

**For discussion
on 27 March 2018**

Legislative Council Panel on Development

PWP Item No. 201WC (Part)

**Relocation of Diamond Hill fresh water and
salt water service reservoirs to caverns –**

Investigation study, design and associated site investigation works

PURPOSE

This paper briefs Members on the proposal to upgrade part of **201WC**, entitled “Relocation of Diamond Hill fresh water and salt water service reservoirs (DHSRs) to caverns” (the Project) to Category A at an estimated cost of \$127.5 million in money-of-the-day (MOD) prices to carry out investigation study, design and associated site investigation works for relocation of DHSRs to caverns.

PROJECT SCOPE

2. The part of **201WC**, which we propose to upgrade to Category A, comprises:-
- (a) an investigation study on the relocation of DHSRs to caverns¹, and detailed impact assessments on related environment, traffic, geotechnical, blasting vibration, slope², drainage, waterworks, utilities, etc.;
 - (b) preliminary and detailed design of the proposed works on: (i) construction of the relocated DHSRs and associated pumping

¹ Including (i) a review/further exploration on the options of vehicular access tunnel portal location (Vehicular Access Option 1 – Portal of access tunnel located near the entrance of the Lion Rock Park; and Vehicular Access Option 2 – Portal of access tunnel located next to the Ma Chai Hang fresh water service reservoir); and (ii) a study on the technical feasibility of extending the salt water network of the relocated Diamond Hill salt water service reservoir to reach Tsui Chuk Garden.

² Including private slopes in the vicinity of the proposed cavern and tunnels (e.g. Chuk Yuen North Estate's).

stations, water main laying works, access road improvement works, tunnels, adits, ventilation shaft and caverns for accommodating the relocated DHSRs and associated facilities; (ii) decommissioning of the existing DHSRs and associated facilities; and (iii) associated works³;

- (c) public engagement (PE) and consultation exercises⁴ with relevant stakeholders;
- (d) associated site investigation works and their supervision; and
- (e) preparation of tender documents and assessment of tenders for the associated site investigation works and the future construction works for the Project.

3. A plan showing the preliminary layout⁵ of the relocated DHSRs is shown at **Enclosure 1**.

4. Subject to funding approval of the Finance Committee (FC), we plan to engage consultants to carry out the above investigation study, design and associated site investigation works in the third quarter of 2018 for completion in the second quarter of 2021.

5. We will retain the remainder of **201WC** in Category B, which mainly comprises the proposed works described in paragraph 2(b) above. We will seek funding for the remainder of **201WC** at a later stage.

JUSTIFICATION

6. There is a pressing need to optimise the supply of land for various uses by sustainable and innovative approaches to support social and economic development. It is the established policy of the Government to adopt a multi-pronged approach to expand land resources. One practicable approach is rock cavern development, which is a viable source of long-term land supply.

³ Including environmental mitigation works, landscaping works, utilities diversion, etc. that are incidental to the Project.

⁴ The PE and consultation activities will include roving exhibitions, community liaison group meetings and public forum.

⁵ The location and sizes of the relocated DHSRs and associated pumping stations and facilities are subject to review under the proposed investigation study and design.

7. According to the findings of the study on “Enhanced Use of Underground Space in Hong Kong” completed by the Civil Engineering and Development Department (CEDD) in 2011, about two-third of the land in Hong Kong is suitable for cavern development from topographical and geological perspectives. The other study on “Enhancing Land Supply Strategy: Reclamation outside Victoria Harbour and Rock Cavern Development” completed by CEDD in 2014 further proposed relocating DHSRs to caverns as one of the proposed pilot schemes for rock cavern development.

8. The Water Supplies Department (WSD) in December 2014 commenced a feasibility study on the relocation of DHSRs to caverns (FSR). The main tasks of the FSR were substantially completed in December 2016. The results confirmed that relocating DHSRs to caverns in the hillside to the north of Chuk Yuen North Estate is technically feasible.

9. The FSR also identified that the Project would generate social benefits from the releasing of about 4 hectares of land to address the territorial housing needs and the local community needs. We therefore propose to carry out the proposed investigation study, design and associated site investigation works for the relocation of the existing DHSRs to caverns as soon as possible.

10. The future land uses of the existing DHSRs site to be released are subject to a separate planning and engineering (P&E) study, in which public views received during the previous PE exercises under the FSR will be taken into consideration and reviewed to formulate appropriate development and land uses schemes for further consultation with the public and stakeholders.

FINANCIAL IMPLICATIONS

11. We estimate the cost of the proposed investigation study, design and associated site investigation works to be \$127.5 million in MOD prices.

