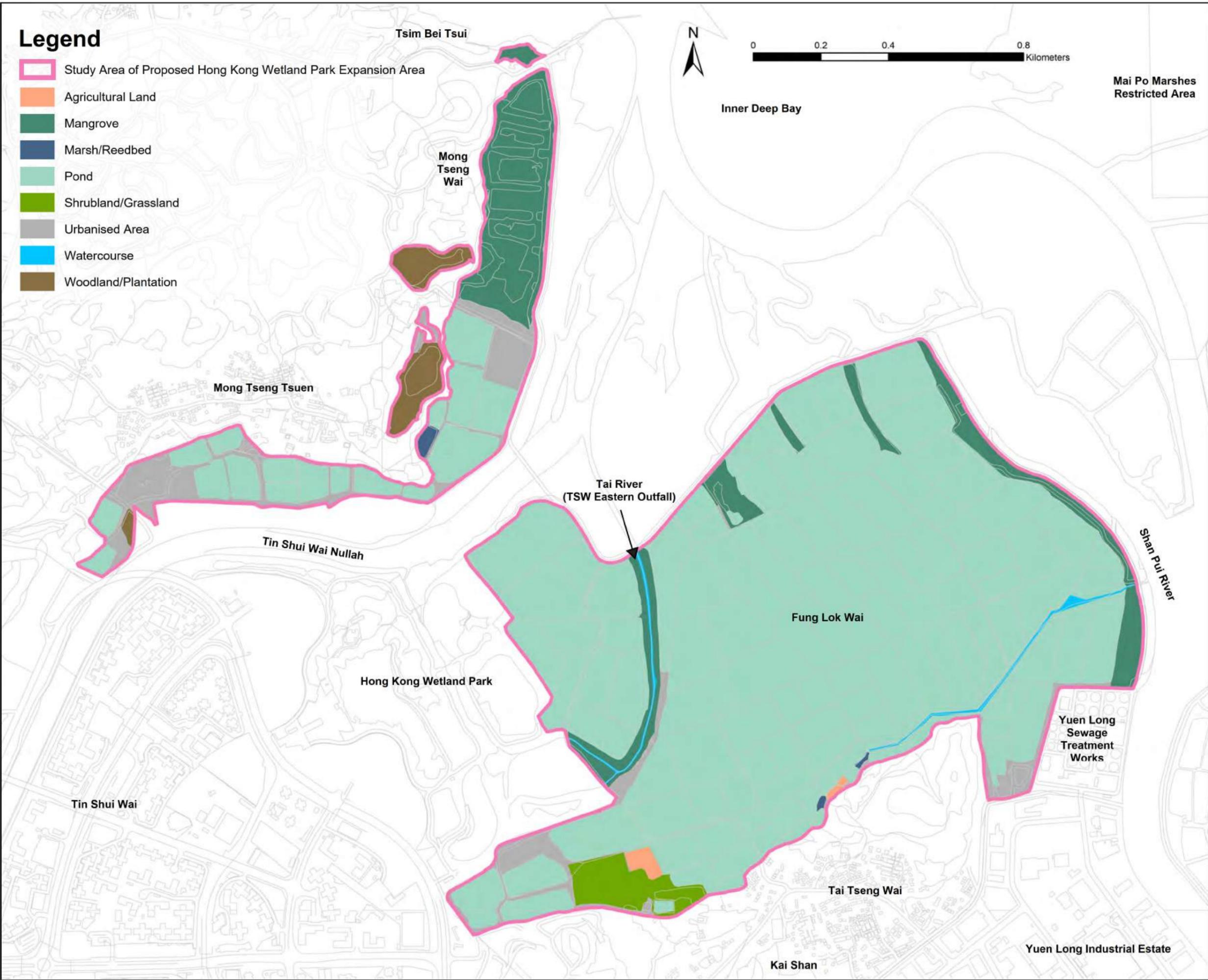
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SHEET TITLE
 HABITAT MAP OF THE STUDY AREA
 OF THE PROPOSED HKWP
 EXPANSION AREA

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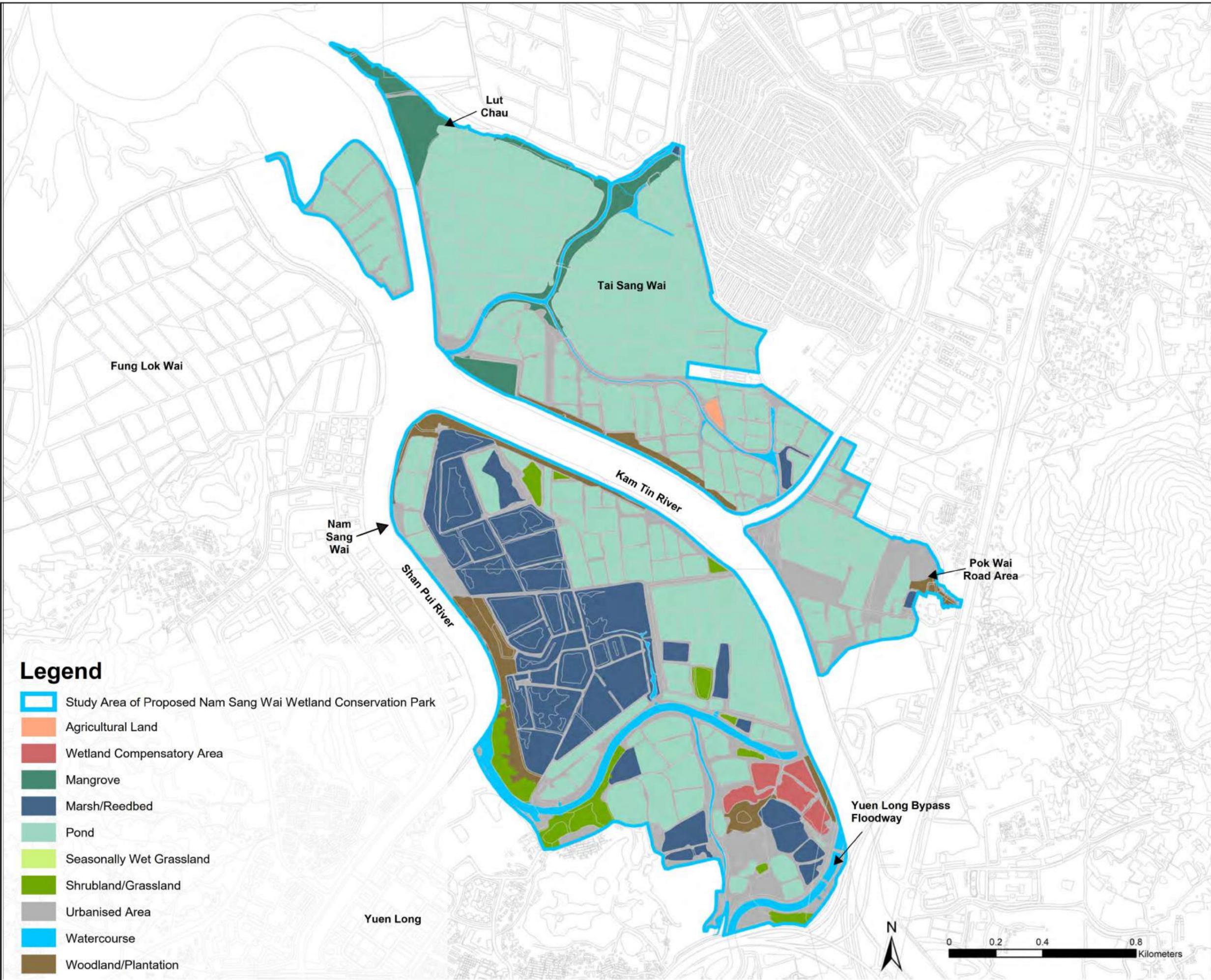
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OF THE PROPOSED NSW WCP

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60691033/SR/FIGURE 2.5C

Legend

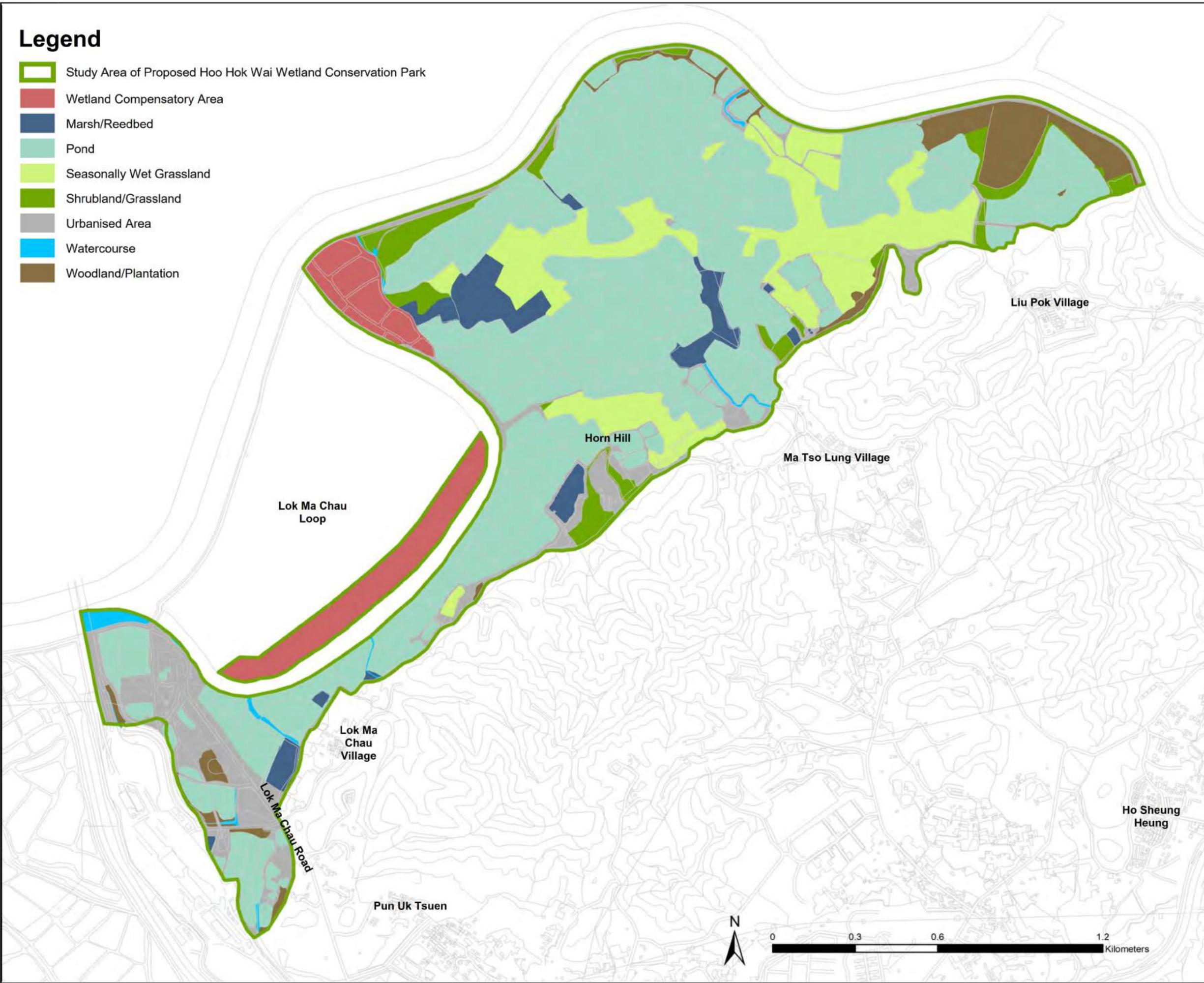
- Study Area of Proposed Nam Sang Wai Wetland Conservation Park
- Agricultural Land
- Wetland Compensatory Area
- Mangrove
- Marsh/Reedbed
- Pond
- Seasonally Wet Grassland
- Shrubland/Grassland
- Urbanised Area
- Watercourse
- Woodland/Plantation



