



ELM

香港 HONG KONG
2030+

Towards a Planning Vision and
Strategy Transcending 2030

Preliminary Concepts for the
East Lantau Metropolis



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1 Overview

Background

- 1.1 Planning for strategic infrastructure projects, such as Hong Kong-Zhuhai-Macao Bridge (HZMB), Tuen Mun-Chek Lap Kok Link, Hong Kong International Airport (HKIA) Three-Runway System and Tung Chung New Town Extension, has commenced since the publication of the Revised Concept Plan for Lantau in 2007. In the light of a further strengthened role of Lantau in Hong Kong, we should seek to harness the potential brought by the new infrastructure, explore new development opportunities, and create greater synergy with the existing and planned projects on Lantau.
- 1.2 Owing to the continued tight supply of developable land in Hong Kong, and acknowledging the long lead time required for land production, the Government has been striving to increase land supply to meet the population growth and to sustain economic and social development of Hong Kong through a multi-pronged land supply strategy. In 2014, the study on 'Enhancing Land Supply Strategy: Reclamation Outside Victoria Harbour and Rock Cavern Development' (ELSS) aimed to, among others, assess the feasibility of enhancing land supply through reclamation outside Victoria Harbour. According to the ELSS, the central waters of Hong Kong have been identified as having good potential for artificial island development since it is less ecologically sensitive than the eastern waters of Hong Kong which are bounded by shorelines of high ecological value, and the western waters which are heavily constrained by a number of major infrastructure projects. Taking on board the findings of the ELSS, the 2014 Policy Address announced the initiative to explore ways to further develop the eastern waters off Lantau Island and

neighbouring areas, with a view to developing an East Lantau Metropolis (ELM) for accommodating new population and a core business district (CBD) in addition to Central and Kowloon East for promoting economic development and providing job opportunities in Hong Kong.

- 1.3 The proposed ELM will be situated in mid-way between Hong Kong Island and the main island of Lantau (**Plan 1**). The concept is to create artificial island(s) by reclamations



Plan 1: Broad Location of the Proposed East Lantau Metropolis

in the waters near Kau Yi Chau and the Hei Ling Chau Typhoon Shelter, and to make better use of the underutilised land in Mui Wo.

- 1.4 The ELM, positioned as a long-term strategic growth area, is included in Lantau Development Advisory Committee's¹ (LanDAC) first-term work report submitted to the Chief Executive in January 2016. The development scale and feasibility of the ELM are subject

to further detailed study. This document aims to illustrate some preliminary analysis and planning concepts of the development of the ELM.

Vision

- 1.5 The ELM and the New Territories North (NTN) are two strategic growth areas proposed under the “Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030” (Hong Kong 2030+) to meet the long-term social, economic and environmental needs of Hong Kong beyond 2030.
- 1.6 Being a potential long-term strategic growth area, the ELM would be planned as a smart, liveable and low-carbon development cluster with the third core business district (CBD3) for Hong Kong through provision of sizeable land for housing and economic uses, and would generate ample employment opportunities. The ELM and its supporting transport infrastructure will facilitate the formation of a strategic transport link to enhance the connectivity between Hong Kong Island and Lantau, particularly the HKIA and Hong Kong Boundary Crossing Facilities (HKBCF) of HZMB. It could also help support Hong Kong's overall population and economic growth, and achieve a more balanced spatial development pattern for the territory.



(For Indication Only)

¹ The Chief Executive announced in the 2014 Policy Address the establishment of the LanDAC with a view to advising the Government on the opportunities brought by various major infrastructure proposals in Lantau, as well as the synergy effects of Hong Kong and the Pearl River Delta, and to formulate an overall economic and social development strategy for Lantau in balancing development and conservation.

2 Existing Conditions

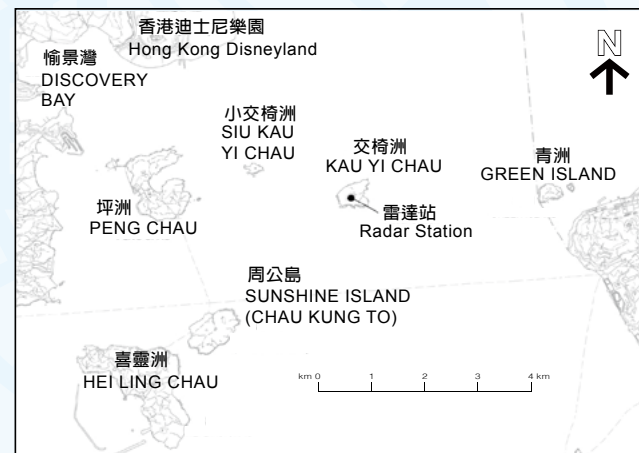
2.1 The ELM will be located in the central waters between Hong Kong Island and Lantau. There are a few islands with a fair amount of developments nearby (such as Cheung Chau and Peng Chau) and others with correctional and related facilities (such as Hei Ling Chau and Shek Kwu Chau) while most islands are uninhabited (such as Kau Yi Chau and Sunshine Island). Some marine facilities including fairways, anchorages and typhoon shelter are also found in the central waters.

Kau Yi Chau

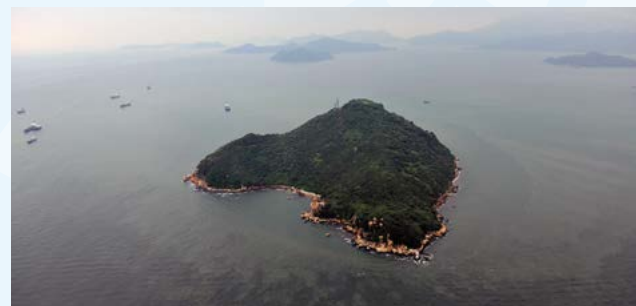
2.2 Kau Yi Chau (**Plan 2**), having a land area of about 23 ha, is currently uninhabited with only a radar station held under a Government Land Allocation and zoned “Government, Institution or Community (1)”. The planning intention of the remaining area, zoned “Conservation Area” (“CA”), is to conserve the existing natural landscape and character of Kau Yi Chau. Part of the central waters falls in areas zoned “Other Specified Uses” (“OU”) annotated “Container Terminal” and “Container Back-up Area” which were once intended for the long-term expansion of the container port and provision of port-related back-up facilities. However, container terminal use is no longer considered compatible with the strategic planning direction for tourism and recreational uses in northeast Lantau. Alternative locations for the future container terminal in other parts of the territory together with the need were examined under “Study on the Strategic Development Plan for Hong Kong Port 2030” (Port 2030 Study).

2.3 To the northwest of Kau Yi Chau is Tsing Chau Tsai Peninsula, including Penny’s Bay which is

predominantly occupied by the Hong Kong Disneyland. To the west are the uninhabited island of Siu Kau Yi Chau and the rural township of Peng Chau. To the immediate north, east and south are the Western Anchorages, Kau Yi Chau Dangerous Goods Anchorage (south of Kau Yi Chau) and the Western Fairway, which is one of the busiest fairways in Hong Kong waters.



