

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 705 – CIVIL ENGINEERING

Civil Engineering – Land development

767CL - Planning and engineering study for Lung Kwu Tan reclamation and the re-planning of Tuen Mun West area

782CL - Engineering Study on Road P1 (Tai Ho - Sunny Bay Section)

Members are invited to recommend to the Finance Committee –

- (a) the upgrading of **767CL** to Category A at an estimated cost of \$179.0 million in money-of-the-day (MOD) prices; and
- (b) the upgrading of **782CL** to Category A at an estimated cost of \$130.2 million in MOD prices.

PROBLEM

We need to carry out the following studies and the associated site investigation works –

- (a) a planning and engineering study for Lung Kwu Tan reclamation and the re-planning of Tuen Mun West area and the associated site investigation works to provide development opportunities to meet the needs of society; and
- (b) an engineering study on Road P1 (Tai Ho - Sunny Bay Section) and the associated site investigation works to relieve the traffic pressure on the North Lantau highway, cope with the housing and economic developments at North Lantau, and enhance the resilience of the North Lantau transport network.

/PROPOSAL.....

PROPOSAL

2. The Director of Civil Engineering and Development, on the advice of the Director of Planning, proposes to upgrade **767CL** to Category A at an estimated cost of \$179.0 million in MOD prices to engage consultants to conduct the planning and engineering study for Lung Kwu Tan reclamation and the re-planning of Tuen Mun West area and the associated site investigation works.

3. The Director of Civil Engineering and Development proposes to upgrade **782CL** to Category A at an estimated cost of \$130.2 million in MOD prices to engage consultants to conduct the engineering study on Road P1 (Tai Ho – Sunny Bay Section) and the associated site investigation works.

4. The Secretary for Development supports the above proposals.

PROJECT SCOPE AND NATURE

——— 5. Details of the above two projects are provided at Enclosures 1 and 2 respectively.

Development Bureau
February 2020

767CL - Planning and engineering study for Lung Kwu Tan reclamation and the re-planning of Tuen Mun West area

PROJECT SCOPE AND NATURE

The scope of **767CL** comprises –

- (a) a planning and engineering study for the proposed Lung Kwu Tan reclamation and the re-planning of Tuen Mun West area to establish the reclamation extent, land uses and development proposals, as well as undertaking the relevant detailed impact assessments, including statutory environmental impact assessment (EIA) and area-wide traffic impact assessment, and preliminary design of the associated infrastructure including upgrading of Lung Mun Road;
- (b) community engagement and consultation exercises with the stakeholders¹; and
- (c) associated site investigation works including supervision.

— A plan indicating the location of the proposed Lung Kwu Tan reclamation and Tuen Mun West area is at Figure 1 of Enclosure 1.

2. Subject to funding approval of the Finance Committee, we plan to commence the Study and the associated site investigation works in the latter half of 2020 for completion in 30 months.

/JUSTIFICATION

¹ Community engagement and consultation exercises include roving exhibitions, community liaison group meetings, community forums, etc.

JUSTIFICATION

3. Hong Kong is mountainous with little flat land and the supply of developable land is particularly limited. The Government has been adopting a multi-pronged strategy to enhance land supply. According to the Report of the Task Force on Land Supply (TFLS) submitted to the Government in December 2018, the TFLS recommended that Lung Kwu Tan reclamation and development of River Trade Terminal site are worthy of study and implementation with priority. The TFLS considered that new land formed by the reclamation offers the Government greater flexibility to review different kinds of land use demands from a macro perspective and conduct holistic planning. As regards developing the River Trade Terminal site, the TFLS was of the view that, from the perspective of comprehensive planning, the Government should consider holistically the land uses of the coastal area of Tuen Mun West (including the River Trade Terminal site, the Lung Kwu Tan reclamation as well as the industrial and special facilities nearby) and examine rationalisation and realignment of operations on different sites, so as to increase planning flexibility. The Government agreed and accepted the recommendation of TFLS and proposed to conduct a comprehensive planning and engineering study for Lung Kwu Tan reclamation and the coastal area of Tuen Mun West area (including the River Trade Terminal).

