

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 705 – CIVIL ENGINEERING

Civil Engineering – Land development

751CL - Planning and engineering study on Sunny Bay reclamation

Members are invited to recommend to the Finance Committee the upgrading of **751CL** to Category A at an estimated cost of \$96.1 million in money-of-the-day prices for carrying out a planning and engineering study on Sunny Bay reclamation and associated site investigation works.

PROBLEM

We need to establish the technical feasibility and appropriate scale of reclamation and development at Sunny Bay as a measure of long-term land supply.

PROPOSAL

2. The Director of Civil Engineering and Development, on the advice of the Director of Planning and with the support of the Secretary for Development, proposes to upgrade **751CL** to Category A at an estimated cost of \$96.1 million in money-of-the-day (MOD) prices to engage consultants to undertake a planning and engineering study on Sunny Bay reclamation (the Study) and the associated site investigation works.

/PROJECT

PROJECT SCOPE AND NATURE

3. The scope of **751CL** comprises –

- (a) a detailed planning and engineering study to establish the reclamation extent, land uses and the technical feasibility, including formulation of a recommended outline development plan and recommended layout plan, planning and engineering assessments on baseline review, land use options, air ventilation and urban design, site formation and reclamation, traffic and transport, drainage and sewerage, water supplies and utilities etc. and preparation of preliminary design of engineering infrastructure for supporting the proposed developments;
- (b) environmental impact assessment (EIA) for the proposed developments and the associated engineering infrastructure;
- (c) community engagement exercises with relevant stakeholders;
- (d) formulation of the implementation strategy and programme; and
- (e) associated site investigation works including supervision.

4. A location plan showing the Study area and the potential reclamation site at Sunny Bay (about 60 to 100 hectares) is at Enclosure 1.

5. Subject to funding approval of the Finance Committee within this legislative session, we plan to commence the Study and the associated site investigation works in August 2016 for completion in August 2018. The Civil Engineering and Development Department (CEDD) invited tenders for the Study on 11 November 2015, but the tender will be awarded only upon obtaining Finance Committee's funding approval.

/JUSTIFICATION

JUSTIFICATION

6. Reclamation on an appropriate scale outside Victoria Harbour has been identified as one of the possible measures to expand our land resources. CEDD started technical studies and a two-stage public engagement (PE) exercise for the “Enhancing Land Supply Strategy (ELSS): Reclamation outside Victoria Harbour and Rock Cavern Development” in July 2011. During the Stage 1 PE conducted from November 2011 to March 2012, there was wide support for a six-pronged approach¹ for enhancing land supply, including reclamation outside Victoria Harbour.

7. Taking into consideration the public views on site selection criteria, CEDD identified after the Stage 1 PE five potential near-shore reclamation sites including Sunny Bay², and the potential of constructing artificial islands in the central waters between Hong Kong Island and Lantau as possible means to provide new land that would pose smaller impact to developed areas.

8. During the Stage 2 PE conducted from March to June 2013, the public was consulted on possible land uses for the proposed reclamation sites and artificial islands as well as areas of concern for further study. For Sunny Bay reclamation site, residential development, commercial uses mainly for tourism-related facilities such as hotels, retail or dining, government, institution or community uses including parks and recreational or leisure facilities and land reserve are the major supported land uses. Impacts on the marine ecology, ecological conservation, transportation, cost effectiveness and the need to expedite land supply are the major concerns. A summary of the views on Sunny Bay reclamation collected during Stage 2 PE is at Enclosure 2.

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¹ The six-pronged approach includes re-zoning, resumption, redevelopment, reclamation outside Victoria Harbour, rock cavern development and re-use of ex-quarry sites.

² The remaining potential near-shore reclamation sites are Lung Kwu Tan, Ma Liu Shui, Siu Ho Wan and Tsing Yi Southwest.

9. In response to the concerns about potential impacts on marine ecology and the environment arising from reclamation, CEDD has conducted a cumulative environmental impact assessment (CEIA) and an on-site survey of Chinese White Dolphins (CWD) between August 2013 and December 2014 at three reclamation sites in the western waters north of Lantau (viz Sunny Bay, Siu Ho Wan and Lung Kwu Tan). The CEIA study aimed to strategically assess the overall effect of the three reclamation sites on four key environmental aspects, namely air quality, water quality, ecology and fisheries, taking into consideration the major development projects in the vicinity, including the Hong Kong-Zhuhai-Macao Bridge (HZMB) related projects in Hong Kong under construction, Hong Kong International Airport (HKIA)'s proposed three-runway system (3RS) and the Tung Chung New Town Extension.

