For discussion **EC(2017-18)15**
on 20 December 2017

ITEM FOR ESTABLISHMENT SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 60 – HIGHWAYS DEPARTMENT
Subhead 000 Operational expenses

Members are invited to recommend to the Finance Committee the following –

(a) to retain the following three supernumerary posts in the Highways Department –

1 Principal Government Engineer
(D3) ($191,300 - $208,800)

with effect from 1 January 2018 or upon approval of the Finance Committee (whichever is later) to 31 December 2020

2 Chief Engineers
(D1) ($138,500 - $151,550)

with effect from 1 January 2018 or upon approval of the Finance Committee (whichever is later) to 31 December 2019

(b) to extend the redeployment of the following permanent post in the Highways Department –

1 Chief Engineer
(D1)($138,500 - $151,550)

with effect from 1 January 2018 or upon approval of the Finance Committee (whichever is later) to 31 December 2020

/PROBLEM …..

PROBLEM

The Highways Department (HyD) needs dedicated staffing support of the above directorate officers to continue taking forward the Tuen Mun-Chek Lap Kok Link (TM-CLKL) project and the Tuen Mun Western Bypass (TMWB) project and to complete the remaining works of the Hong Kong-Zhuhai-Macao Bridge (HZMB) Hong Kong Section (i.e. Hong Kong Link Road (HKLR) and Hong Kong Boundary Crossing Facilities (HKBCF))[1]. This paper seeks Members' views on the aforementioned proposal.

PROPOSAL

2. Under the Major Works Project Management Office (Special Duties) [2] (MWPMO(SD)) (currently named as HZMB Hong Kong Project Management Office), we propose to –

(a) retain one supernumerary post of Principal Government Engineer (PGE) (D3) (to be retitled from the current Project Manager/HZMB (PM/HZMB) to Project Manager/Major Works (Special Duties) (PM/MW(SD)) with effect from 1 January 2018 or upon approval of the Finance Committee (FC) (whichever is later) to 31 December 2020;

(b) retain two supernumerary posts of Chief Engineer (CE) (D1) (to be retitled from the current Chief Engineer/HKLR (CE/HKLR) and Chief Engineer/HKBCF (CE/HKBCF) to Chief Engineer 2/Special Duties (CE2/SD) and Chief Engineer 3/Special Duties (CE3/SD) respectively) with effect from 1 January 2018 or upon approval of the FC (whichever is later) to 31 December 2019; and

(c) extend the redeployment of one permanent CE (D1) post (to be retitled from the current Chief Engineer/Northwest New Territories (CE/NWNT) to Chief Engineer 1/Special Duties (CE1/SD)) from the Major Works Project Management Office (MWPMO) with effect from 1 January 2018 or upon approval of the FC (whichever is later) to 31 December 2020.

We will review in 2019 and 2020 whether it will be necessary to further retain/extend the above four posts.

/**JUSTIFICATION** …..

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[1] See paragraph 3 below.

[2] Since the works under the HKLR and HKBCF projects of the HZMB will become less from 2018 onwards, HyD proposes to change the title of the project management office and the post titles of the responsible officers to match with the future work of the office.

JUSTIFICATION

Justification for Retention and Extension of the Directorate Establishment

3. As anticipated by HyD, the TM-CLKL project will continue to be at its construction peak whilst the investigation study for the TMWB will be ongoing in 2018. For the HZMB Hong Kong Section (i.e. the HKLR and HKBCF), the works which are not absolutely essential for the commissioning of the HZMB will still be ongoing, including part of the existing road reinstatement works and part of the traffic control and surveillance systems (TCSS) works under the HKLR works contracts; and part of the landscape works and their irrigation systems, part of the finishing, building services and electronic systems works of the ancillary buildings/facilities in the HKBCF, part of the TCSS works and some road/viaduct works under the HKBCF works contracts. Having reviewed the prevailing directorate establishment of the HZMB HKPMO, HyD considers it necessary to retain these posts in order to ensure operational continuity and adequate supervision of these projects.

4. HyD also proposes to rename the HZMB HKPMO as MWPMO(SD) and retain/redeploy four directorate posts (1 PGE and 3 CEs). The supernumerary post of PGE, designated as PM/MW(SD), heads the MWPMO(SD) and is underpinned by the 3 CEs as described in paragraph 2 above. The 3 CEs are responsible for the following projects respectively –

(a) CE1/SD is responsible for taking forward the TM-CLKL (Northern Connection) project as well as monitoring and handling environmental matters;

(b) CE2/SD is responsible for taking forward the TM-CLKL (Southern Connection) project, its electrical and mechanical (E&M) works and TCSS works, as well as the TMWB project; and

(c) CE3/SD is responsible for taking forward the remaining works of the HZMB Hong Kong Section.

5. The proposed organisation chart of the MWPMO(SD) is at Enclosure 1 whereas the progress of the TM-CLKL, TMWB and HZMB Hong Kong Section is set out at Enclosure 2.

Encl. 1
Encl. 2

6. Regarding the TM-CLKL, the completion of the Southern Connection was originally planned to dovetail with the commissioning of the HZMB Main Bridge whilst the Northern Connection was planned to be completed by end 2018. However, in view of various technical difficulties encountered, the construction programme is under a lot of pressure and hence the above completion

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target cannot be met. HyD has carried out a comprehensive review on the commissioning of the TM-CLKL and announced in March 2017 that the Southern Connection is anticipated to be completed in the first half of 2019 at the earliest, whilst the Northern Connection is targeted for completion in 2020 at the earliest. The sub-sea tunnelling works of the Northern Connection are still experiencing some complicated technical issues that need to be resolved with the contractor. Based on the latest revised design submitted by the contractor, HyD anticipates that the Northern Connection can be completed in 2020 at the earliest. Moreover, the tunnel E&M works and TCSS installation works of the Northern Connection are expected to commence in 2018. There are enormous complexities involved in the handover of various works items and the subsequent testing and commissioning. HyD's supervision and co-ordination with other relevant departments are highly critical to the smooth completion of the works.

7. As for the TMWB, the investigation and preliminary design commenced as early as 2008. Hence, after obtaining local support for the proposed alignment of the TMWB[3] in 2010, HyD proceeded with the preliminary design and related assessments. However, some members of the local community have since expressed concerns that the northern viaduct section of the TMWB and the portal of its southern tunnel section at Tsing Tin Interchange might affect nearby residents, and raised strong objections to the project. HyD therefore had to review several proposed alignments of the TMWB to address the concerns of the local community. The latest proposed alignment option is a dual two-lane tunnel of approximately 9 km long linking up the TM-CLKL and Kong Sham Western Highway with an intermediate connection at Tsing Tin Road in Tuen Mun North. As the latest proposed alignment involves quite a substantial revision, HyD has to engage a professional engineering consultant to conduct an investigation study thereon. In July and September 2016, HyD consulted Tuen Mun District Council, the Traffic and Transport Committee of Yuen Long District Council and Ha Tsuen Rural Committee, Yuen Long on the latest proposed alignment option. They raised no objection to the proposed investigation study. HyD commenced the investigation study on the latest proposed alignment option subsequently in October 2017. The study will take two years and will include assessments on the environment, traffic, etc. together with a review on the construction cost, implementation arrangements and schedule.

8. Regarding the HZMB, at the meeting of the HZMB Joint Works Committee of the Three Governments (JWC) on 7 November 2017, the meeting discussed in detail the progress of the Main Bridge, of the ports in all three sides

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[3] This alignment option is composed of tunnels and viaducts. The southern tunnel will connect to TM-CLKL with a portal in the north at Tsing Tin Interchange, connecting to a proposed dual two-lane viaduct alongside Tuen Mun Road. The viaduct will then span over Lam Tei Interchange and run further north along Castle Peak Road connecting to Kong Sham Western Highway near Yick Yuen.

and of the link roads. The three sides agreed to make their best endeavours to overcome difficulties and challenges so as to achieve the target of completing the major construction works of the Main Bridge and the ports by end 2017, and to continue improving the clearance conditions of the ports. The commissioning date of the HZMB will be ascertained by the Central Government and will be announced once confirmed.

9. Regarding the HZMB Hong Kong Section (i.e. the HKLR and HKBCF), HyD will continue to take forward the works so as to dovetail with the commissioning of the HZMB. The works under the HKLR and HKBCF projects which are not absolutely essential for the HZMB commissioning will be completed in 2018. These include part of the existing road reinstatement works and part of the TCSS works under the HKLR works contracts; and part of the landscape works and their irrigation systems, part of the finishing, building services and electronic systems works of ancillary buildings/facilities in the HKBCF, part of the TCSS works and some road/viaduct works under the HKBCF works contracts. Regarding the second phase of the HKBCF project which aims to address the long-term operational needs, the implementation schedule will be decided on the basis of the passenger and traffic flows after the commissioning of the HKBCF.

10. HyD has already awarded a total of 14 major civil and E&M works contracts in respect of the TM-CLKL, HKLR and HKBCF projects with a value totalling about $70 billion (in money-of-the-day prices). In case of unforeseen circumstances, the contractors of the works may file claims in accordance with the relevant contract terms with sufficient grounds and information as reasonable support. As of November 2017, in relation to the TM-CLKL, HKLR and HKBCF projects, HyD has received claims of $3.0 billion, $3.2 billion and $5.4 billion respectively. The consulting engineers engaged by HyD are handling the claims in accordance with the contracts. After receiving the claims submitted by the contractors, the consulting engineers engaged by HyD will review the reasonableness of these claims in the light of the contracts, the grounds of the claims and related documents, etc. submitted by the contractors, and seek HyD's comments in respect of the assessments. HyD has to strenuously examine each claim assessment review submitted by the consulting engineers, closely monitor the assessment process and progress, offer professional comments in respect of the analysis of claim assessments, review the validity, principles and liabilities of all the claims with a view to safeguarding the interest of the Government and ensuring the proper use of public funds. In view of the current situation and based on our experience from the implementation of mega-scale projects previously, the assessment procedures for major and large claims require the leadership of PGE and CEs to ensure the project teams handle the claims prudently, and are anticipated to be concluded at least one to two years after the projects have been completed. All these require the PM/MW(SD) to supervise the project team to complete the tasks efficiently and timely.

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11. Taking into account the mega scale and complexity of the TM-CLKL and the HZMB Hong Kong Section as well as the substantial amount of work in the next few years (including continuing to take forward the TM-CLKL project, completing the remaining works of the HZMB Hong Kong Section, handling variation orders and contractual claims under various works contracts as well as implementing the TMWB project under planning), we consider it necessary to maintain adequate supervision at the directorate level of the works by retaining the 3 supernumerary posts and extending the redeployed permanent post. Detailed justifications for the retention or extension of these 4 directorate posts are given in the following paragraphs.