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Legend

- Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
- Wetland Compensatory Area
- Marsh/Reedbed
- Pond
- Seasonally Wet Grassland
- Shrubland/Grassland
- Urbanised Area
- Watercourse
- Woodland/Plantation



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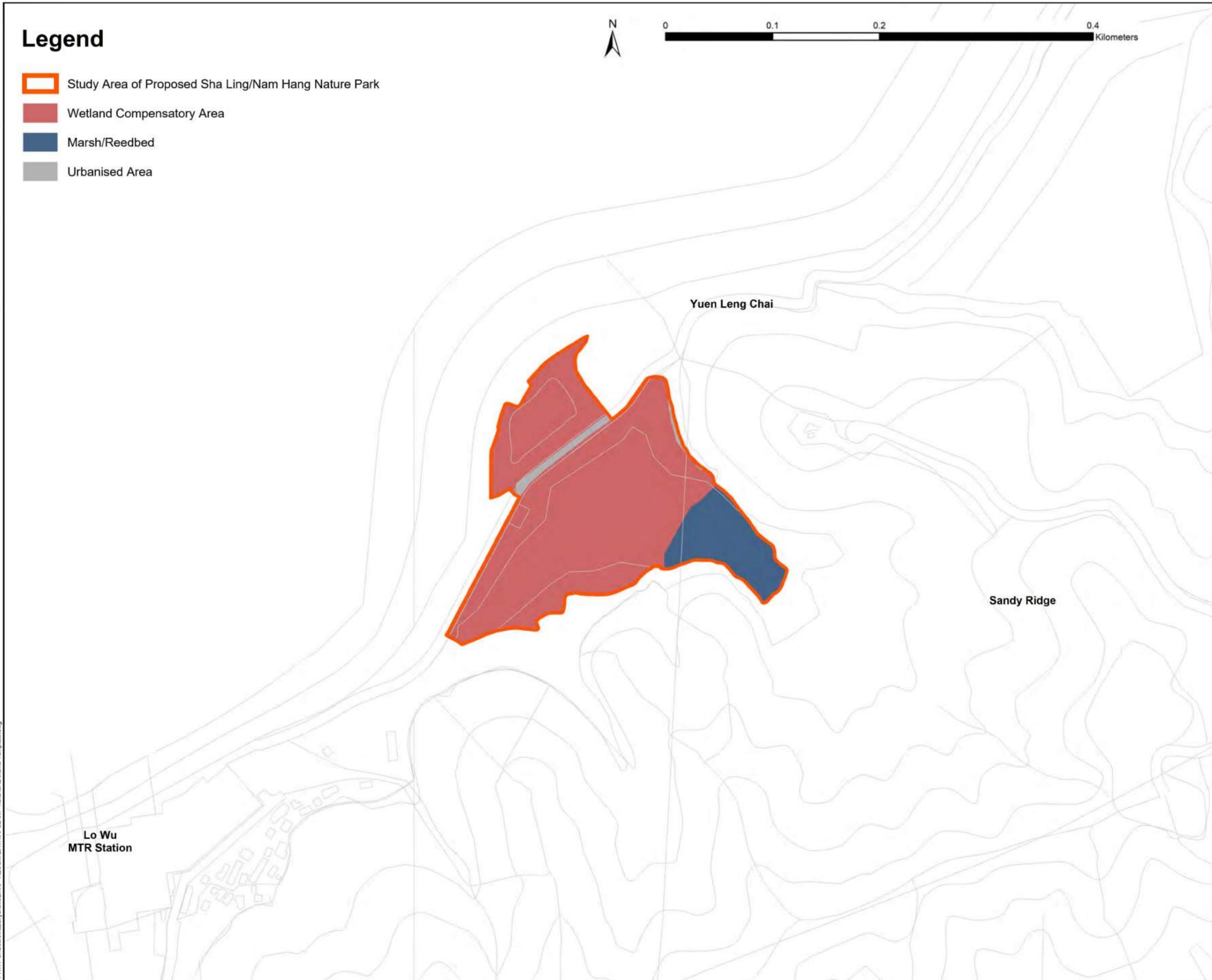
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Legend

- Study Area of Proposed Sha Ling/Nam Hang Nature Park
- Wetland Compensatory Area
- Marsh/Reedbed
- Urbanised Area



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60691033/SR/FIGURE 2.5E

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Agricultural Land



Wetland Compensatory Area



Mangrove



Marsh/Reedbed



Marsh/Reedbed



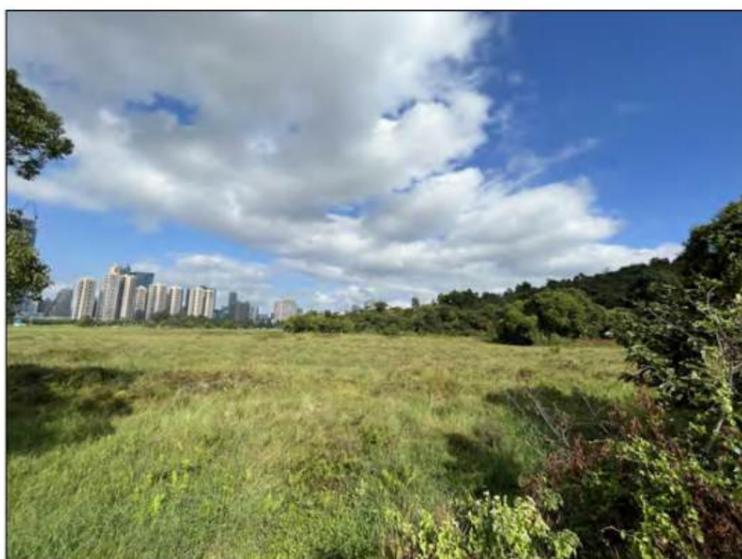
Marsh/Reedbed



Pond



Seasonally Wet Grassland



Shrubland/Grassland

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REPRESENTATIVE PHOTOGRAPHS OF
HABITAT TYPES RECORDED ACROSS
THE WCPS SYSTEM STUDY AREA

SHEET NUMBER

SHEET 1 OF 2

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Shrubland/Grassland



Shrubland/Grassland



Urbanised Area



Urbanised Area



Urbanised Area



Watercourse



Woodland



Woodland

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PROJECT NO.

60691033

CONTRACT NO.

AFCD/CON/01/22

SHEET TITLE

REPRESENTATIVE PHOTOGRAPHS OF
HABITAT TYPES RECORDED ACROSS
THE WCPS SYSTEM STUDY AREA

SHEET NUMBER

SHEET 2 OF 2

60691033/SR/FIGURE 2.6



Sprinkle Aerator



Wheel Aerator



Traditional Auto-feeder



Modern Auto-feeder



PVC Fish Feeding Frame



Wooden Fish Feeding Frame



PVC Water Pipe



L-shaped Water Pipe



L-shaped Water Pipe Connecting Adjacent Ponds

PROJECT

AFCD/CON/01/22
STRATEGIC FEASIBILITY STUDY ON
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REPRESENTATIVE PHOTOGRAPHS OF
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AREA

SHEET 1 OF 2

SHEET NUMBER

60691033/SR/FIGURE 2.7



Water Pipe and Pump



Wooden Gate



Concrete Gate



Concrete Gate with Wooden Board



Active Storage



Derelict Storage



Derelict Temporary Structure



Derelict Temporary Structure



Active Temporary Structure

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 AREA

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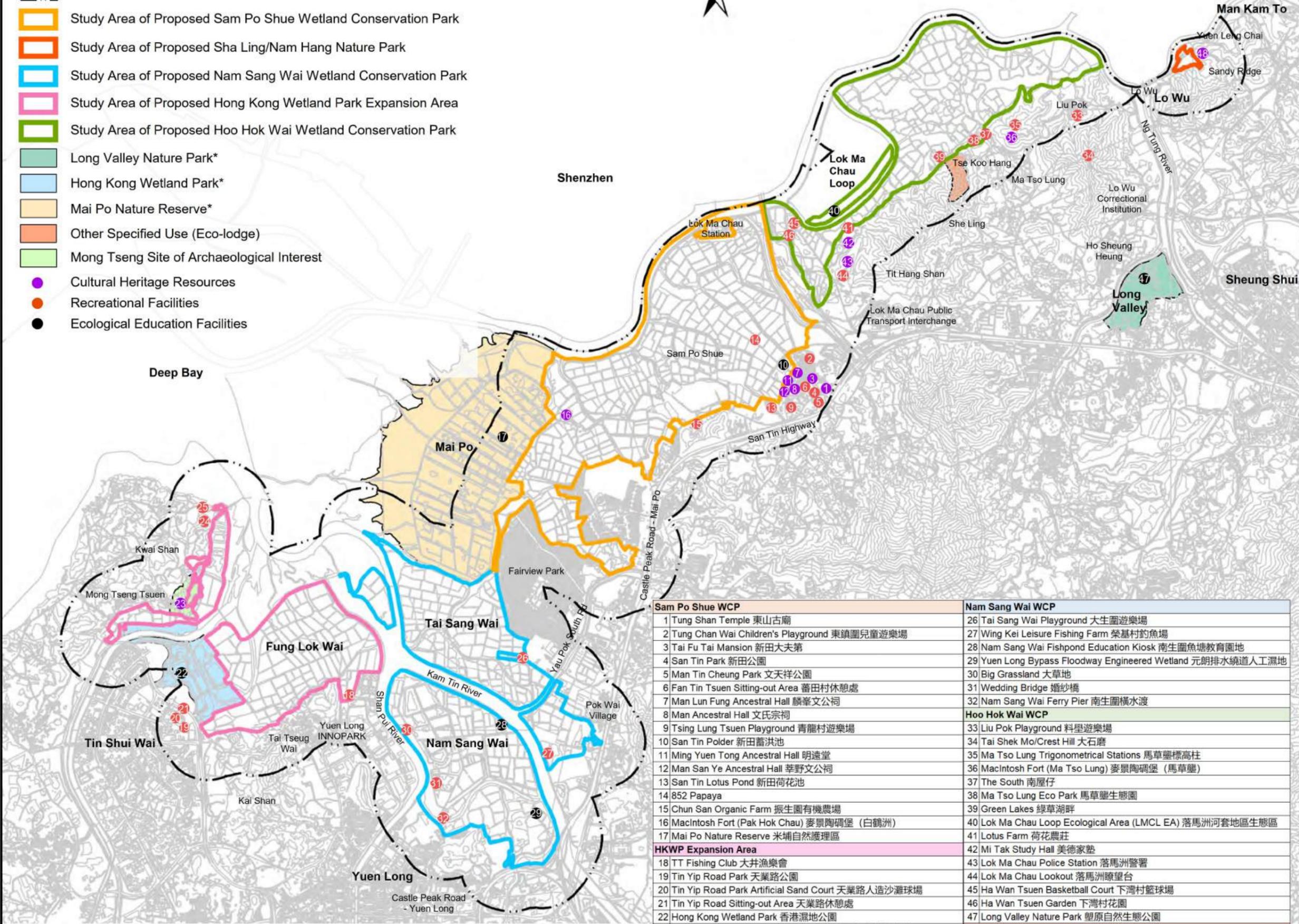
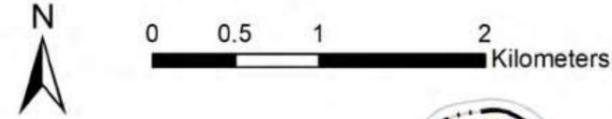
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Legend