10. According to the CWD survey, Sunny Bay is unlikely to be a CWD hotspot and has only low and probably occasional dolphin use. Overall, the CEIA has revealed that there is no insurmountable environmental problem identified with respect to the four key environmental aspects for reclamation at Sunny Bay. CEDD briefed the Advisory Council on the Environment of the findings of the CEIA and CWD survey at its meeting on 9 March 2015. A summary of the findings of the CEIA (including findings of CWD survey) related to Sunny Bay reclamation is at Enclosure 3.

11. Lantau is strategically located in the western part of Hong Kong, with several major infrastructure and development projects under construction, including the HZMB and the Tuen Mun-Chek Lap Kok Link, and a number of projects under planning, including HKIA's 3RS, HKIA north commercial district development, Tung Chung New Town Extension, topside development of the HZMB Hong Kong boundary crossing facilities island, Siu Ho Wan reclamation, the East Lantau Metropolis, etc.

12. Having considered the locational advantages and key economic development concepts of Lantau, the land requirement and supply of different types of commercial uses in the territory, the opportunities and constraints of major sites for economic developments, stakeholders' views, etc., the Planning Department recommends the Sunny Bay reclamation site be mainly used for recreation and tourism-related developments. The site, together with Hong Kong Disneyland, could be developed into a recreation and tourism gateway for Northeast Lantau by establishing new tourist attractions, recreational or leisure facilities, themed hotels, as well as retail, catering and entertainment facilities. In addition, other suitable land uses that meet market demand and are compatible with the above developments such as convention and exhibition facilities will also be considered.

13. We propose to carry out the Study to develop detailed proposals for reclamation, land uses and engineering infrastructure at Sunny Bay. The following key issues will be addressed –

- (a) the Study will review the findings and recommendations of previous studies in which a leisure and entertainment node was proposed at Sunny Bay, and the latest strategic planning, traffic, transport and infrastructure proposals relevant to the study area. We will also take account of the latest situation of the Tung Chung New Town Extension as well as the public views collected during the Stage 2 PE for ELSS;
- (b) emphasis will be put on the synergy of the proposed Sunny Bay reclamation and the surrounding areas such as the Hong Kong Disneyland, the proposed topside development of the HZMB Hong Kong boundary crossing facilities island and the HKIA north commercial district; and
- (c) opportunities will be sought to investigate the conversion of the existing seawall into eco-shoreline for rejuvenating the marine ecology and the enjoyment of the public on the seafront.

14. We will conduct community engagement activities to gather comments from stakeholders and the public in formulating the development proposals. A community engagement strategy setting out the detailed arrangement and programme of the engagement activities will be formulated under the Study.

FINANCIAL IMPLICATIONS

15. We estimate the costs of the Study and the associated site investigation works to be \$ 96.1 million in MOD prices (please see paragraph 17 below), broken down as follows –

/\$ million

		\$ million	
(a)	Consultants' fees for	51.1	
(i)	planning study	10.4	
(ii)	engineering study	28.7	
(iii)	EIA for the proposed developments and associated engineering infrastructure	10.2	
(iv)	supervision of associated site investigation works	1.8	
(b)	Site investigation works	22.5	
(c)	Expenses for community engagement exercise and other miscellaneous items	3.5	
(d)	Contingencies	7.7	
	Sub-total	84.8	(in September 2015 prices)
(e)	Provision for price adjustment	11.3	
	Total	96.1	(in MOD prices)

16. In view of the multi-disciplinary nature of the Study requirements and inadequate in-house resources, we plan to engage consultants to undertake the Study and to supervise the associated site investigation works. A breakdown of the estimates for the consultants' fees by man-months is at Enclosure 4.