PM/MW(SD) (currently titled as PM/HZMB)

12. PM/MW(SD), who is of the rank of PGE, leads the MWPMO(SD) to deliver the TM-CLKL project, TMWB project and remaining works of the HZMB Hong Kong Section. He/she has to take full charge of all professional, technical, contractual and interface issues, and to steer a range of policies involved in the smooth implementation of these projects. He/she also has to provide professional advice and support to the Transport and Housing Bureau (THB) so as to assist THB to oversee the delivery of these projects from a policy perspective.

13. PM/MW(SD) will play a pivotal role in spearheading and supervising the implementation of the TM-CLKL project, TMWB project and remaining works of the HZMB Hong Kong Section. These projects are currently at different stages of implementation and/or will be completed at different times (details are at Enclosure 2): the remaining works of the HKLR and HKBCF will be completed in 2018; the TM-CLKL Southern Connection is anticipated to be completed in the first half of 2019 at the earliest; the TM-CLKL Northern Connection is targeted for completion in 2020 at the earliest; the further investigation study of the TMWB project which began in October 2017, with the assessments and preliminary design anticipated to be completed by end 2019. PM/MW(SD) has to closely supervise the progress of each project and undertake high-level co-ordination to ensure smooth implementation and timely completion. Also, he/she needs to supervise the project teams to efficiently handle and review claims submitted by the contractors, closely monitor the assessment process and progress, offer professional comments in respect of the analysis of claim assessments and handle cases involving negotiation, mediation, arbitration and litigation which may arise from the claims, as well as finalise the projects accounts.

14. Even after the commissioning of the HZMB, PM/MW(SD) will still have to attend inter-governmental meetings with representatives of the Mainland Government (at both the Central People's Government as well as Guangdong Provincial Government levels) and the Macao Special Administrative Region

/Government …..

Government to offer strategic advice in relation to the HZMB Main Bridge, and to complete the finalisation of the construction project accounts. He/she monitors the work of the HZMB Authority, which was set up by the three governments, through regular meetings with its key staff and provides THB with professional support in the JWC for vetting and approval of the HZMB Authority's submissions. The dedicated handling by a senior directorate officer with strong professional expertise and sound management skills to safeguard the interest of the Government and to ensure the proper use of public funds is especially important given the mega scale of the HZMB, technical complications of the works and the high level co-ordination required amongst the three governments for completing the finalisation of the accounts of this mega cross-boundary project.

15. Taking into account the scale, complexity, importance and the latest progress of the various projects undertaken by the MWPMO(SD), its necessary engagement in the co-ordination amongst the three governments at the initial stage after the commissioning of the HZMB, maintenance of high-level contacts with the officials of Mainland and Macao and the key staff of the HZMB Authority, as well as the finalisation of project accounts for the HZMB Main Bridge and Hong Kong Section, we consider it operationally essential to keep the Head of the MWPMO(SD) at D3 level on a full time supernumerary basis up to 31 December 2020.

CE1/SD (currently titled as CE/NWNT)

16. The permanent post of CE1/SD is internally redeployed from the MWPMO. This staff member will mainly be responsible for taking forward the TM-CLKL Northern Connection and implementing environmental protection measures in respect of various projects undertaken by the MWPMO(SD). The TM-CLKL project involves the construction of the longest sub-sea tunnel in Hong Kong connecting Tuen Mun with the HKBCF artificial island, which encompasses very complicated technical and challenging engineering issues.

17. The construction works of TM-CLKL are delivered under five works contracts. The first 3 works contracts (i.e. the Northern Connection Sub-sea Tunnel Section contract, Southern Connection Viaduct Section contract and Northern Connection Toll Plaza contract) are under construction and the works are progressing in full swing, whilst the 2 remaining works contracts (i.e. the E&M contract and TCSS contract) are undergoing tender assessment and tender preparation respectively.

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18. The Northern Connection Sub-sea Tunnel Section is constructed by deploying 3 large-diameter tunnel boring machines (TBMs). This is the first time that such tunnelling technique is deployed for the construction of a sub-sea tunnel in Hong Kong. The sizes of the TBMs deployed are the largest ever in the city's history, representing an engineering challenge. It is anticipated that by end 2017, the remaining works of the Northern Connection Sub-sea Tunnel Section will include the underground tunnel, approach ramp, airshaft, ventilation building, cross passages between the tunnel tubes, at-grade roads and the installation of public utilities, etc. at the reclamation area of the Southern Landfall (SLF), and the at-grade roads and the installation of public utilities, etc. at the Northern Landfall.

19. As announced by HyD in March 2017, the construction works under the Northern Connection Sub-sea Tunnel Section contract have been encountering various technical difficulties. The tunnel alignment below the seawall of the SLF has to be lowered by approximately 10 metres to avoid passing through the stone columns so as to ensure the safe operation of the TBMs. As a result, the contractor has to modify the design of a section of the SLF tunnel to cope with the revised alignment of the tunnel. CE1/SD has been overseeing and participating in the difficult discussion about the design revision with the contractor with a view to ensuring the contractor to be co-operative and produce a reasonable design programme and cost proposal for the modified design of the SLF tunnel. Based on the design scheme submitted, CE1/SD will have to negotiate with the contractor on the relevant supplementary agreement(s) to confirm the required cost and construction time. Therefore, he/she will have to continue to lead the project team to monitor the implementation of the project and to resolve possible problems or difficulties encountered.

20. Furthermore, when taking forward the works of the Sub-sea Tunnel Section, CE1/SD has to oversee and resolve the interface issues amongst the sub-sea tunnel works, E&M and TCSS works with a view to completing the Northern Connection in 2020 at the earliest.

21. Given the substantial number of anticipated variation orders and contractual claims related to the TM-CLKL Northern Connection Sub-sea Tunnel Section, CE1/SD has to lead the project team to critically examine each claim, closely monitor the assessment procedures and progress, offer professional comments in respect of the analysis of claim assessments provided by the consultant, review the justifications and liabilities of all claims, control the project costs and complete the finalisation of project accounts with a view to safeguarding the interest of the Government and ensuring the proper use of public funds. In view of the current situation and based on the experience from past large-scale infrastructure projects, the assessment procedures for major and large claims are

/anticipated …..

anticipated to be concluded at least 1 to 2 years after the projects have been completed. CE1/SD is required to lead the project team in the course of negotiation, mediation, arbitration or litigation which may arise from these claims.

22. CE1/SD will also monitor and address environmental issues and make timely response to public concerns. He/she has to lead the project team in implementing the mitigation measures, including environmental monitoring and audit as stipulated in the Environmental Permits of various projects undertaken by the MWPMO(SD). Moreover, according to the recommendations of the environmental impact assessment report of the HKBCF and HKLR projects of the HZMB, fish fry are to be released by HyD in the newly established Brothers Marine Park as well as the existing Sha Chau and Lung Kwu Chau Marine Park as a measure to enhance fishery resources in the waters. HyD is now actively preparing for the deployment of artificial reefs with a volume of 10 800 cubic metres within the Brothers Marine Park as well as the tendering for the fry release exercise, which are anticipated to be implemented in 2018. CE1/SD has to carry out assessment of tenders and appointment of contractors, etc.

CE2/SD (currently titled as CE/HKLR)

23. CE2/SD is tasked to take forward the Southern Connection works, E&M and TCSS works, and TMWB project.

24. The TM-CLKL Southern Connection is composed of a 3-km sea and land viaduct. The construction of the sea viaduct involves various technical challenges including a long-span bridge over the navigation channel in Tung Chung and the strict building height restrictions due to its proximity to the airport, etc. It is anticipated that the remaining works for the TM-CLKL Southern Connection Viaduct Section in 2018 will include the construction of the bridge pier for the land viaduct on the HKBCF artificial island and installation of pre-cast segments of bridge deck, installation of pre-cast segments of bridge deck for the sea viaduct, road surfacing, laying of fire hoses and fresh water piping, installation of railings, road sign gantries and road lighting, and conducting road sign gantries and roadside slope works along the North Lantau Highway. To ensure public safety and public facilities will not be affected by the works, these should be handled with care and proper liaison with relevant stakeholders should be conducted. CE2/SD will oversee this works contract and conduct frequent discussion with the consulting engineer and the contractor on the design and construction so that effective mitigation measures are formulated and implemented to recover the delay with a view to achieving the target completion date of the Southern Connection, which is the first half of 2019 at the earliest.

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25. Coupled with the complicated technical and contractual challenges of the TM-CLKL project, upon the award of the E&M contract and TCSS contract in 2018, the workload of CE2/SD will be further increased.

26. Given the substantial number of anticipated variation orders and contractual claims related to the TM-CLKL Southern Connection Viaduct Section, CE2/SD will have to lead the project team to critically examine each claim, closely monitor the assessment procedures and progress, offer professional comments in respect of the analysis of claim assessments provided by the consultant, review the justifications and liabilities of all claims, control the project costs and complete the finalisation of project accounts with a view to safeguarding the interest of the Government and ensuring the proper use of public funds. In view of the current situation and based on the experience from past large-scale infrastructure projects, the assessment procedures for major and large claims are anticipated to be concluded at least 1 to 2 years after the projects have been completed. CE2/SD has to lead the project team in the course of negotiation, mediation, arbitration or litigation which may arise from these claims.

27. Besides, CE2/SD will also be responsible for taking forward the TMWB project. The latest proposed alignment scheme for the TMWB comprises an approximately 9-km long tunnel linking the TM-CLKL in the south and Kong Sham Western Highway in the north, with slip tunnels of approximately 3 km long connecting to Tsing Tin Road. The engineering design will involve various complicated considerations as the tunnel will pass through a number of mountains with complex geological conditions and constraints in different aspects, appropriate measures have to be taken to address the concerns of members of the local community. An advanced tunnel design will be required to cater for the technical issues associated with the operation. CE2/SD will be responsible for conducting consultation with relevant stakeholders with a view to working out a proposal that is acceptable to all. He/she will also be implementing the preparation work of the detailed design of the project.

