

**For information**

**Legislative Council Panel on Development**

**181WF – In-situ reprovisioning of Sha Tin water treatment works**

**PURPOSE**

This paper briefs Members on the proposal to upgrade part of **181WF** to Category A, entitled “In-situ reprovisioning of Sha Tin water treatment works – South Works – design and site investigation”, at an estimated cost of \$149.1 million in money-of-the-day (MOD) prices, for engaging consultants to carry out design and site investigation for the reprovisioning works.

**PROPOSAL**

2. The scope of works under **181WF** comprises the in-situ reprovisioning of the southern portion (South Works) and northern portion (North Works) of the Sha Tin Water Treatment Works (WTW), as follows -

- (a) in-situ reprovisioning of the South Works;
- (b) condition survey and improvement works for the existing North Works to ensure smooth operation during reprovisioning of the South Works; and
- (c) in-situ reprovisioning of the North Works.

The location of the proposed works is shown on the plan at **Enclosure 1**.

3. The part of **181WF** that we now propose to upgrade to Category A comprises -

- (a) site investigation for in-situ reprovisioning of the South Works;
- (b) condition survey and improvement works for the existing North Works; and
- (c) a consultancy for the in-situ reprovisioning of the South Works for–
  - (i) impact assessment on environment, hydraulics, and other aspects necessary for completion of the design;

- (ii) detailed design for the reprovisioning of the South Works to the proposed capacity of 550 000 cubic metres per day ( $\text{m}^3/\text{day}$ ), the associated fresh water pumping station, and common facilities including administration buildings, a laboratory, alum saturation tanks and a chemical house, as well as other associated civil, geotechnical, mechanical and electrical, environmental, control and monitoring works; and
- (iii) supervision of the condition survey, improvement works and site investigation works

## **JUSTIFICATION**

4. Sha Tin WTW is the largest WTW in Hong Kong. The South Works were commissioned in 1964 while the subsequent expansions in 1973, 1976 and 1983 formed the North Works. After more than 40 years of services, the Sha Tin WTW has reached a stage of requiring substantial reprovisioning as its plant and equipment are approaching the end of their service life. The present operation at Sha Tin WTW is also not efficient by modern day standard, particularly in treating raw water of variable quality. A major constraint in the in-situ reprovisioning of Sha Tin WTW is the difficulties in maintaining the plant in operation during the reprovisioning process. In order to reduce the risk that the supply of treated water would be interrupted by the reprovisioning work, we have formulated a strategy by making use of the reserved capacity of Tai Po WTW.

5. At present, Sha Tin WTW and Tai Po WTW supply about 1 060 000  $\text{m}^3/\text{day}$  (with 700 000  $\text{m}^3/\text{day}$  from North Works and 360 000  $\text{m}^3/\text{day}$  from South Works) and 250 000  $\text{m}^3/\text{day}$  of treated water, respectively. Under the strategy, we will uprate the Tai Po WTW to make up for the reduction in the treatment capacity as a result of the currently proposed reprovisioning of the South Works of Sha Tin WTW. This will enable Tai Po WTW to extend its supply zone to cover part of urban Kowloon, and the entire Hong Kong Central and Western districts, which are currently supplied by Sha Tin WTW.

6. In order to ensure that the North Works will be in smooth operation during the in-situ reprovisioning of South Works, we need to conduct condition survey and carry out improvement works for the existing North Works before the South Works is

decommissioned for the proposed reprovisioning works. In particular, the existing common facilities must be in operation and continue to serve the North Works until the respective reprovisioned common facilities are commissioned. The arrangement can effectively reduce the risk of interruption of treated water supply to the public during the reprovisioning of the South Works of the Sha Tin WTW.

7. At present, the upgrading works of Tai Po WTW are under construction. We need to timely commence the site investigation and detailed design for the reprovisioning of the South Works of the Sha Tin WTW so that construction works could commence following the commissioning of the upgraded Tai Po WTW by end 2011.

8. Owing to the lack of in-house resources and expertise to undertake work described in paragraphs 3 above, we propose to engage consultants to carry out the work.