- 500m Assessment Area
- Study Area of Proposed Sam Po Shue Wetland Conservation Park
- Study Area of Proposed Sha Ling/Nam Hang Nature Park
- Study Area of Proposed Nam Sang Wai Wetland Conservation Park
- Study Area of Proposed Hong Kong Wetland Park Expansion Area
- Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
- Long Valley Nature Park*
- Hong Kong Wetland Park*
- Mai Po Nature Reserve*
- Other Specified Use (Eco-lodge)
- Mong Tseng Site of Archaeological Interest
- Cultural Heritage Resources
- Recreational Facilities
- Ecological Education Facilities



| Sam Po Shue WCP | Nam Sang Wai WCP |
|--|--|
| 1 Tung Shan Temple 東山古廟 | 26 Tai Sang Wai Playground 大生圍遊樂場 |
| 2 Tung Chan Wai Children's Playground 東鎮圍兒童遊樂場 | 27 Wing Kei Leisure Fishing Farm 榮基村釣魚場 |
| 3 Tai Fu Tai Mansion 新田大夫第 | 28 Nam Sang Wai Fishpond Education Kiosk 南生圍魚塘教育園地 |
| 4 San Tin Park 新田公園 | 29 Yuen Long Bypass Floodway Engineered Wetland 元朗排水繞道人工濕地 |
| 5 Man Tin Cheung Park 文天祥公園 | 30 Big Grassland 大草地 |
| 6 Fan Tin Tsuen Sitting-out Area 蕃田村休憩處 | 31 Wedding Bridge 婚紗橋 |
| 7 Man Lun Fung Ancestral Hall 麟峯文公祠 | 32 Nam Sang Wai Ferry Pier 南生圍橫水渡 |
| 8 Man Ancestral Hall 文氏宗祠 | Hoo Hok Wai WCP |
| 9 Tsing Lung Tsuen Playground 青龍村遊樂場 | 33 Liu Pok Playground 料壘遊樂場 |
| 10 San Tin Polder 新田蓄洪池 | 34 Tai Shek Mo/Crest Hill 大石磨 |
| 11 Ming Yuen Tong Ancestral Hall 明遠堂 | 35 Ma Tso Lung Trigonometrical Stations 馬草壘標高柱 |
| 12 Man San Ye Ancestral Hall 莘野文公祠 | 36 MacIntosh Fort (Ma Tso Lung) 麥景陶砲堡 (馬草壘) |
| 13 San Tin Lotus Pond 新田荷花池 | 37 The South 南屋仔 |
| 14 852 Papaya | 38 Ma Tso Lung Eco Park 馬草壘生態園 |
| 15 Chun San Organic Farm 振生園有機農場 | 39 Green Lakes 綠草湖畔 |
| 16 MacIntosh Fort (Pak Hok Chau) 麥景陶砲堡 (白鶴洲) | 40 Lok Ma Chau Lookout 落馬洲瞭望台 |
| 17 Mai Po Nature Reserve 米埔自然護理區 | 41 Lotus Farm 荷花農莊 |
| HKWP Expansion Area | 42 Mi Tak Study Hall 美德家塾 |
| 18 TT Fishing Club 大井漁樂會 | 43 Lok Ma Chau Police Station 落馬洲警署 |
| 19 Tin Yip Road Park 天業路公園 | 44 Lok Ma Chau Lookout 落馬洲瞭望台 |
| 20 Tin Yip Road Park Artificial Sand Court 天業路人造沙灘球場 | 45 Ha Wan Tsuen Basketball Court 下灣村籃球場 |
| 21 Tin Yip Road Sitting-out Area 天業路休憩處 | 46 Ha Wan Tsuen Garden 下灣村花園 |
| 22 Hong Kong Wetland Park 香港濕地公園 | 47 Long Valley Nature Park 壆原自然生態公園 |
| 23 Mong Tseng Site of Archaeological Interest 輞井考古遺址 | Sha Ling/Nam Hang Nature Park |
| 24 Lookout Pavilion 唐夏寮 | 48 MacIntosh Fort (Nam Hang) 麥景陶砲堡 (南坑) |
| 25 Tsim Bei Tsui Deep Bay Lookout 尖鼻咀后海灣瞭望點 | |

*Despite only part of the Hong Kong Wetland Park and Mai Po Nature Reserve falls within the 500m Assessment Area, these two areas, together with the Long Valley Nature Park, are assessed as a whole under the Study



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 ECOLOGICAL EDUCATION AND RECREATION FACILITIES IN THE ASSESSMENT AREA OF THE WCP SYSTEM

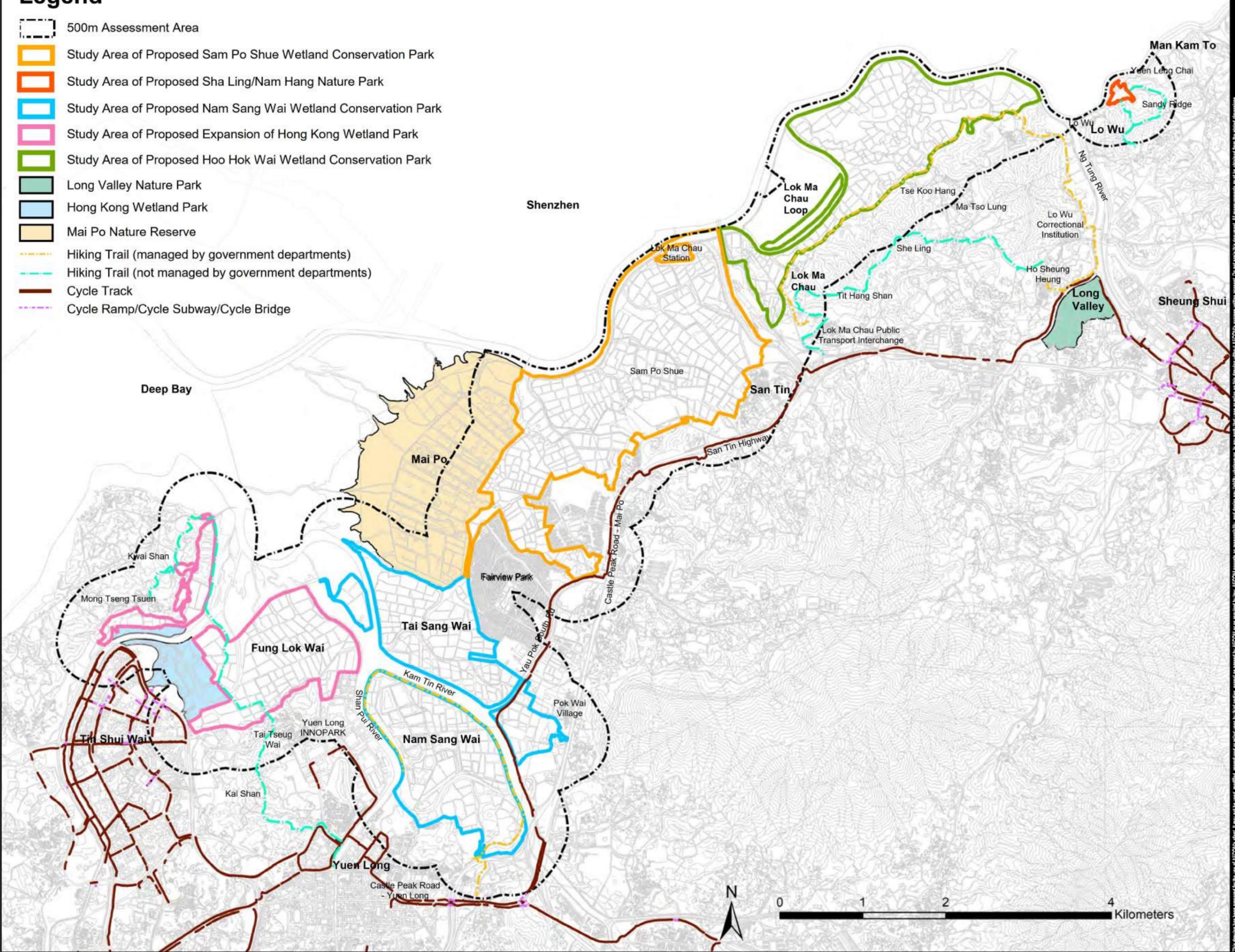
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Legend

- 500m Assessment Area
- Study Area of Proposed Sam Po Shue Wetland Conservation Park
- Study Area of Proposed Sha Ling/Nam Hang Nature Park
- Study Area of Proposed Nam Sang Wai Wetland Conservation Park
- Study Area of Proposed Expansion of Hong Kong Wetland Park
- Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
- Long Valley Nature Park
- Hong Kong Wetland Park
- Mai Po Nature Reserve
- Hiking Trail (managed by government departments)
- Hiking Trail (not managed by government departments)
- Cycle Track
- Cycle Ramp/Cycle Subway/Cycle Bridge



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SHEET TITLE
 CYCLE TRACKS AND HIKING
 TRAILS ACROSS THE WCPS
 SYSTEM

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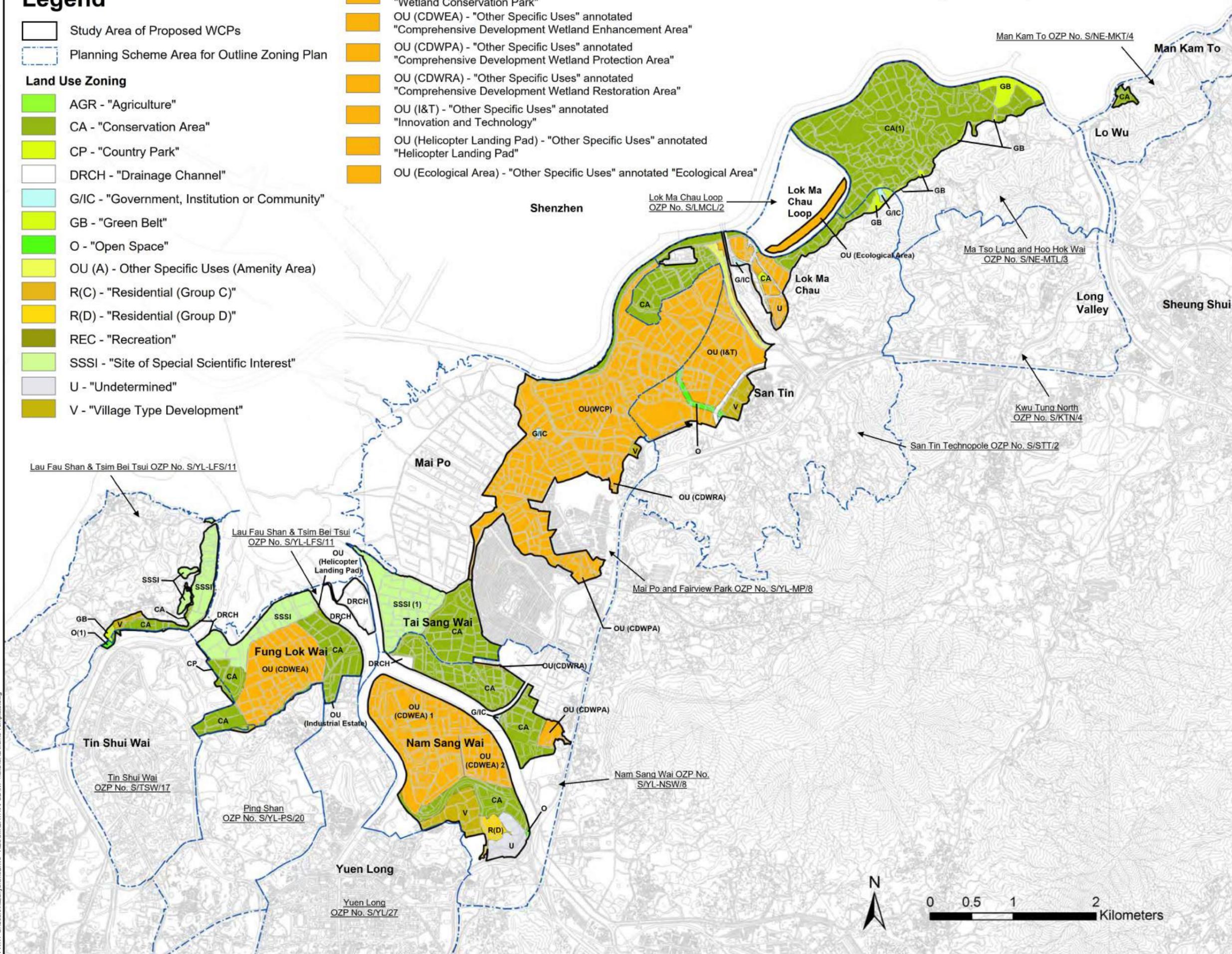
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Legend