CE3/SD (currently titled as CE/HKBCF)

28. CE3/SD will be tasked to implement the remaining works of the HZMB Hong Kong Section. Regarding the HKLR project, it was connected in May 2017. The bridge structure works of the viaduct section and their post-tensioning tendons have been fully completed. To dovetail with the commissioning of the HZMB, the remaining associated works such as bridge deck surfacing, road lighting, traffic aids, etc. are being carried out, whilst the tunnel portion, at-grade roads and associated works are under construction. However, the remaining works on the Airport Island, including part of the existing road reinstatement works and part of the TCSS works, etc. which are not absolutely

/essential …..

essential for the HZMB commissioning, will continue to be taken forward after the HZMB commissioning and are anticipated to be completed in 2018. CE3/SD will need to conduct in-depth and intensive discussions with THB and various government departments, the Airport Authority Hong Kong (AAHK), the MTR Corporation Limited and other stakeholders in respect of interface matters to ensure the smooth implementation of the project to achieve the target completion. The interface with AAHK will involve a lot of complex arrangements between the existing airport infrastructure and the project works. For instance, when conducting the reinstatement works on the existing roads on the Airport Island, temporary diversion of the existing roads, including Airport Road which leads to the trunk road of the Hong Kong International Airport, will be required.

29. Regarding the HKBCF project, CE3/SD has to take forward its remaining works, including part of the landscape works and the related irrigation systems, part of the finishing, building services and electronic systems works of ancillary buildings/facilities in the HKBCF, part of the TCSS works and some road/viaduct works (including the roads/viaducts connecting to the TM-CLKL).

30. After the commissioning of the HZMB, CE3/SD will still play an instrumental role in leading the project team to effectively take forward and complete the remaining works of the HKLR and HKBCF projects to make sure that the requirements of the respective departments[4] are fully addressed and that the facilities would be handed over smoothly to the relevant managing and maintenance departments[5] or maintenance contractors. As the construction, operation and maintenance of the remaining works involve many departments, maintenance units and organisations of public utilities, CE3/SD has to maintain close liaison with the consultants, contractors and stakeholders and make arrangements in respect of complex interface and co-ordination matters to ensure all the remaining facilities under the HKBCF works contracts can be completed as soon as possible after the commissioning of the HZMB.

31. CE3/SD is also responsible for following up on the second phase works necessary for meeting the long-term operational needs of the HKBCF. These include additional clearance kiosks at the vehicle clearance plaza and

/additional …..

[4] Including the Customs and Excise Department, the Immigration Department, the Department of Health, the Hong Kong Police Force, the Food and Environmental Hygiene Department, the Agriculture, Fisheries and Conservation Department, the Transport Department and the Fire Services Department, etc.

[5] Including the Drainage Services Department, the Water Supplies Department, the Architectural Services Department, the Electrical and Mechanical Services Department and the Leisure and Cultural Services Department.

additional drop-off and pick-up areas at the public transport interchanges, etc. Implementation schedule of these works will depend on the passenger and traffic flow after the commissioning of the HKBCF so as to enhance the clearance capacity of the HKBCF and to cater for its operational needs in the long run.

32. Given the substantial number of anticipated variation orders and contractual claims related to the HKLR and HKBCF projects, CE3/SD has to lead the project team to critically examine each claim, closely monitor the assessment procedures and progress, offer professional comments in respect of the analysis of claim assessment provided by the consultant, review the justifications and liabilities of all the claims, control the project costs and complete the finalisation of project accounts with a view to safeguarding the interest of the Government and ensuring the proper use of public funds. In view of the current situation and based on the experience from past large scale infrastructure projects, the assessment procedures for major and large claims are anticipated to be concluded 1 to 2 years after the projects have been completed. CE3/SD has to lead the project team in the course of negotiation, mediation, arbitration or litigation which may arise from these claims.

Duration of Proposed Retention and Extension of the Posts

33. Given the justifications mentioned above, we propose to retain the supernumerary posts of CE2/SD and CE3/SD up to 31 December 2019, and to retain the supernumerary post of PM/MW(SD) and extend the redeployed permanent post of CE1/SD up to 31 December 2020.

34. We will review the continued need for these four posts in 2019 and 2020 respectively, taking into account the progress of the TM-CLKL and TMWB projects, the progress of claims resolution and finalisation of contract accounts as well as the overall staffing situation in HyD by that time.

35. The latest job descriptions of PM/MW(SD) and the three CEs are at Enclosure 3(a) to (d).

Encl. 3

ALTERNATIVES CONSIDERED

36. We have critically examined the possible redeployment of other existing directorate officers within HyD to take on the work of the proposed posts. As other incumbents are already fully engaged in their respective work schedules, it is operationally not possible for them to take up the tasks without adversely affecting the discharge of their current duties. The key portfolio of the existing PGE and CE posts and our assessment of the possibility for them to take up additional responsibilities are detailed at Enclosure 4.

Encl. 4

/37. …..

37. In the light of the upcoming workload in different divisions of HyD, we consider that the proposed retention of three supernumerary posts (PM/MW(SR), CE2/SD and CE3/SD) and the extension of redeployment of one permanent post (CE1/SD) is the only viable arrangement to sustain the implementation of the TM-CLKL project, TMWB project and remaining works of the HZMB Hong Kong Section. The existing organisation chart of HyD is at Enclosure 5.

Encl. 5

FINANCIAL IMPLICATIONS

38. The proposed retention of the 3 supernumerary posts at directorate level will bring about an additional notional annual salary cost at mid-point of $5,962,200 with details as follows, while the extension of redeployment of one permanent CE post will not involve any additional cost –

Rank	No. of Posts	Notional annual salary cost at mid-point ($)
Supernumerary Posts		
PGE (D3)	1	2,431,800
CE (D1)	2	3,530,400
Total	3	5,962,200

The additional cost expressed in terms of full annual average staff cost, including salaries and staff on-costs, is $8,254,000. The proposed extension of the redeployed CE post within HyD will not involve additional cost. Moreover, the arrangement for the proposed retention of the posts concerned and the extension of the redeployed post will not increase the number of staff of the support team under the MWPMO(SD). We have earmarked adequate provision in 2017-18 to meet the expenditure of this proposal and will reflect the resources required in the Estimates of subsequent years concerned.

PUBLIC CONSULTATION

39. We consulted the Legislative Council Panel on Transport on 21 July 2017. Members in general supported the proposal.

BACKGROUND

40. The FC approved on 14 May 2004 vide EC(2004-05)4 the creation of one PGE (i.e. PM/HZMB) and one CE (i.e. CE/HKLR) supernumerary posts and the redeployment of one permanent CE (i.e. CE/NWNT) post in HyD with effect from 1 July 2004 for a period of six years for establishing HZMB HKPMO

/dedicated …..

dedicated to oversee the planning and implementation of HZMB project and related Hong Kong projects. On 14 May 2010, FC approved vide EC(2010-11)2 the retention of these two supernumerary posts and the extension of the redeployed permanent post for a period of four years up to 30 June 2014. Besides, on 13 February 2009, FC approved vide EC(2008-09)16 the creation of one supernumerary CE (i.e. CE/HKBCF) post to lead a new division in HZMB HKPMO to undertake the planning and implementation of HZMB HKBCF project with effect from 1 April 2009 for a period of five years up to 31 March 2014. In addition, on 10 January 2014, FC approved vide EC(2013-14)9 the retention of these three supernumerary posts and the extension of the redeployed permanent post up to 31 December 2017.

ESTABLISHMENT CHANGES

41. The establishment changes in HyD for the last two years are as follows ─

Establishment (Note)	**Number of Posts**			
	Existing (as at 1 December 2017)	**As at 1 April 2017**	**As at 1 April 2016**	**As at 1 April 2015**
A	31 + (4) #	31 + (4)	31 + (3)	31 + (5)
B	586	566	557	538
C	1 613	1 602	1 566	1 557
Total	**2 230 + (4)**	**2 199 + (4)**	**2 154 + (3)**	**2 126+ (5)**

Note:
A ─ ranks in the directorate pay scale or equivalent
B ─ non-directorate ranks, the maximum pay point of which is above MPS Point 33 or equivalent
C ─ non-directorate ranks, the maximum pay point of which is at or below MPS Point 33 or equivalent
( ) ─ number of supernumerary directorate posts
─ as at 1 December 2017, there was no unfilled directorate post in HyD

CIVIL SERVICE BUREAU COMMENTS

42. The Civil Service Bureau supports the proposal to retain the supernumerary PGE and CE posts and to extend the redeployment of the permanent CE post. The grading and ranking of these posts are considered appropriate having regard to the level and scope of responsibilities and the professional input required.

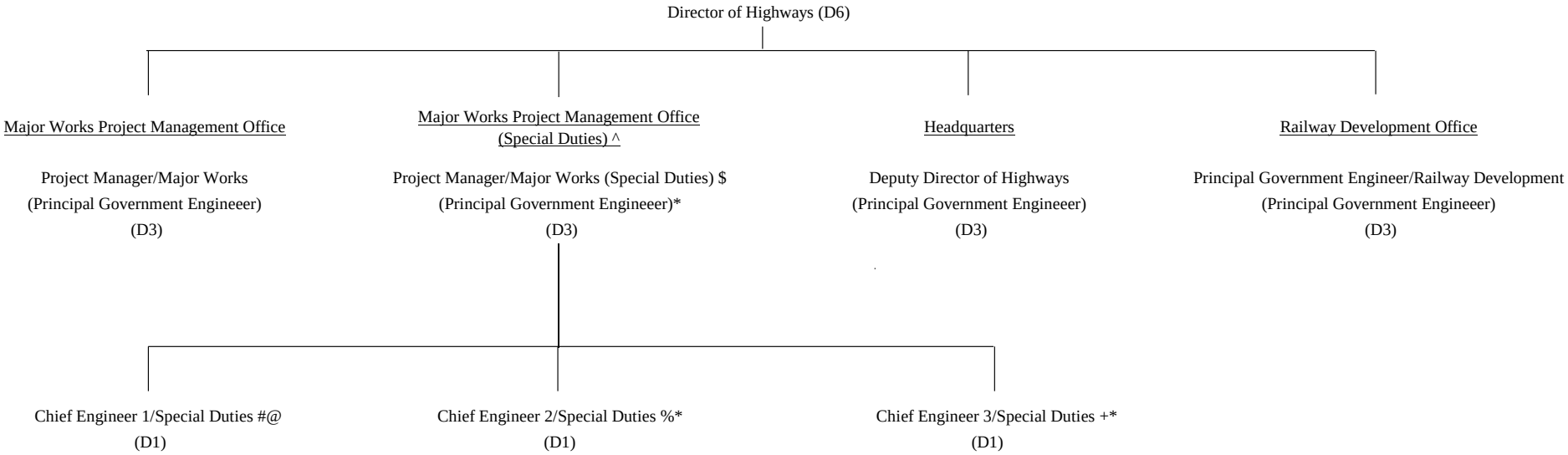
/**ADVICE** …..