## FINANCIAL IMPLICATIONS

9. We estimate the cost of the proposed design consultancy and site investigation to be \$149.1 million in MOD prices, made up as follows -

	<b>\$ million</b>
(a) Consultants' fees	105.0
(i) Impact assessments	19.7
(ii) Detailed design	78.7
(iii) Supervision of condition survey and improvement works as well as site investigation works	6.6
(b) Condition survey and improvement works	14.5
(c) Site investigation works	7.8
(d) Contingencies	12.5

	<b>\$ million</b>
Sub-total	<u>139.8</u> (in September 2009 prices)
(e) Provision for price adjustment	<u>9.3</u>
Total	<u>149.1</u> (in MOD prices)

10. The proposed part-upgrading of **181WF** to Category A will not give rise to any recurrent expenditure.

### **ENVIRONMENTAL IMPLICATIONS**

11. The proposed design consultancy and site investigation are not designated projects under the Environmental Impact Assessment Ordinance (Cap. 499). The proposed design works will not cause any adverse environmental impacts. We shall implement suitable mitigation measures to control short-term environmental impacts from the site investigation works.

12. The proposed design consultancy and site investigation 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/recycle construction waste as much as possible in the future implementation of the construction projects.

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

### **TRAFFIC IMPLICATIONS**

14. The proposed design consultancy and site investigation will not have significant impact on traffic.

## **PUBLIC CONSULTATION**

15. We consulted the Development and Housing Committee of the Sha Tin District Council on 3 September 2009 in respect of the proposed works at Sha Tin WTW. Members of the Committee supported the proposed works.

## **HERITAGE IMPLICATIONS**

16. The proposed design consultancy and site investigation will not affect any heritage sites, i.e. all declared monuments, proposed monuments, graded historic sites/buildings, sites of archaeological interest and government historic sites identified by Antiquities and Monuments Office.

## **LAND ACQUISITION**

17. The proposed design consultancy and site investigation do not require any land acquisition.

## **BACKGROUND**

18. After the promulgation of the two-stage re-provisioning strategy in 2007, we submitted an information paper on the first stage of the strategy to the LegCo Panel on Development in March 2009. In May 2009, we upgraded part of **334WF** to Category A as **339WF** at an approved project estimate of \$43.4 million in MOD price, entitled “Expansion of Tai Po water treatment works and ancillary raw water and fresh water transfer facilities – design and site investigation”, for engaging consultants to carry out design and site investigation for the works. Upon completion of the design of the works in the first phase, we upgraded the second part of **334WF** to Category A as **343WF** in February 2010 at an approved project estimate of \$259.9 million in MOD Price, entitled “Expansion of Tai Po water treatment works and ancillary raw water and fresh water transfer facilities – part 1 works”, for upgrading the treatment capacity of Tai Po WTW from 250 000 m<sup>3</sup>/day to 400 000 m<sup>3</sup>/day.

19. The in-situ re-provisioning of Sha Tin WTW is the second stage of the re-provisioning strategy. We upgraded **181WF** to Category B in February 2002. In

January 2003, we engaged consultants to carry out the investigation study for the proposed works under **181WF** at a cost of about \$10.2 million charged under block allocation **Subhead 9100WX** “Waterworks, studies and investigations for items in Category D of the Public Works Programme”.

20. The investigation study for the in-situ reprovisioning of Sha Tin WTW was completed in September 2004. It recommended an outline design scheme for reprovisioning of Sha Tin WTW which would be used as the basis for further design development of the proposed works.

21. During the in-situ reprovisioning of the South Works, the operation of North Works will continue.

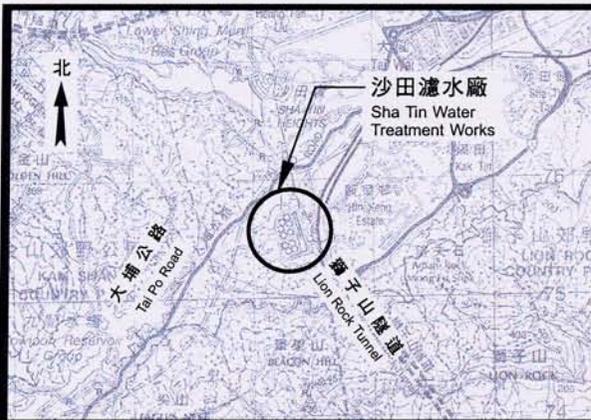
22. We estimate that the proposed design consultancy and associated site investigation works will create about 95 jobs (28 for labourers and another 67 for professional/technical staff) providing a total employment of 1 680 man-months.

