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**Public Works Subcommittee of the Finance Committee
of the Legislative Council**

**Minutes of the 23rd meeting
held in Conference Room 1 of the Legislative Council Complex
on Tuesday, 9 June 2015, at 8:30 am**

Members present:

Hon Alan LEONG Kah-kit, SC (Chairman)
Hon WU Chi-wai, MH (Deputy Chairman)
Hon Albert HO Chun-yan
Hon LEE Cheuk-yan
Hon James TO Kun-sun
Hon CHAN Kam-lam, SBS, JP
Hon LEUNG Yiu-chung
Hon Emily LAU Wai-hing, JP
Hon TAM Yiu-chung, GBS, JP
Hon Abraham SHEK Lai-him, GBS, JP
Hon Frederick FUNG Kin-kee, SBS, JP
Hon WONG Kwok-hing, BBS, MH
Prof Hon Joseph LEE Kok-long, SBS, JP, PhD, RN
Hon Cyd HO Sau-lan, JP
Hon CHAN Hak-kan, JP
Hon CHAN Kin-por, BBS, JP
Hon CHEUNG Kwok-che
Hon IP Kwok-him, GBS, JP
Hon Paul TSE Wai-chun, JP
Hon LEUNG Kwok-hung
Hon Albert CHAN Wai-yip
Hon Michael TIEN Puk-sun, BBS, JP
Hon Steven HO Chun-yin

Hon Frankie YICK Chi-ming
Hon Gary FAN Kwok-wai
Hon Charles Peter MOK, JP
Hon CHAN Chi-chuen
Hon CHAN Han-pan, JP
Dr Hon Kenneth CHAN Ka-lok
Hon CHAN Yuen-han, SBS, JP
Hon LEUNG Che-cheung, BBS, MH, JP
Hon Kenneth LEUNG
Hon Alice MAK Mei-kuen, JP
Dr Hon KWOK Ka-ki
Hon Dennis KWOK
Hon Christopher CHEUNG Wah-fung, SBS, JP
Dr Hon Fernando CHEUNG Chiu-hung
Hon SIN Chung-kai, SBS, JP
Dr Hon Helena WONG Pik-wan
Hon IP Kin-yuen
Dr Hon CHIANG Lai-wan, JP
Ir Dr Hon LO Wai-kwok, BBS, MH, JP
Hon Christopher CHUNG Shu-kun, BBS, MH, JP
Hon Tony TSE Wai-chuen, BBS

Members absent:

Hon Ronny TONG Ka-wah, SC
Dr Hon LEUNG Ka-lau
Hon Claudia MO
Dr Hon Elizabeth QUAT, JP

Public officers attending:

Mr YEUNG Tak-keung, JP	Deputy Secretary for Financial Services and the Treasury (Treasury) ³
Mr HON Chi-keung, JP	Permanent Secretary for Development (Works)
Mr Thomas CHOW Tat-ming, JP	Permanent Secretary for Development (Planning and Lands)
Ms Anissa WONG, JP	Permanent Secretary for the Environment

Ms Jasmine CHOI Suet-yung	Principal Assistant Secretary for Financial Services and the Treasury (Treasury) (Works)
Mr YAU Shing-mu	Under Secretary for Transport and Housing
Ms Judy CHUNG Sui-kei	Principal Assistant Secretary for Transport and Housing (Transport) ⁵
Mr Peter LAU Ka-keung	Director of Highways
Mr Andy YAU Pak-hang	Project Manager (Hong Kong- Zhuhai-Macao Bridge Hong Kong Project Management Office) Highways Department
Mr MA Kuen	Chief Engineer (Hong Kong Boundary Crossing Facilities) (Hong Kong- Zhuhai-Macao Bridge Hong Kong Project Management Office) Highways Department
Miss Susie HO Shuk-yee	Permanent Secretary for Commerce and Economic Development (Communications and Technology)
Mr LEUNG Koon-kee	Director of Architectural Services
Mr Frank WONG Tak-choi	Project Director (1) Architectural Services Department
Mr WONG Chi-leung	Senior Project Manager (125) Architectural Services Department
Mr Victor LAM Wai-kiu	Government Chief Information Officer (Acting) Office of the Government Chief Information Officer
Ms Joyce MOK Kwai-ying	Assistant Government Chief Information Officer (IT Operations) Office of the Government Chief Information Officer