4. Located at the western end of Tuen Mun, Lung Kwu Tan together with its adjoining areas currently accommodate various industrial facilities including two power stations. Taking into account the constraints in relocating these facilities, we considered that the reclaimed land at Lung Kwu Tan would be suitable for industrial uses (especially those requiring ample spaces for operations and relying on the use of sea-borne transport). Besides supporting various kinds of local industries, such as construction and environmental industries etc., the proposed reclaimed land at Lung Kwu Tan may also offer space to accommodate different types of economically beneficial activities or land uses in more centralized, organized and efficient manners, including the space to accommodate, where necessary, the existing industrial facilities at Tuen Mun West and some of the brownfield operations affected by developments. These land uses will provide job opportunities for the local community.

5. The Civil Engineering and Development Department (CEDD) commenced the Technical Study on Reclamation at Lung Kwu Tan (the Technical Study) in October 2015 to ascertain the feasibility of the proposed reclamation. The Technical Study was completed in 2017. It suggested a preliminary reclamation extent of about 220 hectares (ha) to 250 ha, and established that the proposed reclamation development would not cause insurmountable technical and environmental problems. According to the findings of the Technical Study, we propose to upgrade Lung Mun Road that links with Tuen Mun Town Centre to cope with the proposed development and enhance the connectivity of Lung Kwu Tan and Tuen Mun West area. A new road will also be constructed within the reclaimed land as an alternative of Lung Kwu Tan Road, which will address the residents' concerns on environmental nuisance arising from heavy vehicles passing by Lung Kwu Tan Village. In addition, we will optimise the design of the reclamation area in the Study to preserve the existing natural shoreline as far as possible, and will provide a green-channel along natural shoreline as well as an eco-shoreline along man-made shore. We will also enhance the water feature and plan for ample landscaping and greening coverage by means of holistic urban design to foster a better community environment and living quality of the residents thereat, including the adjacent Lung Kwu Tan Village.

6. The River Trade Terminal in Tuen Mun West area is located relatively closer to the Tuen Mun Town Centre and existing strategic transport infrastructure. In view of the current dwindling volume of cargo handling in the River Trade Terminal², we will take the opportunities from the proposed Lung Kwu Tan reclamation to rationalise and realign the existing operations at different sites on its periphery, and review the need of the River Trade Terminal, with a view to raising the land use potential of Tuen Mun West area for housing and/or other beneficial developments. In addition, the strategic transport networks being planned will enhance the connectivity of Tuen Mun with the urban areas. It will help relieve the congestion of the existing transport networks and unleash the development potential of the coastal area in Tuen Mun West.

7. In summary, Lung Kwu Tan reclamation, upgrading of Lung Mun Road and re-planning of Tuen Mun West area will provide various development opportunities to meet the needs of society. We will review and establish the suitable land uses and development scale of Tuen Mun West area in the Study, and explore urban development strategies that adopt smart and green measures to create a sustainable and people-oriented community with resilience against extreme weather.

/FINANCIAL

² In 2018, the utilisation rate of the River Trade Terminal berths was only 20% of its capacity.

FINANCIAL IMPLICATIONS

8. We estimate the costs of the Study and the associated site investigation works to be \$ 179.0 million in MOD prices, broken down as follows –

		\$ million (in MOD prices)
(a)	Consultants' fees for	121.4
	(i) planning and engineering study	93.2
	(ii) environmental impact assessment	25.3
	(iii) supervision of site investigation works	2.9
(b)	Community engagement exercise and consultation exercises	10.4
(c)	Site investigation works	31.0
(d)	Contingencies	16.2
	Total	<u>179.0</u>

9. In view of the complex and multi-disciplinary nature of the Study, we plan to engage consultants to undertake the Study and supervise the associated site investigation works. A breakdown of the estimates for the consultants' fees by man-months is at Annex 1 to Enclosure 1.

10. Subject to funding approval, we plan to phase the expenditure as follows –

Year	\$ million (MOD)
2020-2021	3.0
2021-2022	65.0
2022-2023	59.4
2023-2024	43.9
2024-2025	7.7
	<hr/> 179.0 <hr/>

11. We have derived the MOD estimate on the basis of the Government's latest forecast of the trend rate of change in the prices of public sector building and construction output for the period from 2020 to 2025. We will engage consultants to undertake the Study on a lump sum basis. 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.

