





Enhancing Land Supply Strategy

# RECLAMATION OUTSIDE VICTORIA HARBOUR and ROCK CAVERN DEVELOPMENT

Executive Summary on Final Report for Reclamation



Civil Engineering Development Department

Agreement No. 9/2011 Increasing Land Supply by Reclamation and Rock Cavern Development cum Public Engagement - Feasibility Study

Executive Summary on Final Report for Reclamation

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number

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#### 1 Introduction

#### 1.1 Project Background

On 30 June 2011, the Civil Engineering and Development Department commissioned Ove Arup and Partners HK Ltd. (Arup) as the Consultants to undertake this Feasibility Study to strive for an enhanced land supply strategy by focusing on two land supply methods, i.e. reclamation outside Victoria Harbour on an appropriate scale and rock cavern development. The Study includes a two-stage Public Engagement exercise to gauge public views and foster public's understanding and acceptance of the issues.

Land demand is influenced by various factors, including demographic change, economic performance, property market, Government policy, social needs, public expectations and nature conservation, etc. These factors and their influence to the land demand are difficult to predict, especially in relation to the long-term demand. Owing to the scarce resources of developable land in Hong Kong, ever changing land demand and the long lead time required for land production, it is the prime objective of the Government to increase the supply of developable land as a long-term strategy to cope with future development needs and to capture windfall opportunities in the fast changing market.

The Government is currently relying on rezoning, redevelopment, land resumption and redevelopment of ex-quarry sites as the major methods to supply land. However, these methods have their own challenges and problems and have been significantly affecting the Government to supply land in a timely manner. While the Government will continue to make use of these existing land supply methods, the Government is actively pressing ahead with two other land supply methods which are not commonly used in recent years, including reclamation and rock cavern development.

# 1.2 Objectives of Assignment

The main objectives of the assignment are to:

- a) conduct a territory-wide site search in Hong Kong to identify potential reclamation outside Victoria Harbour and rock cavern development sites to be taken forward for more detailed study based on broad technical and environmental assessment;
- b) launch a two-stage Public Engagement exercise to engage the public regarding increasing the land supply by reclamation outside Victoria Harbour on an appropriate scale and rock cavern development.

# 1.3 Purpose of Report

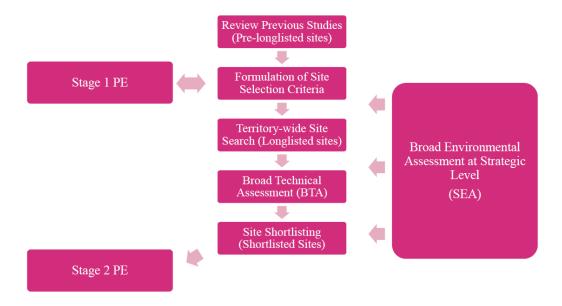
The purpose of this Final Report (Executive Summary) is to provide a brief summary on the work undertaken under the Study and the final outcome of the selection of potential reclamation sites.

#### 1.4 Disclaimer

Any proposals pertaining to the extent, shape, land use, transport infrastructure, etc. for the reclamation and rock cavern development sites shown in reports, are solely hypothetical assumptions for the purpose of broad technical assessment and strategic environmental assessment only. They do not represent the extent, shape and land use and transport infrastructure to be implemented in future regardless of whether the sites are selected for further study or not. Indeed, all these development parameters will be developed based on future planning and engineering feasibility study, statutory process including the Environmental Impact Assessment Ordinance (EIAO), Town Planning Ordinance (TPO), etc. and public consultation.

# 2 Overall Site Selection Methodology

The site selection process carried out under this Study is broadly illustrated below:



#### Main tasks include:

- a) review of previous studies and constraints for identification of prelonglisted sites;
- b) Stage 1 Public Engagement for formulation of initial site selection criteria (SSC);
- c) selection of longlisted sites from the pre-longlisted sites based on the initial SSC;
- d) refined SSC after stage 1 PE;
- e) broad technical assessment (BTA) for the longlisted sites;
- f) site shortlisting based on the findings of BTA, refined SSC after Stage 1 PE and SEA to shortlist sites for consultation in PE2 and further detailed study; and
- g) Stage 2 Public Engagement to consult the public on the shortlisted sites.

Broad environmental assessments at a strategic level (SEA) were also carried out to provide environmental input for the entire site selection process.

## 3 Review of Previous Studies and Constraints

A review of the previous studies has been carried out, including the previously studied reclamation projects, their opportunities and constraints. This review formed the basis of this Study with regards to the site selection process.