Mr Simon SIU Kam-wing	Senior Systems Manager (IT Operations) ² Office of the Government Chief Information Officer
Mr TSE Chin-wan	Deputy Director (1) Environmental Protection Department
Miss Amy YUEN Wai-yin	Assistant Director (Water Policy) Environmental Protection Department
Mr TSOI Lim-chung	Principal Environmental Protection Officer (Sewerage Infrastructure) (Acting) Environmental Protection Department
Mr Enoch LAM Tin-sing	Director of Water Supplies
Mr LEUNG Wing-lim	Assistant Director (New Works) Water Supplies Department

Clerk in attendance:

Ms Sharon CHUNG	Chief Council Secretary (1) ²
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Staff in attendance:

Ms Anita SIT	Assistant Secretary General 1
Mr Fred PANG	Senior Council Secretary (1) ²
Mr Raymond CHOW	Senior Council Secretary (1) ⁶
Ms Christy YAU	Legislative Assistant (1) ⁷
Ms Clara LO	Legislative Assistant (1) ⁸
Ms Haley CHEUNG	Legislative Assistant (1) ⁹

Action

The Chairman advised that there were seven items on the agenda for the meeting. Four of them were those carried over from the previous meeting of the Subcommittee on 3 June 2015. He reminded members that in accordance with Rule 83A of the Rules of Procedure ("RoP") of the Legislative Council ("LegCo"), they should disclose the nature of any direct or indirect pecuniary interests relating to the funding proposals under discussion at the meeting before they spoke on the item. He also drew members' attention to Rule 84 of RoP on voting in case of direct pecuniary interest.

Action

Head 706 – Highways

PWSC(2015-16)14 845TH Hong Kong–Zhuhai–Macao Bridge Hong Kong Boundary Crossing Facilities — Reclamation and Superstructures

2. The Chairman advised that the proposal, i.e. PWSC(2015-16)14, was to increase the approved project estimate for 845TH by \$5,461.1 million from \$30,433.9 million to \$35,895.0 million in money-of-the-day prices to cover the cost of the works under the project. The Subcommittee had commenced deliberation on the proposal at the meeting on 3 June 2015.

Delay in the implementation of the project and cost overrun

3. Taking in view that the design of the Hong Kong-Zhuhai-Macao Bridge ("HZMB") had been revised from "double Y-shape" to "single-Y shape", Mr Gary FAN was concerned that the actual traffic volume on HZMB in the future would be lower than the projected volume based on the original "double Y-shape" design. He enquired whether it was possible to scale down the works on the ancillary buildings and facilities of the Hong Kong Boundary Crossing Facilities ("HKBCF") of which the contract had just been awarded in April 2015, and expand the relevant facilities at a later stage when the traffic volume increased.

4. Mr CHAN Han-pan opined that the filibustering tactics employed by some members had delayed the approval of some funding proposals of public works projects. In view of the surge in construction prices in recent years, he considered that any delay in granting funding approval for such projects would result in project cost increase. He enquired whether the Administration would consider suitably postponing the implementation of some ancillary works on which the contracts had not yet been awarded, such that the construction programme would be less tight and the tender prices would not keep on increasing.

5. In response, Director of Highways ("DHy") advised that the "single Y-shape" design of HZMB with its projected traffic volume was adopted in the HZMB project. In the planning of the contract packages, due consideration had been given to allowing the works to be completed in phases. However, if some major works were deferred to be carried out after the commissioning of HKBCF, the construction cost would be further increased and the operation of HKBCF would be affected.

6. Ir Dr LO Wai-kwok expressed concern about the technical difficulties encountered in the construction of the HZMB project, in particular the construction of the sub-sea tunnel of the Main Bridge. He enquired how long the works had been delayed due to such technical difficulties.

7. DHy responded that the works of the Main Bridge included the construction of a 6.7-kilometre sub-sea tunnel comprising 33 sections of immersed tubes. Each section was about 180 metres long and weighed around 80 000 tonnes. The progress of the project had been affected for a few months by the technical difficulties encountered in the laying of immersed tubes at the site.

8. Mr WU Chi-wai enquired whether there was sufficient supply of plants, materials and labour to meet the demand of the large number of heavy civil engineering works projects in progress. DHy responded that while there was sufficient supply of construction materials in general, there had been considerable increases in the prices of materials commonly required in heavy civil engineering and building works in recent years. There was also a shortage of rock supply which was required in reclamation works.