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

PUBLIC CONSULTATION

13. We briefed the members of the Tuen Mun District Council on the Study at its meeting on 5 March 2019. Majority of the members supported the proposal of taking forward the Study. Some members were concerned about the potential impacts of the proposed development on the local traffic and environmental conditions. We will conduct technical and environmental assessments under the Study and formulate proposals with blue-green elements³ and mitigation measures. In the course of the Study, we will conduct community engagement activities and provide more comprehensive information to consult the community.

/14.

³ The design relating to blue water resources and green spaces including visual corridors, breezeways, eco-channels, etc.

14. We briefed the Legislative Council Panel on Development on the Study on 20 January 2020. Members generally supported submitting the funding proposal to the Public Works Sub-committee for consideration.

ENVIRONMENTAL IMPLICATIONS

15. The Study is a designated project under Schedule 3 of the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499). We will prepare EIA report(s) according to the requirements under EIAO for submission to the Director of Environmental Protection for approval. For works items (such as reclamation, major roads and sewage pumping stations) proposed under the Study and constitute designated projects under Schedule 2 of the EIAO that require Environmental Permits for construction and operation, the environmental impact including air quality, water quality and hydraulics, ecology⁴, fisheries, cultural heritage, noise, landscape and visual impacts of these works items will be adequately assessed in the EIA report(s).

16. 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 or recycle construction waste as much as possible in the future implementation of the construction projects.

17. We strive to adopt most suitable environment-friendly methods that can effectively reduce pollution caused by the removal of seabed sediments. We will explore other more advanced and environment-friendly reclamation technologies and designs in the Study with a view to further protecting the environment. In addition, we will explore in the Study to provide green-channel to protect the existing natural shorelines as far as possible and provide eco-shorelines at reclamation area if situation warrants.

HERITAGE IMPLICATIONS

18. 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

⁴ It will include the impact assessment for Chinese White Dolphins.

LAND ACQUISITION

19. 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 Lung Kwu Tan reclamation and the re-planning of Tuen Mun West area.

BACKGROUND INFORMATION

20. The CEDD commenced a study entitled “Enhancing Land Supply Strategy” in July 2011, with a view to identifying the suitable sites for reclamation outside Victoria Harbour. Lung Kwu Tan is one of the potential near-shore reclamation sites. The study was completed in 2014 and the executive summaries were uploaded to CEDD’s website for public information.

21. We upgraded **767CL** to Category B in September 2013.

22. We commenced the Technical Study on Lung Kwu Tan Reclamation in October 2015 and completed the Technical Study in 2017.

23. The Study and the associated site investigation works will not directly involve any tree removal or planting proposals.

24. We estimate that the Study and the associated site investigation works will create about 41 jobs (9 for labourers and another 32 for professional or technical staff), providing a total employment of 950 man-months.

Annex 1 to Enclosure 1 to PWSC(2019-20)26

767CL – Planning and engineering study for Lung Kwu Tan reclamation and the re-planning of Tuen Mun West area

Breakdown of the estimates for consultants' fees (in September 2019 prices)

Consultants' staff costs ^(Note 1)			Estimated man- months	Average MPS* salary point	Multiplier ^(Note2)	Estimated fees (\$ million)
(i)	Planning and engineering study	Professional	305	38	2.0	52.4
		Technical	468	14	2.0	28.3
					Sub-total	80.7#
(ii)	Environmental impact assessment	Professional	83	38	2.0	14.3
		Technical	129	14	2.0	7.8
					Sub-total	22.1#
(iii)	Supervision of site investigation works	Professional	7	38	2.0	1.2
		Technical	22	14	2.0	1.3
					Sub-total	2.5#
					Total	105.3#