Plan 2: Site Plan of Kau Yi Chau



Kau Yi Chau is located in the Central Waters between Hong Kong Island and Lantau

Hei Ling Chau

2.4 Hei Ling Chau (**Plan 3**) with an area of about 190 ha is primarily Government land. On the island, there

2 Existing Conditions

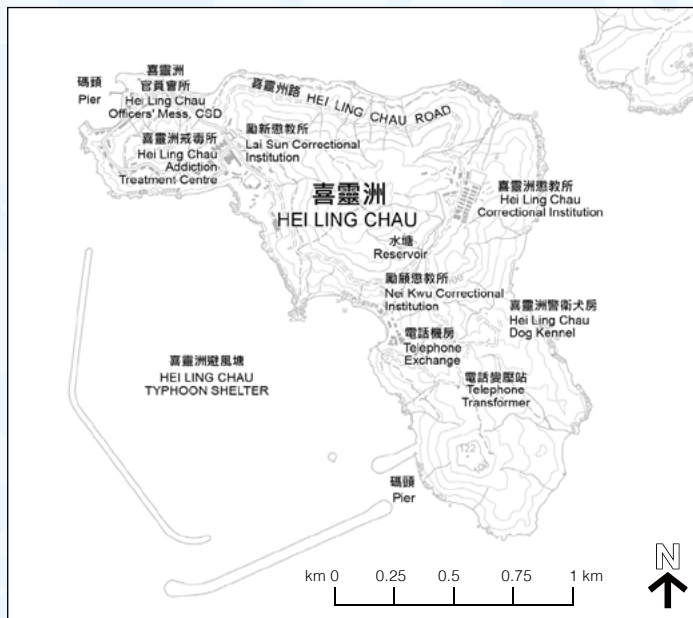
are four correctional facilities (including Hei Ling Chau Correctional Institution, Hei Ling Chau Addiction Treatment Centre, Lai Sun Correctional Institution and Nei Kwu Correctional Institution, with a total capacity of about 1,640 places; post-tied departmental quarters, and a staff mess), a dog kennel; basic infrastructure/utility facilities such as telephone exchange, telephone transformer and reservoir. The remaining part of the island is largely covered by lush greenery.

- 2.5 Hei Ling Chau is gazetted under the legislation as restricted/closed area under the management of the Correctional Services Department (CSD). Prior approval from or arrangement with CSD is required for social and official visits to the relevant correctional facilities. There is an existing pier at the north-western corner of Hei Ling Chau providing limited ferry services from Central via Peng Chau.

- 2.6 The Hei Ling Chau Typhoon Shelter with an area of about 77 ha is located to the immediate south-west of the island and is the only typhoon shelter in Hong Kong which could accommodate vessels with an overall length exceeding 50m and up to 75m. However, due to its remoteness, its utilisation is low in comparison with other typhoon shelters at or near Victoria Harbour.



Hei Ling Chau Typhoon Shelter



Plan 3: Site Plan of Hei Ling Chau



Existing Conditions of Hei Ling Chau

2 Existing Conditions

- 2.7 To the northeast of Hei Ling Chau is the uninhabited island of Sunshine Island and to the northwest is the Mui Wo township. Further south near Chi Ma Wan Peninsula is the Cheung Sha Wan Fish Culture Zone (FCZ), which is designated by the Agriculture, Fisheries and Conservation Department (AFCD) and is the second largest FCZ in Hong Kong.

Mui Wo

- 2.8 Mui Wo, overlooking Silver Mine Bay Beach, is largely a rural township with a population of about 5,900 in 2015. Apart from village settlements², there are also medium-density public housing (e.g. Ngan Wan Estate and two Subsidised Sale Flats developments under construction), low- to medium-density private residential developments, community facilities (e.g. Government offices, Mui Wo Municipal Services Building comprising a market, a library and a sports centre, Mui Wo Fire Station and South Lantau Police Station, etc.) as well as active and fallow agricultural land. Small-scale commercial and recreational facilities are also found. The majority of the low-lying area in Mui Wo is private land while the hilly areas are largely Government land (**Plans 4 and 5**).
- 2.9 Mui Wo is connected with Tung Chung New Town, HKIA and other parts of Lantau via South Lantau Road and Tung Chung Road which are restricted roads requiring permits for access. Ferry services provide direct connection between Mui Wo and

² There are eight recognised villages in Mui Wo, namely. Luk Tei Tong, Tai Tei Tong, Chung Hau, Mui Wo Kau Tsuen, Pak Ngan Heung, Mang Tong, Tung Wan Tau and Man Kok Tsui.



水泥廠
Cement Works



巴士廠
Bus Depot



梅窩渡輪碼頭及
鄰近住宅發展
Mui Wo Ferry Pier &
nearby residential
developments



銀礦灣泳灘
Silver Mine Bay Beach



銀礦灣酒店
Silvermine Beach Resort



梅窩政府合署
Mui Wo Government Offices

Plan 4: Existing Conditions of Mui Wo

2 Existing Conditions

Central as well as other parts of Lantau and outlying islands, such as Discovery Bay, Chi Ma Wan, Peng Chau, etc.

- 2.10 The Silver Mine Bay Beach and the Silvermine Beach Resort are located at the northern waterfront. The ferry pier and a number of Government uses and utilities (such as bus depot, cement works, Mui Wo Refuse Transfer Facility, Mui Wo Sewage Treatment Works and a helicopter landing pad) are located along the reclaimed land on the southern waterfront. Uphill in the south is the Silver Mine Bay Water Treatment Works (WTW), which is a Potentially Hazardous Installation (PHI) with a 1km consultation zone covering a significant portion of Mui Wo.