In addition to the review of the previous projects, constraints mapping has been adopted to identify pre-longlisted sites based on Geographic Information System (GIS). A constraint mapping exercise began with the identification of key constraints, including predominantly physical, environmental and planning constraints, and a digital map for each category of constraints. These maps were overlaid to provide an overall constraint map. Constraints and considerations across the territory were identified and the relevant data were collated from the relevant government departments and/or other sources available. The constraints and considerations covered a range of aspects, including conservation, cultural heritages, physical constraints and engineering. These constraints and considerations are shown below:

- Country Park and Special Areas
- Potential Country Parks
- Marine Parks and Marine Reserves
- Proposed, Committed and Potential Marine Parks
- Restricted Areas
- Ramsar Sites
- Mai Po Nature Reserves
- Sites of Special Scientific Interest
- Conservation Areas
- Coastal Protection Areas
- Wetland Conservation Areas
- Wetland Buffer Areas
- Priority Sites for Enhanced Conservation
- Ecologically Important Streams
- Seagrass Beds
- Mangroves
- Key Coral Areas
- Intertidal Mudflats
- Woodlands
- Juvenile Horseshoe Crab Sites
- Dolphin Hotspots

- Finless Porpoise Hotspots
- Fish Culture Zones
- Artificial Reef Development Areas
- Areas of Oyster Production
- Water Gathering Grounds and Reservoirs
- Gazetted Beaches and Beaches To be Gazetted
- Declared Monuments
- Site of Archaeological Interest
- Graded and Proposed Graded Historic Buildings
- Consultation Zones of Potentially Hazardous Installations (PHIs)
- Safety Zone of PHIs
- Existing Landfill Sites
- Landfill Extension
- Closed Landfill Sites
- Hong Kong International Airport Aircraft Noise Exposure Forecast (NEF)
   25 Contours
- Public Fill Banks
- Sediment Disposal Areas
- Explosives Dumping Grounds
- Marine Borrow Areas
- Geoparks
- Green Belt
- Traditional Burial Grounds
- Recognized Indigenous Villages (Village Type Development)
- Victoria Harbour
- Closed Areas
- Military Sites
- Airport Exclusion Zone
- Airport Height Restriction
- Deed of Restrictive Covenant for Disneyland
- Anchorages & Designated Bunkering Areas
- Fairway & Navigation Channels

- Sub-sea Tunnels
- Marine Facilities
- Submarine Pipelines, Cables & Utilities
- Ship Wrecks
- Infrastructure & Development under Construction and/or Feasibility Studies
- Existing Development and Infrastructure

Summary of key constraints are shown in **Figures 1 and 2**.

Based on the above constraints and considerations, a total of 48 pre-longlisted reclamation sites were identified. These sites are shown in **Figure 3**.

# 4 Stage 1 Public Engagement and Formulation of Site Selection Criteria (SSC)

The Stage 1 Public Engagement (PE1) was conducted between November 2011 and March 2012. The aim of PE1 was to seek public views on land supply by reclamation outside Victoria Harbour and rock cavern development, and the site selection criteria.

To enhance the public awareness of the PE1 exercise and to encourage public participation, a series of PE activities including public forums and roving exhibitions were organized. The consultation document, PE1 Digest, was widely disseminated to the public at various outlets including District Offices, roving exhibition counters and public forums. A web version of the PE1 Digest and a promotional video was uploaded onto the Study website.

A set of SSC initially formulated through collaboration with various government departments in a Value Management Workshop (I) was put forward for discussion in PE1.

The proposed SSC were found to be largely agreeable to the general public. For reclamation, the impacts on environment and local community are identified as being relatively more important than other SSC, while for rock cavern development, the social impact, environmental impact and engineering feasibility are considered relatively more important among others. The SSC include:

Guiding Principles	For Reclamation	For Rock Cavern Development	
Social Harmony & Benefits	Impact on local community	Social benefits at the releasing site upon relocation of existing facilities	
	Site location and accessibility	Social impact at the cavern development site	
	Meeting local needs	1	
Enhanced Environmental	Environmental impacts	Environmental impacts at the cavern development site	
Performance	Environmental benefits	Environmental benefits in the vicinity of the releasing site upon relocation of existing facilities	
Economic	Cost effectiveness	Cost effectiveness	
Efficiency & Practicality	Planning flexibility	Specific requirements of facilities	
	Engineering feasibility	Engineering feasibility	
		Suitability of relocation based on existing facility status	

Other major views, in particular for reclamation, collected during Stage 1 Public Engagement are summarized as follows:

a) There was broad support for establishment of land reserve;

- b) There was broad consensus that more land required to meet the needs for providing more housing and community facilities, improving the living environment and enabling infrastructural development;
- c) There was broad support for a six-pronged approach for enhancing land supply;
- d) Impacts on the environment and local communities are the most important site selection criteria for reclamation;
- e) There was no consensus on reclamation, with strong opposition to reclamation at some specific sites, and major concerns of those against reclamation are related to impacts on environment and local communities;
- f) Site location is regarded as important when considering reclamation.