9. Dr KWOK Ka-ki expressed concern that HZMB would become a "white elephant". He questioned the justifications for implementing the HZMB project and requested the Administration to provide information to the Subcommittee on --

- (a) the container throughput handled by the Kwai Tsing Container Terminals annually in the past five years, with a breakdown on the cargo to and from the Mainland; and
- (b) an estimation of the relevant container throughput (with the above-mentioned breakdown) for the next five years.

10. Under Secretary for Transport and Housing ("USTH") responded that at present, road traffic between Hong Kong and the western Pearl River Delta must detour to the north via Shenzhen. HZMB would provide a direct road link between Hong Kong and the western Pearl River Delta, thus greatly reducing the distance, travelling time and transportation costs between the two places. New cargo sources would be brought to Hong Kong's port, thereby benefitting the local freight industry and reinforcing Hong Kong's status as an international shipping and aviation centre. USTH undertook to provide the information requested by Dr KWOK Ka-ki.

(Post-meeting note: The Administration's supplementary information was circulated to members vide LC Paper No. PWSC231/14-15(01)

on 29 June 2015.)

11. Mr IP Kwok-him expressed support for the HZMB project and disagreement with the view that HZMB would become a "white elephant". He opined that the judicial review on the Environmental Impact Assessment ("EIA") report in respect of the project published in 2010 had caused delay in the implementation of the HKBCF project and cost overrun. He called on the Administration to monitor the progress of the HKBCF project to avoid further cost overrun. Noting that the drainage works, sewerage works, waterworks and common utilities enclosures were among the works items which had more significant cost increases, Mr IP sought further information about the use of the common utilities enclosures.

12. DHy replied that the common utilities enclosures would accommodate utilities underground to avoid road digging for maintenance in future. They would also serve as an underground access to the kiosks for vehicle clearance by the operation staff.

13. Mr Albert CHAN said that there had been other works projects which had substantial amount of cost overrun in the past few years, and those projects were not involved in any judicial review. He criticized Mr IP Kwok-him for calling a stag a horse and twisting the facts by saying that the judicial review on the EIA report in respect of the HZMB project had caused delay in the HKBCF project and the cost overrun. He said that the Democratic Alliance for the Betterment and Progress of Hong Kong took the fake "universal suffrage" as a genuine universal suffrage and was a party selling fake medicine. Mr IP Kwok-him reiterated his views on the delay in the HKBCF project and criticized Mr Albert CHAN's comments about him as ignoring the facts and malicious personal attacks.

14. The Chairman advised that members' comments made at the meeting should be focused on the proposal and no more comments unrelated to the proposal should be made. Mr IP Kwok-him called on the Chairman to exercise his power in a timely manner to disallow comments and discussion not related to the agenda items. The Chairman noted Mr IP's views.

Proposed commercial development on the HKBCF island

15. Mr WU Chi-wai asked whether any infrastructures or facilities under 845TH would have to be altered or demolished in future to accommodate the proposed commercial development on the HKBCF island. DHy responded that the proposed commercial facilities would only be developed at the topside and/or in the underground space of the HKBCF island. The implementation of any proposed commercial development should not affect

the construction and operation of HZMB and HKBCF.

Tuen Mun Western Bypass

16. Mr Michael TIEN expressed support for the HZMB project. He said that some Tuen Mun residents were very concerned about the traffic condition of the road network in Tuen Mun upon the commissioning of HZMB and had raised objections to the construction of the Tuen Mun Western Bypass ("TMWB"). Therefore the alignment of TMWB had yet to be finalized. In this connection, Mr TIEN requested the Administration to provide written information to the Subcommittee on --

- (a) the progress of the planning/implementation of the TMWB project; and
- (b) whether the works schedule of the TMWB project would affect the commissioning of the Tuen Mun-Chek Lap Kok Link and the HZMB; if yes, the remedial measures to be taken; if no, the reasons.

17. Sharing a similar concern, Mr Albert HO enquired about the expected completion dates of HZMB and TMWB respectively, and whether the Administration had any contingency plan if the TMWB project was not completed by the time the HZMB was commissioned.

18. In response, USTH advised that the Governments of Hong Kong, Zhuhai and Macao, together with the HZMB Authority, would conduct an in-depth and objective analysis on the progress of the entire HZMB project with a view to coming up with a target programme. As regards the TMWB project, the Highways Department had completed a preliminary review and presented a revised proposed alignment of TMWB to the Tuen Mun District Council in March 2015. The Administration would further review the TMWB project, including the works programme and the estimated cost, having regard to the latest views of the Tuen Mun District Council. USTH further advised that the Administration's assessment revealed that, after the commissioning of HZMB and the Tuen Mun-Chek Lap Kok Link, the traffic condition of the existing road network in Tuen Mun would remain manageable up to 2026. He undertook to provide the information requested by Mr Michael TIEN.