## **WAY FORWARD**

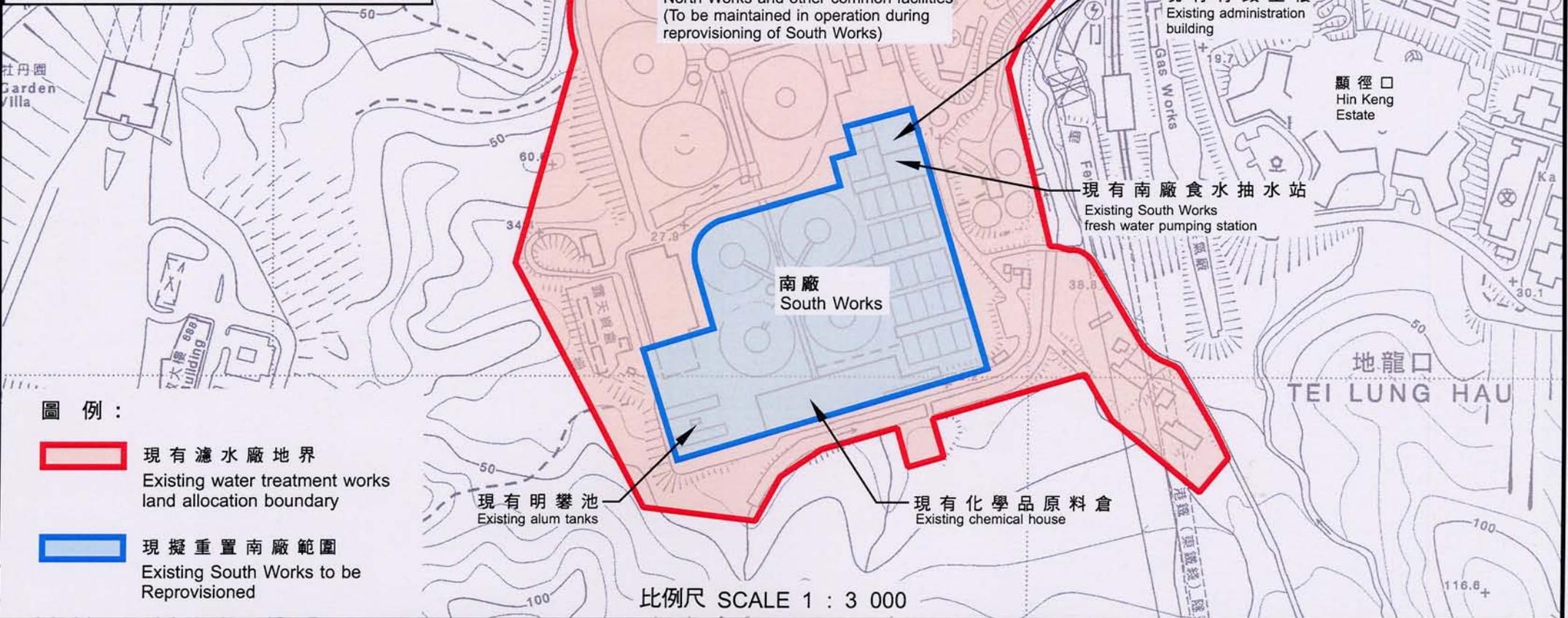
23. Members are invited to support the proposed part-upgrading of **181WF** to Category A for consideration by the Public Works Subcommittee in June 2010 and for funding approval by the Finance Committee in July 2010. Subject to funding approval, we plan to start the consultancy and site investigation in September 2010 for completion of the design in 2012.

**Development Bureau**

**May 2010**

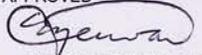


位置圖  
Location Plan



- 圖例：
- 現有濾水廠地界  
Existing water treatment works land allocation boundary
  - 現擬重置南廠範圍  
Existing South Works to be Reprovisioned

比例尺 SCALE 1 : 3 000

核准 APPROVED  
  
 總工程師/工程管理 CE/PM  
 12/5/2010

工務工程計劃第 9181WF 號 — 沙田濾水廠原地重置工程 - 南廠位置圖  
 P.W.P. Item No. 9181 WF — In-situ reprovisioning of Sha Tin water treatment works - South Works Location Plan  
 (甲級工程)  
 (CAT 'A' Submission)

 水務署  
 WATER SUPPLIES DEPARTMENT  
 草圖編號 SKETCH NO. SK 62009 / 099