- Study Area of Proposed WCPs
- Planning Scheme Area for Outline Zoning Plan
- Land Use Zoning**
- AGR - "Agriculture"
- CA - "Conservation Area"
- CP - "Country Park"
- DRCH - "Drainage Channel"
- G/IC - "Government, Institution or Community"
- GB - "Green Belt"
- O - "Open Space"
- OU (A) - Other Specific Uses (Amenity Area)
- R(C) - "Residential (Group C)"
- R(D) - "Residential (Group D)"
- REC - "Recreation"
- SSSI - "Site of Special Scientific Interest"
- U - "Undetermined"
- V - "Village Type Development"

- OU (WCP) - "Other Specific Uses" annotated "Wetland Conservation Park"
- OU (CDWEA) - "Other Specific Uses" annotated "Comprehensive Development Wetland Enhancement Area"
- OU (CDWPA) - "Other Specific Uses" annotated "Comprehensive Development Wetland Protection Area"
- OU (CDWRA) - "Other Specific Uses" annotated "Comprehensive Development Wetland Restoration Area"
- OU (I&T) - "Other Specific Uses" annotated "Innovation and Technology"
- OU (Helicopter Landing Pad) - "Other Specific Uses" annotated "Helicopter Landing Pad"
- OU (Ecological Area) - "Other Specific Uses" annotated "Ecological Area"

Notes:
The zonings shown in the figure reflects those as of October 2024



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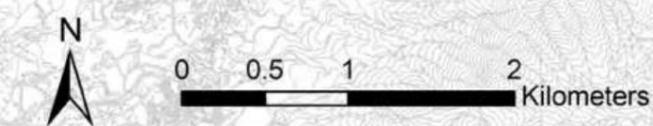
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SHEET TITLE
OUTLINE ZONING PLANS AND ZONINGS IN THE STUDY AREA OF THE WCPs SYSTEM

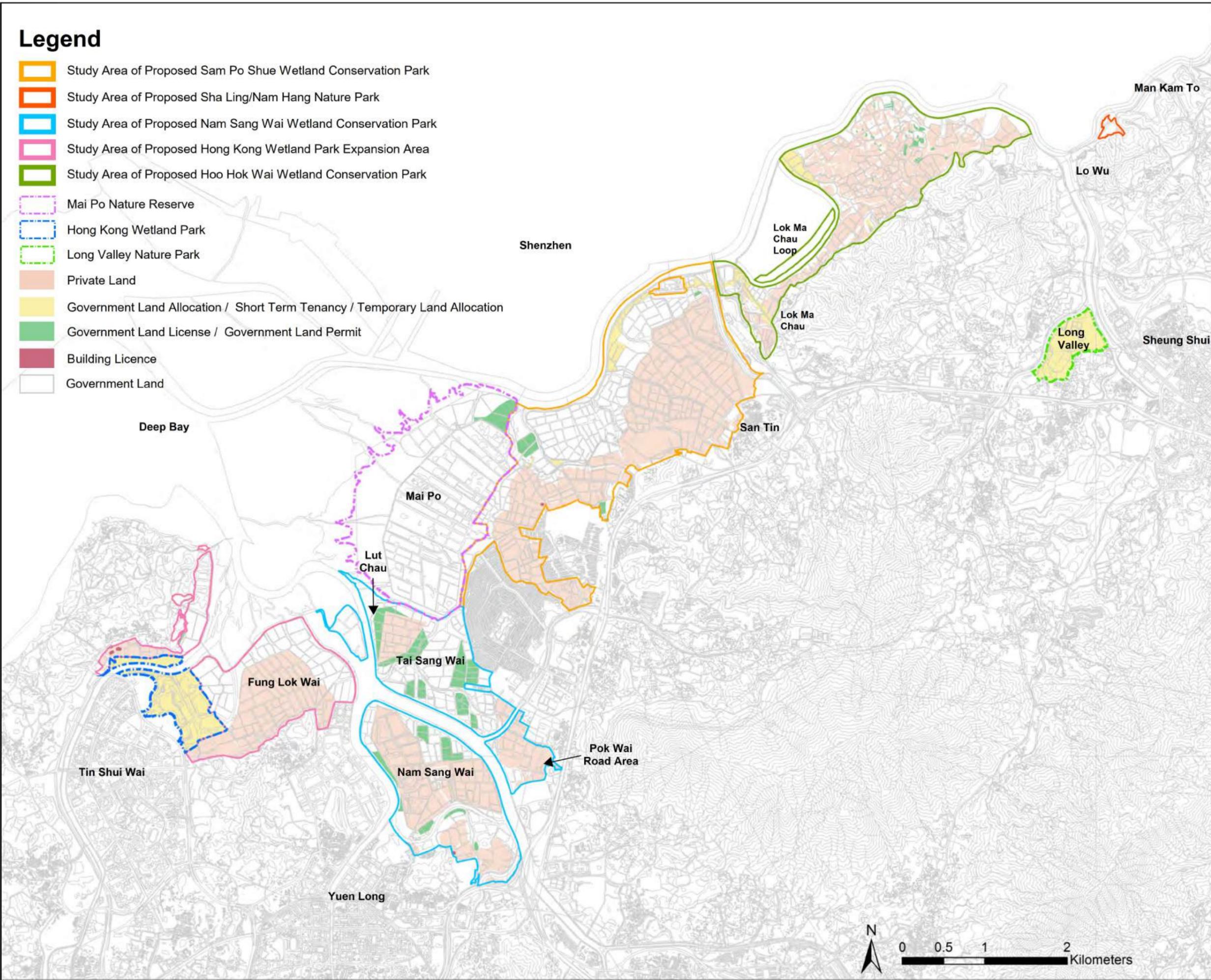
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Legend

- Study Area of Proposed Sam Po Shue Wetland Conservation Park
- Study Area of Proposed Sha Ling/Nam Hang Nature Park
- Study Area of Proposed Nam Sang Wai Wetland Conservation Park
- Study Area of Proposed Hong Kong Wetland Park Expansion Area
- Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
- Mai Po Nature Reserve
- Hong Kong Wetland Park
- Long Valley Nature Park
- Private Land
- Government Land Allocation / Short Term Tenancy / Temporary Land Allocation
- Government Land License / Government Land Permit
- Building Licence
- Government Land



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SHEET TITLE
 LAND STATUS OF THE WCPS SYSTEM

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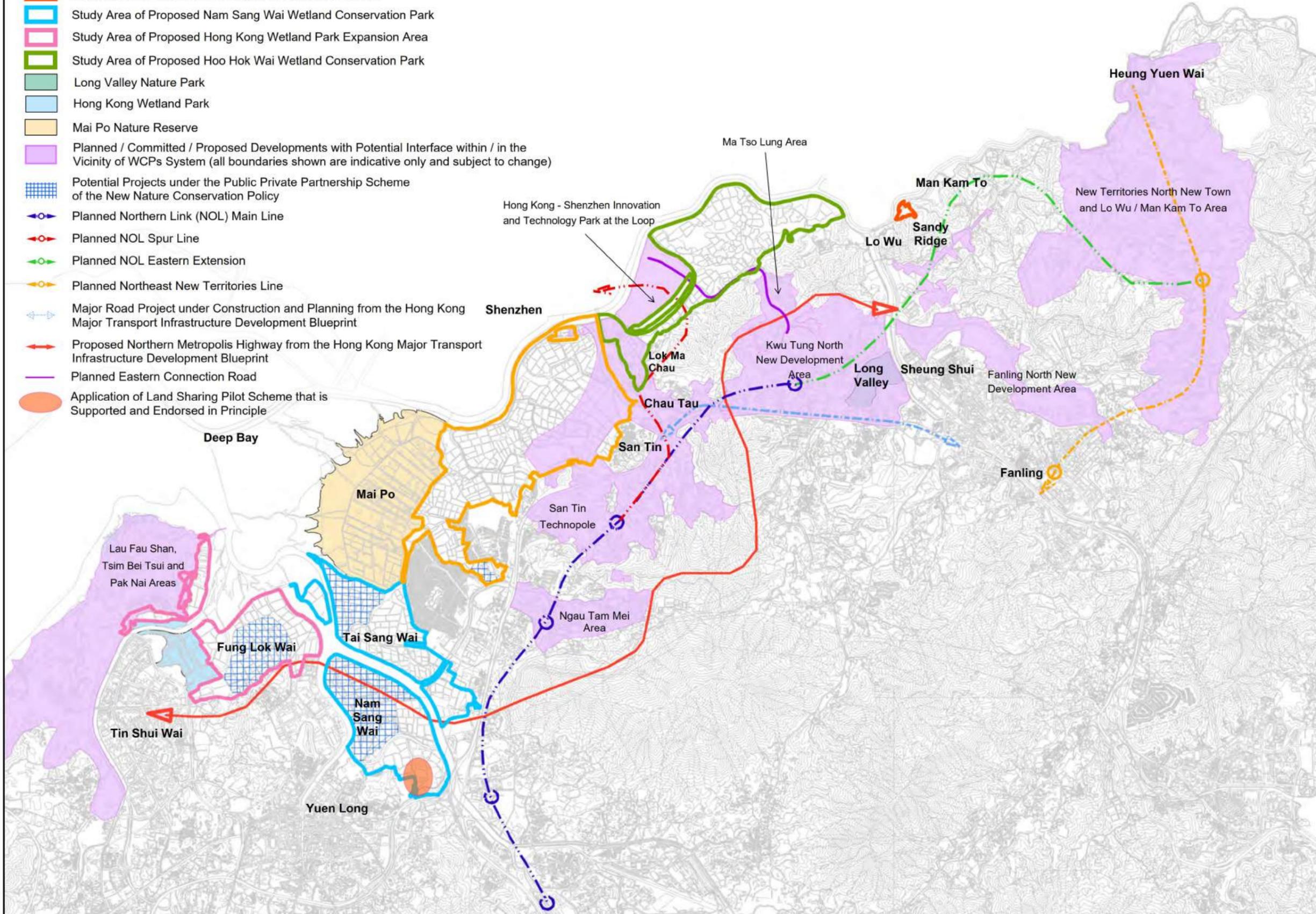


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Legend

- Study Area of Proposed Sam Po Shue Wetland Conservation Park
- Study Area of Proposed Sha Ling/Nam Hang Nature Park
- Study Area of Proposed Nam Sang Wai Wetland Conservation Park
- Study Area of Proposed Hong Kong Wetland Park Expansion Area
- Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
- Long Valley Nature Park
- Hong Kong Wetland Park
- Mai Po Nature Reserve
- Planned / Committed / Proposed Developments with Potential Interface within / in the Vicinity of WCPs System (all boundaries shown are indicative only and subject to change)
- Potential Projects under the Public Private Partnership Scheme of the New Nature Conservation Policy
- Planned Northern Link (NOL) Main Line
- Planned NOL Spur Line
- Planned NOL Eastern Extension
- Planned Northeast New Territories Line
- Major Road Project under Construction and Planning from the Hong Kong Major Transport Infrastructure Development Blueprint
- Proposed Northern Metropolis Highway from the Hong Kong Major Transport Infrastructure Development Blueprint
- Planned Eastern Connection Road
- Application of Land Sharing Pilot Scheme that is Supported and Endorsed in Principle



