For discussion **PWSC(2024-25)20**
on 7 February 2025

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 706 – HIGHWAYS
Transport – Roads
895TH – Northern Metropolis Highway

Members are invited to recommend to the Finance Committee the upgrading of part of **895TH** to Category A as **900TH** "Northern Metropolis Highway – Investigation" at an estimated cost of $688.3 million in money-of-the-day prices.

PROBLEM

In order to take forward the Northern Metropolis Highway (NMH) project, with a view to driving the development of the Northern Metropolis, enhancing the traffic connections of the new development areas (NDAs) in the region and fully unleashing the development potential of the Northern Metropolis, we need to conduct an investigation study for the NMH.

PROPOSAL

2. The Director of Highways proposes to upgrade part of **895TH** to Category A as **900TH** at an estimated cost of $688.3 million in money-of-the-day (MOD) prices to conduct an investigation study for the NMH, including the relevant site investigation works. The proposal is supported by the Secretary for Transport and Logistics.

/PROJECT …..

PROJECT SCOPE AND NATURE

3. The NMH is a major east-west corridor linking the development nodes in the Northern Metropolis, with a total length of 23 kilometers (km), which is the largest single road project in Hong Kong so far. The preliminary alignment of the NMH connects Tin Shui Wai to the New Territories North (NTN) New Town near Ping Che, and consists of the following four major road sections –

(i) Tin Shui Wai Section – an approximately 5.5 km-long highway connecting Tin Tsz Road at Tin Shui Wai to San Tin Highway near Kam Tin;

(ii) San Tin Section – an approximately 7 km-long highway connecting San Tin Highway near Kam Tin to Fanling Highway (Pak Shek Au Section) near Kwu Tung North/Fanling North NDAs (referred to as "KTN/FLN NDAs" hereafter);

(iii) Kwu Tung Section – an approximately 4.5-km long highway connecting Fanling Highway (Pak Shek Au Section) near KTN/FLN NDAs to Lo Wu/Man Kam To areas; and

(iv) NTN New Town Section – an approximately 6 km-long highway connecting Lo Wu/Man Kam To areas to Heung Yuen Wai Highway and Sha Tau Kok Road.

The layout plan of the preliminary alignment of the NMH is at **Enclosure 1.**

4. **895TH** (referred to as "Proposed Project" hereafter) includes the mainline, interchanges and slip roads of the NMH, associated building, civil, structural, electrical and mechanical (E&M), environmental and other related works, as well as the establishment of a traffic control and surveillance system (TCSS), etc.

5. We propose to upgrade part of the Proposed Project to Category A (i.e. **900TH**) (referred to as "the Investigation" hereafter), comprising –

(i) optimisation of the alignment and interchange locations of the NMH;

(ii) preliminary design of the NMH;

(iii) site investigation and relevant supervision works;

/(iv) …..

(iv) assessments of the impacts on environment, traffic, heritage, land acquisition and other aspects[1], as well as formulation of mitigation measures; and

(v) gazettal of the Proposed Project with an aim to completing the relevant statutory procedures.

6. We will commence the Investigation immediately after obtaining funding approval from the Finance Committee (FC) of the Legislative Council (LegCo). We plan to first complete the investigation study of the NMH (San Tin Section) (referred to as "San Tin Section" hereafter) within 25 months, including optimisation of alignment and interchange locations, carrying out the Environmental Impact Assessment (EIA)[2] of the San Tin Section in accordance with the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499), and completing the gazettal procedures [3] under the Roads (Works, Use and Compensation) (Cap. 370), as well as completing site investigation, other impact assessments and the preliminary design of the San Tin Section in parallel, with a view to compressing the timeline.

/JUSTIFICATION …..

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[1] The Investigation also includes assessments of the impacts on drainage, waterworks and public utilities.