17. Subject to funding approval, we will phase the expenditure as follows –

Year	\$ million (Sept 2015)	Price adjustment factor	\$ million (MOD)
2016 – 2017	13.3	1.05775	14.1
2017 – 2018	45.6	1.12122	51.1
2018 – 2019	24.2	1.18849	28.8
2019 – 2020	1.7	1.25980	2.1
	<hr/> 84.8 <hr/>		<hr/> 96.1 <hr/>

18. We have derived the MOD estimate on the basis of the Government's latest set of assumptions on the trend rate of change in the prices of public sector building and construction output for the period from 2016 to 2020. We will engage consultants to undertake the Study on a lump sum basis with provision for price adjustment. We will tender the proposed site investigation works under a standard re-measurement contract because the quantity of works involved may vary depending on actual ground conditions. The contract for site investigation works will provide for price adjustment.

19. The Study and the associated site investigation works will not give rise to any recurrent consequences.

PUBLIC CONSULTATION

20. We have completed a two-stage PE exercise on “ELSS: Reclamation outside Victoria Harbour and Rock Cavern Development” as mentioned in paragraphs 6 and 8 above. Please find at Enclosure 2 a summary of the public views on Sunny Bay reclamation as collected during Stage 2 PE.

21. As part of the Stage 2 PE, we briefed the Tsuen Wan District Council (TWDC) on, among others, the potential reclamation at Sunny Bay on 28 May 2013. We further consulted the Community Building, Planning and Development Committee of the TWDC on the Study on 17 March 2014. Members had no objection to the Study.

22. We consulted the Legislative Council Panel on Development (the Panel) on 22 April 2014. Members generally supported submitting the funding proposal to the Public Works Subcommittee (PWSC) for consideration.

23. At the PWSC meetings on 26 November 2014 and 9 January 2015, Members considered the funding proposal (vide PWSC(2014-15)34) and expressed concerns about the following issues –

- (a) adverse impacts on fisheries (in particular Ma Wan mariculturists);
- (b) adverse impacts on marine ecological conditions; and
- (c) aircraft noise imposed on the future developments.

24. We have addressed Members' concerns about the impacts on fisheries and marine ecology in the CEIA and CWD survey respectively. The assessment findings are summarised in paragraphs 9 and 10 above.

25. We are aware of the potential impact of aircraft noise generated from HKIA's operation on the future developments at the proposed Sunny Bay reclamation. Noise-sensitive land uses, such as residential developments and educational institutions, may not be suitable for areas within the Noise Exposure Forecast (NEF) 25 contours related to aircraft operation. The Study will consider the future NEF 25 contours as included in the EIA report for HKIA's 3RS in the detailed assessment of planning constraints.

26. We have recently met with relevant stakeholders, including academia and fisheries groups. Taking into account their advice on maintaining a wider entrance to enhance tidal flushing to Yan O Wan, we have suitably revised the boundary of the potential reclamation site.

27. On the other hand, from end January to April 2016, the Lantau Development Advisory Committee and the Government together conducted a public engagement exercise on the proposals of Lantau development which include the proposed Sunny Bay reclamation. We also briefed the Panel on the proposed development strategy for Lantau, with the proposed Sunny Bay reclamation as one of the components, on 23 February 2016. During the public engagement, the fisheries groups expressed concerns about the potential fishery impacts of reclamation works. As stated in paragraph 10 above, the CEIA has revealed that there is no insurmountable environmental problem identified with respect to the four key environmental aspects, including fisheries, for the proposed reclamation at Sunny Bay. We hence plan to conduct the Study which will further assess the impacts of the proposed reclamation on fisheries, and recommend suitable mitigation measures. In the public engagement exercise, we also received general comments that leisure and tourism proposals in the Lantau development were lacking in details and detailed land use proposals for reclamations had not been developed. The Study will aim to draw up land use proposals at Sunny Bay to address these concerns.

ENVIRONMENTAL IMPLICATIONS

28. The Study is a designated project under Schedule 3 of the Environmental Impact Assessment Ordinance (EIAO) (Chapter 499). We will prepare and submit an EIA study report in compliance with the requirements under the EIAO, the Technical Memorandum on the EIA Process and the EIA Study Brief. An application for approval of the EIA study report will be submitted to the Director of Environmental Protection under the EIAO. Some works items (such as reclamation, major roads and sewage pumping stations) that may be proposed under the Study to support the developments in Sunny Bay are designated projects under Schedule 2 of the EIAO that require Environmental Permits prior to construction and operation. The assessments to be carried out in the EIA of the Study will cover all necessary aspects such as air quality, water quality and hydraulics, ecology, fisheries, heritage and archaeology, noise, landscape and visual impacts arising from these works items.