ADVICE OF THE STANDING COMMITTEE ON DIRECTORATE SALARIES AND CONDITIONS OF SERVICE

43. As the posts are proposed to be retained on a supernumerary basis, their retention, if approved, will be reported to the Standing Committee on Directorate Salaries and Conditions of Service in accordance with the agreed procedure.

Transport and Housing Bureau
December 2017

Proposed Organisation Chart of Major Works Project Management Office (Special Duties) of Highways Department



Legend

^	Currently named as Hong Kong - Zhuhai - Macao Bridge (HZMB) Hong Kong Project Management Office.
$	Currently titled as Project Manager/HZMB.
#	Currently titled as Chief Engineer/Northwest New Territories.
%	Currently titled as Chief Engineer/Hong Kong Link Road.
+	Currently titled as Chief Engineer/Hong Kong Boundary Crossing Facilities.
*	Supernumerary posts (1 Principal Government Engineer and 2 Chief Engineers) to lapse on 1.1.2018. This paper proposes to retain the supernumerary Principal Government Engineer post up to 31.12.2020 and the two supernumerary Chief Engineer posts up to 31.12.2019.
@	1 permanent Chief Engineer post redeployed from Major Works Project Management Office to Major Works Project Management Office (Special Duties) (currently titled as HZMB Hong Kong Project Management Office) on a time-limited basis up to 31.12.2017. This paper proposes to extend the redeployment of this permanent post up to 31.12.2020.

Latest Progress of the Hong Kong-Zhuhai-Macao Bridge and Related Highway Infrastructure Projects

Spanning over Lingdingyang, the Hong Kong-Zhuhai-Macao Bridge (HZMB), an unprecedented mega transport infrastructure project co-built by Guangdong, Hong Kong and Macao, will connect the Hong Kong Special Administrative Region (HKSAR) in the east and the Macao Special Administrative Region and Zhuhai City of Guangdong Province in the west. The entire HZMB project mainly consists of two parts (see Figure 1): (i) the Main Bridge (i.e. a bridge about 22.9 km long and the associated sub-sea tunnel about 6.7 km long) situated in the Mainland waters which is being taken forward by the HZMB Authority; and (ii) the respective link roads and boundary crossing facilities under the responsibility of the three governments.

2. Regarding the commissioning date of HZMB, at the meeting of the HZMB Joint Works Committee of the Three Governments on 7 November 2017, the meeting discussed in detail the commissioning date of the HZMB. The three sides agreed to make their best endeavours to overcome difficulties and challenges so as to achieve the target of completing the major construction works of the Main Bridge and the ports by end 2017, and to continue improving the clearance conditions of the ports. The commissioning date of the HZMB will be ascertained by the Central Government and will be announced once confirmed.

3. As for the Tuen Mun-Chek Lap Kok Link (TM-CLKL), the completion date of the Southern Connection of TM-CLKL was originally planned to tie in with the commissioning of the HZMB Main Bridge whilst the Northern Connection was originally planned to be completed by end 2018. However, in view of various technical difficulties of the works, the construction programme is under a lot of pressure and the above target completion dates cannot be met. According to the latest assessment by the Highways Department (HyD), the Southern Connection is anticipated to be completed in the first half of 2019 at the earliest, whilst the Northern Connection is targeted for completion in 2020 at the earliest.

4. The progress of the HZMB Main Bridge, Hong Kong Boundary Crossing Facilities (HKBCF), Hong Kong Link Road (HKLR), TM-CLKL and Tuen Mun Western Bypass (TMWB) are detailed in the ensuing paragraphs.

/HZMB …..

HZMB Main Bridge

5. The HZMB Main Bridge project mainly consists of the following three parts: (i) tunnel and artificial islands which comprise the construction of two artificial islands for the tunnel landings in the west of the HKSAR boundary and a sub-sea tunnel section of about 6.7 km long; (ii) the construction of a section of bridge of about 22.9 km long; and (iii) implementation of the associated works, including civil and structural works, environmental impact mitigation measures, works related to drainage, electrical and mechanical (E&M), traffic control and surveillance systems (TCSS), etc.

6. The construction of the tunnel and artificial islands of the HZMB Main Bridge has entered the final stage. Its critical process, including the placement of tunnel segments and installation of the final connection, was completed in May 2017. Currently, the road surfacing works and installation of E&M facilities inside the immersed tube tunnel are still underway. Besides, the building and related finishing works on the East and West artificial islands are underway.

7. The bridge section of the HZMB Main Bridge was connected in end September 2016 and the bridge deck surfacing works were completed in July 2017.

8. In addition, traffic engineering works including the installation of public utilities and testing for commissioning are required to be carried out at the HZMB Main Bridge.

HZMB Hong Kong Section - HKBCF

9. The HKBCF is located on an artificial island of about 150 hectares reclaimed from the open waters off the northeast of the Hong Kong International Airport (HKIA) (i.e. about 130 hectares for the HKBCF and about 20 hectares for the Southern Landfall of the TM-CLKL tunnel section).

10. The HKBCF project includes reclamation, construction of cargo, passenger and related vehicle inspection and clearance facilities (including the Passenger Clearance Building), offices for frontline departments (such as the Immigration Department, the Customs and Excise Department, etc.), road facilities, public transport interchanges and associated civil works, TCSS and landscaping works, etc.

/11. …..

11. Reclamation for the HKBCF was largely completed. The reinforced concrete works for the Passenger Clearance Building and the installation of prefabricated landmark canopy segments were completed, whilst other works including the installation of glass curtain walls, building services and E&M works are now underway. The construction of bridge deck segments, which falls into land infrastructure works, which are essential for commissioning, was completed, whilst the remaining works of bridge deck related facilities, bituminous pavement and drainage systems are underway; various ancillary buildings inside the Vehicle Clearance Plaza in the central portion have been topped out; the finishing and building services of ancillary buildings, as well as the finishing and E&M works of the combined common utility enclosure and staff subways in the Vehicle Clearance Plazas, vehicle clearance kiosks, box culverts and drainage, sewerage system and road paving works are in progress.

HZMB Hong Kong Section - HKLR

12. The 12-km long HKLR comprises (i) a 9.4-km long viaduct extending from the Guangdong-HKSAR boundary to the Scenic Hill on the Airport Island; (ii) a 1-km long Scenic Hill Tunnel; and (iii) a 1.6-km long at-grade road on the newly reclaimed area at the east of the HKIA connecting to the HKBCF.

13. The HKLR project includes the construction of a dual 3-lane carriageway connecting the HZMB Main Bridge at the HKSAR boundary with the HKBCF, and the associated civil, structural, geotechnical, marine, environmental protection, landscaping and drainage works. There are also works for other facilities including installation of street lighting, traffic aids (including sign gantries), fire hydrants, and the TCSS and E&M works, etc.

14. The HKLR viaduct, tunnel and at-grade road have all been connected in May 2017. The road surfacing and road furniture installation works will be completed progressively as scheduled.

TM-CLKL

15. The TM-CLKL comprises a dual 2-lane carriageway of about 9 km long between Tuen Mun South and North Lantau. It will become the second strategic external road link of Lantau (including the HKIA). The TM-CLKL includes the Southern Connection and the Northern Connection (see Figure 2). The Southern Connection connects North Lantau Highway at Tai Ho with the HKBCF by means of a sea viaduct of about 1.6 km long and associated approach roads, while the Northern Connection connects the HKBCF with Tuen Mun Area 40 by a sub-sea tunnel of about 5 km long and will land at the newly

/reclaimed …..

reclaimed area next to the Tuen Mun River Trade Terminal. It will then cross Lung Mun Road by means of an elevated carriageway connecting with the toll plaza in Tuen Mun Area 46 and will finally connect Lung Mun Road and Lung Fu Road near Butterfly Bay via slip roads and a roundabout.

16. The project is being implemented under five works contracts as scheduled. The first three works contracts commenced in June 2013, August 2013 and July 2014 respectively. The remaining two works contracts (i.e. the Tunnel Buildings and E&M Works of the Northern Connection and the TCSS Works of the Northern Connection) are now under tender assessment and tender preparation respectively.

17. For the Southern Connection, the construction of the viaducts is now in full swing. The foundation construction works of the elevated carriageways are basically completed and the erection of the precast bridge segments is in progress. According to the contractor's programme submitted in March 2017, it is anticipated that all the works could be completed in the first half of 2019 at the earliest in the absence of other unforeseen circumstances in the future.

18. For the Northern Connection, the second phase of the reclamation works for the Northern Landfall of the sub-sea tunnel has commenced. The excavation works underneath the seabed by large diameter tunnel boring machines (TBMs) have been largely completed. One of the TBMs arrived at the tunnel ventilation shafts at the HKBCF artificial island in end May 2017. Another TBM will arrive at a later stage. The construction of cross passages between the tunnel tubes by small TBMs is still underway. Currently, there are still some complicated technical issues regarding the sub-sea tunnelling works of the Northern Connection which need to be resolved with the contractor. According to the latest design modifications submitted by the contractor, HyD anticipates the Northern Connection can be completed in 2020 at the earliest.

TMWB

19. The latest alignment option for the TMWB (see Figure 3) will connect the TM-CLKL and Kong Sham Western Highway with intermediate connections to Tsing Tin Road in Tuen Mun North. The construction of TMWB is important for the development of Northwest New Territories. Apart from improving the local transportation network, it can also provide the district with a direct express route to the HKIA.

/20. …..