[2] The NMH will span across various areas in the NTN and pass through a large number of undeveloped areas, including Lam Tsuen Country Park, Wetland Conservation Areas (e.g. Nam Sang Wai), major rivers (e.g. Shan Pui River and Kam Tin River) and many valleys and slopes, etc. In this regard, we will need to conduct ecological survey covering both wet and dry seasons and large-scale trees survey for obtaining the baseline ecological information along the alignment and within the study area. According to the streamlined EIA process of the Environmental Protection Department (EPD), the time required for EIA process for typical projects is 18 months, while 24 months or more will be required for larger scale or complicated projects. We have collaborated with the EPD to establish an "Environmental Study Management Group" to facilitate various tasks under the EIA and will make good use of various innovative technical assessment measures from the Hong Kong Environmental Database established by the EPD, including making good use of the baseline air quality data and online noise assessment models, as well as commencing baseline surveys before the issue of a study brief by the EPD and supplementing existing ecological data with standardised methodologies, etc., with a view to compressing the completion of the EIA study for the San Tin Section within about 15 months.

[3] We plan to first arrange the gazettal of the road scheme for the San Tin Section and address the public views expected to be received. We will strive to complete the gazettal procedures of the San Tin Section within 9 months, which is about 2 months ahead of the earlier estimate of 11 months for completing the gazettal of the entire NMH as originally planned, so as to commence the next stage of works of the San Tin Section as soon as possible.

JUSTIFICATION

Transport Demand of the Northern Metropolis

7. The Northern Metropolis is the new engine of Hong Kong's economic development. Following the progressive development of the Northern Metropolis, the residential and employment population will gradually increase[4]. The transport demand for east-west connectivity within the Northern Metropolis and cross-boundary connections will therefore be very strong in the future.

8. Currently, the traffic flow between northeast and northwest of the New Territories mainly relies on the Fanling Highway, San Tin Highway and Yuen Long Highway of Route 9. Upon commissioning of the NMH, it will serve as an alternative route for members of the public travelling in the Northern Metropolis. It can effectively divert about 40% of the traffic flow between the New Territories East and West during peak hours, thereby alleviating the traffic pressure on the abovementioned existing roads and enhancing the stability and resilience of the overall road network in the NTN.

9. Apart from diverting the traffic flow, the NMH will provide a number of interchanges to connect to the existing major highways and link up the development nodes in the Northern Metropolis, including Ngau Tam Mei, San Tin Technopole, Kwu Tung North/Fanling North and NTN New Town. This will significantly improve the transport efficiency of the strategic road network in the northern part of the New Territories. Furthermore, the NMH will enhance the accessibility of the NDAs to tie in with the development projects in the areas, including the Northern Metropolis University Town, the third medical school and an integrated medical teaching and research hospital, Hong Kong-Shenzhen Innovation and Technology Park at Lok Ma Chau Loop, data centres at Sandy Ridge and the joint-user government building in Kwu Tung North, as mentioned in the Chief Executive's 2024 Policy Address (referred to as "Policy Address" hereafter), as well as other projects related to the economic and housing development, so as to fully unleash the development potential of the NDAs. The NMH will also further enhance the cross-boundary road connections for passengers and goods in Hong Kong. The public and visitors could travel conveniently to and from various major land boundary control points[5] in the Northern Metropolis through a more accessible road network.

/*Preliminary .....*

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[4] The Northern Metropolis covers Yuen Long and North District, with a total residential population of about 980 000 and around 134 000 jobs at present. Upon full development, the entire Northern Metropolis is expected to accommodate around 2.5 million residents and provide about 650 000 jobs (i.e. an increase of 1.5 times and nearly 4 times respectively).

[5] There are five road-based land crossings, namely Shenzhen Bay Port, Lok Ma Chau, Man Kam To, Sha Tau Kok and Heung Yuen Wai, and two rail-based land crossings, namely Lo Wu and Lok Ma Chau Spur Line.

Preliminary Alignment of NMH

10. According to the preliminary alignment, the NMH will connect to Heung Yuen Wai Highway/Sha Tau Kok Road through an interchange at its east end to facilitate public access to Heung Yuen Wai and Sha Tau Kok Control Points, while connecting to the major roads in Tin Shui Wai at its west end to allow public to access the Hong Kong-Shenzhen Western Corridor and Shenzhen Bay Port via the roads in Tin Shui Wai and Hung Shui Kiu/Ha Tsuen NDA. The driving distance between Tin Shui Wai town centre and NTN New Town will be greatly reduced by 9 km (about 30%) from currently around 32 km to roughly 23 km.