PUBLIC CONSULTATION

12. We have conducted a two-staged PE exercise under the FSR to seek the views of the public and stakeholders with a view to building consensus on the Project. The Stage 1 PE was conducted from October 2015 to January 2016 to establish the need for the relocation and to solicit views on future use of the existing DHSRs site to be released, while the Stage 2 PE was conducted from November to December 2016 to solicit views on the

preliminary relocation proposal and land use option for the existing DHSRs site to be released. We also met with the relevant Wong Tai Sin District Council (WTSDC) Members in April to July 2015. During the PE exercise, we carried out a wide range of activities, including distribution of PE digests, roving exhibitions, community group meetings, and public forum.

13. During the PE exercise, the major concerns/views raised by the stakeholders were on the type of residential development in the existing DHSRs site to be released, the traffic impact during construction and from the proposed development in the existing DHSRs site to be released, as well as the effect of blasting vibration on buildings and slopes and the environmental nuisances such as noise and dust emission arising from the construction works of the Project. These aspects will respectively be reviewed under a separate P&E study for the future land use of the existing DHSRs site to be released mentioned in paragraph 10 and the proposed investigation study of the Project.

14. We consulted the WTSDC on the findings and recommendations of the FSR, as well as the proposal to proceed with the investigation study, design and associated site investigation works, on 9 January 2018 and 6 March 2018. The WTSDC generally supported the proposal⁶.

ENVIRONMENTAL IMPLICATIONS

15. The proposed investigation study, design and associated site investigation works are not designated projects under the Environmental Impact Assessment (EIA) Ordinance (Cap. 499), and will not cause any long-term environmental impacts. We have included in the project estimate the cost of implementing suitable mitigation measures to control short-term environmental impacts arising from the site investigation works.

16. The proposed site investigation works will only generate very little construction waste. We will require the consultants to fully consider measures to minimise the generation of construction waste and to reuse or recycle construction waste as much as possible for implementation in the construction stage of the Project in future.

⁶ In view of some WTSDC Members' concern with the portal location of the vehicular access tunnel, WSD will review the options of portal location under the proposed investigation study (vide Footnote 1(i)), and consult the WTSDC on the outcome of the review before proceeding with the detailed design of the Project.

17. The Project constitutes a designated project under Schedule 2 of the EIA Ordinance, and an environmental permit is required for their construction and operation. We will conduct an EIA study to address the environmental impacts and prepare an EIA report to meet the requirements under the EIA Ordinance, and propose mitigation measures if necessary. We will submit the EIA report to the Director of Environmental Protection for approval under the EIA Ordinance. We will follow the statutory procedures, including provision of the EIA report for inspection and comment by the public and the Advisory Council on the Environment.

HERITAGE IMPLICATIONS

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

LAND ACQUISITION

19. The proposed investigation study, design and associated site investigation works will not require any land acquisition.

TRAFFIC IMPLICATIONS

20. The proposed investigation study, design and associated site investigation works will not have significant impact on traffic.

BACKGROUND

21. On 11 July 2014, FC approved upgrading **195WC** “Feasibility study on relocation of Diamond Hill fresh water and salt water service reservoirs to caverns” to Category A with an approved project estimate of \$46 million in MOD prices for carrying out the FSR. The FSR commenced in December 2014. The main tasks under the FSR were substantially completed in December 2016.