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 圖名
 LOCATION OF COMMITTED, PLANNED AND PROPOSED DEVELOPMENTS

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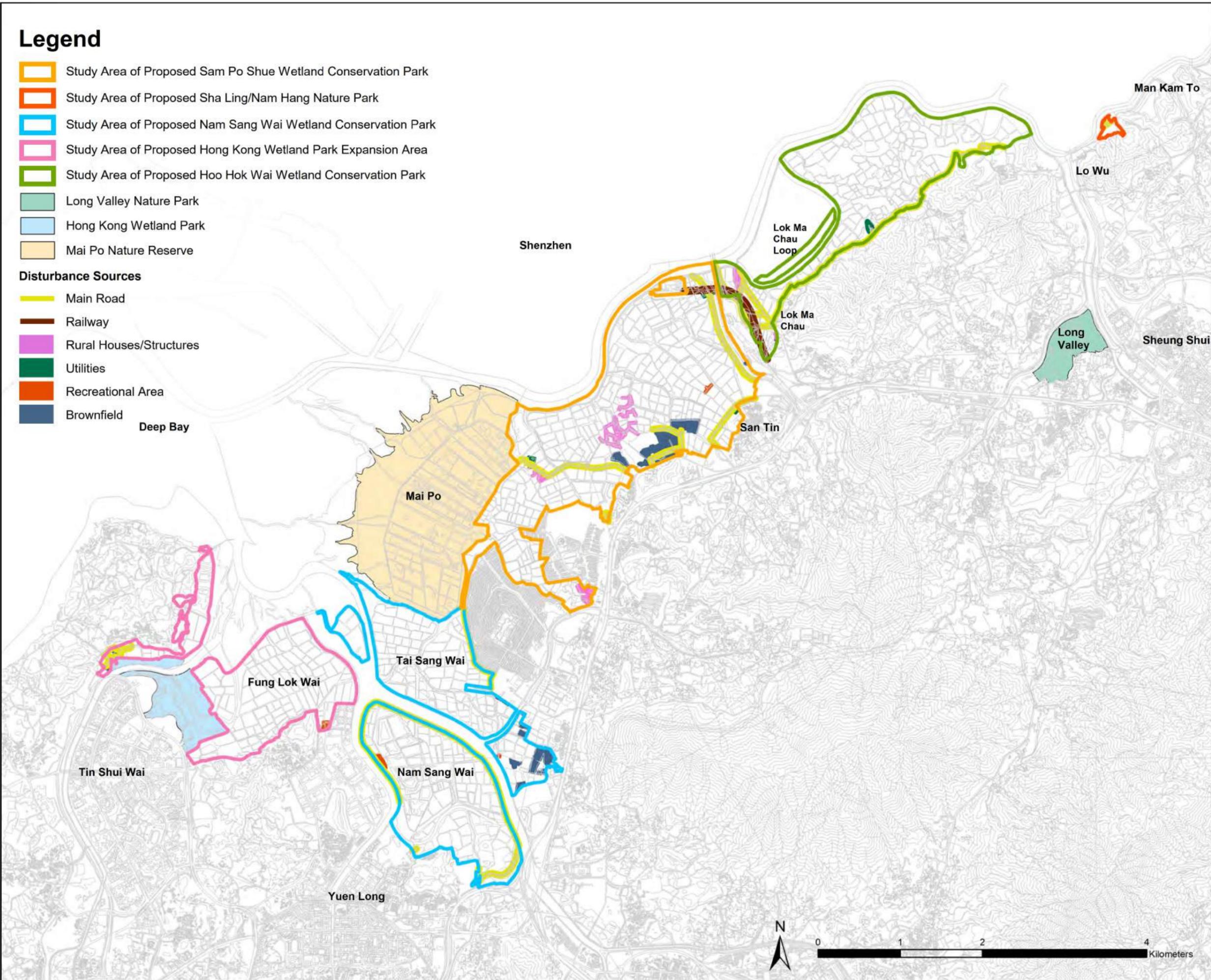
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Legend

- Study Area of Proposed Sam Po Shue Wetland Conservation Park
- Study Area of Proposed Sha Ling/Nam Hang Nature Park
- Study Area of Proposed Nam Sang Wai Wetland Conservation Park
- Study Area of Proposed Hong Kong Wetland Park Expansion Area
- Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
- Long Valley Nature Park
- Hong Kong Wetland Park
- Mai Po Nature Reserve

Disturbance Sources

- Main Road
- Railway
- Rural Houses/Structures
- Utilities
- Recreational Area
- Brownfield



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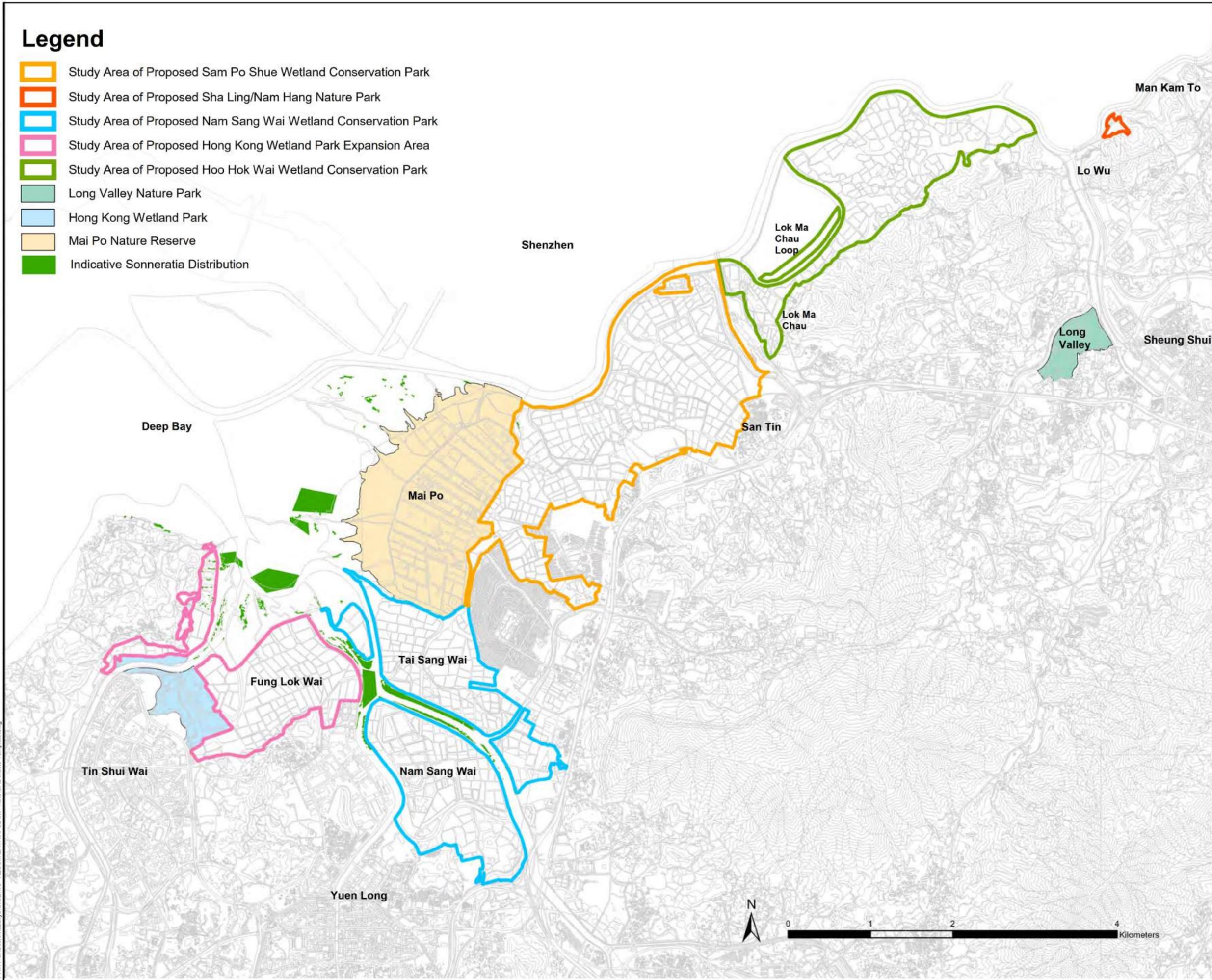
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Legend

- Study Area of Proposed Sam Po Shue Wetland Conservation Park
- Study Area of Proposed Sha Ling/Nam Hang Nature Park
- Study Area of Proposed Nam Sang Wai Wetland Conservation Park
- Study Area of Proposed Hong Kong Wetland Park Expansion Area
- Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
- Long Valley Nature Park
- Hong Kong Wetland Park
- Mai Po Nature Reserve
- Indicative Sonneratia Distribution



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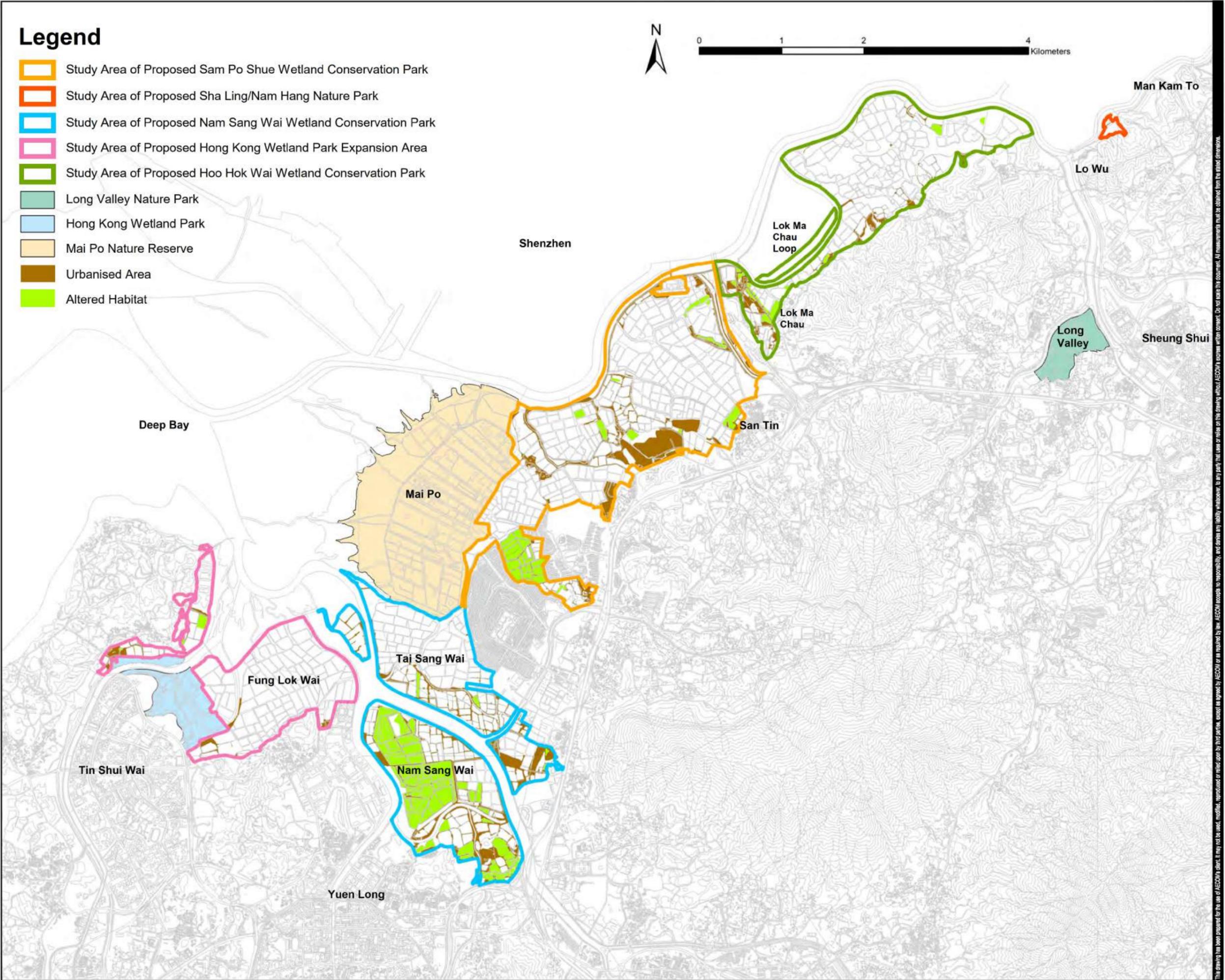
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Legend