11. Under the Investigation, we will review the preliminary alignment of the NMH and other possible alignment options based on the latest development and planning data, and carry out preliminary assessment on various aspects such as engineering feasibility, transport demand and cost effectiveness, etc., so as to finalise the best alignment for NMH. For instance, we will review the need to extend the NMH or propose other road improvement works (including enhancing the design of the relevant connecting roads, etc.) to meet the anticipated transport demand of the relevant NDAs and strengthen the connectivity with major land boundary control points.

12. We will collaborate with the relevant policy bureaux and departments under the Investigation to enhance the connectivity between the west end of the NMH and Hung Shui Kiu Station (such as MTR Tuen Ma Line, the Hong Kong-Shenzhen Western Rail Link (Hung Shui Kiu-Qianhai) under planning), as well as other public transport services, so as to facilitate the public to interchange with other modes of transport.

13. At all stages of the project implementation, including the Investigation and the subsequent design and construction stages, we will also maintain close liaison with the relevant Government departments and stakeholders, with a view to reprovisioning the existing facilities affected by the works (including footpaths, cycle tracks, footbridges, underground utilities, etc.) while enhancing the relevant facilities and surrounding environment as appropriate, so as to enhance the effectiveness of the project and the public's well-being.

Implementation Strategy of NMH

14. With a "Policy Innovation" mindset, we will adopt a principle of "Holistic Planning and Phased Implementation" in taking forward the entire NMH project. Unlike the past practice of implementing projects separately with regard to individual transport demand of a certain district, the Investigation will carry out advance work for the entire 23 km-long NMH, including optimisation of alignment,

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completion of statutory procedures such as EIA and gazettal, etc., as well as preliminary design and site investigation works. This will help expedite the implementation of other sections in the future. When the planning of NDAs is finalised progressively and transport demand is anticipated at relevant road sections, we will be able to promptly commence the detailed design and construction works after obtaining LegCo's funding approval. Upon completion ofthe Investigation, we will actively take forward the next stage of work for the San Tin Section of the NMH. The target is to have the San Tin Section technically ready for tendering in 2027 so that funding approval can be sought from the LegCo as and when necessary for carrying out the advance works[6] and detailed design as well as commencing the main construction works of the San Tin Section, with a view to commissioning the San Tin Section in or before 2036.

15. According to the current development plan, the development of the San Tin Technopole will include the widening of a section of the San Tin Highway and the associated upgrading works for San Sham Road, which will meet the transport demand of the San Tin Technopole and the areas near Ngau Tam Mei during the initial stage of development. With the progressive development of San Tin Technopole and the Ngau Tam Mei area, traffic congestion is anticipated at San Tin Highway during peak hours in 2036.

16. Upon completion of the investigation study for the San Tin Section, we will strive to seek funding approval from the LegCo as early as possible to proceed with the next stage of works for the San Tin Section, taking into account factors including availability of public resources, the urgency and significance of the implementation of public works projects. In accordance with the target set out in the Policy Address, we will strive to commission the San Tin Section in or before 2036 to increase the road capacity in the district and drive the research and technology industry and economic development. In order to unleash the development potential of the innovation and technology sites within the San Tin Technopole (including the lands to be developed under the "Large-scale Land Disposal" approach) as early as possible, we plan to adopt "Design and Build"[7] contract form, which incorporates the inputs from contractors at an early stage of the detailed design, leveraging their technical expertise and construction equipment,

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[6] We will propose feasible advance construction works under the Investigation, including site formation at tunnel portals, reprovisioning of affected existing facilities, relocating underground utilities, transplanting or removing trees, constructing temporary roads required for the construction works, etc., to facilitate the main construction works.

[7] Under the "Design and Build" approach, the Government will procure the detailed design and construction works of a project together, both of which will be undertaken by the contractor. The "Design and Build" approach is usually applicable to large-scale works projects of higher complexity where the contractor is required to possess the expertise and experience in relevant construction technologies and provide the most effective detailed design, construction method and maintenance arrangement based on the project requirements and design parameters, etc., and undertake the construction works of the project. Examples include construction of trunk roads which are more complex.

and collaborating with them to enhance speed and efficiency with a view to commissioning part of the San Tin Section as early as possible, thereby providing an alternative route for the San Tin Technopole and Ngau Tam Mei to alleviate the anticipated traffic pressure on the San Tin Highway. We will also examine the latest construction methods and innovative technologies in the Investigation to explore the feasibility of further compressing the construction programme of the San Tin Section.