銀濤軒
Silver Waves Court



銀灣邨
Ngan Wan Estate



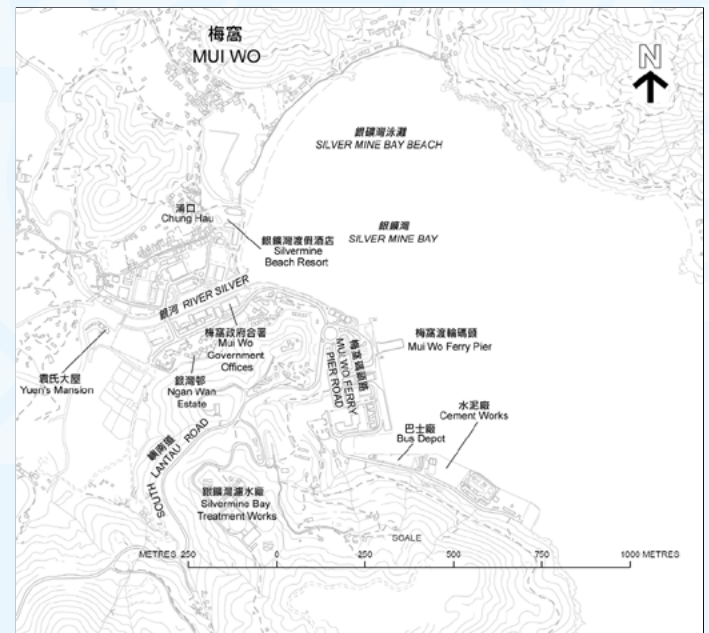
袁氏大屋
Yuen's Mansion



梅窩市政大樓
Mui Wo Municipal Services Building



銀河
River Silver



Plan 5: Site Plan of Mui Wo

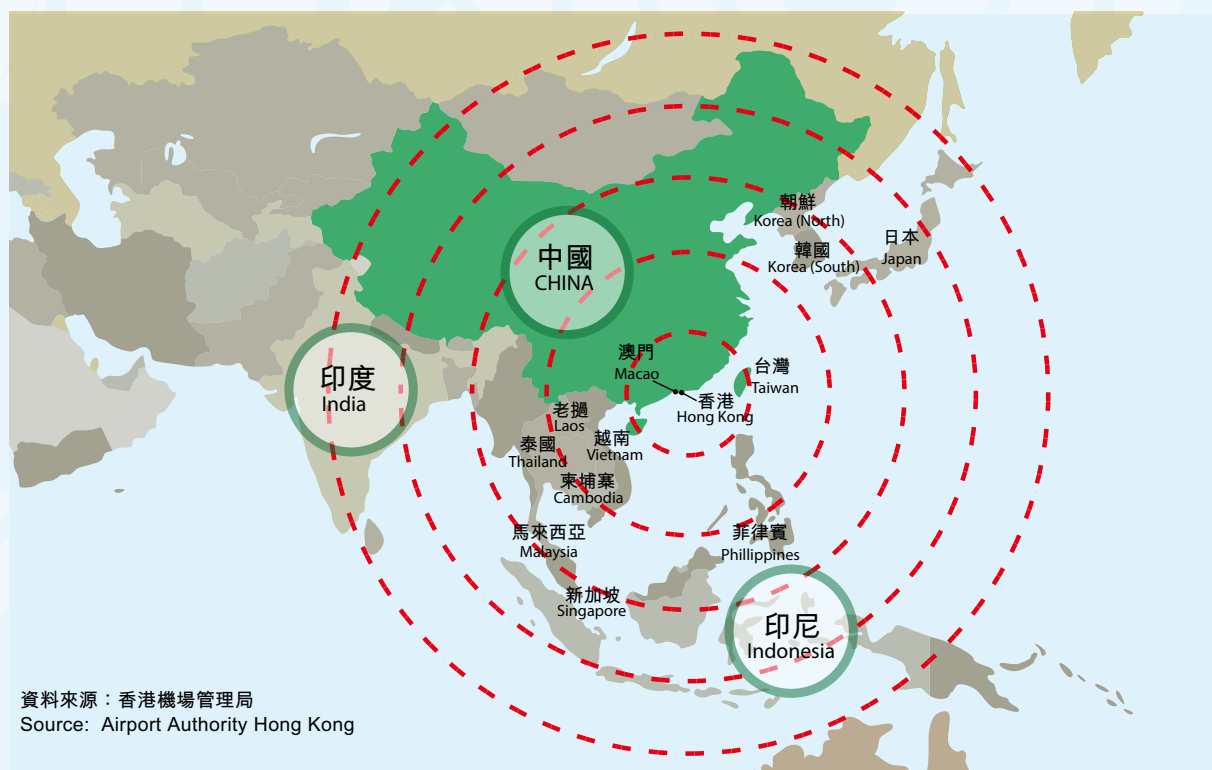
3 Opportunities & Constraints

I. Opportunities

A Strategic Location

3.1 The ELM will enjoy the geographical advantage of being close to the traditional CBD (i.e. Central and the adjoining areas on Hong Kong Island) and to Lantau where a number of strategic infrastructure and urban developments are in the pipeline or under planning. In addition to the North Commercial District on the airport island, the topside commercial development on the

artificial island of the HKBCF of HZMB, Siu Ho Wan development and Sunny Bay reclamation, the ELM would buttress Lantau's position as the confluence of the Greater Pearl River Delta and the "double gateway" of Hong Kong rendered by the presence of the HKIA and HZMB.

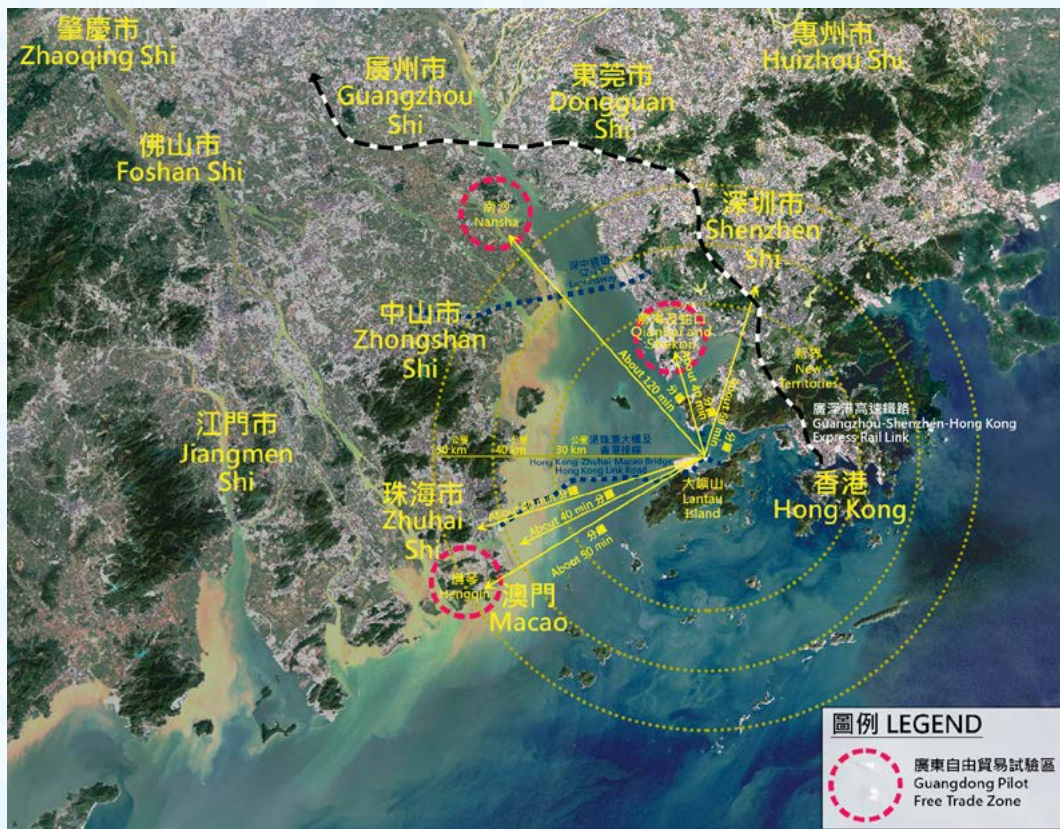


International Transport Hub - Reaching Half of the World Population within Five Hours' Flying Time

3 Opportunities & Constraints

3.2 To the east, Kau Yi Chau is about 4km from Hong Kong Island West which is equivalent to the distance between Central and North Point. With new strategic transport infrastructure, the ELM could be connected to the traditional CBD conveniently and efficiently, hence reinforcing the existing business node around Victoria Harbour as well as creating a new metro-front in the territory.

3.3 Taking the advantage of enhanced connectivity, proximity to the traditional CBD, easy access to the HKIA and HZMB, Lantau and the central waters exhibit great potential for expanding and diversifying Hong Kong's economic capacity.



One-hour Inter-City Traffic Circle within the Greater Pearl River Delta Region

3 Opportunities & Constraints

B Scope for Sizeable Reclamation

- 3.4 Chinese White Dolphins are found in the western waters and Finless Porpoises are active in the southern waters of Lantau, the central waters are relatively less ecologically sensitive. Subject to addressing the relevant constraints, sizeable reclamation in the central waters would provide ample opportunities for comprehensive land use planning and design.
- 3.5 In comparison with urban renewal and rezoning, developing the ELM through reclamation would not affect existing development or settlement.

C Undeveloped and Underutilised Space/Land

- 3.6 The northeast Lantau was previously identified as the primary area for expansion of Hong Kong's port facilities. The draft North-East Lantau Outline Zoning Plan with port development as the major development theme was first gazetted in 1995. In view of the port cargo forecast and the strategic planning direction for tourism and recreational uses in northeast Lantau, the need and alternative location for the future port facilities have been examined under the Port 2030 Study. As such, the waters previously identified for container terminals at Kau Yi Chau present potential for other uses.



Kau Yi Chau is about 4km from Hong Kong Island West

3 Opportunities & Constraints

- 3.7 Reclamation at and near the currently underutilised Hei Ling Chau Typhoon Shelter (about 77 ha) at an appropriate scale could provide more developable land. On the other hand, the relocation of the existing correctional and related facilities in Hei Ling Chau could help release about 20 ha of Government land ready for development subject to, amongst others, identification of suitable sites for relocation which can meet CSD's operational and security requirement as well as addressing the ecological concerns.
- 3.8 The underutilised land in the existing Mui Wo township and its fringe areas offers opportunities for upgrading and re-planning of the area. Moreover, the Government uses and utilities located at the southern waterfront (including sewage treatment works, cement works and bus depot, etc.) of about 3 ha could be consolidated or relocated to facilitate replanning of the area. As the Civil Engineering Development Department (CEDD) has identified a suitable site for rock cavern development at the hillside to the south of these existing facilities, the feasibility of accommodating the Government uses in rock cavern would be explored at a later stage.