29. The Study and the associated site investigation works will only generate very little construction waste. We will require the consultants to fully consider measures to minimise the generation of construction waste and to reuse and recycle construction waste as much as possible in the future implementation of the construction projects.

HERITAGE IMPLICATIONS

30. The Study and the associated site investigation works will not affect any heritage sites, i.e. all declared monuments, proposed monuments, graded historic sites and buildings, sites of archaeological interest and government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

31. The Study and the associated site investigation works will not require any land acquisition. The Study will examine the need and extent of land acquisition and/or clearance required for implementation of the development at Sunny Bay.

BACKGROUND INFORMATION

32. On 24 May 2011, we briefed the Panel Members on the Government's plan to launch a two-stage PE on ELSS and conduct technical studies to explore the options of reclamation on an appropriate scale outside Victoria Harbour and rock cavern development. The Panel Members expressed support to commence the technical studies and the PE exercise.

33. We upgraded **751CL** in Category B in September 2011.

34. We launched the Stage 1 PE on 10 November 2011 and briefed the Panel Members on 22 November 2011 on the progress of the technical studies and Stage 1 PE, key issues including the proposed six-pronged approach of increasing land supply, and the initial site selection criteria for reclamation outside Victoria Harbour and rock cavern development.

35. The Panel held a special meeting on 10 March 2012 to receive public views on the Government's strategy on enhancing land supply.

36. On 22 January 2013, we briefed the Panel Members on the policy initiatives of the Development Bureau in the 2013 Policy Address. Among others, we outlined the results of the Stage 1 PE.

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37. We launched the Stage 2 PE on 21 March 2013 and briefed the Panel Members on 23 April 2013 that Sunny Bay is one of the five near-shore reclamation sites for further consideration.

38. The Panel held a special meeting on 1 June 2013 to receive public views on the proposed reclamation sites including reclamation at Sunny Bay.

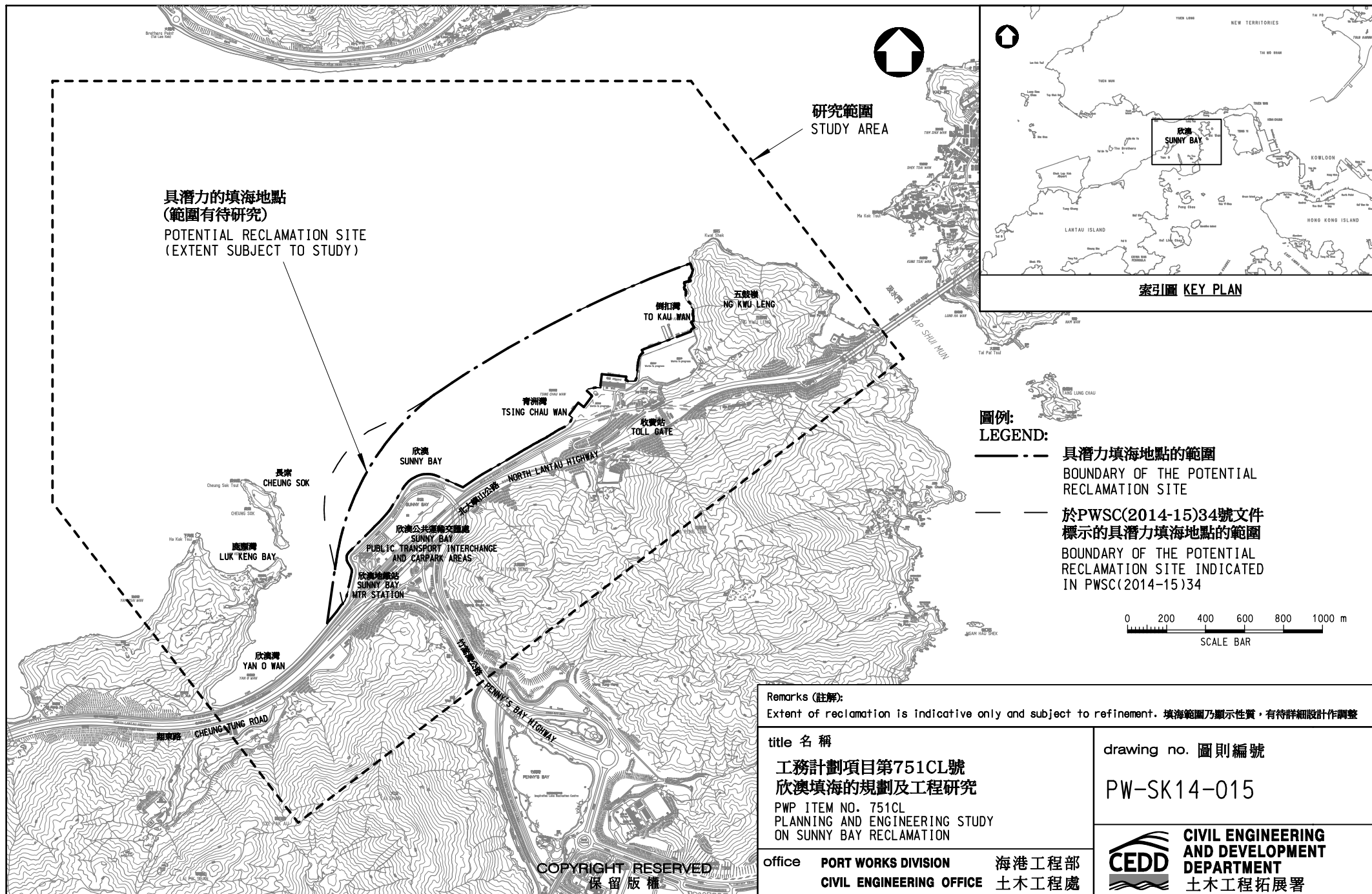
39. On 28 January 2014, we briefed the Panel Members on the results of Stage 2 PE.