17. As for the remaining sections of the NMH, we will closely liaise with the relevant departments to conduct a traffic impact assessment based on the latest planning parameters of the NDAs (including reviewing the need for extension of the NMH or proposing other road improvement projects). We will take into account the transport infrastructure projects in the pipeline, including the capacity of roads and railways, overall cost-effectiveness and allocation of public resources, etc., in formulating a more concrete implementation programme, with a view to completing the remaining sections of the NMH in phases in about 3 to 4 years after the commissioning of the San Tin Section.

18. Meanwhile, the Government is taking forward a number of transport infrastructure projects related to the Northern Metropolis, including the Fanling Bypass, widening of Fanling Highway and the Northern Link to enhance road and railway networks connecting the metropolis and beyond, so as to cope with the future transport demand of relevant NDAs.

FINANCIAL IMPLICATIONS

19. We estimate the cost of the Investigation to be $688.3 million in MOD prices, which includes the cost of the relevant site investigation works, with breakdown as follows –

			$ million (in MOD prices)
(a)	Consultants' fees		290.5
	(i)	optimisation of alignment and interchange locations	40.9
	(ii)	assessment of the impacts on environment, traffic, heritage, land acquisition and other aspects, as well as formulation of mitigation measures and gazettal of the Proposed Project	139.2
	(iii)	preliminary design of the NMH	110.4

/(b) …..

(b)	Site investigation	310.6
(c)	Relevant supervision fees for site investigation works	24.6
(d)	Contingencies	62.6
	Total	688.3

The breakdown for the estimates of the consultants' fees and relevant supervision fees for site investigation works is at **Enclosure 2**.

20. In view of the multi-disciplinary nature of the Investigation, we plan to engage consultants to undertake the relevant work including various impact assessments, preliminary design (including the structural and geotechnical designs for the viaducts, tunnels and grade-separated interchanges of the mainline and slip roads of NMH, as well as design of the associated E&M equipment for TCSS, etc.), and providing professional advice on the implementation and financial arrangement of the Proposed Project. We have invited tenders for the relevant consultancy in parallel and updated the estimated consultancy fees by making reference to the returned tender prices. The consultancy will only be awarded upon obtaining FC's approval.

21. As the NMH will pass through a large number of undeveloped areas, available site investigation information is relatively limited. We therefore need to conduct a certain amount of site investigation works under the Investigation, such as vertical drill holes, trial pits and horizontal directional drilling works which are necessary for the design of tunnels, etc., to assess different alignment options and complete the relevant preliminary design. The site investigation data will allow contractors to better understand the geological conditions, reduce construction uncertainties and unnecessary risk premium, thereby increasing the competitiveness of project tender bids and lowering construction costs. It will also help minimise the chances of project delays or additional expenses resulting from unforeseen geological conditions.

22. In order to complete the extensive assessment and design work under the investigation study as early as possible, we will adopt innovative technologies to enhance project management. In the consultancy agreement for the Investigation, we have stipulated provisions requiring consultants to establish an electronic platform for the Government, consultants, and relevant stakeholders to submit and respond to documents electronically to enhance efficiency in carrying out the Investigation. At the same time, this platform can set up regular reminders to prompt relevant stakeholders to respond on time, notify the Highways Department (HyD) to take early actions in complicated cases, so as to ensure that the Investigation and related statutory procedures can be completed on time.

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23. We have also endeavoured to reduce the project cost and achieve greater cost-effectiveness by adopting the "Dual Innovation" mindset. On "Technology Innovation", in order to encourage consultants to make extensive use of innovative technology in the investigation study, HyD has set out in the assessment criteria of the tender documents the requirement for the consultants to propose new technologies suitable for application in the Investigation in their technical proposals in order to obtain a higher technical score. Consultants proposed the use of advanced technology to carry out a number of tasks under the investigation study, including using drones to conduct large-scale traffic and tree surveys in lieu of manual work, more extensive use of the Building Information Modelling (BIM) technology to enhance team collaboration and increase productivity. On the other hand, following the further finalisation of the planning and layouts of the NDAs in the Northern Metropolis recently, about one-third of the road sections originally proposed to be constructed in tunnel form could be constructed in form of at-grade roads or viaducts without affecting the overall land use. The aggregated length of tunnel sections of NMH is expected to be reduced from around 15 km to around 10 km (including the tunnel section of the 6-km long NTN New Town Section, which can be reduced from the original proposal of about 2 km to the current estimate of about 0.5 km). Since the site investigation works required for the design of at-grade roads or viaducts are generally less than those for tunnels, the amount of site investigation works to be carried out under the Investigation could be reduced accordingly.