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- Study Area of Proposed Nam Sang Wai Wetland Conservation Park
- Study Area of Proposed Hong Kong Wetland Park Expansion Area
- Study Area of Proposed Hoo Hok Wai Wetland Conservation Park
- Long Valley Nature Park
- Hong Kong Wetland Park
- Mai Po Nature Reserve
- Urbanised Area
- Altered Habitat



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SHEET TITLE
 ALTERED HABITATS / URBANISED
 AREA SUITABLE FOR ENHANCEMENT
 AND/OR DEVELOPMENT

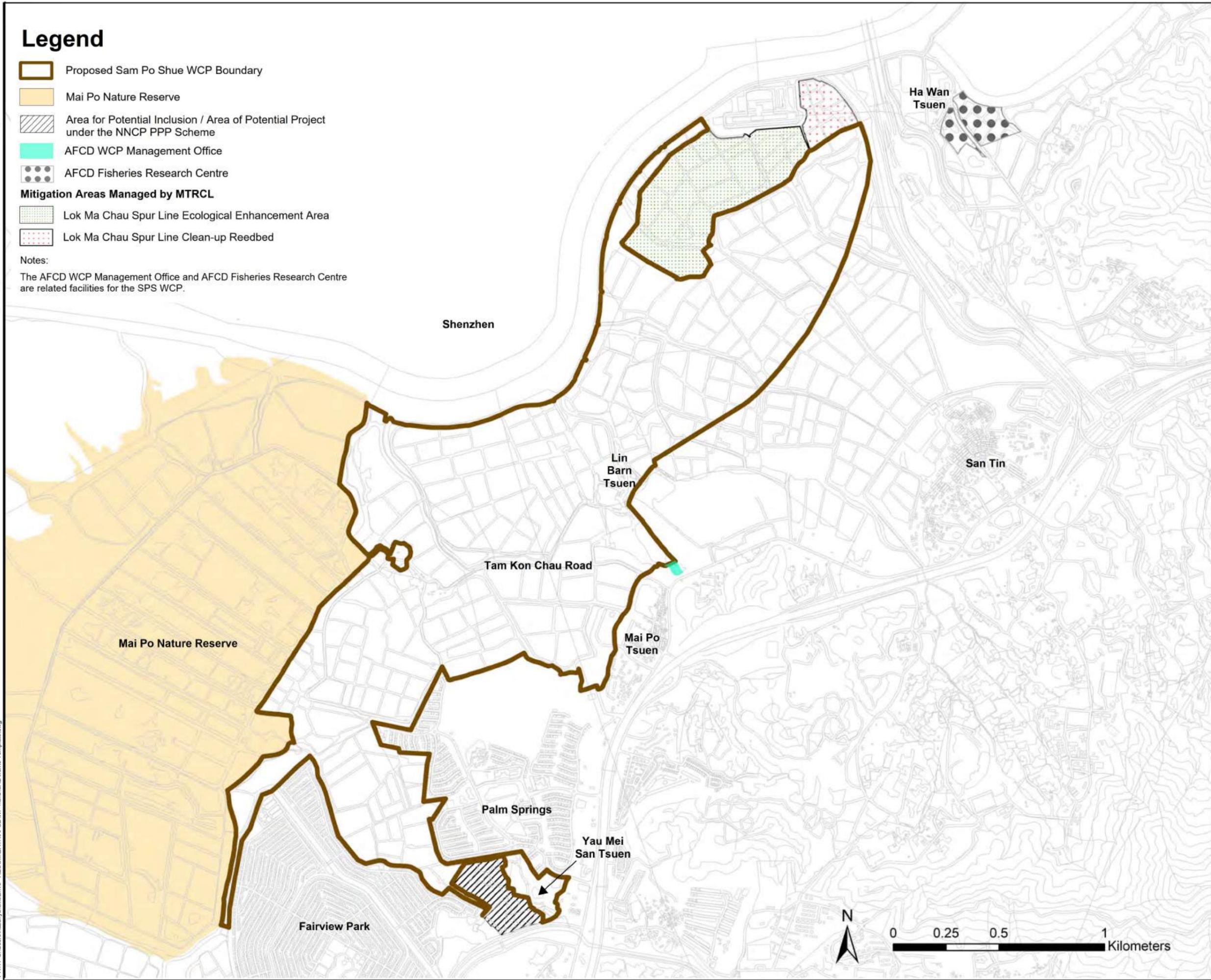
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Legend

-  Proposed Sam Po Shue WCP Boundary
-  Mai Po Nature Reserve
-  Area for Potential Inclusion / Area of Potential Project under the NNCP PPP Scheme
-  AFCD WCP Management Office
-  AFCD Fisheries Research Centre
- Mitigation Areas Managed by MTRCL**
-  Lok Ma Chau Spur Line Ecological Enhancement Area
-  Lok Ma Chau Spur Line Clean-up Reedbed

Notes:
 The AFCD WCP Management Office and AFCD Fisheries Research Centre are related facilities for the SPS WCP.



PROJECT
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SHEET TITLE
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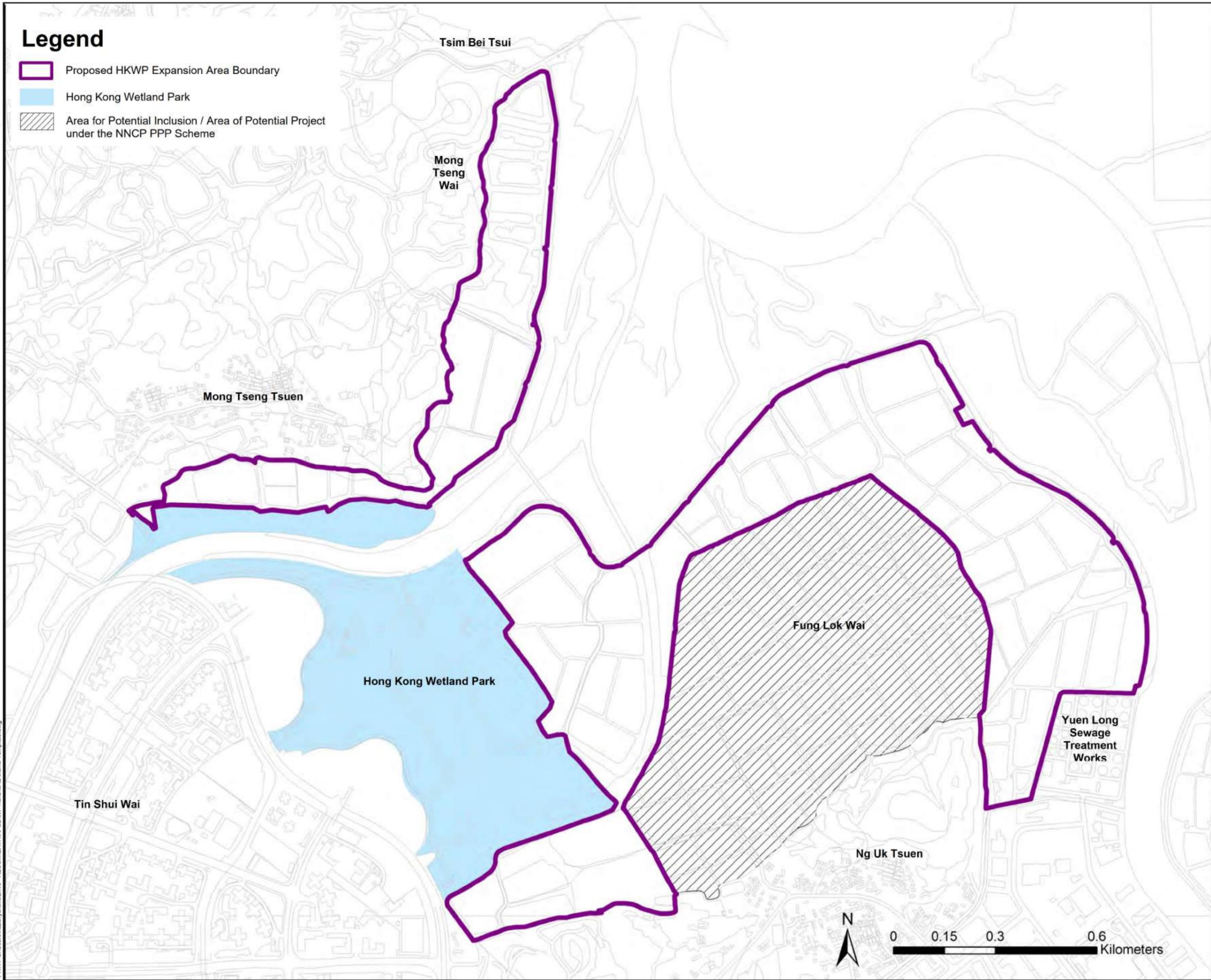
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Legend

-  Proposed HKWP Expansion Area Boundary
-  Hong Kong Wetland Park
-  Area for Potential Inclusion / Area of Potential Project under the NNCP PPP Scheme



PROJECT

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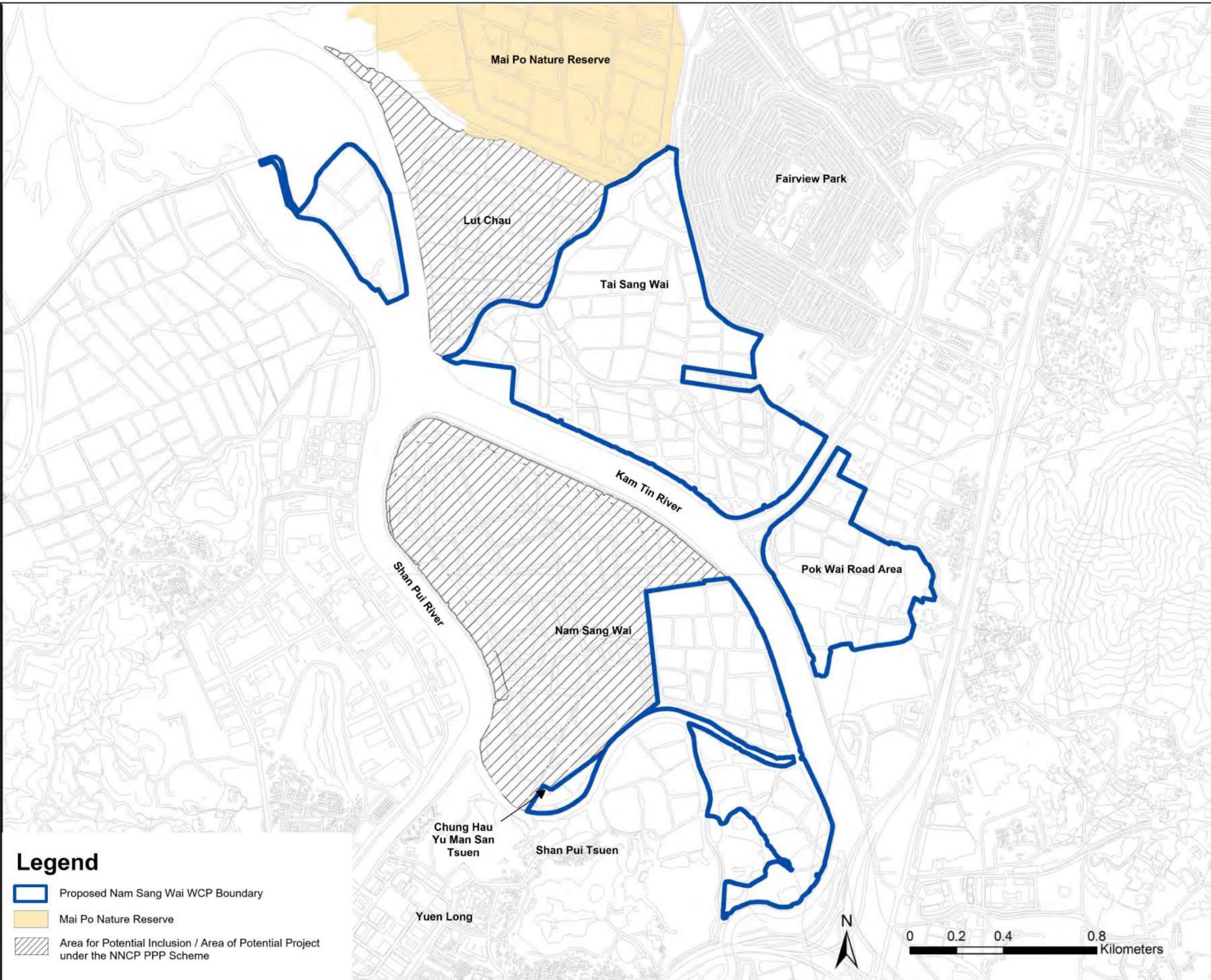
PROPOSED PARK BOUNDARY OF
 THE HKWP EXPANSION AREA