40. We submitted PWSC(2014-15)34 for upgrading of **751CL** to Category A to the PWSC in November 2014. The paper was discussed at the PWSC meetings on 26 November 2014 and 9 January 2015, but the item did not receive majority support from Members. To address Members' concerns, we have provided additional information in this paper (see paragraphs 23 to 26 above). We have also revised the programme, estimated cost and cashflow of the item in paragraphs 5, 15 and 17 above and the boundary of the potential reclamation site in Enclosure 1.

41. The Study and the associated site investigation works will not directly involve any tree removal or planting proposals. We will require the consultants to take into consideration the need for tree preservation during the Study.

42. We estimate that the proposed Study and the associated site investigation works will create about 50 jobs (12 for labourers and another 38 for professional or technical staff), providing a total employment of 920 man-months.

Development Bureau
June 2016



**A summary of views collected in Stage 2 Public Engagement
on Sunny Bay reclamation**

Land Use

Land reserve and residential development (in particular public rental housing) are the most supported land uses for Sunny Bay reclamation.

2. Other major supported land uses covered uses for commercial, tourism related facilities, retail, dining, theme parks, recreational or leisure facilities, public parks, tourist spots and holiday village.

Aspects of Specific Concerns

3. A considerable number of respondents indicated that reclamation works would increase job opportunities and help alleviate the housing problem. Some considered that reclamation at Sunny Bay would be beneficial to the local community and economic growth.

4. Impacts on landscape or habitats along the shorelines, marine ecology, ecological conservation, transportation, cost-effectiveness and the need to expedite land supply were the major concerns about the Sunny Bay reclamation.

5. Other concerns included impact on the local community, deterioration of seawater quality, air and noise pollution near the development site, and the importance of environmental impact assessment.

6. The Executive Summary of Stage 2 Public Engagement is available at website of the Civil Engineering and Development Department¹.

¹ <http://www.cedd.gov.hk/eng/landsupply/doc/Report%20on%20Stage%202%20Public%20Engagement%20-%20Executive%20Summary.pdf>

**A summary of the findings of the CEIA
related to Sunny Bay reclamation**

The Civil Engineering and Development Department (CEDD) conducted a cumulative environmental impact assessment (CEIA) and an on-site survey of Chinese White Dolphins (CWDs) to examine strategically the total effects of the three reclamation sites in the western waters north of Lantau (viz Sunny Bay, Siu Ho Wan and Lung Kwu Tan) on marine ecology and the environment. Four key environmental aspects, namely air quality, water quality, ecology and fisheries, were studied, taking into consideration the major infrastructure and development projects in their vicinity, including the Hong Kong-Zhuhai-Macao Bridge (HZMB) related projects in Hong Kong under construction, the Hong Kong International Airport (HKIA)'s three-runway system and the Tung Chung New Town Extension under planning.