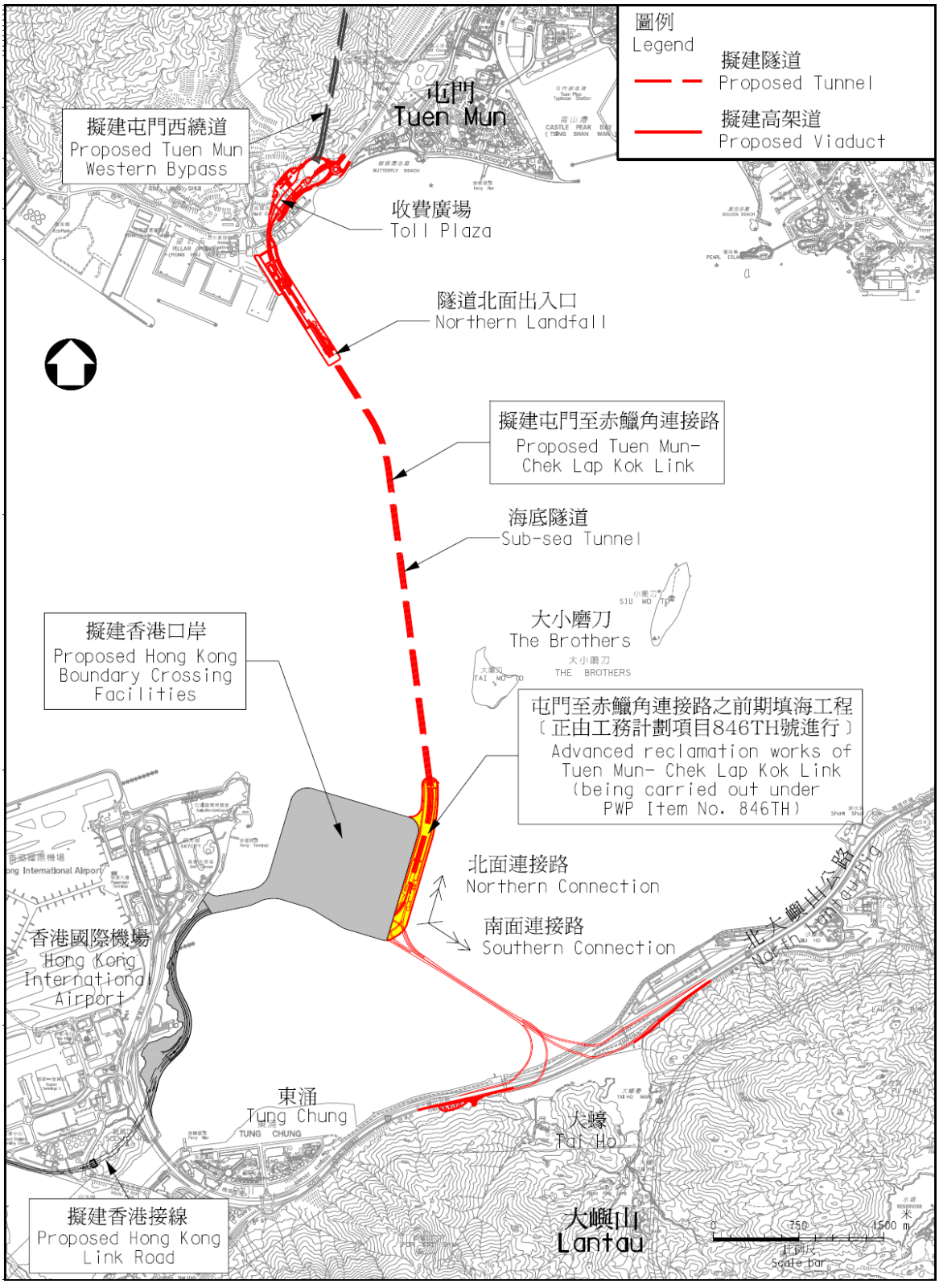
20. HyD consulted the Tuen Mun District Council, the Traffic and Transport Committee of the Yuen Long District Council and the Ha Tsuen Rural Committee on the latest proposed alignment option in July and September 2016. They raised no objection to the investigation study proposed by HyD. HyD commenced the investigation study on the latest alignment option in October 2017. The study will include assessments of the impacts of the environment, traffic, etc. and a review on the cost, implementation arrangements and works programme.

附圖 1
Figure 1

港珠澳大橋主橋及相關工程
Layout plan for HZMB Main Bridge and the related projects

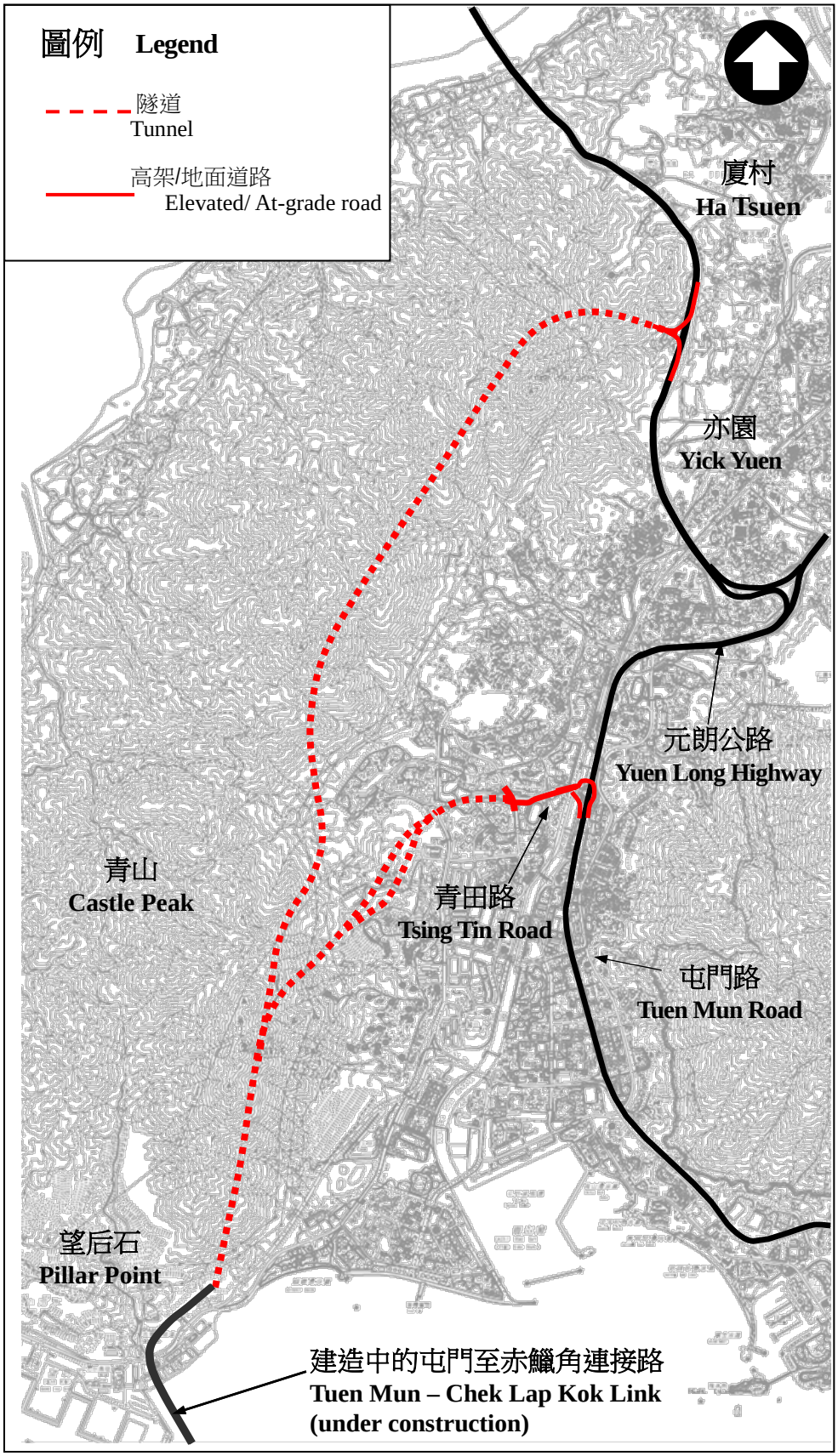
附圖 2
Figure 2

屯門至赤鱲角連接路
Tuen Mun – Chek Lap Kok Link



附圖 3
Figure 3

屯門西繞道最新建議走線
Tuen Mun Western Bypass – Latest Recommended Alignment



Enclosure 3(a) to EC (2017-18)15

Job Description
Project Manager/Major Works (Special Duties)

Rank **:** Principal Government Engineer (D3)

Responsible to : Director of Highways

Major Duties and Responsibilities –

(i) Planning, administering and directing the work of the Major Works Project Management Office (Special Duties) to ensure that the Tuen Mun-Chek Lap Kok Link (TM-CLKL) project, the Tuen Mun Western Bypass (TMWB) project and the remaining works of the Hong Kong-Zhuhai-Macao Bridge (HZMB) Hong Kong Section are completed smoothly.

(ii) Providing professional advice and technical support to the policy bureau on the implementation of the TM-CLKL project, the TMWB project and the remaining works of the HZMB Hong Kong Section, including the pre-construction planning and technical studies of the TMWB.

(iii) Engaging in high-level discussion and liaison with the authorities of Mainland and the Macao Special Administrative Region as well as the HZMB Authority in respect of the accounts finalisation of the HZMB Main Bridge project.

(iv) Giving support to and, whenever necessary, deputising for the Director of Highways in fulfilling his duties in the inter-governmental committees (e.g. the Joint Works Committee of the Three Governments).

(v) Administering the tender and construction of the second phase of the Hong Kong Boundary Crossing Facilities project and the TM-CLKL project, and the design and tender of the TMWB project, including its public engagements exercise.

(vi) Formulating strategies and procedures in respect of the TM-CLKL project, the TMWB project and the remaining works of the HZMB Hong Kong Section.

(vii) Monitoring the delivery of the construction works contracts and overseeing the handling of claims submitted by the contractors, the disputes arising therefrom and the finalisation of the project accounts.

Enclosure 3(b) to EC(2017-18)15

Job Description
Chief Engineer 1/Special Duties

Rank **:** Chief Engineer (D1)

Responsible to: Project Manager/Major Works (Special Duties)

Major Duties and Responsibilities –

(i) Assisting in formulating and executing the strategies and procedures in respect of the Tuen Mun-Chek Lap Kok Link (TM-CLKL) Northern Connection Sub-sea Tunnel Section, and the monitoring and handling of environmental issues.

(ii) Providing technical support and professional advice in relation to the design, construction, financial and legal matters for the implementation of the above project.

(iii) Consulting and co-ordinating with the policy bureaux/departments and other relevant stakeholders in respect of the design, construction, operation and maintenance of the above project to resolve the related problems.

(iv) Handling the statutory procedures required under the Environmental Impact Assessment Ordinance, Roads (Works, Use and Compensation) Ordinance and Town Planning Ordinance during the construction and operation stages of the TM-CLKL project and the remaining works of the Hong Kong-Zhuhai-Macao Bridge Hong Kong Section.

(v) Co-ordinating land-related matters and resolving interface and co-ordination issues between the TM-CLKL Northern Connection Sub-sea Tunnel Section and the existing highways in Tuen Mun as well as the Hong Kong Boundary Crossing Facilities project.

(vi) Leading the project team to resolve claims submitted by the contractors and the disputes arising therefrom in order to complete the finalisation of project accounts.

Job Description
Chief Engineer 2/Special Duties

Rank **:** Chief Engineer (D1)

Responsible to : Project Manager/Major Works (Special Duties)

Major Duties and Responsibilities –

(i) Assisting in formulating and executing the strategies and procedures in respect of the works of the Southern Connection, electrical and mechanical (E&M) and associated traffic control and surveillance systems (TCSS) under the Tuen Mun-Chek Lap Kok Link (TM-CLKL) project, and the Tuen Mun Western Bypass (TMWB) project.