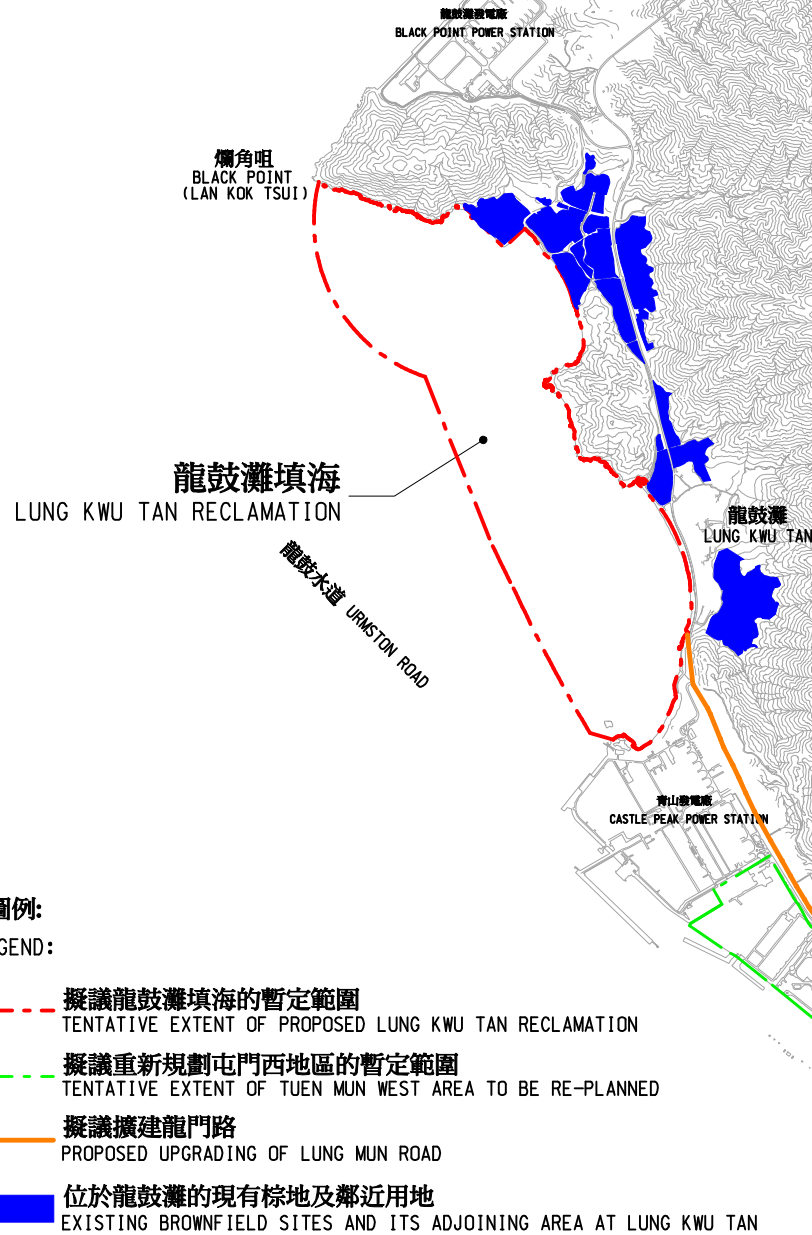
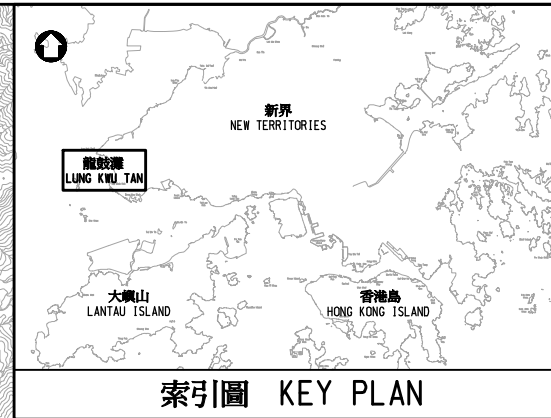
* MPS = Master Pay Scale

Notes

1. The actual man-months and fees will only be known after the consultants have been selected.
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 (subject to Finance Committee's approval, MPS point 38 = \$85,870 per month and MPS point 14 = \$30,235 per month).

Remarks

The cost figures in this Annex are shown in constant prices to correlate with the MPS salary point of the same year. The figures marked with # are shown in money-of-the-day prices in paragraph 8 of Enclosure 1.