(Post-meeting note: The Administration's supplementary information was circulated to members vide LC Paper No. PWSC231/14-15(01) on 29 June 2015.)

Environmental impact of the HZMB local projects

19. Mr Albert CHAN expressed concern about the environmental impact of the local projects of the HZMB (such as the construction of the HZMB Hong Kong Link Road and the HKBCF). He requested the Administration to provide written information to the Subcommittee on --

- (a) whether there was any difference between the findings of the EIA report on the projects published a few years ago and the present situation; if yes, the details; and
- (b) the number of Chinese White Dolphins living in Hong Kong waters at present, in comparison with the numbers in the past 5 years.

(Post-meeting note: The Administration's supplementary information was circulated to members vide LC Paper No. PWSC231/14-15(01) on 29 June 2015.)

Motion on adjournment of discussion on PWSC(2015-16)14

20. Dr KWOK Ka-ki moved a motion to adjourn the discussion on PWSC(2015-16)14 pursuant to Paragraph 33 of the Public Works Subcommittee Procedure.

21. The Chairman said that the Subcommittee would proceed to deal with Dr KWOK Ka-ki's motion. Each member could speak once on the motion, and the speaking time should not be more than three minutes. He then invited members to speak on the motion.

22. Dr KWOK Ka-ki opined that the Administration had not yet fully addressed the concerns raised by members and had not provided sufficient information on the project. He considered that adjourning the discussion on the funding proposal would allow more time for the Administration to look into the issues raised by members. The Subcommittee could then proceed to discuss other items on the agenda.

23. Mr LEUNG Che-cheung, Mr CHAN Han-pan and Mr TAM Yiu-chung expressed objection to the motion. They were worried that further delay in the project would result in higher cost overrun. They considered that the Subcommittee should continue the deliberation on the proposal so as to allow the Administration to address any further concerns and questions raised by members. Mr LEUNG asked, if the adjournment motion was supported by the Subcommittee and so the HKBCF project was further delayed, how much additional cost might be incurred for the project.

Mr CHAN and Mr TAM said that HZMB would greatly improve the land transport connection between Hong Kong and the western part of Guangdong Province, and facilitate the economic cooperation between the two places. Therefore, the early commissioning of HZMB was beneficial to Hong Kong's economic growth.

24. Mr Michael TIEN considered that the filibustering conducted by some LegCo Members had delayed the implementation of many initiatives of the Administration in various areas. He said that the need for the HZMB project had been agreed on many years ago, and the construction of the Main Bridge and associated infrastructure was underway. He did not see any justification for adjourning the discussion on the proposal, which would cause further delay in the implementation of the project.

25. Ir Dr LO Wai-kwok indicated objection to the motion. He opined that any delay in the HZMB-related local infrastructural projects would affect the commissioning of the entire HZMB project, which involved the work of three Governments. He considered that, if members had any questions and concerns on the proposal, they should raise them and seek responses or clarifications from the Administration, but not adjourn the discussion on the proposal.

26. At the invitation of the Chairman, USTH responded to the motion moved by Dr KWOK Ka-ki. He said that adjourning the discussion on the proposal would definitely delay the progress of the funding application of the project. If the Administration could not obtain the approval of the Finance Committee for additional funds to meet the increase in the project estimate for 845TH within the current legislative session, the Administration would have to implement special measures to mitigate the impact, such as to delete from the on-going contracts and contracts to be awarded certain ancillary facilities which were not immediately required at the time of the commissioning of HZMB. However, re-tendering those works to be deleted would cause additional time and cost. Moreover, if those works were to be constructed after the commissioning of the HKBCF, it would increase the complexity of the construction. It would also cause disturbance to the public at the time of commissioning if some of the facilities were not available. The operation of HKBCF would be affected if those works to be deleted were to be constructed after the commissioning of HKBCF.

27. In response to members' views on the motion, Dr KWOK Ka-ki said that it was the duty of the Subcommittee to examine carefully the Administration's funding proposals on public works projects, and members should not approve such proposals irrespective of the justifications, cost-effectiveness, and the needs of the society. He considered that public coffers should be used on other works projects directly related to the

livelihood of Hong Kong people instead of the "white elephant" infrastructural projects.