24. In November 2024, the Development Bureau proposed measures to lower the costs of public works projects at the LegCo Subcommittee to Study the Effectiveness, Costs and Management of Public Works Projects, including adopting the framework contract procurement model for suitable public works contracts. Under the "Policy Innovation" framework contract procurement approach, the Government can enter into framework agreements with a number of contractors, and may, before awarding the works order, request contractors to provide technical proposals and quotations in respect of the works, so as to select the most suitable contractor for the works. Such procurement mode is currently being trialed in some large-scale infrastructure projects, including the site investigation works for the Investigation. Making reference to the market prices based on framework contract procurement model, the cost required for site investigation works can be reduced as well. With reference to the consultancy fees for other transport infrastructure projects of similar nature in recent years and with due consideration to the scale, scope and uniqueness of the Investigation, the cost of the Investigation is considered reasonable. The latest estimated cost of the Investigation is lower than the preliminary estimate of about $1,134.2 million (in MOD prices) when the LegCo Panel on Transport was consulted in February 2024. Details are listed at **Enclosure 3**.

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

Year	$ million (in MOD prices)
2025 – 26	165.8
2026 – 27	261.6
2027 – 28	186.9
2028 – 29	74.0
	688.3

26. We have derived the MOD estimates on the basis of the Government's latest set of assumptions on the trend rate of change in the prices of public sector building and construction output for the period of 2025 to 2029. Subject to funding approval, we will engage consultants to undertake the Investigation on a lump sum basis. As for the site investigation works under the Investigation, it will be implemented under a re-measurement contract as the quantity of works involved may vary depending on actual ground conditions. The Investigation will be delivered under New Engineering Contract. The contract will provide for price adjustments. Project management and cost-effectiveness will be enhanced via promoting cooperation, mutual trust and collaborative risk management between contract parties.

27. The Investigation will not give rise to any recurrent expenditure.

PUBLIC CONSULTATION

28. The Government conducted a public consultation on the preliminary findings of the "Strategic Studies on Railways and Major Roads beyond 2030" (referred to as "the Strategic Studies" hereafter), including the proposed NMH, from December 2022 to March 2023. Consultations with the LegCo, the Transport Advisory Committee, the Heung Yee Kuk, and members of the District Councils were conducted. Focus group meetings were held with professional bodies, academia, think tanks, and green groups while two public forums were organised to collect views from different sector of the community. The public was generally supportive of the proposed NMH and expressed views on the planning and implementation of the project, such as extending the proposed NMH eastward to Sha Tau Kok Road and implementing the project as soon as possible to tie in with the development of the Northern Metropolis.

29. The Government briefed the LegCo Panel on Transport on 15 December 2023 on the "Hong Kong Major Transport Infrastructure Development Blueprint" (referred to as "the Blueprint" hereafter). Having carefully examined the views of the public and stakeholders on the Strategic Studies and conducted technical analyses, taking into account the traffic benefits, coverage, potential environmental impacts and cost-effectiveness, etc., of each project, the Government proposed to enhance the "Three Railways and Three Major Roads", including the NMH. Members also supported the transport infrastructure projects proposed for the Northern Metropolis proposed in the Strategic Studies.

30. We consulted the LegCo Panel on Transport on the Investigation on 16 February 2024. Members generally supported early implementation of NMH, but hoped the Government could reduce the costs and shorten the time required. We have addressed their concerns in this paper, and provided supplementary information to the LegCo Panel on Transport on 8 May 2024 (LegCo Paper No. CB(4)572/2024(01)) to respond to other views from Members.

31. We also consulted the North District Council and the Traffic and Transport Committee of the Yuen Long District Council on 12 March 2024 and 17 April 2024 respectively. Both expressed their support for the Proposed Project and provided comments in respect of the project alignment and implementation programme, including further extending the proposed alignment eastward and westward and taking forward NMH as soon as possible. We will follow up with the comments under the Investigation.