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龍鼓灘填海和重新規劃屯門西地區的規劃及工程研究

PLANNING AND ENGINEERING STUDY FOR LUNG KWU TAN RECLAMATION AND THE RE-PLANNING OF TUEN MUN WEST AREA

782CL - Engineering Study on Road P1 (Tai Ho - Sunny Bay Section)

PROJECT SCOPE AND NATURE

The scope of works of **782CL** comprises –

- (a) an investigation study¹ and the preliminary design for the works relating to the Road P1 (Tai Ho – Sunny Bay Section) that mainly consists of the following works components –
 - (i) a carriageway of approximately 9.5 km long that extends from the Tai Ho Interchange² to Sunny Bay and connects to the North Lantau Highway (NLH) and the proposed Route 11, which involves viaduct(s), tunnel(s) and reclamation works; and
 - (ii) the associated building, civil, structural, marine, electrical and mechanical, landscaping³, and environmental protection and mitigation works; and
- (b) the associated site investigation works and works supervision.

2. A plan showing the indicative alignment of the Road P1 (Tai Ho – Sunny Bay Section) is at Figure 1 of Enclosure 2.

3. Subject to funding approval of the Finance Committee, we plan to commence the Engineering Study on Road P1 (Tai Ho – Sunny Bay Section) (the Study) in the latter half of 2020 for completion in 30 months.

/JUSTIFICATION.....

¹ The investigation study includes a review of the findings of previous studies, and impact assessments on environment, traffic, geotechnical, marine, heritage and other related aspects.

² Tai Ho Interchange is part of the Road P1 (Tung Chung – Tai Ho Section), which has been included in **799CL** entitled “Tung Chung New Town Extension - Detailed Design and Site Investigation” for implementation.

³ The investigation study covers the consideration of building cycle tracks and promenades along appropriate road section(s).

JUSTIFICATION

4. The NLH is a major route connecting Lantau, including Tung Chung and the Hong Kong International Airport, with the urban areas. At present, whenever there is a traffic incident on the NLH, the road traffic connecting Lantau and urban areas would be seriously affected. With the progressive implementation of the planned developments in North Lantau (e.g. Tung Chung New Town Extension and the SKYCITY development project at the airport), it is forecasted that the traffic congestion of the NLH would get serious during peak hours since 2031. In order to relieve the traffic pressure on the NLH, cope with the housing and economic developments at North Lantau, and enhance the resilience of the North Lantau transport network, we have to commence the Study as soon as possible.

5. Road P1 is about 12 km long in total, with two sections which are about 2.5 km of Tung Chung to Tai Ho Section and about 9.5 km of Tai Ho to Sunny Bay Section. Road P1 (Tung Chung – Tai Ho Section) is within the scope of 799CL entitled “Tung Chung New Town Extension - Detailed Design and Site Investigation”, and the relevant detailed design and site investigation are in progress.

6. The Study is to determine the alignment, overall layout, preliminary design proposal and land requirement of Road P1 (Tai Ho – Sunny Bay Section). Under the Study, we will conduct relevant impact assessments, including an environmental impact assessment (EIA), with a view to identifying the impacts and the mitigation measures required. We will also carry out site investigation works to provide geotechnical and geological information for relevant design works.

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the Study and the associated site investigation works to be \$130.2 million in MOD prices, broken down as follows -

/\$ million

		\$ million (in MOD prices)
(a)	Consultants' fees for	62.3
	(i) investigation study and preliminary design	44.4
	(ii) environment impact assessment	12.4
	(iii) supervision of site investigation works	5.5
(b)	Community engagement and consultation exercises	2.1
(c)	Site investigation works	54.1
(d)	Contingencies	11.7
Total		<hr/> 130.2 <hr/>

8. In view of the complex and multi-disciplinary nature of the Study, we plan to engage consultants to undertake the Study and supervise the associated site investigation works. A breakdown of the estimates for the consultants' fees by man-months is at Annex 1 to Enclosure 2.

9. Subject to funding approval, we plan to phase the expenditure as follows –

Year	\$ million (MOD)
2020 – 2021	1.2
2021 – 2022	32.5
2022 – 2023	58.0
2023 – 2024	30.9
2024 – 2025	7.6
Total	<hr/> 130.2 <hr/>

10. We have derived the MOD estimates on the basis of the Government's latest forecast of the trend rate of change in the prices of public sector building and construction output for the period from 2020 to 2025. We will engage consultants to undertake the Study on a lump sum basis. 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.