28. The Chairman put to vote the question that the discussion on PWSC(2015-16)14 be then adjourned. At the request of Dr KWOK Ka-ki, the Chairman ordered a division. Twenty-one members voted for, 15 members voted against the motion and no one abstained. The votes of individual members were as follows:

For:

Mr Albert HO
Mr James TO
Ms Emily LAU
Prof Joseph LEE
Mr CHEUNG Kwok-che
Mr Albert CHAN
Mr Gary FAN
Mr CHAN Chi-chuen
Mr Kenneth LEUNG
Mr SIN Chung-kai
Mr IP Kin-yuen
(21 members)

Mr LEE Cheuk-yan
Mr LEUNG Yiu-chung
Mr Frederick FUNG
Ms Cyd HO
Mr LEUNG Kwok-hung
Mr WU Chi-wai
Mr Charles MOK
Dr Kenneth CHAN
Dr KWOK Ka-ki
Dr Helena WONG

Against:

Mr CHAN Kam-lam
Mr WONG Kwok-hing
Mr CHAN Kin-por
Mr Paul TSE
Mr Steven HO
Mr CHAN Han-pan
Miss Alice MAK
Ir Dr LO Wai-kwok
(15 members)

Mr TAM Yiu-chung
Mr CHAN Hak-kan
Mr IP Kwok-him
Mr Michael TIEN
Mr Frankie YICK
Mr LEUNG Che-cheung
Mr Christopher CHEUNG

Abstain:

(0 member)

29. The Chairman declared that the motion was carried, and announced that the discussion on PWSC(2015-16)14 should henceforth be adjourned.

Head 703 – Buildings

PWSC(2015-16)6 120KA Building a government data centre complex

30. The Chairman advised that the proposal, i.e. PWSC(2015-16)6, was to upgrade part of 120KA, entitled "Building a government data centre complex – pre-construction consultancy services", to Category A at an estimated cost of \$52.6 million in money-of-the-day prices. The Panel on Information Technology and Broadcasting had been consulted on the proposal on 8 December 2014. Panel members supported in principle the proposal. A report on the gist of the Panel's discussion had been tabled at the meeting.

31. At the invitation of the Chairman, Permanent Secretary for Commerce and Economic Development (Communications and Technology) ("PSCT") briefed members on the proposal.

The need for a government data centre complex ("the Complex")

32. Mr Charles MOK supported the construction of the Complex in view of the ageing government data centre design and facilities, and the relocation needs of the existing government data centres hosted in the three government office buildings at the Wan Chai waterfront. He considered that the consolidation of government data centre facilities and operations could facilitate the enforcement of information technology ("IT") security and the promotion of e-Government services. Mr MOK called for the early implementation of the project and enquired about the relevant timetable. He also asked whether the Administration would develop more government data centre complexes in the future.

33. In response, PSCT advised that subject to the necessary approvals, the target completion time of the Complex was 2020. The Administration would keep in view the need for data centre services in government bureaux and departments ("B/Ds") and make suitable arrangements to support the development of government data centre services.

34. Mr Michael TIEN expressed concern about the cost-effectiveness of building and operating the Complex as compared with engaging outsourced data centres services. He enquired about the average cost of using a rack for placement of computer servers and IT facilities through outsourcing arrangements, the estimated construction and operating cost of the Complex, as well as the estimated breakeven period.

35. In response, Government Chief Information Officer (Acting) ("GCIO (Atg)") advised that the average cost of using an equipment rack of outsourced data centre services ranged from some \$200,000 to \$400,000 a year. The preliminary estimated construction cost of the Complex would be around \$1 billion to \$2 billion, and the annual operating cost of the Complex would be about 15% to 18% of the construction cost. Through the consolidation of data centre facilities and operations, the Complex could improve synergy and flexibility in terms of resource sharing so that the Government as a whole would spend less in both capital investment and recurrent operation in data centre services. GCIO (Atg) further advised that according to initial estimation which was subject to verification by the pre-construction consultancy, there would be a breakeven of the investment for the Complex in about seven to nine years.

36. Mr Michael TIEN and Mr Albert HO enquired about the Administration's long-term planning of the data centre service arrangements for B/Ds. Mr TIEN questioned whether the shortage of land resources in Hong Kong had hindered the establishment of government data centres, thereby outsourced data centres services were required.