(ii) Providing technical support and professional advice in relation to the construction, financial and legal matters for the implementation of the TM-CLKL Southern Connection Viaduct Section works.

(iii) Consulting and co-ordinating with the policy bureaux/departments, the Airport Authority of Hong Kong and other related stakeholders on matters relating to the construction, operation and maintenance of the works of TM-CLKL Southern Connection Viaduct Section to resolve problems related to architectural design and maintenance.

(iv) Administering consultancies and construction works contracts of the TM-CLKL Southern Connection Viaduct Section. Monitoring its project scope, cost and implementation programme.

(v) Preparing and awarding the E&M and TCSS contracts under the TM-CLKL project.

(vi) Co-ordinating land-related matters and resolving the interface and co-ordination issues between the TM-CLKL Southern Connection Viaduct Section and the existing North Lantau Highway as well as the Hong Kong Boundary Crossing Facilities project. Leading the project team to resolve the claims submitted by contractors and the disputes arising therefrom in order to complete the finalisation of project accounts.

/(vii) …..

(vii) Taking forward the TMWB project, including conducting public consultations, preparing a scheme that is generally acceptable to all parties, providing technical support and professional advice in relation to the design, planning, feasibility study, environmental impact assessment study, etc. for the TMWB project.

Job Description
Chief Engineer 3/Special Duties

Rank **:** Chief Engineer (D1)

Responsible to : Project Manager/Major Works (Special Duties)

Major Duties and Responsibilities –

(i) Assisting in formulating and executing the strategies and procedures in respect of the remaining works of the Hong Kong Link Road (HKLR) and Hong Kong Boundary Crossing Facilities (HKBCF) project.

(ii) Providing technical support and professional advice relating to the construction, financial and legal matters for the implementation of the remaining works of the HKLR and HKBCF project.

(iii) Consulting and co-ordinating with the policy bureaux/departments, the Airport Authority of Hong Kong and other related stakeholders on matters relating to the construction, operation and maintenance of the remaining works of the HKLR and HKBCF project.

(iv) Administering consultancies and construction works contracts of the HKLR and HKBCF project. Monitoring the project scope, cost and programme of the project.

(v) Co-ordinating land-related matters and resolving the interface and co-ordination issues between the remaining works of the HKLR and HKBCF project and the existing and proposed roads on Airport Island as well as the Tuen Mun - Chek Lap Kok Link.

(vi) Leading the project team to resolve the claims submitted by contractors and the disputes arising therefrom in order to complete the finalisation of project accounts.

(vii) Undertaking the procurement for the second phase of the HKBCF project.

Key portfolios of the existing Principal Government Engineer and Chief Engineer posts in the Highways Department and assessment of the possibility for them to take up additional responsibilities

Headquarters (HQs) and Regional Offices (ROs)

Deputy Director of Highways (DDHy) (Principal Government Engineer (PGE)) (D3) currently oversees the HQs and two ROs (i.e. Urban and New Territories). At the HQs, DDHy is assisted by 2 Government Engineers (GEs) (D2) (i.e. Assistant Director/Technical(AD/T) [1] and Assistant Director/Development (AD/D) [2]) and 4 Chief Engineers (CEs) to manage 7 Divisions and 10 Units. As regards the ROs, each office is led by 1 GE and supported by 2 CEs.

2. DDHy has to assist Director of Highways (DHy) in the overall management of the Department, including formulation of departmental policies, overseeing staff matters of all professional and technical grades, and monitoring departmental expenditures. Apart from being the internal departmental administrative head, DDHy also has to oversee the work of the HQs and the two ROs. In view that DDHy already has a wide span of responsibilities and is fully engaged, he cannot take on the responsibilities of Project Manager/Major Works (Special Duties) (PM/MW(SD)) on top of his own schedule.

3. As for the 4 CEs in the HQs, DHy has assessed their current and anticipated workload, and concluded that they have no spare capacity to take up additional duties. They are/will be fully engaged as follows –

(a) Chief Highway Engineer/Works is responsible for overseeing the implementation of small to medium sized highway capital works projects in the territory, including planning, design and construction, public consultation and statutory procedures. His personal

/involvement …..

[1] AD/T is responsible for formulating technical and administrative policies, standards, techniques and guidelines on highway engineering, public lighting, landscaping, surveying, quality management, environmental matters etc. and administering the public relations and training matters for the department, as well as personnel matters (including staff deployment, grade management and appointments).

[2] AD/D is responsible for managing capital works projects, maintaining highway facilities in Tsing Ma Control Area and Tsing Sha Control Area, setting standard for the design of bridges and highway structures; providing highway structural design, technical advice and support services; and overseeing the provision of highway project planning, site safety and environmental advice, contractual advice and geotechnical advice services.

involvement is required in determining project scope, steering public consultation process, approving documents for the relevant statutory procedures, administering the tendering process and approving tender documents as well as managing and administering contracts. Furthermore, Chief Highway Engineer/Works has recently taken up large scale projects including the improvement works for Fan Kam Road, the road network in West Kowloon Reclamation Development as well as the proposed pedestrian environment improvement works in Kwun Tong Business Area (Ngau Tau Kok Portion). Currently, he is managing about 90 projects under planning, design or construction.

(b) Chief Highway Engineer/Bridges and Structures is responsible for design and standard setting for bridges and highway structures, provision of comments and technical advice on public and private developments/projects involving highway structures, supervision of structural design for in-house highway projects (over 20 projects every year) plus providing structurally related technical support for on-going construction works. Furthermore, he also supervises the maintenance of highway facilities within the Tsing Ma Control Area and Tsing Sha Control Area[3].

(c) Chief Engineer/Lighting provides professional services and advice on all matters relating to the policies, design, planning and construction of public lighting provisions as well as the maintenance and administration of 245 000 units of road lighting in the territory. Besides, he is studying and reviewing the standard and latest technologies for road lighting from environmental (light nuisance and pollution) and energy saving perspectives. He is also planning and implementing the Light Emission Diode (LED) road lights replacement programme by selecting suitable low and medium wattage high pressure sodium road lights for replacement by LED road lights to reduce energy consumption and greenhouse gas emission, which requires his attention in the short to medium term.

(d) Chief Highway Engineer/Research and Development conducts research on an on-going basis in relation to setting and upgrading highway design, construction, maintenance and material specifications and standards to meet operational needs and enhance

/environmental …..

[3] Highway facilities within the two Control Areas comprise 4 long span cable-supported bridges, 4 dual three-lane tunnels, 1 dual two-lane tunnel, viaducts, roads and roadside slopes, all lying along strategic routes linking to the Airport. Due to the special structural designs of the 4 long span cable-supported bridges within the two Control Areas, close attention to their wear and tear is required. Apart from the regular repairs of the bridge deck surfacing, the essential structural elements require frequent inspection and maintenance.

environmental protection, and handles related work for the issuance of the new Code of Practice for the Lighting, Signing and Guarding of Road Works under the Road Traffic Ordinance (Cap. 374). He also oversees the Division's work in formulating and reviewing the departmental information technology strategies, co-ordinating the management of road excavations, supervising centralised audit inspection teams on road opening works, and supervising the management of all asphalt suppliers for public works. The dedicated attention of a chief professional officer is required to ensure incorporation of updated technology into highway engineering specifications and standards, to make use of state-of-the-art knowledge in formulating the departmental information technology strategies, to devise sophisticated co-ordinating and control mechanisms for road excavation, and to liaise with concerned parties for timely implementation of new initiatives. It is not practicable for him to take up further duties in addition to his current ones.

4. As regards the two ROs (each led by 1 GE and supported by 2 CEs), they are responsible for district administration of highway infrastructure and maintenance works in their respective geographic area. They provide comments on public and private developments affecting public roads, provide technical advice on new highway projects (including gazettal-processing and objection-handling for road works initiated by the ROs and the private sector), and plan, design and supervise maintenance and improvement works for about 2 100 km of roads, 2 600 highways structures and 12 700 road side slopes. They also oversee the processing of road excavation permits, co-ordinate road opening matters, and monitor the performance of utility undertakers in excavation works. In the light of these on-going and heavy duties, and to ensure that the highway network is maintained in a safe and satisfactory condition, the directorate officers concerned cannot be spared/redeployed for taking on additional duties.

Major Works Project Management Office (MWPMO)

5. There are 8 directorate officers in the MWPMO, including 1 PGE (designated as Project Manager/Major Works (PM/MW))(D3), 2 GEs and 5 CEs. PM/MW heads the MWPMO and is responsible for the planning, design and implementation of major highways infrastructure projects. The average expenditure for projects handled by the MWPMO for the coming five financial years (from 2017-18 to 2021-22 financial year) amounts to about $7 billion per year. As PM/MW has a very heavy workload in high-level co-ordination and decision-making on major public engagement, technical, statutory and funding issues, it is not practicable for him to take on the responsibilities of PM/MW(SD) on top of his own schedule.

/6. …..

6. DHy has assessed the current and anticipated workload of the five CEs of MWPMO. The outcome is that they do not have spare capacity in the short to medium term to take on additional work. Details are as follows –

(a) Chief Engineer 1/Major Works (CE1/MW) is mainly responsible for the planning and implementation of a number of medium to large scale infrastructure projects[4]. In the next five years, CE1/MW will be overseeing the implementation of the current phase of the Universal Accessibility (UA) Programme involving retrofitting barrier-free access facilities for the existing public walkways. Under the scope of the current phase of the UA Programme, there are about 200 project items. As at end November 2017, 69 items were completed, 121 items are under construction whilst the remaining 12 items are at the investigation and design stage. In essence, currently the UA Programme is progressing in full swing. To further take forward the UA Programme, the Government has invited the District Councils (DCs) to further nominate not more than three existing walkways in each district for the next phase of the UA Programme. The walkways eligible for consideration by the DCs are no longer confined to the public walkways maintained by the Highways Department (HyD). The DC consultations were largely completed in September 2017 with a total of 45 walkways selected. CE1/MW is mainly responsible for the feasibility study and design work for the newly selected items under the two engineering consultancy agreements commenced in end September 2017, with a view to commencing the construction of these new items progressively from 2019 onwards. If those nominated items involve walkways not being maintained by HyD, CE1/MW would need to conduct substantial co-ordination with the parties responsible for the management and maintenance of these walkways to enable the said lift retrofitting works. If these parties involve multi-ownership, extensive engagement of the owners, preparation of legal documents and going through the required procedures for securing their agreement would be inevitable. Furthermore, CE1/MW is involved in the finalisation for the completed Tolo Highway widening project and responsible for the outstanding noise barrier works for the Yuen Long Highway widening and Tolo Highway (between Island House Interchange and Ma Liu Shui Interchange) widening projects. He/she will not therefore have any spare capacity to take on additional duties.