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60691033/SR/FIGURE 4.2

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Legend

-  Proposed Nam Sang Wai WCP Boundary
-  Mai Po Nature Reserve
-  Area for Potential Inclusion / Area of Potential Project under the NNCP PPP Scheme



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PROJECT NO.
 項目編號
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CONTRACT NO.
 合約編號
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SHEET TITLE
 圖紙名稱
 PROPOSED PARK BOUNDARY OF
 THE NSW WCP

SHEET NUMBER
 圖紙編號
 60691033/SR/FIGURE 4.3

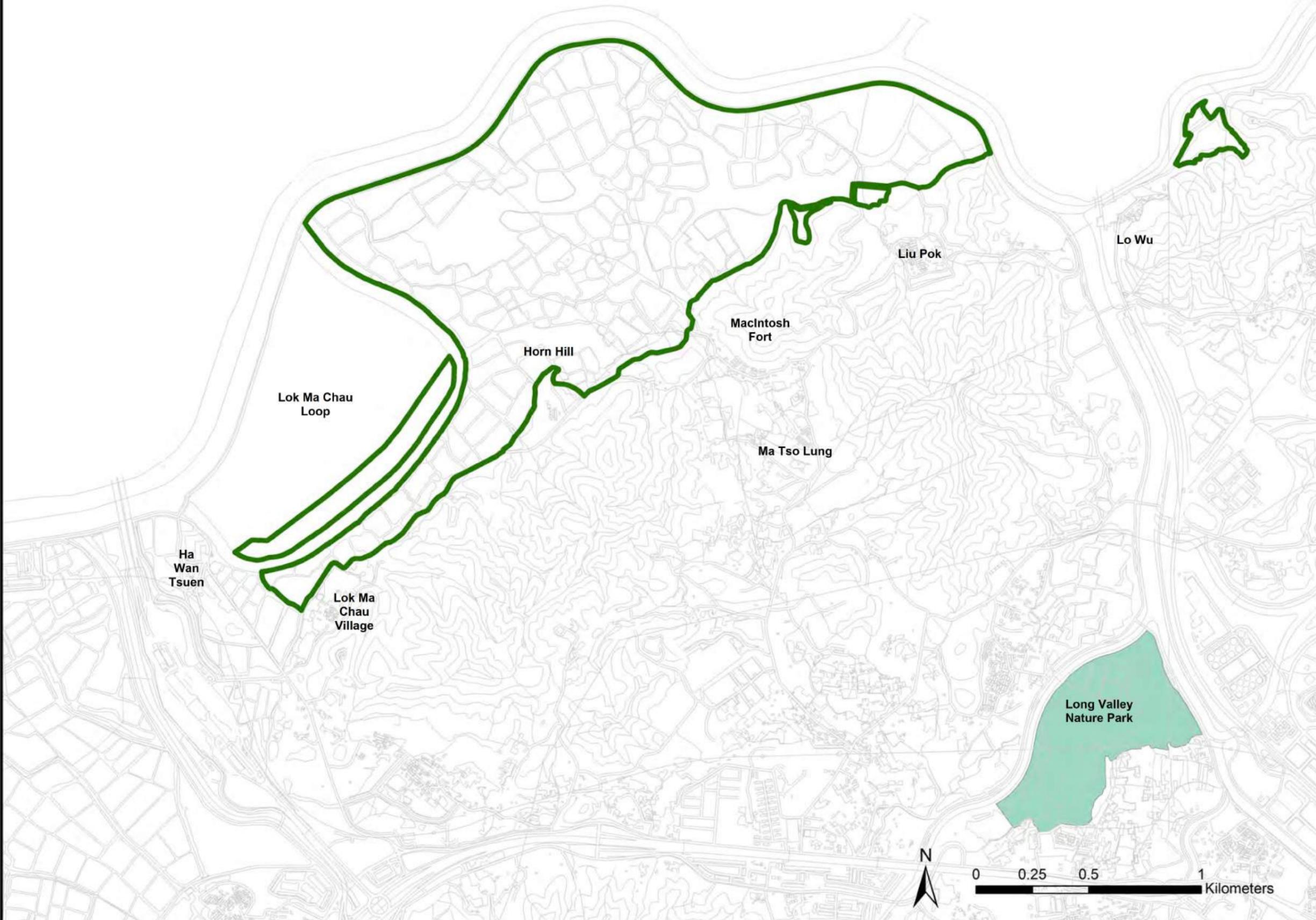
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Legend

-  Proposed Hoo Hok Wai WCP (including Sha Ling/Nam Hang area) Boundary
-  Long Valley Nature Park

Shenzhen



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SHEET TITLE
 圖紙名稱

PROPOSED PARK BOUNDARY OF
 THE HHW WCP (INCLUDING SL/NH
 AREA)

SHEET NUMBER
 圖紙編號

60691033/SR/FIGURE 4.4

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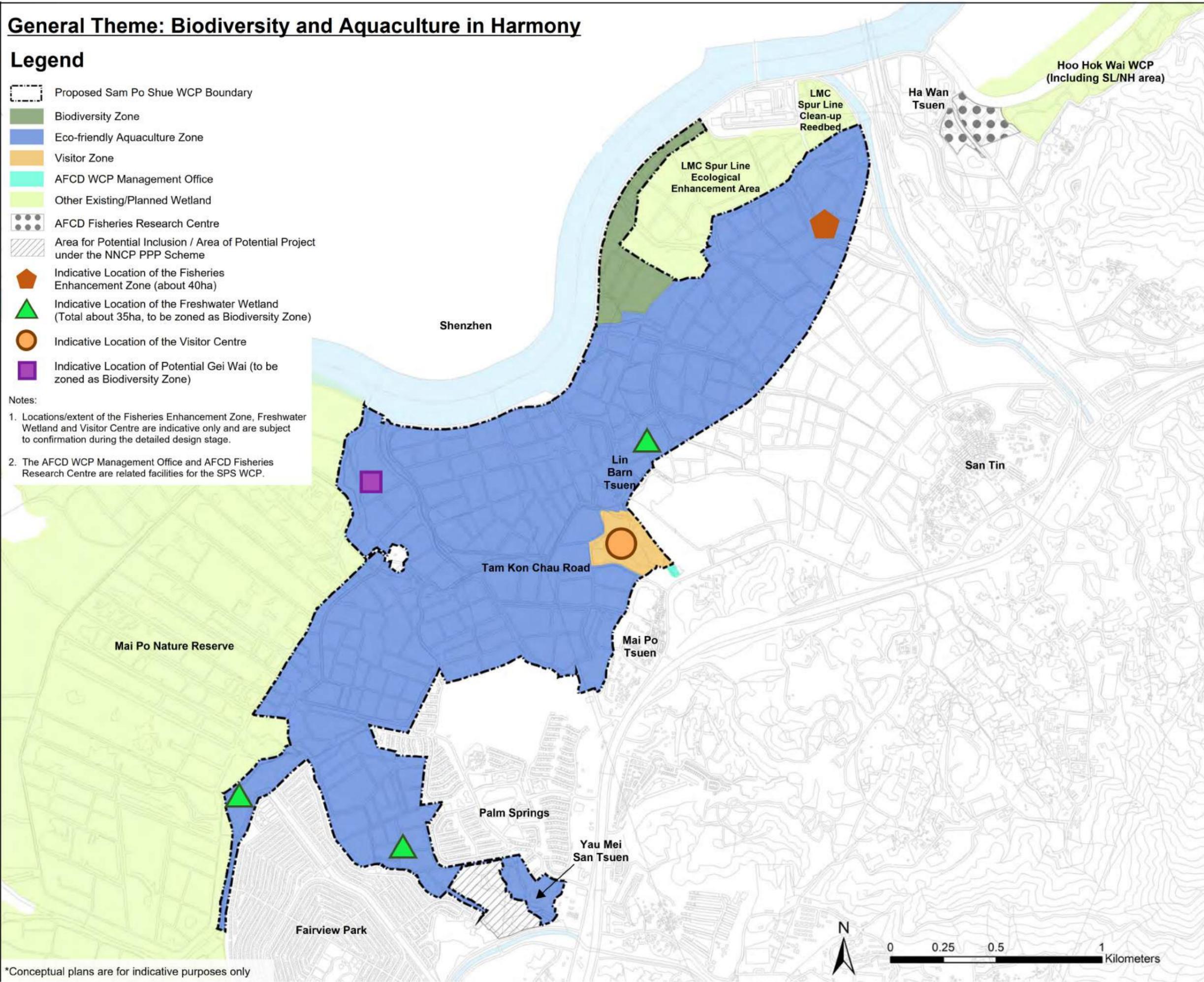
General Theme: Biodiversity and Aquaculture in Harmony

Legend

-  Proposed Sam Po Shue WCP Boundary
-  Biodiversity Zone
-  Eco-friendly Aquaculture Zone
-  Visitor Zone
-  AFCD WCP Management Office
-  Other Existing/Planned Wetland
-  AFCD Fisheries Research Centre
-  Area for Potential Inclusion / Area of Potential Project under the NNCP PPP Scheme
-  Indicative Location of the Fisheries Enhancement Zone (about 40ha)
-  Indicative Location of the Freshwater Wetland (Total about 35ha, to be zoned as Biodiversity Zone)
-  Indicative Location of the Visitor Centre
-  Indicative Location of Potential Gei Wai (to be zoned as Biodiversity Zone)

Notes:

1. Locations/extent of the Fisheries Enhancement Zone, Freshwater Wetland and Visitor Centre are indicative only and are subject to confirmation during the detailed design stage.
2. The AFCD WCP Management Office and AFCD Fisheries Research Centre are related facilities for the SPS WCP.