The Island West Transfer Station - an example of Cavern Development in Hong Kong

©CEDD

D Housing Development

- 3.9 With enhanced connectivity and infrastructure, the potential sizeable artificial island(s) in the central waters provide opportunity for major urban development. Some of the underutilised Government land could also be replanned. For example, relocating the correctional and related facilities currently located in Hei Ling Chau and accommodating suitable Government uses in cavern will further release developable land for housing and other developments.



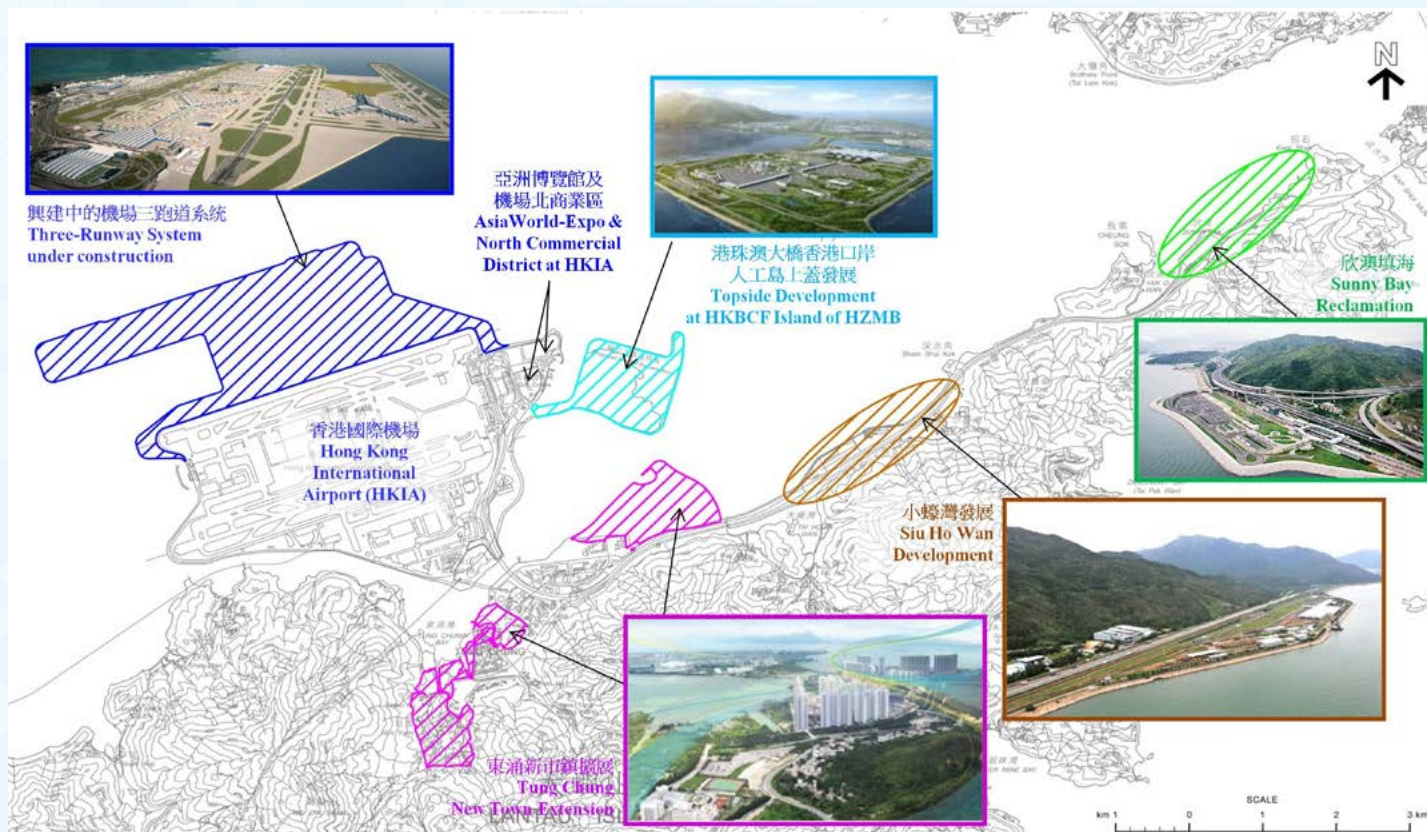
Provision of Land for Housing and other Developments

3 Opportunities & Constraints

E Economic Opportunities

3.10 With the creation of sizeable land through reclamation, the ELM has great potential to provide ample commercial floorspace for smart, innovative and quality premises, creating a financial and producer services hub with a variety of quality jobs which is strongly tied with the airport and Hong Kong's connector role in the region, capitalising on the new economic infrastructure on North Lantau.

3.11 The ELM is aimed to boost the economic development and employment opportunities in Hong Kong. The future development of the Southwest New Territories (SWNT) with a large amount of population and employment could lead to a more balanced development pattern in Hong Kong. The roles of the ELM and the traditional CBD as well as the commercial developments at the North Lantau Corridor (**Plan 6**) are complementary and synergistic.



Plan 6: Major Developments in North and Northeast Lantau (For Indication Only)

F Tourism, Heritage and Recreational Resources

3.12 The scenic sea views along the Mui Wo waterfront as well as the famous tourist spots, such as Silvermine Bay Waterfall and Silver Mine Bay Beach, are invaluable natural resources in Hong Kong. There is ample opportunity to promote eco-tourism and water sports in Mui Wo. For example, Silver Mine Bay Beach offers some water sports and coastal recreation facilities. The hillside in Mui Wo is also popular for hiking and outings. As such, there is scope to provide more diversified outdoor activities at Mui Wo for the enjoyment of local residents and visitors.



Silvermine Beach Resort and Silver Mine Bay Beach

3.13 Furthermore, the heritage attractions including graded historic buildings (such as Yuen's mansion, a compound with six Grade 2 historic buildings, and the watchtower of Luk Tei Tong which is a Grade 3 historic building), archaeological sites (viz. Chung Hau Archaeological Site

and Mang Tong Archaeological Site), old village path to Nam Shan and the authentic recognised villages offer good potential for cultural heritage tourism, which could benefit the local economy.



Yuen's Mansion

G Improvement in Transport Infrastructure

3.14 Development of the ELM offers the opportunity to enhance the connectivity between the traditional CBD and Lantau (including HKIA), as well as the Northwest New Territories (NWNT), subject to further detailed study, including examination of the connections to Hong Kong Island West and Kowloon West.

3 Opportunities & Constraints

II. Constraints (Plans 7 and 8)

A Ecological Constraints

- 3.15 Kau Yi Chau should be preserved as a conservation area. As some marine benthic species, i.e. coral communities, have been identified around the waters of Kau Yi Chau, consideration should be given to translocating the coral to suitable locations to compensate for the loss of coral areas as ex-situ mitigation for the development, if avoidance or minimisation of these impacts on the coral communities is not feasible.
- 3.16 According to AFCD, a significant land area at the central portion of Hei Ling Chau and the adjacent Sunshine Island provide habitat for the Bogadek's Burrowing Lizard which is a rare and endemic species with restricted distribution. Moreover, the northern coast of Hei Ling Chau is a key coral area which should also be duly protected. As such, the development footprint of Hei Ling Chau should primarily be on the newly reclaimed land, and development on the island should be confined to the areas of the existing correctional and related facilities.



Bogadek's Burrowing Lizard

- 3.17 In Mui Wo fringe, the existing fung shui woodland, the natural stream courses and the farmland scattered around the low-lying flatland that of ecological value should be preserved.



An Overview of Mui Wo

- 3.18 White-bellied Sea Eagle is a species of conservation concern. Green Island, to the northwest of Kennedy Town, is one of their breeding sites while Penny's Bay was also recorded in 2007 as one of their nesting locations.