37. PSCT replied that the Administration completed a consultancy study in 2012 to formulate a blueprint for the sustainable arrangements of data centre services with a view to addressing the long-term hosting needs of the government IT services. It was recommended that the best approach was for the Government to establish a consolidated complex to address such needs of the Government in a holistic manner so as to achieve better economy of scale and cost effectiveness in the overall government data centre operations. GCIO (Atg) supplemented that the Complex could fulfill the demand for data centre services for five to 10 years after its commissioning in 2020. Some B/Ds might need to operate their own data centres due to specific statutory, business or operational need, and some might engage public cloud services or outsourcing to meet specific, urgent or short-term demand for hosting services. The Administration adopted a step-by-step and pragmatic approach in consolidating the data centre services of B/Ds, so as to strike a balance between the economic benefit achieved through consolidation and the relocation cost.

38. Noting the imminent relocation needs of the existing government data centres hosted in the three government office buildings at the Wan Chai waterfront, Ir Dr LO Wai-kwok expressed support for the proposal. He requested the Administration to provide the respective estimated data processing capacities of the Complex, other government data centres, and outsourced data centre services in terms of equipment racks required by the

Administration at the time when the Complex was commissioned.

(Post-meeting note: The Administration's supplementary information was circulated to members vide LC Paper No. PWSC218/14-15(01) on 19 June 2015.)

Site location of the Complex

39. Mr Albert HO and Dr CHIANG Lai-wan enquired about the reasons for choosing the site in Cheung Sha Wan instead of one in Tseung Kwan O, such as the Tseung Kwan O Industrial Estate which housed a cluster of high-tier data centres. PSCT responded that the Administration aimed to develop Hong Kong as a regional data centre hub. While the Tseung Kwan O Industrial Estate was operated and managed by the Hong Kong Science and Technology Parks Corporation, the Administration had earmarked other sites in Tseung Kwan O outside the Industrial Estate for high-tier commercial data centre development. PSCT explained that the sites in Tseung Kwan O were of relatively large size and were more suitable for developing high-tier commercial data centres.

40. Noting that the electricity consumption of data centres was high, and that uninterruptible power supply system was essential, Dr CHIANG Lai-wan expressed concern whether high construction cost would be incurred for the power supply and the fibre-optic cabling infrastructure. In view that the Complex would be located in a densely populated area with factories nearby, Dr CHIANG was also concerned about the risk of fire hazard in respect of the emergency generators of the Complex.

41. GCIO (Atg) replied that there was available power supply infrastructure in the vicinity of the site that could meet the operation needs of the Complex without significant infrastructure enhancements, e.g. building new power substations. In addition, since Cheung Sha Wan was in the urban area, there would not be much difficulties in the installation of fibre-optic cabling network. GCIO (Atg) and Director of Architectural Services further advised that the fire safety assessment on the oil tank for the emergency generators had been conducted. The Fire Services Department would be consulted on the proposed design of the Complex on the relevant fire safety requirements.

42. Mr Albert HO enquired whether it was necessary for the data centres to be located close to the user B/Ds. GCIO (Atg) responded that it would depend on the business and operational needs of the user B/Ds. For example, it would be better for the data centres to be located close to the user B/Ds when the processing of multi-media data or large volume of printing

work were involved.

43. There being no further questions from members on the item, the Chairman put the item to vote.

44. The item was voted on and endorsed. The Chairman consulted members on whether the item would require separate voting at the relevant Finance Committee ("FC") meeting. No member made such a request.

Head 705 – Civil Engineering

PWSC(2015-16)17 54DP Further enhancing quality of coastal waters of Victoria Harbour

45. The Chairman advised that the proposal, i.e. PWSC(2015-16)17, was to upgrade 54DP to Category A at an estimated cost of \$89.4 million in money-of-the-day prices for carrying out a study on further enhancing quality of coastal waters of Victoria Harbour ("the Study"). The Panel on Environmental Affairs had been consulted on the proposal on 24 November 2014. Panel members supported the Study. The Administration had provided supplementary information to the Panel on 19 March 2015. A report on the gist of the Panel's discussion had been tabled at the meeting.

46. At the invitation of the Chairman, Deputy Director of Environmental Protection (1) ("DDEP(1)") briefed members on the proposal.

47. While expressing support for the Study, Dr Hon Helena WONG highlighted the long-existing odour problems at the waterfront in Hung Hom and Tai Kok Tsui, and considered that the Administration should have identified effective measures to deal with the near shore pollution problems earlier. She enquired about the measures taken or to be taken by the Administration to improve the water quality of Victoria Harbour in the past and in the future before the completion of the Study.