/(b) …..

[4] Including widening of Tolo Highway and Fanling Highway, the current and next phases of the UA Programme.

(b) Chief Engineer 2/Major Works (CE2/MW) is mainly responsible for the implementation of the some $42 billion mega scale Central Kowloon Route (CKR) project[5]. Given the high complexity and mega scale of the CKR project, CE2/MW has to focus on monitoring the funding application for the project, the continuous preparation of tender documents and the tendering process for the construction contracts and the subsequent implementation of the construction works. CE2/MW also has to make considerable efforts in engaging the concerned stakeholders in major issues relating to environmental impacts, interfaces with existing facilities and building safety. The construction of CKR will commence progressively and in end 2019 reaches its peak, which will last for several years until the commissioning of CKR. Hence, the workload of CE2/MW will continue to increase substantially. Furthermore, CE2/MW is also responsible for the finalisation of accounts of the consultancy agreement under Route 8 – Cheung Sha Wan to Sha Tin. CE2/MW will therefore not have any spare capacity to take on additional duties.

(c) Chief Engineer 3/Major Works (CE3/MW) and Chief Engineer 4/Major Works (CE4/MW) are mainly responsible for the implementation of the some $36 billion mega scale Central–Wanchai Bypass and Island Eastern Corridor Link (CWB) project[6]. The schedule of this project is very tight and construction is now progressing in full swing, requiring very close and strengthened monitoring and management to avoid and mitigate the risks that may cause delay so as to meet the target of commissioning by end 2018 or the first quarter of 2019. Apart from the complexity of the engineering works, the possible impact of the works on traffic, the waterfront and the environment as well as the complex interface with the existing facilities/developments and other projects in the vicinity will require careful monitoring, close liaison and extensive public

/consultation …..

[5] The CKR project consists of a 4.7-km long dual 3-lane trunk road linking Yau Ma Tei Interchange in West Kowloon with Kowloon Bay and Kai Tak Development in East Kowloon with 3.9 km in tunnel, 3.4 km of approach roads and slip roads and the associated reconstruction of 300 m of Gascoigne Road Flyover to the west of Nathan Road. The CKR, together with the Trunk Road T2 and Tseung Kwan O – Lam Tin Tunnel will form Route 6, which will provide an express link between West Kowloon and Tseung Kwan O. It will enhance the capacity of major east-west road corridors in Kowloon, thus relieving traffic congestion and coping with future traffic needs.

[6] The CWB project consists of a 4.5-km dual three-lane trunk road with 3.7 km in tunnel between Central and North Point, 3 km of approach roads and slip roads, and associated 800 m Island Eastern Corridor between Hing Fat Street and Po Leung Kuk Yu Lee Mo Fan Memorial School. It is the last missing link of the strategic highway along the north shore of the Hong Kong Island and there is public expectation for its early completion to help relieve traffic congestion along the Connaught Road/Harcourt Road/Gloucester Road corridor.

consultation, and therefore will demand substantial involvement of CE3/MW and CE4/MW throughout till its completion and commissioning. Apart from the CWB project, the 2 CEs are also responsible for the planning and implementation of the Lin Ma Hang Road Western Section and Eastern Section widening projects, the Hiram's Highway Improvement Stage 1 and 2 projects and 24 noise barrier retrofitting projects for the existing roads[7]. The implementation of these projects has however attracted vastly diverse views from the public given their traffic, engineering, environmental, land and heritage impacts. Accordingly, the 2 CEs and their teams have to carefully handle and address public concerns when working out the preferred improvement options and consulting the public. In order to take forward these projects smoothly, the personal and dedicated attention of the 2 chief professional officers is required and it is therefore not practicable for CE3/MW and CE4/MW to take up further duties.

(d) Chief Engineer 5/Major Works (CE5/MW) is mainly responsible for the planning and implementation of a number of medium to large scale infrastructure projects. He is now overseeing the implementation of the Fanling Highway widening project[8], one of the milestones of which is to tie in with the programme of part of the works of Liantang/Heung Yuen Wai Boundary Control Point project. CE5/MW is also heavily involved in the planning and implementation of the Widening of Castle Peak Road - Castle Peak Bay Section project, the Elevated Pedestrian Corridor in Yuen Long Town connecting with Long Ping Station project, the proposed Pedestrian Footbridge System in Mong Kok project, the Widening of Tsuen Wan Road between Tsuen Tsing Interchange and Kwai Tsing Interchange project as well as the settlement of claims and finalisation of two contracts for the Tuen Mun Road Improvement project, of which the works have been substantially completed. In addition, CE5/MW is responsible for the administration of the Feasibility Study on Route 11 (between North Lantau and Yuen Long), which involves the assessments of its traffic, environmental,

/land …..

[7] It is a government policy to retrofit noise barriers or enclosures where practicable on existing roads with traffic noise levels exceeding 70 dB(A)L10(1 hour) for residential premises. So far 17 retrofitting projects have been completed. Amongst the existing 24 retrofitting projects, two are under construction, one has completed gazettal procedures and 21 are under various stages of planning and study.

[8] The Fanling Highway widening project consists of widening of about 3 km long of Fanling Highway between Tai Hang and Wo Hop Shek Interchange from a dual 3-lane carriageway to a dual 4-lane carriageway; construction of a vehicular bridge of about 400 m long at Kau Lung Hang; and demolition and re-provisioning of six existing footbridges. The estimated cost of $4,320 million for the relevant project was approved by the Finance Committee (FC) of Legislative Council on 21 June 2013.

land, marine, drainage, water supply and utility impacts, carrying out of public consultation and handling of many interfacing issues with other departments. The relevant workload will be inevitably heavy given the mega-scale, high complexities as well as tight schedule of this Route 11 of 12.5 km. Furthermore, the public has diverse views on the Widening of Castle Peak Road, the Elevated Pedestrian Corridor in Yuen Long Town and the Pedestrian Footbridge System in Mong Kok and the Widening of Tsuen Wan Road projects. Therefore, the planning, design and implementation of these projects would demand a lot of efforts of CE5/MW and his team. To enable these projects to take forward smoothly, the dedicated attention of a chief professional officer is required to oversee the timely completion of relevant statutory procedures, public engagement and funding application for these projects. Therefore, CE5/MW will not have any spare capacity to take on additional duties.

Railway Development Office (RDO)

7. The RDO is led by Principal Government Engineer/Railway Development (PGE/RD) (D3). He is responsible for overseeing the planning, design and implementation of railway projects, including the related re-provisioning and enabling works, public infrastructure works and station improvement works, and overseeing the MTR Corporation Limited (MTRCL) on these aspects. While the Hong Kong Section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) and the Shatin to Central Link (SCL) are at their critical stage of construction, PGE/RD has to monitor the MTRCL on the implementation of the projects. As a number of new railway projects recommended in the Railway Development Strategy 2014 (RDS-2014) will progressively enter the planning and design stage in the coming few years, PGE/RD has to be heavily involved in the liaison work at managerial level and the decision making on relevant implementation issues, etc. It is not possible for him to take on the responsibilities of PM/MW(SD) on top of his own duties.

8. PGE/RD is supported by 2 GEs and underpinned by 5 CEs in performing the relevant duties. Upon assessment, DHy concluded that all directorate staff are fully committed to the tasks as mentioned above and do not have spare capacity to share other offices' duties. The key duties of the CEs are set out below –

(a) Chief Engineer/Railway Development 1-1 (CE/RD1-1) is responsible for overseeing the planning and design of the Tuen Mun South Extension and the Northern Link (and Kwu Tung Station)

/which …..

which are new railway schemes recommended in the RDS-2014. The two new projects will involve matters such as complex interface and technical issues in connection with developments in the vicinity, which require liaison, co-ordination as well as decision making at the directorate and managerial level. Although the Kwun Tong Line Extension (KTE) commenced service in October 2016, CE/RD1-1 still needs to closely monitor the cost of the essential public infrastructure works of the KTE project, including review of each claim assessment report submitted by the MTRCL which involves the spending of public funds, provision of professional comments in respect of the analysis of claims assessment, review on the validity, principles and liabilities of all claims. CE/RD1-1 is also involved in the preparation of the concession agreement for the SCL.

(b) Chief Engineer/Railway Development 1-2 (CE/RD1-2) is responsible for the planning and implementation of the North South Corridor of the SCL, which extends the existing East Rail Line across Victoria Harbour to Admiralty via the Wan Chai North Area, and the public infrastructure works related to railway operation. The design and construction of the Cross-harbour Section of SCL is extremely challenging as the SCL tunnel will interface with the CWB and Wan Chai Development Phase II works, all of which are mega projects being constructed within congested workspace in the urban area and under very tight construction schedules. Resolution of the complex interface and technical issues requires efforts of directorate staff.

(c) Chief Engineer/Railway Development 1-3 (CE/RD1-3) [9] is responsible for the planning and implementation of the East West Corridor of the SCL. This section of SCL involves many construction works being carried out in highly populated areas including Sha Tin, Wong Tai Sin, Kowloon City and Yau Tsim Mong. The construction works are extremely complicated, involving a large number of interfaces with railways in operation and the public. Although the South Island Line (East) (SIL(E)) commenced service in December 2016, CE/RD1-3 still needs to closely monitor the cost of the essential public infrastructure works of the SIL(E), including review of each claim assessment report submitted by the MTRCL which involves the spending of public funds, provision of professional comments in respect of the analysis of claims assessment, review on the validity, principles and liabilities of all the

/claims …..