White-bellied Sea Eagle

©AFCD

B Environmental Constraints

- 3.19 Potential impacts on water quality and hydraulics should be carefully examined during further study to avoid any adverse impacts of the reclamation and alignment of transport linkage between the ELM and Hong Kong Island West on the marine ecology and water quality within the surrounding waters.
- 3.20 Given the configuration of the Silver Mine Bay, any large-scale reclamation should be avoided to prevent potential adverse impact on water quality, hydrodynamics and the marine ecology. Since there are flight paths across the surroundings of Kau Yi Chau, the potential aircraft noise impact to the ELM would be taken into account in the early planning stage.

C Marine Constraints

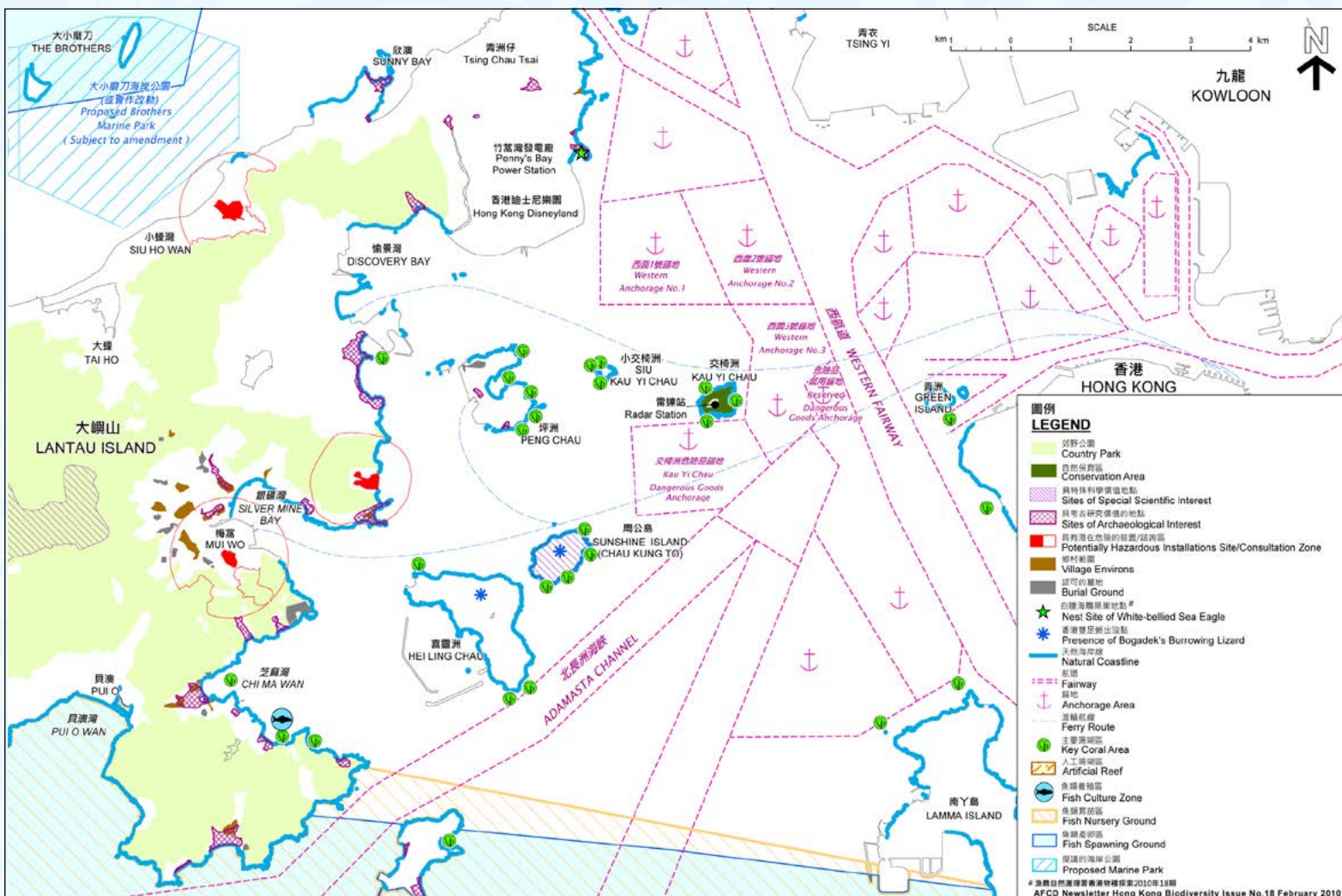
- 3.21 Fairways and waterways near the waters to the east and south of Lantau are critical to operation of the port, navigation safety and marine traffic. Kau Yi Chau is about 600m from the Western Fairway, which is one of the busiest and vital fairways in Hong Kong. Large-scale reclamation may pose risks to the passing marine vessels due to reduced water body and congested fairways. It is also essential to provide adequate buffer between the reclamation and navigation fairway.



Busy Marine Traffic in Hong Kong

- 3.22 Major anchorages (including Kau Yi Chau Dangerous Goods Anchorage and Western Anchorage No. 3) may also be affected, which would likely require re-provisioning should they be displaced. Besides, the reclamation at and near Hei Ling Chau Typhoon Shelter would require either relocating the typhoon shelter to an alternative location or reprovisioning at a reduced scale. In short, the continued operation of the port, marine traffic and the safety of fairways should be ensured in the event of reclamation, and necessary mitigation measure should be provided.
- 3.23 The impact of reclamation on existing ferry routes, such as routes between Central and Mui Wo/ Peng Chau/ Discovery Bay, would be carefully assessed. On the other hand, new ferry services could be explored as an alternative transport mode.

3 Opportunities & Constraints



Plan 7: Development Constraints of Kau Yi Chau and Hei Ling Chau (For Indication Only)

D Infrastructure Constraints

3.24 The potential reclamation site is in the middle of the central waters and there is a lack of transport or infrastructural facilities. Hei Ling Chau is a closed area and is only accessible to other areas via waterborne transport. The existing transport and other essential infrastructure are limited. Even in Mui Wo, the existing transport and supporting infrastructure, such as water supply, sewerage, electricity, waste disposal and other utilities, would not be able to cope with the substantial increase in population and activities envisaged in the ELM. As such, new transport and supporting infrastructure would be required to support the future development.

E Fisheries Resources

3.25 The reclamation and other associated marine works for the ELM may bring potential impacts to the fisheries resources as well as the capture fisheries and marine fish culture in the nearby waters. Its potential impacts would need to be further studied and examined.

F Local Constraints

3.26 Due to the presence of considerable private land under fragmented ownership, developments at Mui Wo may involve complicated clearance of scattered structures, land resumption and re-housing issues. Existing village environs, burial grounds, country parks, ecologically-sensitive areas (such as fung shui woodland) and heritage sites should also be preserved.