48. DDEP(1) advised that a multi-pronged approach had been adopted to deal with the near shore pollution problems. The Environmental Protection Department took enforcement actions to stop illegal discharge from buildings to storm drains, and requested the Buildings Department to step in if necessary. The Food and Environmental Hygiene Department took enforcement actions against food premises conducting scullery activities at rear lanes. The Drainage Services Department replaced broken sewers, rectified mis-connections between foul sewers and storm drains, desilted storm drains and culverts as well as upgraded or installed dry weather flow interceptors. However, given the diverse nature of sources of pollution

discharges into the harbour, odour formed at different locations from various sources would require different solutions to tackle. Under these circumstances, the Administration needed to carry out the Study to identify the pollution sources affecting coastal water and formulate site specific solutions. DDEP(1) assured members that the Administration would continue to take enforcement action in parallel with the Study.

49. Dr Helena WONG further enquired whether there was untreated sewage being discharged directly into Victoria Harbour at present. DDEP(1) responded that the Administration had been implementing the Harbour Area Treatment Scheme ("HATS") to collect and treat sewage generated around Victoria Harbour. Stage 1 of HATS collected sewage from the Kowloon Peninsula and some other districts for centralized treatment at the Stonecutters Island Sewage Treatment Works ("SCISTW") before discharging into Victoria Harbour. Upon commissioning of HATS Stage 2A in end-2015, the remaining preliminarily-treated sewage from Hong Kong Island would also be collected for treatment at SCISTW. Nevertheless, it was difficult to eliminate the residual polluted flow from entering the storm water drainage system, particularly in densely populated areas with many old private buildings and various daily activities in the streets.

50. There being no further questions from members on the item, the Chairman put the item to vote.

51. The item was voted on and endorsed. The Chairman consulted members on whether the item would require separate voting at the relevant FC meeting. No member made such a request.

Head 709 – Waterworks

PWSC(2015-16)18 357WF Design and construction for first stage of desalination plant at Tseung Kwan O

52. At 10:22 am, the Chairman consulted members on whether to extend the meeting for 15 minutes to allow sufficient time for deliberating the proposal PWSC(2015-16)18. Members agreed and the Chairman announced that the meeting be extended for 15 minutes up to 10:45 am.

53. The Chairman advised that the proposal, i.e. PWSC(2015-16)18, was to upgrade part of 357WF, entitled "Design and construction for first stage of desalination plant at Tseung Kwan O – investigation study review, design and site investigation", to Category A at an estimated cost of \$154.5 million in money-of-the-day prices. The Panel on Development had been consulted on the proposal on 24 March 2015. Panel members generally supported the

submission of the funding proposal to the Subcommittee for consideration. A report on the gist of the Panel's discussion had been tabled at the meeting.

54. At the invitation of the Chairman, Director of Water Supplies ("DWS") briefed members on the proposal.

The need for a desalination plant

55. Mr Kenneth LEUNG and Mr Dennis KWOK supported the development of seawater desalination in Hong Kong. Mr KWOK considered that Hong Kong's fresh water resources could not rely heavily on importing raw water from Dongjiang ("DJ") in Guangdong Province in the long run in view of the increasing water demand, the keen competition for DJ water with other cities in the Pearl River Delta Region, as well as the pollution of DJ water. Noting that the output capacity of the first stage of the proposed desalination plant would account for only 5% (and 10% if expanded in the second stage) of the total fresh water consumption in Hong Kong, Mr LEUNG and Mr KWOK considered that the pace of development of seawater desalination in Hong Kong was too slow. They urged the Administration to plan ahead for the further development of seawater desalination in Hong Kong, including building more desalination plants and the necessary power supply infrastructure to support their operation, as well as increasing the target proportion of fresh water supply from desalination.

56. DWS responded that the Administration planned to construct the proposed desalination plant, at a 10-hectare site at Tseung Kwan O, in two stages. There were many cases in overseas places where desalination plants were developed in phases. Compared with developing the proposed project in one go, the two-phase development approach would enable the Administration to accumulate experience at the first stage and make use of new technology to lower the construction and production costs at the second stage. In deciding whether to further expand the proposed desalination plant, build new plants in other areas, or set a target proportion of fresh water supply from desalination, the Administration would take into account various factors, including fresh water demand, advancement in desalination technology, production cost, etc. DWS added that, to minimize the delivery cost, a desalination plant should preferably be located close to the area to which the water was to supply.