ENVIRONMENTAL IMPLICATIONS

32. The proposed NMH is a designated project under Schedule 2 of the EIAO, which requires HyD to apply for an environmental permit for its construction and operation. We will conduct an EIA study under the Investigation to comply with the requirements of the EIAO. The EIA study will assess the environmental impacts of the project works and formulate corresponding mitigation measures, which will cover air quality, water quality, ecology, fisheries, cultural heritage, noise, landscape and visual impact, etc.

33. 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 Investigation. If it is later confirmed that the relevant site investigation works is a designated project under the EIAO, we will follow the statutory procedures as required under the EIAO to assess their environmental impacts and formulate corresponding mitigation measures, and obtain environmental permits before carrying out relevant works. Related cost has been included in the project estimates.

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34. The Investigation, including relevant 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

35. The Investigation will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded heritage sites/historic buildings or structures, sites of archaeological interest, all newly proposed graded heritage sites/ historic buildings or structures and government historic sites identified by the Antiquities and Monuments Office (AMO). If the scope of the relevant site investigation works under the Investigation involves any heritage site, we will follow the requirements of the relevant mechanism to assess the impacts of the works on the heritage and formulate corresponding mitigation measures before carrying such works, and only proceed with the works after obtaining AMO's consent. Related cost has been included in the project estimates.

LAND ACQUISITION

36. The Investigation, including relevant site investigation works, will not require any land acquisition. The Investigation will examine the need and extent of land acquisition and/or clearance required for the implementation of the Proposed Project.

BACKGROUND INFORMATION

37. The Government has all along been adopting the "infrastructure-led" and "capacity-creating" planning principles in taking forward transport infrastructure projects. In view of the anticipated transport and logistics demand in the Northern Metropolis, we propose to take forward the NMH.

38. In light of Hong Kong's long-term development needs, the Government commenced the Strategic Studies in December 2020 to conduct a holistic and objective analysis on the supply and demand of major transport infrastructure in Hong Kong. The findings of the Strategic Studies indicate that there will be a strong transport demand for east-west connectivity within the Northern Metropolis and cross-boundary connections in the long run. As a result,

the Strategic Studies preliminarily recommended taking forward the NMH (Tin Shui Wai – Kwu Tung Section) in end-2022 and conducted a public consultation together with other initial recommendations of the Strategic Studies. Having carefully examined the views of the public and stakeholders and conducted technical analyses, the Strategic Studies recommended enhancing the NMH by extending it eastward to include the additional NMH (NTN New Town Section), so as to enhance the overall connectivity and coverage of NMH.

39. The Government subsequently promulgated the Blueprint in December 2023, which includes the enhanced proposed alignment of NMH. The enhanced NMH consists of four main road sections, linking up the development nodes in the Northern Metropolis, enhancing the east-west connection of the NTN and forming a new east-west corridor. Among them, the San Tin Section is expected to be commissioned between 2034 to 2038, while the remaining sections of NMH are expected to commission in 2039 and beyond to cope with the gradually increasing transport demand.

40. The Investigation, including relevant site investigation works, will not directly involve any tree removal or planting proposals. We will examine the impacts on trees during construction, the need for tree preservation and tree planting proposals.

41. We estimate that the Investigation will create about 165 jobs (60 for labourers and 105 for professional or technical staff)[8] providing a total employment of 3 450 man-months.