G Potentially Hazardous Installation (PHI) Constraint

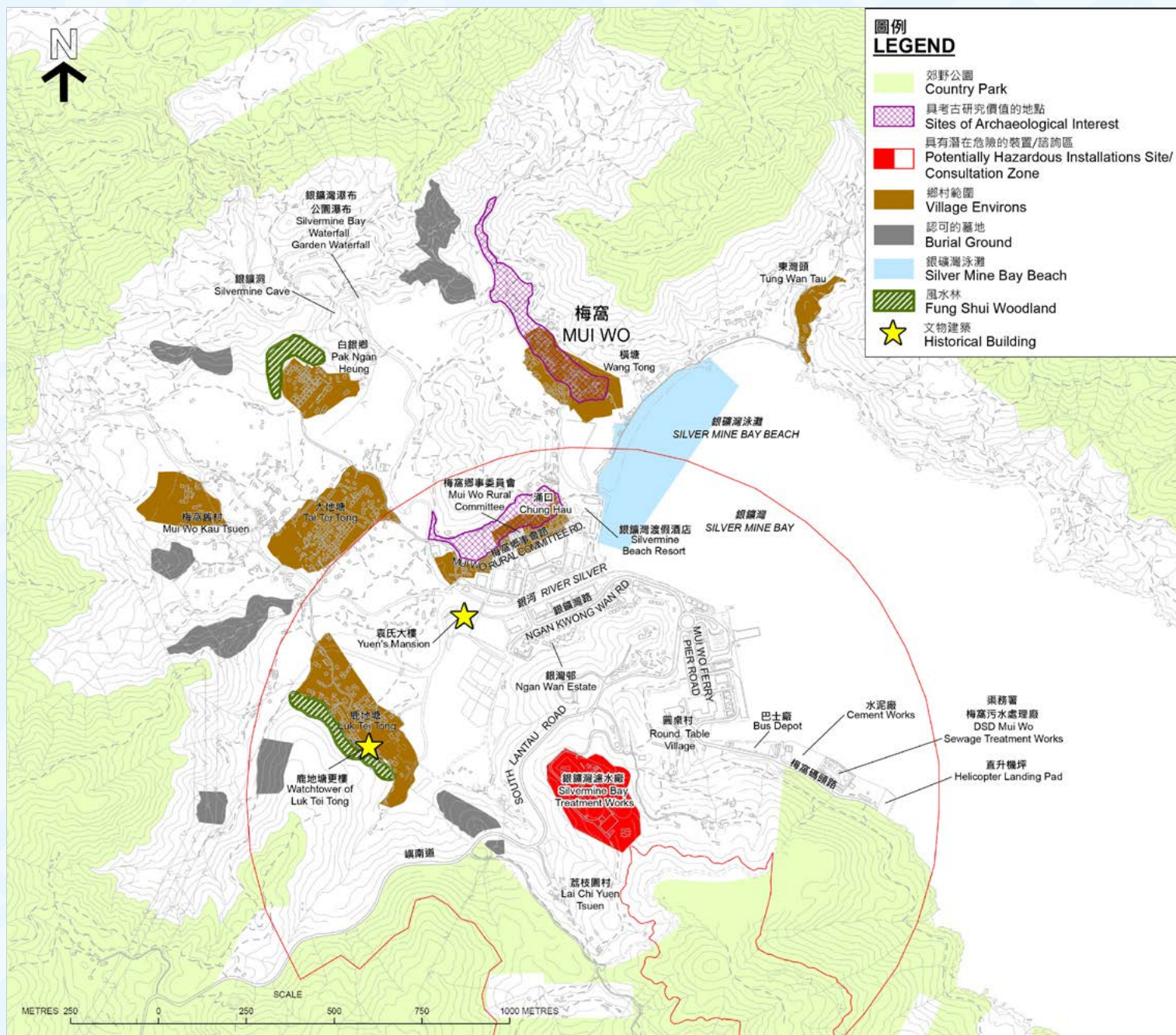
3.27 The Silver Mine Bay WTW is classified as a PHI due to the use and storage of liquid chlorine on site. Developments within the Consultation Zone of the PHI require hazard assessment to ascertain their feasibility. There may be opportunity to explore downsizing the WTW by reducing the quantity of chlorine storage. Alternatively, the subject facility may be relocated or mitigation measures to reduce risks could be implemented. The future location of new WTW should complement the overall development of the ELM.

H Land Use Constraints

3.28 It is necessary to identify suitable areas for relocation purposes to ensure that any development proposals of the correctional facilities on Hei Ling Chau could meet their operational and security requirements and would not cause any undue disruption to their operation. Detailed feasibility and technical studies would need to be carried out for further planning and implementation.

3.29 The Deed of Restrictive Covenant of the Hong Kong Disneyland has stipulated land use, building height and other restrictions on the northeast Lantau area. The proposal to create artificial island(s) in the central waters would need to take into account the restrictions imposed under such Deed.

3 Opportunities & Constraints



A Creating Economies of Scale for Better Planning and Design

- 4.1 The proposed ELM would create the necessary critical mass for the urban and economic developments and achieve cost-effectiveness in the provision of substantial infrastructure as well as strategic benefit to the development in and around the ELM, in particular those at North Lantau. In the territorial context, it would also help promote a more balanced overall development pattern for Hong Kong. Besides, the creation of sizeable developable land would allow ample opportunities for comprehensive planning, design and engineering, as well as the adoption of various innovative, smart and green initiatives.



Central - Hong Kong's Traditional CBD

B Forming a New Core Business District

- 4.2 A CBD in the ELM could be created to complement the traditional CBD in Central and Kowloon East forming an extended metropolitan business core to provide land supply to meet the demand for Grade A offices and other business uses, to provide additional employment opportunities, and to sustain the long-term economic growth of Hong Kong. The new core business node could be positioned as Hong Kong's CBD3, concentrated within a walkable radius of future potential railway stations.
- 4.3 By developing a new CBD in the ELM, more employment opportunities in the area will be created and the traffic demand from Lantau outward to the main urban areas during peak hours may be reduced. A holistic view in the planning of new developments should also be taken so that cross-district travel patterns or concentration of employment in the traditional CBDs could be adjusted.



Kowloon East - Hong Kong's CBD2

4 Overall Planning Approaches

C Embracing Natural Features

- 4.4 In view of the ecological values of Kau Yi Chau, which is currently largely zoned “CA”, innovative measures, such as creation of water channels to separate Kau Yi Chau from the reclamation, would be adopted with a view to minimising the potential impact of the reclamation on ecology and hydrodynamics. The same approach may also be adopted for the reclamation near Hei Ling Chau. Green channels and retention lakes which form part of the sustainable drainage system could be integrated in the layout design to serve as green spines and public amenities. These water and natural features could be linked together to create a water-friendly environment for embracing the natural environment and serving as visual corridors.

D Fostering Urban-Rural-Nature Integration

- 4.5 Mui Wo is rural in nature with a number of village settlements and agricultural land at the fringe areas. The area is endowed with rich landscape and ecological resources as well as cultural heritage. As such, a harmonious approach will be adopted for Mui Wo to foster urban-rural-nature integration. The flat land adjacent to the existing rural township provides opportunity for development at an appropriate scale to produce clustering effect. The beachside could be enhanced to become an activity hub with waterfront promenade for the enjoyment of local residents as well as visitors and tourists. Further north along Silver Mine Bay Beach could be enhanced and upgraded to

become a recreational and tourist node for eco-tourism and water sports developments. Good quality farmland within the “Agriculture” (“AGR”) zone could be preserved for agricultural use as far as possible.

E Enhancing Accessibility and Connectivity

- 4.6 A comprehensive transport network to promote both external and internal accessibility of the ELM is essential. Under the principle of sustainable development, better integration and connectivity with the urban areas and opportunities for strategic transport initiatives will be explored.
- 4.7 The development of the ELM will capitalise on the enhanced accessibility brought by planned and possible new transport infrastructure to pursue a transit-oriented development concept. Adopting railway as the backbone of the passenger transport system, land uses and railway development will be planned in an integrated



Railway as the Backbone of Public Transport System

manner. Major residential, commercial and community facilities will be planned around the future potential railway stations, with development intensity descending from the railways stations. The railway network will be complemented by appropriate road links, as well as other environmentally friendly commuting modes such as trams, cycling and walking to facilitate green mobility. Ferry services could also provide an alternative means of transport.

F Smart, Green and Resilient City

- 4.8 The concept of smart, green and resilient city would be adopted in the planning and design of the ELM in creating a better place to live, work, do business, pursue leisure and study. A smart, green and resilient city is the integration of the following components:

Smart: Technology will be the enabler to facilitate resource optimisation, smart growth and smart living. During the design stage of the ELM, a well planned information and communications technology (ICT) infrastructure network could promote the ELM into a smart and efficient community.