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

PUBLIC CONSULTATION

12. Members of the Islands District Council (DC) and Tsuen Wan DC were consulted on the Study at the meetings of 25 February 2019 and 5 March 2019 respectively. We did not receive objection to the Study in DC meetings.

13. We briefed the Legislative Council Panel on Development about the Study on 20 January 2020. Members' comments were mainly about the connection of Road P1 with the proposed Route 11 and other roads as well as the implementation programme.

ENVIRONMENTAL IMPLICATIONS

14. The proposed Road P1 (Tai Ho – Sunny Bay Section) is a designated project under Schedule 2 of the EIA Ordinance (Chapter 499). The Administration is required to apply for an environmental permit for the construction and operation of the project. We will conduct an EIA study to comply with the requirements of the EIA Ordinance. The EIA study will assess the environmental impacts arising from the proposed works and it will cover the aspects of air quality, water quality, ecology, fisheries, cultural heritage, noise, landscape and visual impact, etc. However, the Study itself is not a designated project and will not cause long-term adverse environmental impacts. We have included in the project estimates the cost of implementing suitable pollution control measures to mitigate short-term environmental impacts arising from the site investigation works under the Study.

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

HERITAGE IMPLICATIONS

16. 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. The Study will investigate if the proposed Road P1 (Tai Ho – Sunny Bay Section) project will affect any sites of archaeological values.

LAND ACQUISITION

17. 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 the proposed Road P1 (Tai Ho – Sunny Bay Section).

BACKGROUND INFORMATION

18. The concept of Road P1 has already been mentioned in the Northshore Lantau Development Feasibility Study completed in 2001, which suggested Road P1 to connect the airport with Sunny Bay. Road P1 was proposed as a dual two-lane carriageway parallel to the NLH.

19. The Revised Concept Plan for Lantau drawn up by the Lantau Development Task Force in 2007 affirmed the need of Road P1 to accommodate the long-term traffic demand.

20. We upgraded **782CL** to Category B in September 2014.

21. The Sustainable Lantau Blueprint promulgated by the Administration in June 2017 reaffirmed the need of Road P1 to strengthen the connectivity of the major developments along the northshore of Lantau.

/22.

22. The Civil Engineering and Development Department (CEDD) completed the “Technical Study on Developments at Siu Ho Wan and the Associated Transport Infrastructures” in 2018. The traffic and transport impact assessment conducted under which indicated that Road P1 would be required to alleviate the traffic congestion in North Lantau in the long term. CEDD is carrying out the “Study on Traffic, Transport and Capacity to Receive Visitors for Lantau – Feasibility Study”, which has also established the traffic needs and the preliminary technical feasibility of Road P1 (Tai Ho – Sunny Bay Section).

23. 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 in carrying out the Study.

24. We estimate that the Study and the associated site investigation works will create about 45 jobs (17 for labourers and 28 for professional/technical staff), providing a total employment of 940 man-months.

Annex 1 to Enclosure 2 to PWSC(2019-20)26

782CL – Engineering Study on Road P1 (Tai Ho – Sunny Bay Section)

Breakdown of the estimates for consultants' fees (in September 2019 prices)

Consultants' staff costs (Note 1)			Estimated man- months	Average MPS* salary point	Multiplier (Note2)	Estimated fees (\$ million)
(i)	Investigation study and preliminary design	Professional	138	38	2.0	23.7
		Technical	235	14	2.0	14.2
					Sub-total	37.9#
(ii)	Environmental impact assessment	Professional	38	38	2.0	6.5
		Technical	66	14	2.0	4.0
					Sub-total	10.5#
(iii)	Supervision of site investigation works	Professional	14	38	2.0	2.4
		Technical	38	14	2.0	2.3
					Sub-total	4.7#
					Total	53.1#