Desalination technology and cost

57. Mr Albert HO said that the concept of seawater desalination was not new to Hong Kong. The Lok On Pai desalination plant in Tuen Mun was

decommissioned some 30 years ago due to high operation cost. He enquired about the respective unit costs of production of potable water from the proposed desalination plant and DJ water, and expressed concern about the implication of electricity tariff on the production cost for desalination, which required high electricity consumption. Referring to the reverse osmosis technology which would be used for the proposed plant, Mr Kenneth LEUNG enquired about the desalination technology used in other places such as Singapore, and the unit production cost of the proposed desalination plant in comparison with those of overseas desalination plants.

58. DWS advised that unlike the energy intensive multi-stage flash distillation process used in the Lok On Pai desalination plant, reverse osmosis was a mature and preferred technology dominating the market due to its reliability and progressive reduction in cost as the technology advanced. The reverse osmosis technology was also adopted in Singapore for desalination. The estimated unit production cost of the proposed desalination plant was \$12 to \$13 per cubic metre, which included the capital cost but not the land premium of the plant, while the unit production cost of DJ water was \$8 to \$9 per cubic metre. DWS said that the cost of sea water desalination in a place was affected by factors such as the quality of the seawater, requirements for the quality of the desalinated water, local electricity cost and energy efficiency of desalination facilities. The estimated unit production cost of the proposed desalination plant was in comparable order with the range of unit costs for producing fresh water by seawater desalination using reverse osmosis technology overseas. The Administration considered that the cost of seawater desalination would be reduced over time with the continuous advancement in technology.

59. Mr Kenneth LEUNG enquired about the Administration's consideration in determining the location of the proposed desalination plant. DWS replied that the site of the proposed desalination plant was situated at the southernmost part of Tseung Kwan O. The site was chosen taking into consideration a number of factors including the quality of the seawater nearby, its close proximity to a strategic water supply network, etc.

60. In response to Mr Albert HO's enquiry about the disposal of brine produced after the reverse osmosis process, DWS advised that similar to the practice adopted in overseas desalination plants using reverse osmosis technology, the brine would be discharged to the sea via the diffusers on the outfall, and it was confirmed that the brine would not cause adverse impact on the surrounding marine environment.

Project cost and implementation timeframe

61. Ir Dr LO Wai-kyok expressed support for the proposal. He enquired about the preliminary estimated construction cost of the proposed desalination plant. On the target of commissioning the desalination plant in 2020, Ir Dr LO opined that such a plan might be too optimistic.

62. DWS responded that the preliminary estimated construction cost of the first stage of the proposed desalination plant was about \$9 billion, which would also cover the construction of some common facilities for the first and second stages, such as the administration building, the intake and outfall facilities, the laboratory, the maintenance workshop as well as the water main to be built in one go. DWS further advised that, subject to the funding approval of FC, the Administration planned to commence the proposed review, design and associated site investigation works in late 2015 for completion in the second half of 2017. In order to meet the tight programme for completion of the proposed works, the Administration would invite tenders for the design and construction works in 2016. The Administration had also started the detailed design for the water main for conveying the fresh water produced at the proposed desalination plant to existing fresh water service reservoirs using in-house resources. Drawing reference from overseas desalination plant projects, the construction period of the first stage of the proposed medium-sized desalination plant would be around three to four years. The Administration considered it feasible to commission the first stage of the plant in 2020.

Other issues

63. Mr WU Chi-wai enquired whether energy efficiency would be one of the considerations for the design of the proposed desalination plant. DWS replied in the affirmative. Mr WU further enquired about the planned land use of the site for the proposed desalination plant at Fat Tong O, Tseung Kwan O. DWS responded that the site at Fat Tong O was currently zoned as "Industrial". The Administration would submit an application to the Town Planning Board for amending the land use of the site to facilitate the development of a desalination plant.

64. There being no further questions from members on the item, the Chairman put the item to vote.

65. The item was voted on and endorsed. The Chairman consulted members on whether the item would require separate voting at the relevant FC meeting. No member made such a request.

Re-scheduling of the next meeting

66. The Chairman said the Administration had requested that the meeting originally scheduled for 17 June 2015 be re-scheduled to 16 June 2015, from 9:00 am to 12:30 pm. Members had been requested to indicate their availability for attending the re-scheduled meeting. He would consider the Administration's request taking into account members' replies.

(Post-meeting note: The meeting originally scheduled for 17 June 2015 was re-scheduled to 16 June 2015. Members were informed accordingly on 9 June 2015 vide LC Paper No. PWSC202/14-15.)

67. There being no other business, the meeting ended at 10:43 am.

Council Business Division 1
Legislative Council Secretariat
5 August 2015