Transport and Logistics Bureau
February 2025

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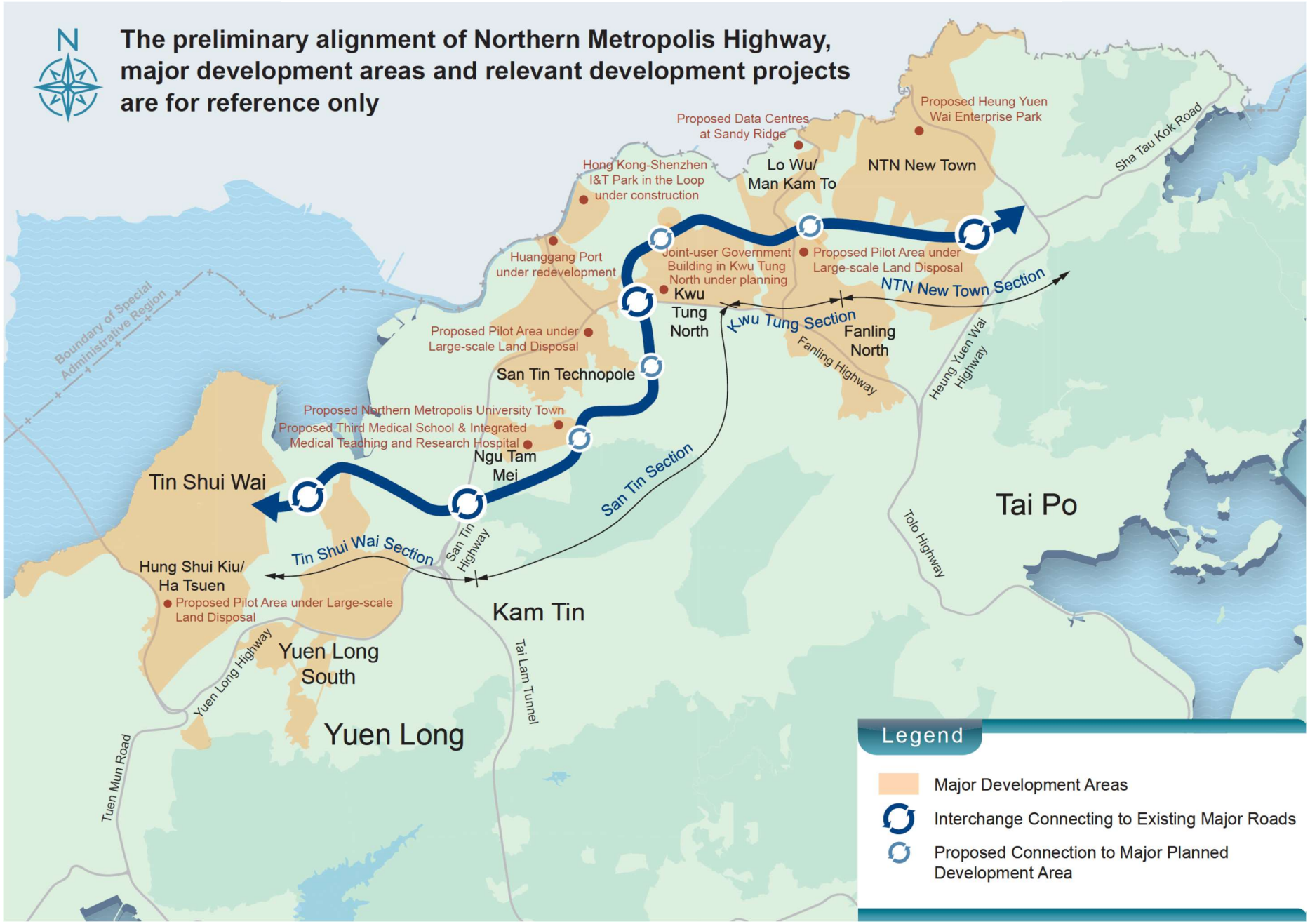
[8] The jobs for labourers to be created will mainly be responsible for carrying out site investigation works and the jobs for professional or technical staff to be created will mainly be responsible for carrying out the Investigation and supervising the relevant site investigation works.

Enclosure 1 to PWSC(2024-25)20

Preliminary Alignment of Northern Metropolis Highway



Enclosure 2 to PWSC(2024-25)20

900TH – Northern Metropolis Highway – Investigation

Breakdown of the estimates for consultants' fees and fees related to supervision of site investigation works (in September 2024 prices)

		Estimated man-months	Average MPS* salary point	Multiplier (Note 2)	Estimated fees ($ million)	
(a) Consultants' fees (Note 1)						
(i) optimisation of alignment and interchange locations	Professional	132	38	2.0	24.6	
	Technical	185	14	2.0	12.4	
				Sub-total	37.0	#
(ii) assessments of the impacts on environment, traffic, heritage, land acquisition and other aspects, as well as formulation of mitigation measures and gazettal of the Proposed Project	Professional	450	38	2.0	83.9	
	Technical	630	14	2.0	42.1	
				Sub-total	126.0	#
(iii) preliminary design	Professional	357	38	2.0	66.6	
	Technical	500	14	2.0	33.4	
				Sub-total	100.0	#
(b) Relevant supervision fees for site investigation works (Note 3)	Professional	86	38	1.6	12.8	
	Technical	187	14	1.6	10.0	
				Sub-total	22.8	#
				Total	**285.8**	#