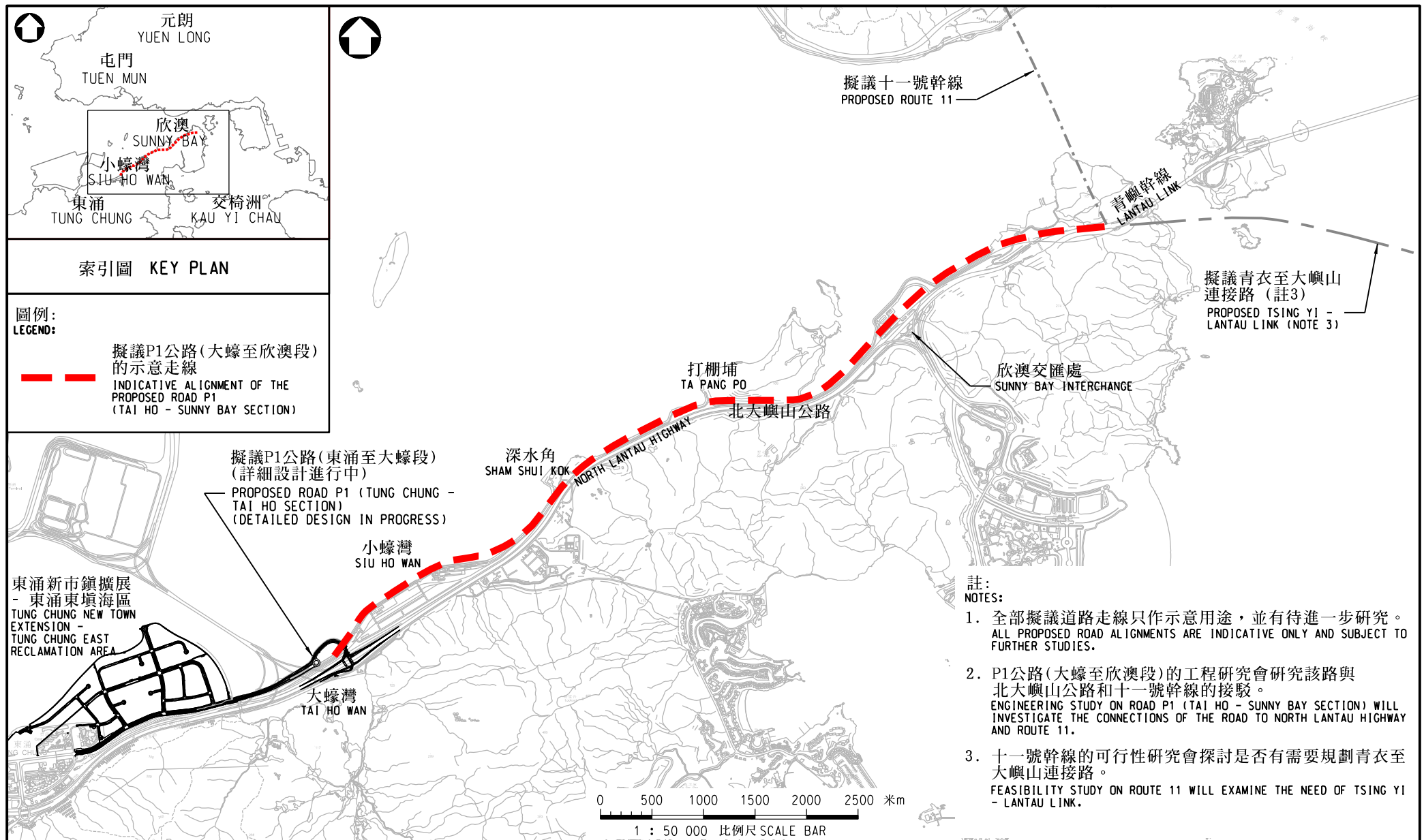
* MPS = Master Pay Scale

Notes

- The actual man-months and fees required will only be known after the consultants have been selected.
- 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 (Subject to Finance Committee's approval, MPS point 38 = \$85,870 per month and MPS point 14 = \$30,235 per month).

Remarks

The cost figures in this Annex are shown in constant prices to correlate with the MPS salary point of the same year. The figures marked with # are shown in money-of-the-day prices in paragraph 7 of Enclosure 2.



圖則名稱 drawing title

P1公路(大蠔至欣澳段)的工程研究

- 示意走線位置圖

ENGINEERING STUDY ON ROAD P1 (TAI HO - SUNNY BAY SECTION)

- LOCATION PLAN OF INDICATIVE ALIGNMENT