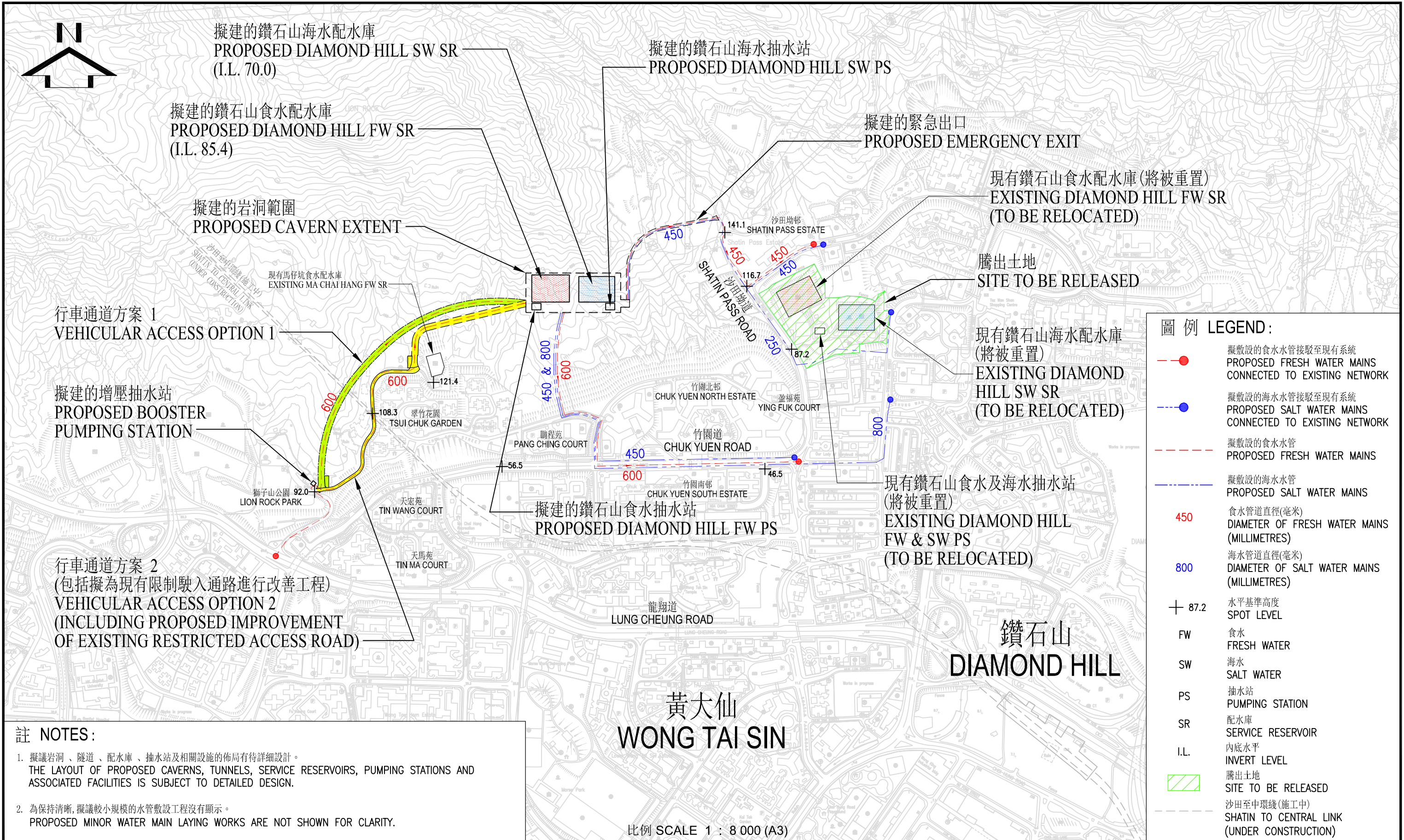
22. We upgraded **201WC** to Category B in October 2017.

23. The proposed investigation study, design and associated site investigation works will not involve any tree removal or planting proposals. We will require the consultants to take into consideration the need for tree preservation during the planning and design stages of the project. We will also incorporate tree planting proposals, where possible, in the construction phase in future.

WAY FORWARD

24. We will seek support of the Public Works Subcommittee for the approval from the FC to upgrade part of **201WC** to Category A, and will invite tenders in parallel to enable early commencement of the proposed investigation study, design and associated site investigation works. We will only award the contract after obtaining FC's funding approval.

Development Bureau
Water Supplies Department
March 2018



圖例 LEGEND:

- 擬敷設的食水管接駁至現有系統
PROPOSED FRESH WATER MAINS CONNECTED TO EXISTING NETWORK
- 擬敷設的海水管接駁至現有系統
PROPOSED SALT WATER MAINS CONNECTED TO EXISTING NETWORK
- 擬敷設的食水管
PROPOSED FRESH WATER MAINS
- 擬敷設的海水管
PROPOSED SALT WATER MAINS
- 450 食水管直徑(毫米)
DIAMETER OF FRESH WATER MAINS (MILLIMETRES)
- 800 海水管直徑(毫米)
DIAMETER OF SALT WATER MAINS (MILLIMETRES)
- + 87.2 水平基準高度
SPOT LEVEL
- FW 食水
FRESH WATER
- SW 海水
SALT WATER
- PS 抽水站
PUMPING STATION
- SR 配水庫
SERVICE RESERVOIR
- I.L. 內底水平
INVERT LEVEL
- 騰出土地
SITE TO BE RELEASED
- 沙田至中環綫(施工中)
SHATIN TO CENTRAL LINK (UNDER CONSTRUCTION)

註 NOTES:

1. 擬議岩洞、隧道、配水庫、抽水站及相關設施的佈局有待詳細設計。
THE LAYOUT OF PROPOSED CAVERNS, TUNNELS, SERVICE RESERVOIRS, PUMPING STATIONS AND ASSOCIATED FACILITIES IS SUBJECT TO DETAILED DESIGN.
2. 為保持清晰, 擬議較小規模的水管敷設工程沒有顯示。
PROPOSED MINOR WATER MAIN LAYING WORKS ARE NOT SHOWN FOR CLARITY.

比例 SCALE 1 : 8 000 (A3)

工務計劃項目第201WC號 - 搬遷鑽石山食水及海水配水庫往岩洞
P.W.P. ITEM NO. 201WC --- Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

水務署
WATER SUPPLIES DEPARTMENT

草圖編號 SKETCH NO. SK 62017 / 135