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CONCEPTUAL PLAN FOR THE
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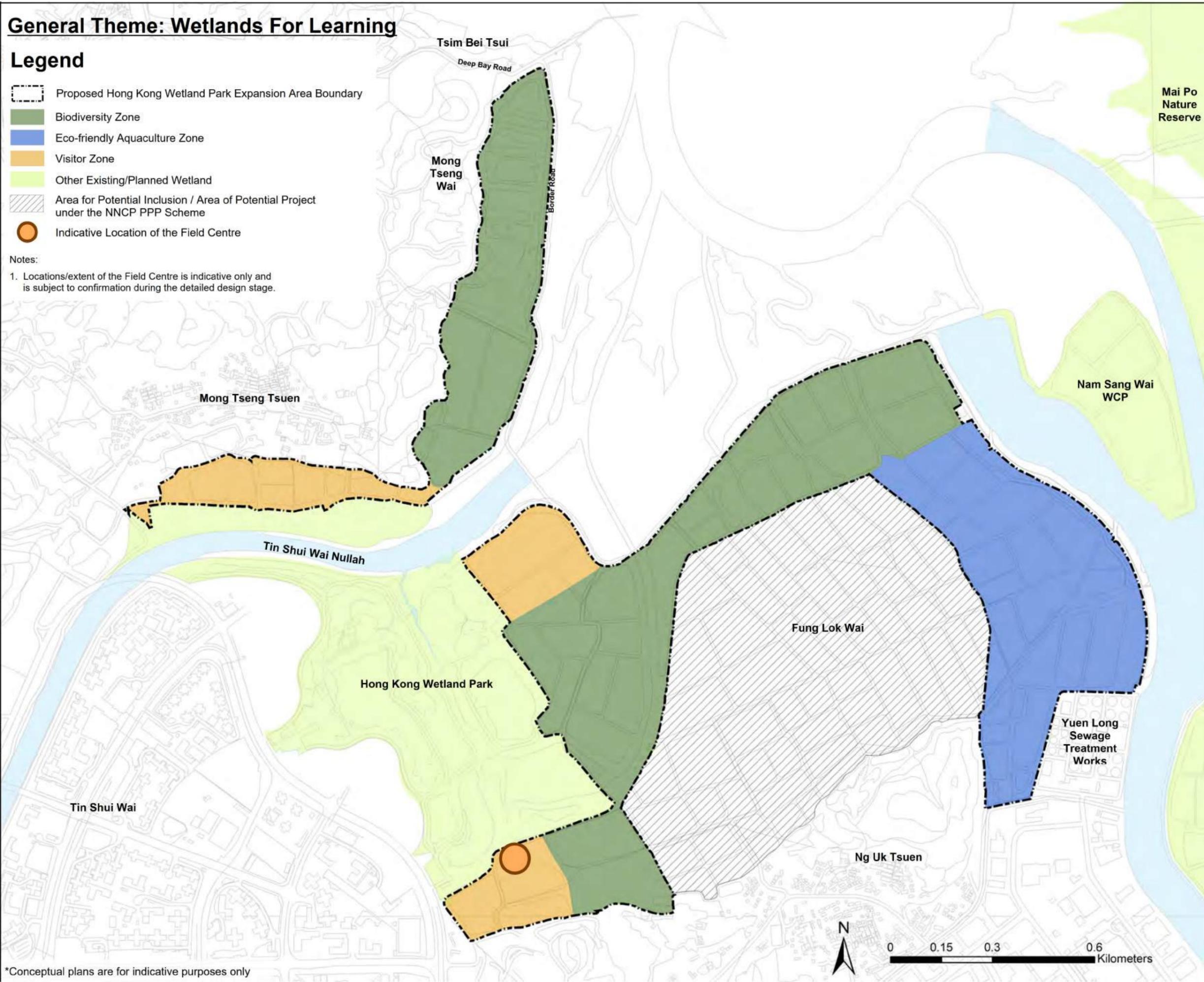
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General Theme: Wetlands For Learning

Legend

-  Proposed Hong Kong Wetland Park Expansion Area Boundary
-  Biodiversity Zone
-  Eco-friendly Aquaculture Zone
-  Visitor Zone
-  Other Existing/Planned Wetland
-  Area for Potential Inclusion / Area of Potential Project under the NNCP PPP Scheme
-  Indicative Location of the Field Centre

Notes:
 1. Locations/extent of the Field Centre is indicative only and is subject to confirmation during the detailed design stage.



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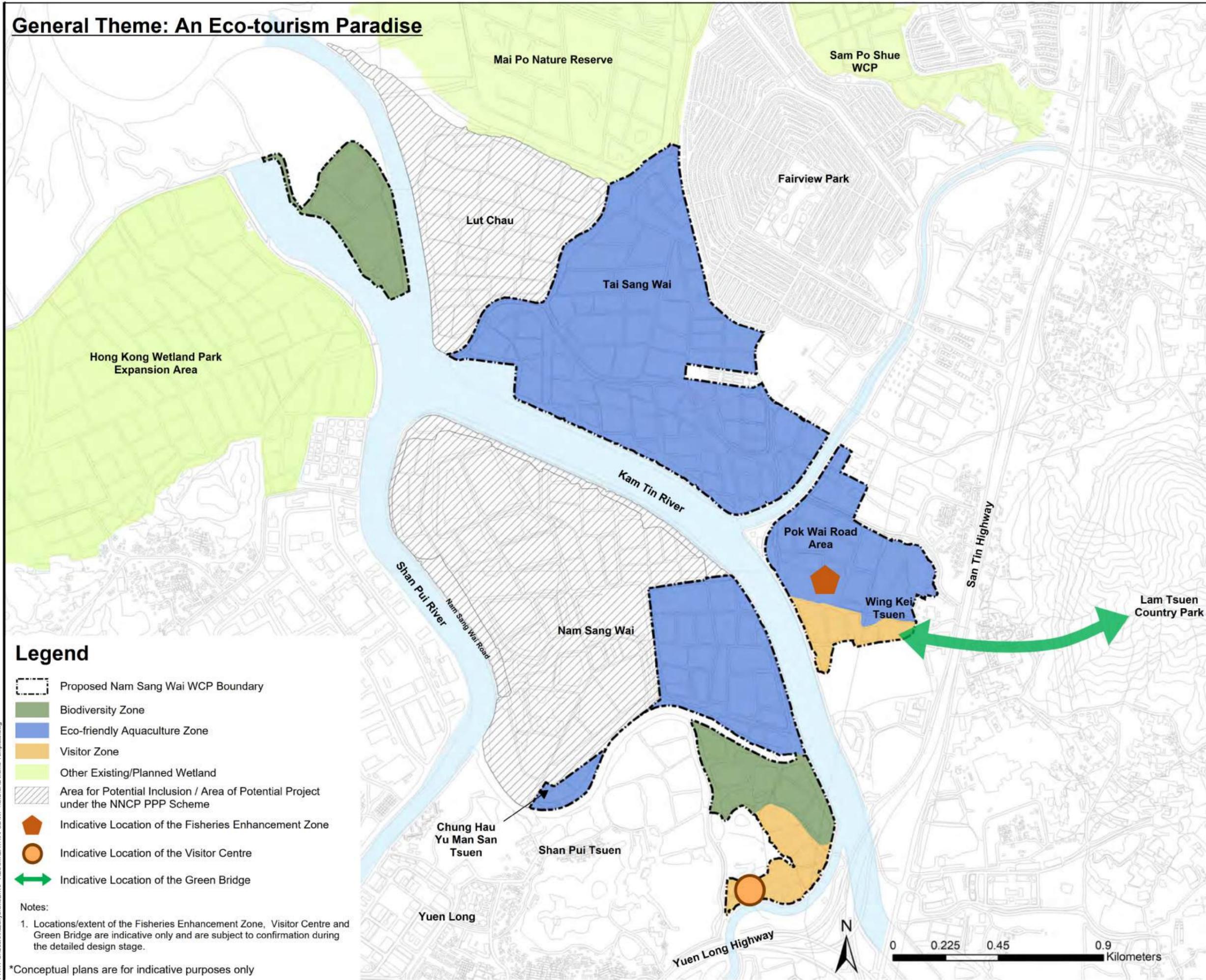
SHEET TITLE
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 AREA

SHEET NUMBER
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General Theme: An Eco-tourism Paradise

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Legend

- Proposed Nam Sang Wai WCP Boundary
- Biodiversity Zone
- Eco-friendly Aquaculture Zone
- Visitor Zone
- Other Existing/Planned Wetland
- Area for Potential Inclusion / Area of Potential Project under the NNCP PPP Scheme
- Indicative Location of the Fisheries Enhancement Zone
- Indicative Location of the Visitor Centre
- Indicative Location of the Green Bridge

Notes:

1. Locations/extent of the Fisheries Enhancement Zone, Visitor Centre and Green Bridge are indicative only and are subject to confirmation during the detailed design stage.

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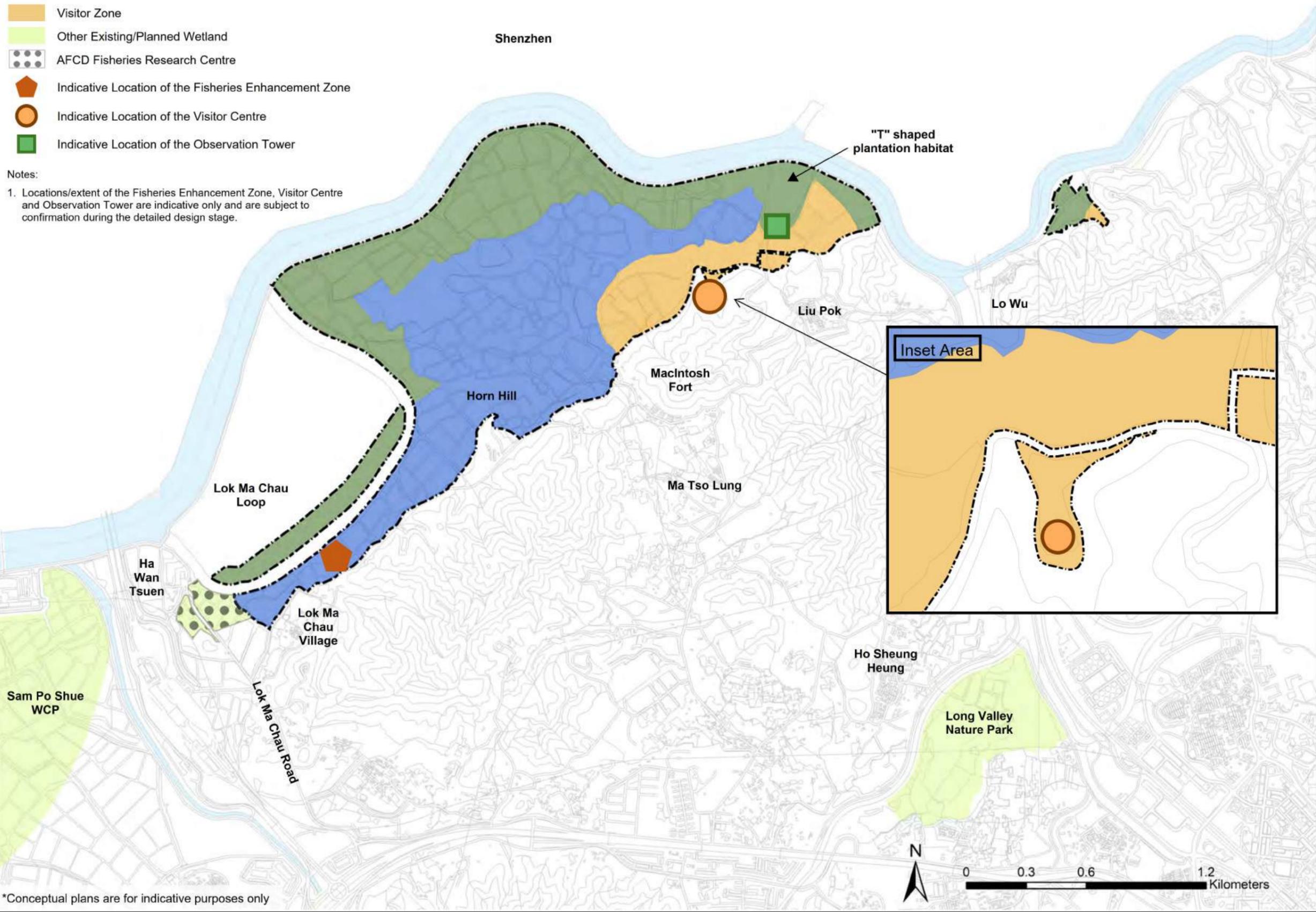
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General Theme: A Rural Retreat

Legend

- Proposed Hoo Hok Wai WCP (including Sha Ling/Nam Hang area) Boundary
- Biodiversity Zone
- Eco-friendly Aquaculture Zone
- Visitor Zone
- Other Existing/Planned Wetland
- AFCD Fisheries Research Centre
- Indicative Location of the Fisheries Enhancement Zone
- Indicative Location of the Visitor Centre
- Indicative Location of the Observation Tower

Notes:
 1. Locations/extent of the Fisheries Enhancement Zone, Visitor Centre and Observation Tower are indicative only and are subject to confirmation during the detailed design stage.



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