2. The CEIA has revealed that there is no insurmountable environmental problem identified with respect to the four key environmental aspects, in relation to the three reclamation proposals. Sunny Bay, according to the CWD survey, is unlikely to be a CWD hotspot and has only low and probably occasional dolphin use. The following summary gives an account of the key potential issues and mitigation options identified in the CEIA related to Sunny Bay reclamation.

Potential issues in relation to air quality

3. Siu Ho Wan and Sunny Bay sites at North Lantau were assessed collectively. No adverse impact due to air pollutants is anticipated at the existing air sensitive receivers. However, due to vehicular emissions, air-sensitive uses should be avoided immediately adjoining the North Lantau Highway at Sunny Bay reclamation.

Potential issues in relation to water quality

4. Based on the water quality modelling for the construction phase of the three reclamations, the CEIA anticipated that, with the adoption of an eco-friendly construction method, such as non-dredged method, for seawall construction and reclamation, and proper mitigation measures such as double-silt curtain system at appropriate locations, the suspended solid level at the identified water sensitive receivers would comply with the Water Quality Objectives. Nonetheless, as the assessment scenarios were built-up with reference to the latest project information including construction programme available at the time of assessment, the findings should be reviewed in the future statutory environmental impact assessment for Sunny Bay reclamation based on the more latest project programme and construction details at the time.

5. In the operational phase, the CEIA revealed that the three reclamations would unlikely have a significant effect on the overall flow pattern in the western waters. The impact on the water quality of the receiving water bodies due to the new developments at the three reclamations would be insignificant with the provision of proper sewage treatment facilities and other green infrastructures such as storm water harvest aiming to reduce pollutant discharge.

Potential issues in relation to ecology including CWD

6. Potential impact to CWD was identified as a major issue regarding the ecological impact of the three reclamation proposals. Based on the result of CWD Survey, Sunny Bay reclamation site was found unlikely to be a CWD hotspot, having only low and probably occasional dolphin use. No direct impact to sites of conservation importance near the potential reclamation site is expected.

Potential issues in relation to fisheries

7. The waters to be affected are of low to moderate fisheries production in term of weight and value. The study also revealed that there would be no direct loss of important spawning or nursery grounds, aquaculture sites or artificial reefs from the three potential reclamation proposals. The water quality modeling assessment predicted that the dissolved oxygen level at Ma Wan Fish Culture Zone would be low only in three months of the year under both with and without reclamation scenarios.

8. The Executive Summary of the CEIA is available at website of the CEDD¹.

¹ [http://www.cedd.gov.hk/eng/landsupply/doc/Executive%20Summary%20on%20Final%20Report%20\(S2\)b.pdf](http://www.cedd.gov.hk/eng/landsupply/doc/Executive%20Summary%20on%20Final%20Report%20(S2)b.pdf)

Enclosure 4 to PWSC(2016-17)34

751CL – Planning and engineering study on Sunny Bay reclamation

Breakdown of the estimates for consultants' fees (in September 2015 prices)

Consultants' staff costs ^(Note 1)		Estimated man- months	Average MPS* salary point	Multiplier ^(Note2)	Estimated fees (\$ million)
(i) Planning study	Professional	46	38	2.0	6.8
	Technical	70	14	2.0	3.6
(ii) Engineering study	Professional	123	38	2.0	18.3
	Technical	204	14	2.0	10.4
(iii) Environmental impact assessment	Professional	32	38	2.0	4.7
	Technical	107	14	2.0	5.5
(iv) Supervision of site investigation works	Professional	9	38	2.0	1.3
	Technical	9	14	2.0	0.5
				Total	51.1

* MPS = Master Pay Scale

Notes

1. The actual man-months and fees will only be known when we have selected the consultants through the usual competitive fee bidding system.
2. A multiplier of 2.0 is applied to the average MPS point to estimate the full staff costs including the consultants' overheads and profit as the staff will be employed in the consultants' offices (as at now, MPS point 38 = \$74,210 per month and MPS point 14 = \$25,505 per month).