The Stage 1 Public Engagement Report and Executive Summary can be found on the Study website <a href="http://www.landsupply.hk">http://www.landsupply.hk</a>.

# **5** Selection of Longlisted Sites

### 5.1 Methodology

A longlisting exercise was carried out and is a screening process to select a smaller batch of sites from the pre-longlist for further study. In the longlisting exercise, each pre-longlisted sites underwent preliminary evaluation. Then each initial SSC was graded as A, B or C based on the preliminary assessment. These grades only provide a simplified basis for broad comparison but do not represent any absolute scoring of the sites. In this broad comparison of the sites, the more grade As that are identified for the site then the more suitable it is likely to be for further study under this Assignment. A total of 48 pre-longlisted reclamation sites were identified.

#### 5.2 Initial Site Selection Criteria

#### 5.2.1 Impact on local community

This criterion considers the impact on local community that could be brought to the area around the reclamation site. Issues that have been considered in the exercise include impact on local cultural or heritage features, distance between reclamation and the shore or existing residential development, visual impact, etc.

#### 5.2.2 Site location and accessibility

This criterion considers the accessibility of the site location, condition of existing infrastructures, scale of new infrastructure required for connection to the site, etc.

#### 5.2.3 Meeting local needs

This criterion considers whether the proposed works can potentially meet any local needs (e.g. are there any needs of creating Government, Institution or Community (GIC) / housing area or job opportunities in the local community) identified from District Councils and relevant planning studies, how these needs are satisfied by the formation of reclaimed land, etc.

#### **5.2.4** Environmental impacts

The environmental impacts on natural resources and surrounding environment for the reclamation sites are considered based on the established constraints map and identified environmental resources and constraints in previous studies. Issues considered include distance of reclamation site from Site of Special Scientific Interest (SSSI), bathing beach, Marine Park or Marine Reserve, Proposed, Committed and Potential Marine Park, Fish Culture Zone, Restricted Area, Coastal Protection Area, Conservation Area, Country Park, Special Areas, recognized heritage sites, and other ecological sensitive areas, etc.

This site selection criteria "Environmental Impacts" focuses on the impacts from the proposed reclamation on natural resources and surrounding environment, while the impacts from landfill sites, PHIs, air quality/odours emission sources and noise emission will be considered in "Planning Flexibility". Sea water intakes

have been identified in the Study. As the seawater intake can be re-provisioned, the constraints from sea water intakes have been considered in "Engineering Feasibility".

#### 5.2.5 Environmental benefits

The environmental performance of potential environmental benefits for the reclamation site is considered based on the surrounding environment and SSC. Issues considered include potential of enhancing the ecology, fisheries, cultural heritage and landscape value and visual aspects, local water quality, volume of public fill that the reclamation works can absorb, etc.

#### **5.2.6** Cost effectiveness

The construction cost to reclamation area ratio generally decreases as the reclamation area is enlarged. Therefore, in terms of cost effectiveness, it is generally more economically to reclaim a larger area.

#### **5.2.7** Planning flexibility

This criterion assesses whether the reclamation site is near or within any constraint upon which any development within the reclamation site will be constrained thus reducing the flexibility in planning for the development. Issues considered include potential constraints on development imposed by the nearby environment (e.g. Airport Height Restrictions, height restriction for development in the vicinity of Hong Kong Disneyland, noise or air quality, existence of unwelcome neighbourhood facilities or industrial areas, etc.).

#### **5.2.8** Engineering feasibility

Feasibility of reclamation development is subject to whether the engineering constraints, if any, can be resolved practically within the bounds of feasible engineering solutions. Issues considered include presence of submarine pipeline(s) or cable(s) and/or existing marine facilities (e.g. typhoon shelter) in the vicinity of the sites, reclamation works potentially limited by clearance restrictions from adjacent bridges, water depth, impact on strategic marine utilities, re-provisioning of substantial length of quays or strategic infrastructures, or the site is so remote that there could be difficult for utilities connection etc.