Green: The idea of green initiatives may proceed in three directions, including resource management, urban development and planning of infrastructure. For resource management, it is suggested to optimise the existing underutilised land and encourage rainwater collection and recycling, effluent reuse, centralised waste treatment, waste to energy, district cooling system, etc. On urban development, it is recommended to encourage the promotion of green buildings, green

communities and green districts. Blue-green infrastructure concepts and eco-shorelines would be incorporated into infrastructure facilities for promoting greening, biodiversity and near-water activities.

Resilient: Being a strategic growth area beyond 2030, we shall adopt the best practice and latest planning and engineering standards and guidelines in planning the ELM to ensure that it could remain functional and be able to cope with uncertainties, especially in the face of climate change. For instance, the reclamation level and infrastructure at the coastal areas should be resilient to extreme weather conditions.

Smart Use of Land Resources

- 4.9 A compact rail based development model complemented by other environmentally friendly transport modes will be considered in the ELM to optimise the use of scarce land resources.
- 4.10 It is worth exploring the feasibility of creating underground spaces in conjunction with the reclamation work in Kau Yi Chau and Hei Ling Chau for accommodating some or all of the required infrastructure, thereby releasing the surface sites for other beneficial uses such as recreational facilities or open spaces.
- 4.11 Besides, subject to further feasibility study, most of the existing “Not-in-My-Backyard” uses at the waterfront of Mui Wo, such as sewage treatment works, cement works and bus depot, etc., could be relocated to the identified rock caverns so as to release ground surface for other beneficial uses and to achieve smart use of land resources.

4 Overall Planning Approaches



ELM is Positioned as a Smart, Green and Resilient Development

Integrated Smart, Green and Resilient Infrastructure System

4.12 An integrated smart, green and resilient infrastructure system is a strategically planned network of physical infrastructure such as waste collection and sorting facility, sewage treatment works, treated sewage effluent, sustainable urban drainage, smart water resources management, district cooling system, etc. We will explore the opportunity to incorporate an integrated smart, green and resilient infrastructure system in the ELM development.

Green and Walkable Environment and Smart Mobility

4.13 Blue-Green Infrastructure : Integrate drainage infrastructures with the surrounding environment to enhance flood resilience. The green channels and retention lakes to be provided for drainage / flood protection purposes would also provide outlets for public enjoyment.

4.14 Walkable and Car-Free Communities : Higher density development would cluster within the walkable catchment of the public transport nodes. Cycle tracks, boardwalks and pedestrian trails will be provided in a comprehensive network for promoting cycling and walking. Moreover, the concepts of “car-free zone” and “low-emission zone” could also be explored in the ELM development.

4 Overall Planning Approaches

4.15 The new technology of “Smart Mobility-Transport Information Platform” and “Intelligent Traffic Management System”, such as utilising the internet or smart phone applications as a one-stop platform for providing transport information, including route map, shortest route recommendation, real time service updates, latest traffic conditions, car parking availability and the location and information on cycling facilities so as to encourage the use of public and low carbon transport, can be applied in developing the ELM to enhance the usage of public and low-carbon transport facilities as well as reduce the congestion and carbon emission there effectively. This technology is increasingly common in a growing number of cities.



Encouraging Cycling and Walking to create a Low-carbon Community

ICT Platform Enabling Smart Urban Living and Businesses

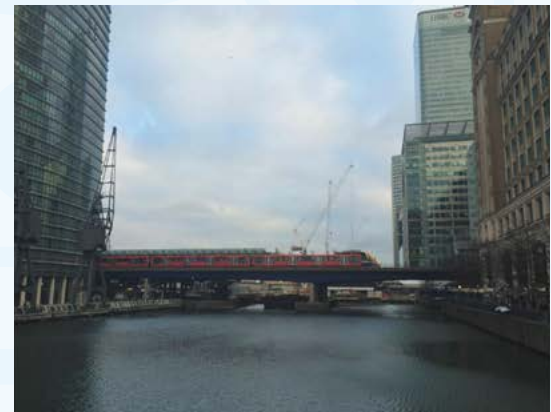
4.16 The establishment of an integrated Common Spatial Data Infrastructure and ICT infrastructure will be an essential foundation for developing the ELM as a smart development cluster. It will be developed in the ensuing planning and engineering feasibility study.

Overview

- 5.1 The basic concept of the ELM is to create artificial island(s) through reclamation in the waters near Kau Yi Chau and Hei Ling Chau Typhoon Shelter as well as making better use of the underutilised land in Mui Wo, with the aim of creating a smart, liveable, low-carbon development cluster including CBD3. Taking into account the surrounding marine and environmental contexts and the available development space, the potential developable area of the ELM is about 1,000 ha and the population of the ELM could range from 400,000 to 700,000 supported by at least about 200,000 employment opportunities.
- 5.2 The estimated population level is based on the new town model, with due consideration of the necessary critical mass in population and jobs required to trigger a viable urban scale, to sustain the proposed railway and road networks, to create efficiency, economies of scale and synergy effects.

Potential Key Development Areas

- 5.3 Having considered the development opportunities and constraints, the ELM could potentially consist of three development areas, namely Kau Yi Chau, Hei Ling Chau and Mui Wo. The three components will be planned comprehensively to achieve synergy, economies of scale, connectivity, optimisation of land uses and functions; and to bring about desired change to the spatial development pattern of the territory.
- 5.4 The ELM will be a mega development project which will unlikely be implemented in one-go. A progressive approach of development and supporting infrastructure over a long time horizon could be adopted. It is necessary to consider the implementation sequence/phasing of the three components of the metropolis having regard to such relevant factors as critical mass to achieve efficient urban scale, provision of infrastructure and delivery of services, cost-effectiveness of infrastructure investment, etc. The scale and phasing of the three development components would be subject to future study.



CBD3 could be a New and Smart Financial and Producer Services Hub

Kau Yi Chau

- 5.5 Kau Yi Chau is positioned as a core development of the ELM with CBD3. Large-scale reclamation is proposed to create sizeable flat land to achieve critical mass. It is targeted to be developed as a new development area to accommodate a large proportion of the new population of the ELM and contribute to the economic development and employment generation of Hong Kong. A new CBD comprising office, hotel and other commercial developments will be provided as an alternative locational choice other than the traditional CBD. It would contribute to a more balanced distribution of employment in Hong Kong. More importantly, it will be a compact, smart and environmentally friendly community close to the existing Metro Area where Hong Kong people can live, work, do business, play and study.
- 5.6 In view of the sensitive natural landscape setting of Kau Yi Chau, the development should not infringe on the existing island in order to protect the existing habitats, including the coral areas around the seashores of Kau Yi Chau. In this regard, innovative measures, such as water channels around the island, should be examined. Moreover, the eco-shoreline concept would be applied for the artificial island(s) to minimise the impact on the marine ecology as far as possible. It would be desirable to concentrate the proposed commercial elements at the eastern part of the reclamation to minimise the distance to Central. By providing regional commercial facilities, quality jobs with a range of skills including the managerial, professional and technology-related jobs could be created. In the detailed planning of this strategic growth area, due regard to the constraints and restraints highlighted in the previous chapter should be given.

Hei Ling Chau

- 5.7 Hei Ling Chau is positioned as a residential township. The scale of the township would depend on the critical mass that allows it to support itself for urban island living. The future residents would be benefitted from the employment opportunities in Kau Yi Chau which is to be developed with a CBD. Hei Ling Chau would mainly offer a convenient near-water lifestyle to widen the choice of accommodation in Hong Kong, while part of the existing typhoon shelter could be retained as a marina-cum-typhoon shelter, subject to further technical assessment.
- 5.8 Sizeable flat land will be created through reclamation of the currently underutilised Hei Ling Chau Typhoon Shelter and its surrounding waters. In view of the ecologically sensitive areas at the island of Hei Ling Chau, creation of water channels, similar to that suggested for Kau Yi Chau, between the reclamation and the existing island would be one of the solutions. Development on the island would be confined to the sites of the existing correctional and related facilities, which would need to be relocated to suitable areas to be identified, to ensure secured and smooth operation in accordance with the relevant legislation. Such development would also need to avoid disturbance to the habitat of the rare Bogadek's Burrowing Lizard, and should be subject to ecological survey.