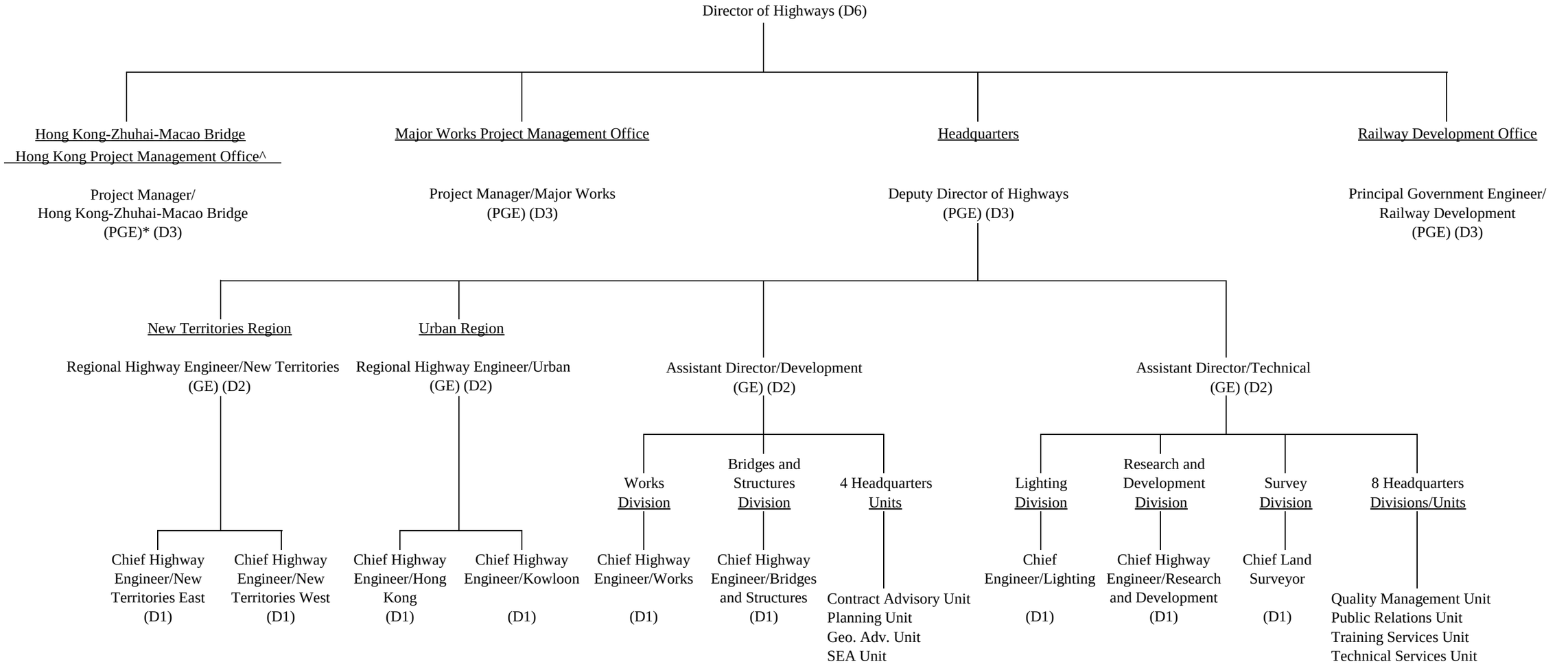
[9] It is a supernumerary post created on 1 April 2009 with the approval of the FC to be retained until 31 March 2022.

claims. Furthermore, CE/RD1-3 oversees the implementation of numerous station improvement works proposed by the MTRCL and the covered walkway at Wong Chuk Hang Station related to railway operation. The management of the above projects requires the participation and supervision of professional directorate officers.

(d) Chief Engineer/Railway Development 2-1 (CE/RD2-1) is responsible for administering the project agreement between the Government and MTRCL on the West Island Line (WIL). Although the WIL was commissioned in December 2014, CE/RD2-1 has to ascertain and verify the refund of non-recurrent capital grant under the established claw-back mechanism between the Government and MTRCL. CE/RD2-1 is also responsible for the planning and implementation of the XRL projects and the associated essential infrastructure works, such as the pedestrian link and public transport interchange connecting the West Kowloon Station. The management of the above projects requires the participation and supervision of professional directorate officers.

(e) Chief Engineer/Railway Development 2-2 (CE/RD2-2) is responsible for providing support to the Transport and Housing Bureau in following up on the recommendations of the RDS-2014. He is also responsible for administering the railway transport model, which involves the maintenance of a comprehensive database of transport statistics and the collation of key planning and land use information to generate forecasts on rail patronage for different railway network configuration under different assumptions of socio-economic conditions and development parameters. Apart from transport modelling work, he has to examine all development proposals from public and private organisations (about 150 in number per annum) near the existing and planned railway lines so that these railway lines would be properly protected. He also needs to take part in various planning and development studies, such as those on Lantau, Northeast New Territories, New Territories North, Hung Shui Kiu and the topside development at the Hong Kong Boundary Crossing Facilities, and to provide comments from the perspective of railway development.

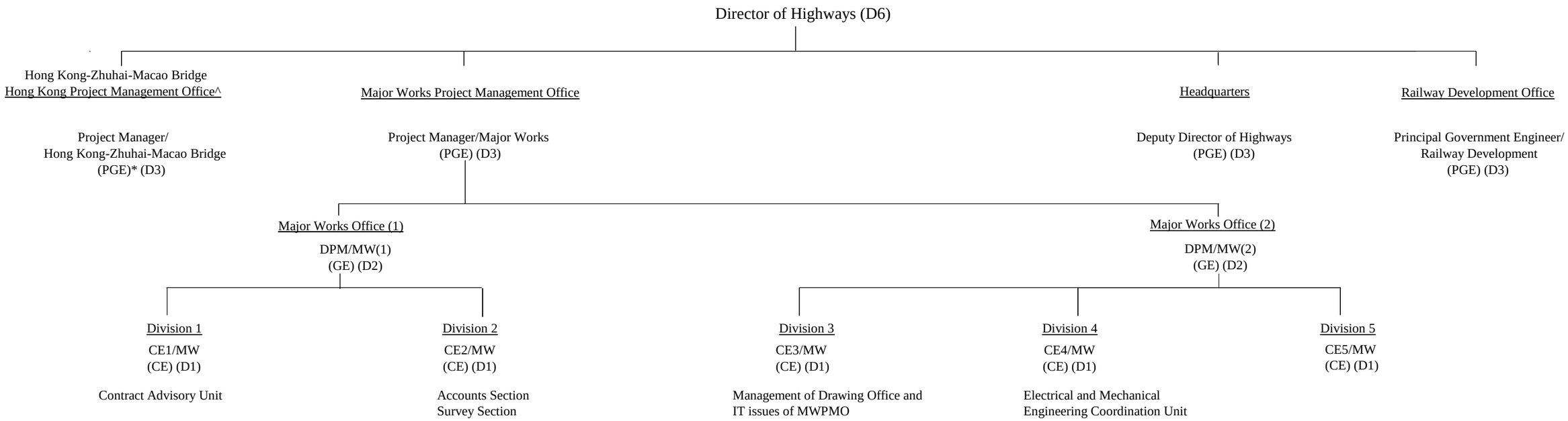
Existing Organisation Chart of Headquarters of Highways Department



Legend

CE	-	Chief Engineer
CLS	-	Chief Land Surveyor
GE	-	Government Engineer
Geo. Adv.	-	Geotechnical Advisory
MAQS	-	Maintenance Accounts and Quantity Surveying
PGE	-	Principal Government Engineer
SEA	-	Safety and Environmental Advisory
^	-	To be renamed as Major Works Project Management Office (Special Duties).
*	-	Supernumerary post of PGE to be lapsed on 1.1.2018. This paper proposes to retain this supernumerary post.

Existing Organisation Chart of Major Works Project Management Office of Highways Department

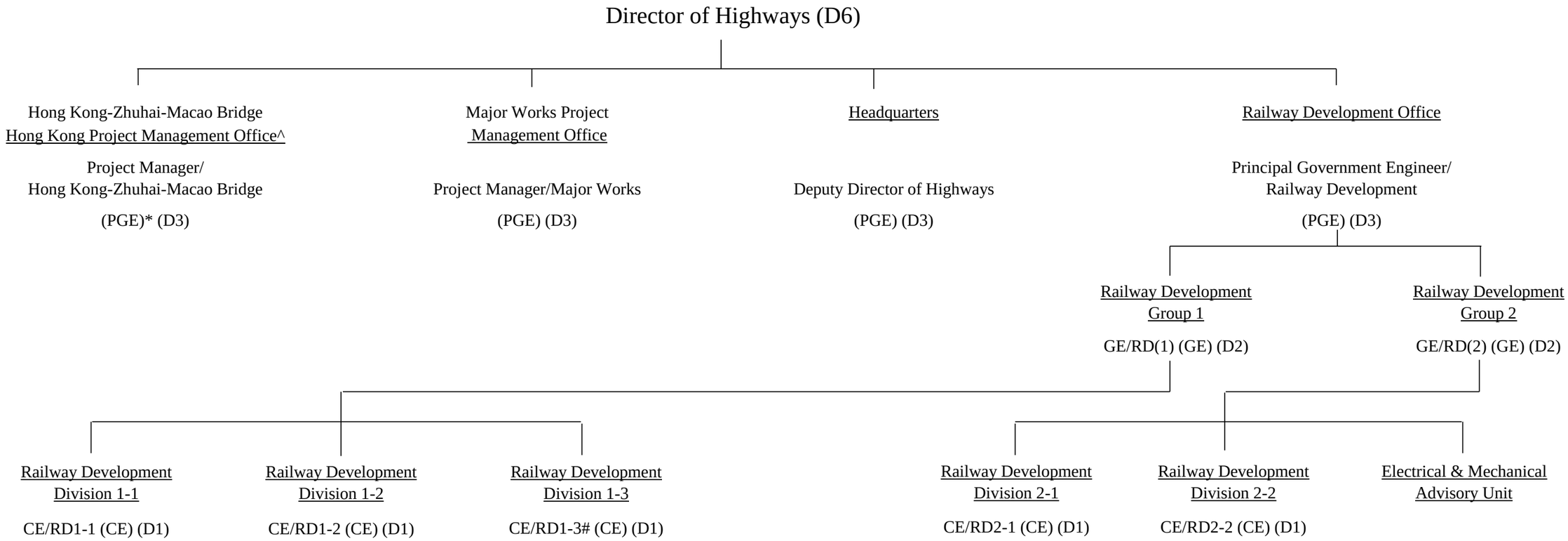


Legend

CE - Chief Engineer
DPM - Deputy Project Manager
GE - Government Engineer
MW - Major Works
PGE - Principal Government Engineer

^ - To be renamed as Major Works Project Management Office (Special Duties).
* - Supernumerary post of PGE to lapse on 1.1.2018. This paper proposes to retain this supernumerary post.

Existing Organisation Chart of Railway Development Office of Highways Department



Legend

CE	- Chief Engineer	^	- To be renamed as Major Works Project Management Office (Special Duties).
GE	- Government Engineer	*	- Supernumerary post of PGE to lapse on 1.1.2018. This paper proposes to retain this supernumerary post.
PGE	- Principal Government Engineer	#	- Supernumerary post of CE to lapse on 1.4.2022.
RD	- Railway Development		