* MPS = Master Pay Scale

Notes

1. The actual man-months and fees will only be known after selection of the consultants.
2. A multiplier of 2.0 is applied to the average MPS salary point to estimate the full staff costs. A multiplier of 1.6 is applied to the average MPS salary point in the case of resident site staff supplied by the consultants. (As at today, MPS salary point 38 = $93,255 per month and MPS salary point 14 = $33,405 per month.)

/3. …..

3. The actual man-months and costs will only be known after completion of the site investigation works.

Remarks

The figures in this Enclosure 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 19 of the main paper.

Enclosure 3 to PWSC(2024-25)20

900TH – Northern Metropolis Highway – Investigation

Major ways to Reduce the Estimated Cost of the Investigation

The Transport and Logistics Bureau consulted the Legislative Council Panel on Transport on the Investigation of Northern Metropolis Highway (NMH) on 16 February 2024. With reference to the costs of investigation studies for projects of similar scale in the past and taking into account factors such as the preliminary alignment of the NMH, site environment and the planning progress of relevant new development areas (NDAs) at that time, the preliminary estimated cost set out in the paper submitted back then was about $1,134.2 million (in money-of-the-day (MOD) prices).

2. Taking into account the latest development plans of relevant NDAs in the Northern Metropolis and the returned tender prices of consultants' fees, the estimated cost of the Investigation is reduced to $688.3 million (in MOD prices) (please refer to paragraph 19 of the main paper for breakdown), which is about $445.9 million lower than the original estimate. The major reasons are as follows –

Breakdown of Major Price Adjustment and Reasons	**Amount of Downward Adjustment ($ million)**
I. Consultants' Fees • To allow early commencement of the Investigation upon funding approval from the Finance Committee, and to reflect the returned tender prices as far as practicable in the Approved Project Estimate, the HyD initiated parallel tendering for the consultancy agreement for the Investigation in February 2024. The consultants' fees in the paper have made reference to the actual returned tender prices. In the technical proposals submitted by consultants, it was stated that new technologies would be utilised for some of the tasks, including traffic impact assessment, Environmental Impact Assessment and preliminary designs (e.g. using drones to conduct large-scale traffic and tree surveys and making extensive use of the Building Information Modelling technology to assist in planning, management and preliminary design work, etc.), so as to reduce manpower required. Furthermore, an electronic platform will be established for use by relevant departments to enhance efficiency of the approval process.	**38.8**
II. Fees of Site Investigation • We have been working closely with the relevant policy bureaux and departments responsible for taking forward the NDAs. Following the further finalisation of the planning and layouts of the NDAs in the Northern Metropolis recently,	**338.2** *159.5*

Breakdown of Major Price Adjustment and Reasons	Amount of Downward Adjustment ($ million)
about one-third of the road sections of NMH originally proposed to be constructed in tunnel form could be constructed in form of at-grade roads or viaducts without affecting the overall land use. The aggregated length of tunnel sections of NMH is expected to be reduced from around 15 kilometres (km) to around 10 km. Since the site investigation works required for the design of at-grade roads or viaducts are generally less than those for tunnels, the amount of site investigation works to be carried out under the Investigation could be reduced accordingly. • After discussion with relevant policy bureau and departments, we have engaged the Geotechnical Engineering Office to adopt the framework contract procurement model for site investigation works for the Investigation and other large-scale infrastructure projects. With a more steady volume of construction works, contractors will be able to plan the work programme more effectively and be more willing to invest in developing innovative technologies to enhance productivity and efficiency as well as reduce construction costs. We have updated the estimated costs of the site investigation works by making reference to the market prices based on framework contract procurement model.	*178.7*
III. Other related expenses, including works supervision fees and contingencies, etc. • In view of the downward adjustment of the consultants' fees and site investigation costs, other related expenses including works supervision fee and contingencies have been adjusted accordingly.	**68.9**
Total	**445.9**