Mui Wo

- 5.9 The concept for Mui Wo is the development of a sustainable and quality residential neighbourhood respecting the rural and natural setting by making better use of the underutilised land. Through re-planning and optimisation of existing underutilised land, together with cavern development, Mui Wo could be revitalised as an enhanced township with a small amount of low-density residential developments as well as recreational and tourism-related uses. The areas around the existing ferry pier extending to the civic square (i.e. the area currently occupied by Mui Wo Municipal Services Building, Mui Wo Swimming Pool, Mui Wo Playground and garden to the south of Mui Wo Rural Committee Road) could become an activity hub with water promenade, retail shops, restaurants, alfresco dining, civic and leisure facilities for the enjoyment of local residents, visitors and tourists. The area further north along Silver Mine Bay Beach would be enhanced and upgraded to become a beachfront recreational node for eco-tourism and water sports development.
- 5.10 Subject to further feasibility study, the existing utilities at the southern waterfront could be relocated to rock caverns or consolidated. The strip of land at the waterfront would be reserved for landing of transport links, waterfront promenade cum commercial facilities and utilities requiring sea frontage.

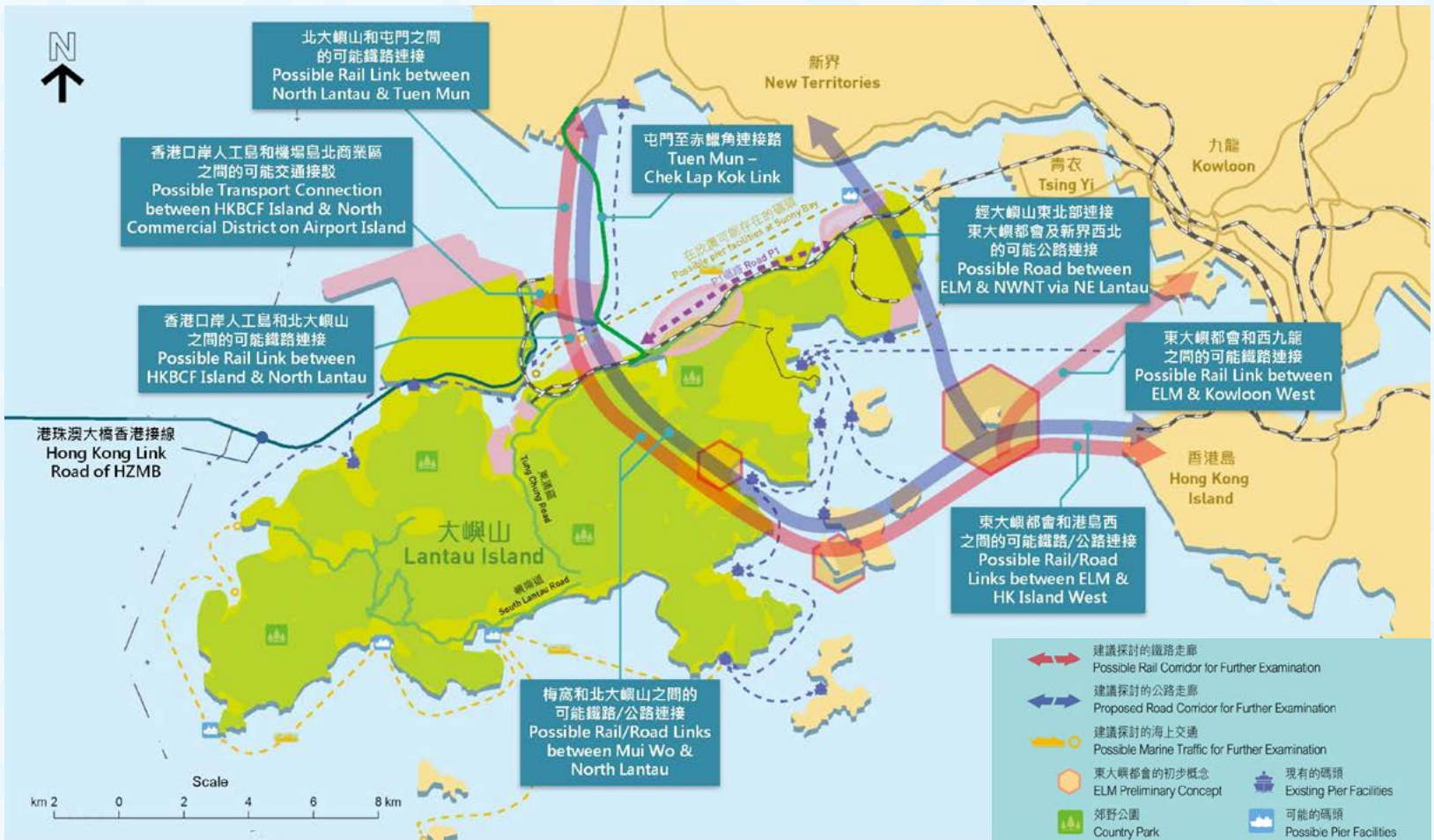
Transport and Other Infrastructure (Plan 9)

- 5.11 Given the potential population and employment opportunities at the proposed ELM and its CBD3 function, it is crucial to connect the ELM with the existing urban districts through a strategic transport network.
- 5.12 Similar to the railway network, a new strategic highway corridor directly connecting the NWNT with the Metro Areas via Lantau and the ELM is also proposed. Under this strategic highway corridor, the ELM would be connected eastwards to Hong Kong Island West, and northwards to the North Lantau Highway which would then be further connected to the NWNT via the HKBCF Island and the Tuen Mun-Chek Lap Kok Link under construction and the proposed Route 11 under planning. It also provides an alternative access to the airport and the NWNT. The connection of the ELM to Mui Wo and the North Lantau Highway would be a potential linkage for the even longer term, and subject to the development scale of the ELM.
- 5.13 Besides land transport, new and additional piers and landing facilities could also be introduced to the ELM to strengthen its external connectivity and inter-island travel by waterborne transport.
- 5.14 Other infrastructure would also be required to support the ELM. Based on a preliminary review, additional sewerage networks and sewage treatment works would need to be built to meet the shortfall in sewage handling capacity supporting the ELM. From the drainage provision perspective, although the ELM is mainly from reclamation with no major risk of flooding, appropriate drainage facilities should be provided for the efficient conveyance of stormwater. The existing waterworks

5. Potential Development Framework

facilities, such as WTWs, serving Lantau and its nearby islands are inadequate to cope with the increase in water demand from the ELM, additional waterworks facilities would be required. It is also estimated that the municipal solid waste generated from the population and

commercial uses of the ELM needs to be properly managed in a sustainable manner. In addition, the construction waste generated from the infrastructure and building works during the initial stage of the development needs to be properly handled as well.



Plan 9 : Strategic Traffic and Transport Infrastructure Concept Plan Adapted from LandAC's First-term Work Report - "Space for All" (For Indication Only)

6 Next Step

- 6.1 These preliminary concepts for the development of the ELM are included in Hong Kong 2030+ for evaluation in the territorial context.
- 6.2 Further studies on planning and engineering feasibility would be conducted prior to taking forward the development proposals, if deemed appropriate. The public will be continuously informed and engaged in the study processes.





ELM



Towards a Planning Vision and
Strategy Transcending 2030

OCTOBER 2016