# 5.3 Longlisted Sites

The pre-longlisted reclamation sites have been evaluated under each of the initial SSC outlined above. 27 reclamation sites are selected to form the longlisted sites as shown in **Figure 4**.

# **6** Broad Technical Assessment (BTA)

Broad technical assessments were carried out for the longlisted sites, which included the following key aspects:

- a) land use, urban planning and urban design;
- b) geotechnical appraisal;
- c) broad environmental assessment;
- d) traffic impact assessment;
- e) civil works (e.g. water, drainage, sewage, etc.);
- f) impact of aircraft and helicopter operation;
- g) sustainability assessment;
- h) implementation, construction and costing.

Any proposals pertaining to the extent, shape, land use, transport infrastructure, etc. for the reclamation sites shown in any report, are solely hypothetical assumptions for the purpose of broad technical assessment and strategic environmental assessment only. They do not represent the extent, shape and land use and transport infrastructure to be implemented in future regardless the sites were selected for further study or not. Indeed, all these development parameters will be developed based on future planning and engineering feasibility study, statutory process including EIAO, TPO, etc. and public consultation.

# 7 Site Shortlisting

#### 7.1 Methodology

Site shortlisting is to select shortlisted sites from the longlist by qualitative assessment based on the results of BTA and the refined SSC. This shortlisting process is to select sites that have higher potential for consultation with the public in PE2 and further detailed study. Any of these sites will need to eventually go through separate feasibility study, statutory process including EIAO, TPO, etc. and public consultation.

A qualitative review of the sites was undertaken to summarise the potential constraints, mitigation measures and issues for each site.

With reference to the feedback from PE1, the shortlisting exercise initially considered the environmental and local community constraints associated with each site as these are considered by the public to be their two primary concerns.

The selected sites are then assessed with reference to other key considerations revealed from the Broad Technical Assessment. These may include, but are not limited to, development potential, adjacent planning constraints, transport links, traffic impact, aircraft and helicopter flight paths, etc.

A qualitative assessment was then completed by assessing the potential impacts and proposing mitigation measures for each of the influencing factors outlined in the review.

Priority is given to near shore reclamation since it can easily be connected to existing road networks and developed areas. Man-made shorelines distances from the existing community are selected as far as possible. It also avoids encroaching on natural shorelines and environmentally sensitive areas.

The shortlisted sites were taken forward for consultation in PE2, while the remaining sites may be studied further if opportunities arise in the future.

# 7.2 Summary of Shortlisted Sites

Based upon the site shortlisting exercise, the following five nearshore reclamation sites were shortlisted:

- (1) Siu Ho Wan
- (2) Sunny Bay
- (3) Southwest Tsing Yi
- (4) Ma Liu Shui
- (5) Lung Kwu Tan

Besides, the site shortlisting exercise has identified there is great development potential for artificial islands in the central waters that worth further exploring. As regards the option of artificial islands, we have reviewed the eastern waters, the central waters and the western waters of Hong Kong. The eastern waters are of high ecological value whilst the western waters are already heavily constrained by

a number of major infrastructure projects. The central waters however are relatively less ecologically sensitive.

These shortlisted sites and the artificial islands in the central waters were taken forward for consultation in PE2, while the remaining sites may be studied further if opportunities arise in the future.

The following section provides a qualitative description of each of the shortlisted sites, summarising the potential constraints and issues with reference to the Broad Technical Assessment undertaken for each site.

#### **7.2.1 Siu Ho Wan**

Siu Ho Wan is located at a strategic location in North Lantau. It is near the Airport, can link up with major trunk road and infrastructure (e.g. North Lantau Highway, railway lines, Tuen Mun Chek Lap Kok Link, Hong Kong – Zhuhai – Macao Bridge Hong Kong Link Road, etc.), and is close to economic infrastructure in the north Lantau. It offers synergy to other developments in North Lantau including the nearby Tung Chung new town. Major constraints include:

- Environmental impacts: air quality, noise (e.g. aircraft and helicopter noise and road traffic noise from North Lantau Highway), water quality, ecology (e.g. potential ecological impacts on committed Marine Park at The Brothers, Tai Ho Stream SSSI, horseshoe crabs, mangrove areas and seagrass bed, coral areas, potential impacts on Chinese White Dolphins), fisheries, landscape and visual aspect, etc.
- Potential interface issues with the nearby various unwelcome facilities and industrial uses, such as sewage treatment works, waste management facilities, etc., and hazard to life issues from the water treatment works.

Other opportunities and constraints for this shortlisted site are shown in **Figure 5**.

#### **7.2.2 Sunny Bay**

Sunny Bay is located at a strategic location in North Lantau. It is close to the Airport, can link up with major truck road and infrastructure (e.g North Lantau Highway, railway lines and station, Tuen Mun Chek Lap Kok Link, etc.), and is close to economic infrastructure in the north Lantau, particularly Hong Kong Disneyland. Sunny Bay is suitable for recreational and tourism development as already stated in the Outline Zoning Plan (OZP). It offers synergy to other developments in North Lantau. Major constraints include:

 Environmental impacts: air quality, noise (e.g. aircraft and helicopter noise and road traffic noise from North Lantau Highway), water quality, ecology (e.g. potential impacts on Chinese White Dolphins, horseshoe crabs, mangrove areas and seagrass bed, etc.), fisheries, landscape and visual aspect, etc.

Other opportunities and constraints for this shortlisted site are shown in **Figure 6**.

#### 7.2.3 Southwest Tsing Yi

Southwest Tsing Yi is located at a central area in Hong Kong. It has good access to existing transportation nodes. Given the strategic location of this site, this site has great potential for integrated development with the adjacent area.

However, its development potential is limited by the adjacent industrial land uses. At present, the site is suitable for extending port facilities to create a regional logistic node. Residential or other development may also be feasible if the adjacent industrial land uses are relocated, releasing a large piece of prime land and benefiting the entire district. Under this Study, this site was assessed on the assumption that the existing industrial land uses would have been relocated. Major constraints include:

- Environmental impacts: air quality, noise (e.g. road traffic noise from Cheung Tsing Highway and Tsing Yi Road) and water quality (e.g. marine emission around Ma Wan Channel), etc.
- Five oil depots/terminals in the vicinity constituting hazard to life issues; and land use interfacing issues with the nearby various unwelcome and industrial facilities/uses.

Other opportunities and constraints for this shortlisted site are shown in Figure 7.

#### 7.2.4 Ma Liu Shui

Ma Liu Shui can provide valuable land in a developed district for residential development near Shatin New Town. It is located within area with good access to existing / future traffic and railway network (e.g. Tolo Highway, Tate's Cairn Highway, Shing Mun Tunnel, Shatin Heights Tunnel, Lion Rock Tunnel, Tate's Cairn Tunnel, the future Shatin Central Link, etc.). It can also provide community facilities to meet the needs in the district. The reclamation will create synergy with the land released by relocating the adjacent Sha Tin Sewage Treatment works to rock cavern. Major constraints include:

- Social impacts on the Chinese University of Hong Kong (CUHK) and the existing residential developments in Ma On Shan.
- Environmental impacts: air quality, noise (e.g. road traffic noise from Tolo and Tate's Cairn Highway), water quality, landscape and visual aspect etc.
- Potential interface issues with the nearby sewage treatment works and marine helipad.

Other opportunities and constraints for this shortlisted site are shown in **Figure 8**.

#### 7.2.5 Lung Kwu Tan

Lung Kwu Tan is easily accessible via existing traffic networks (e.g. Lung Kwu Tan Road, Lung Fu Road, Lung Mun Road, etc.) which have spare capacity with further road widening if needed. It presents opportunity for relatively large-scale reclamation (200 - 300 ha) site which is suitable for comprehensive planning. Major constraints include:

- Environmental impacts: air quality, ecology (e.g. Sha Chau Lung Kwu Chau Marine Parks, potential impacts on Chinese White Dolphins), potential disturbance on the Lung Kwu Tan Valley SSSI (400m away) and butterfly hotspot in the proximity, etc.), fisheries, landscape and visual aspect etc.
- Potential interface issues with the nearby various unwelcome facilities, such as two power stations, cement plants, steel mill, aviation fuel farm, waste management facilities, other industrial uses, etc.

Other opportunities and constraints for this shortlisted site are shown in **Figure 9**.

# 8 Stage 2 Public Engagement

Stage 2 Public Engagement (PE2) was conducted between 21 March 2013 and 21 June 2013. The aim of PE2 was to seek public views on the possible land uses for the shortlisted sites as well as the areas of concern to be addressed in future technical studies.

To enhance the public awareness of the PE2 exercise and to encourage public participation, a series of PE activities including public forums and roving exhibitions were organized. The consultation document, PE2 Digest, was widely disseminated to the public at various outlets including District Offices, roving exhibition counters and public forums. A web version of the PE2 Digest was uploaded onto the Study website.

The Panel on Development of the Legislative Council was consulted on 23 April 2013. Government representatives attended a Special Meeting of the Panel on 1 June 2013 to listen to the views of the deputation. Seven District Councils, in which constituencies the five potential reclamation sites and three rock cavern development sites and the possible artificial islands are located, were also consulted, amongst other stakeholders including green groups, local concerns groups and residents' groups.

The Stage 2 Public Engagement Report and Executive Summary can be found on the Study website <a href="http://www.landsupply.hk">http://www.landsupply.hk</a>.

Key findings from PE2, in particular for reclamation, include:

- a) land reserve, residential development (in particular public rental housing), recreational or leisure facilities and public parks were the four land uses that received most support among those providing feedback on reclamation.
- b) The dominant themes of concerns about reclamation were about the environment, as in the first stage of the Public Engagement. For the reclamation sites in western waters, the primary concern was the potential impact on marine ecology, in particular the habitats of Chinese White Dolphins.
- c) There was particularly strong resistance against the potential reclamation site at Ma Liu Shui from residents on the opposite bank at On Tai, Chung On and Heng On areas in Ma On Shan and some students of the CUHK, conveyed through feedback questionnaire, and the signature campaigns and petitions and Facebook campaign organized by local groups, residents' groups and the CUHK Student Union. Potential impact on existing community and transportation services, and concerns about the environment including coastal landscape and habitats, marine ecology, air and noise pollution, water flow and quality of Shing Mun River were the key reasons behind the resistance.
- d) The large volume of combined resistance to all potential reclamation sites, mostly generated from the signature campaigns and petitions and Facebook campaign organized by the CUHK Student Union but also from some other sources, could indicate considerable resistance to any of the five reclamation sites. On the other hand, the combined acceptance of all five reclamation sites expressed by some construction industry groups

- suggested an economic argument for reclamation (e.g. in terms of creating jobs) which was supported in some quarters of the community.
- e) There were fewer specific objections to Sunny Bay and Tsing Yi Southwest. The number of specific objections to artificial islands was also comparatively small.

#### **9** Conclusion

Five nearshore reclamation sites have been selected under this Study through a site selection process, which include:

- a) identification of 48 pre-longlisted sites based on review of previous studies and constraints;
- b) selection of 27 longlisted sites from the 48 pre-longlisted sites based on the SSC consulted in Stage 1 Public Engagement;
- c) broad technical assessments (BTA) for the 27 longlisted sites;
- d) site shortlisting to shortlist 5 potential reclamation sites from the 27 longlisted sites based on the refined SCC and the findings of BTA for further detailed study; the site shortlisting exercise also identified development potential for artificial islands in the central waters that worth further exploring strategically.
- e) Broad environmental assessments at a strategic level were carried out to provide environmental input for the entire site selection process.

The five shortlisted nearshore reclamation sites are:

- Siu Ho Wan
- Sunny Bay
- Southwest Tsing Yi
- Ma Liu Shui
- Lung Kwu Tan

These shortlisted nearshore reclamation sites and the artificial islands in the central waters were taken forward for consultation in PE2, while the remaining sites may be studied further if opportunities arise in the future.

It is worth highlighting that throughout the entire site selection process under the Study, different environmental and planning issues of all the sites assessed, including the shortlisted sites, have been identified. It is important that the shortlisted sites are required to go through planning and engineering feasibility study, statutory process including EIAO, TPO, etc. and public consultation in future to confirm their acceptability.

To address public concerns regarding potential cumulative impact due to various committed, proposed and potential reclamation works, potential impact on Chinese White Dolphins in the western waters and other potential issues/constraints, the government has commissioned / planned separate consultancies to undertake assessment and explore mitigation measures in advance:

- Chinese White Dolphins monitoring in shallow water of Lung Kwu Tan, Siu Ho Wan and Sunny Bay;
- Cumulative Environmental Impact Assessment (CEIA) on ecology, fisheries, air quality and water quality for the three potential nearshore reclamation sites in western waters of Hong Kong;

• Strategic Study on Artificial Islands.

Subject to the findings of the above separate consultancies and other projects, the government will carry out further detailed studies including planning and engineering feasibility study, statutory process including EIAO, TPO, etc. and public consultation for the shortlisted reclamation sites, for which the reclamation extent, development parameters, mitigation works, etc. will be developed and further discussed with the public.

# Figures

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