

For information

**Legislative Council Panel on Development**  
**237WF – Mainlaying along Fanling Highway**  
**and near She Shan Tsuen**

**PURPOSE**

This paper briefs Members on the proposal to upgrade part of **237WF** - “Mainlaying along Fanling Highway and near She Shan Tsuen” to Category A at an estimated cost of about \$52.6 million in money-of-the-day (MOD) prices, to integrate the water supply systems in Tai Po and Sheung Shui.

**PROPOSAL**

2. The proposed part-upgrading of **237WF** to Category A comprises laying of about 1 kilometre (km) of 1 200 millimetres (mm) diameter fresh water mains along Fanling Highway and Tai Wo Service Road West. Site plans showing the proposed works are at **Enclosure**.

3. We plan to start the construction of the proposed works in May 2009 for completion in May 2013.

**JUSTIFICATION**

4. Currently, the Fanling, Sheung Shui and Tai Po East areas covering a population of about 314 000 receive fresh water supply from the Sheung Shui water treatment works (WTW). In the event of a break down in the Sheung Shui WTW, only around 127 000 of these population in Fanling town centre, Sheung Shui town centre (part) and Tai Po East areas will receive back-up supply from the Tai Po WTW. Full back-up supply is not available due to capacity constraint of the existing water mains linking the two WTWs. Therefore, there exists a risk of widespread suspension of fresh water supply affecting a population of about 187 000 if the Sheung Shui WTW breaks down.

5. To improve the reliability of fresh water supply, we propose to upgrade the integration between the Sheung Shui and the Tai Po WTWs by laying additional water mains. The proposed mainlaying works will enable the transfer of fresh water from the Tai Po WTW to the supply zones of the Sheung Shui WTW when needed.

6. The proposed mainlaying works described in paragraphs 2 falls within the project boundary of **720TH** –“Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling” to be implemented by Highways Department. In order to reduce repeated road openings and interface problems arising from two contractors working on the same site, we will entrust the proposed mainlaying works to Highways Department for construction in conjunction with the roadworks under **720TH**. The roadworks under **720TH** is currently planned to be implemented in stages commencing in May 2009. To tie in with this works programme, the mainlaying works as described in paragraph 2 above needs to be upgraded to Category A in early 2009 for incorporation into the roadworks contract.

## FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the proposed works to be \$52.6 million in MOD prices, made up as follows –

		\$ million
(a) Mainlaying		38.3
(i) conventional method	31.8	
(ii) trenchless methods <sup>1</sup>	6.5	
(b) Environmental mitigation measures		0.4
(c) Consultants' fees		3.2
(i) contract administration	0.2	
(ii) resident site staff costs	3.0	
(d) Contingencies		4.2
	Sub-total	46.1 (in September 2008 prices)
(e) Provision for price adjustment		6.5
	Total	52.6 (in MOD prices)

<sup>1</sup> Mainlaying by trenchless methods refers to the use of pipe jacking, micro-tunnelling or boring techniques to construct underground pipelines without opening up the road surface for the whole length of the pipelines.

## ENVIRONMENTAL IMPLICATIONS

8. The proposed mainlaying works is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We have completed the Preliminary Environmental Review (PER) for the project. The PER concluded and the Director of Environmental Protection agreed that the project would not have any long-term environmental impacts. We will incorporate the implementation of standard pollution measures to mitigate short-term construction impacts in the works contract.

9. For short-term impacts during construction, we will control noise, dust and site run-off within established standards and guidelines through the implementation of mitigation measures, such as the use of temporary noise barriers and silenced construction plant to reduce noise generation and water-spraying to reduce emission of fugitive dust. We have included about \$0.4 million (in September 2008 prices) in the project estimate for the implementation of these mitigation measures.

10. We have considered the alignment of the water mains in the planning and design stages to reduce the generation of construction waste where possible. In addition, we will require the contractor to reuse inert construction waste (e.g. excavated soil) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of inert construction waste to public fill reception facilities<sup>2</sup>. We will encourage the contractor to maximize the use of recycled or recyclable inert construction waste, as well as the use of non-timber formwork to further minimize the generation of construction waste.

11. We will also require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. We will ensure that the day-to-day operations on site comply with the approved plan. We will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert construction waste and non-inert construction waste to public fill reception facilities and landfills respectively through a trip-ticket system.

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<sup>2</sup> Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert construction waste in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

12. We estimate that the project will generate in total about 10 000 tonnes of construction waste. Of these, we will reuse about 8 400 tonnes (84%) of inert construction waste on site and deliver 1 500 tonnes (15%) of inert construction waste to public fill reception facilities for subsequent reuse. In addition, we will dispose of 100 tonnes (1%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be \$53,000 for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne<sup>3</sup> at landfills).

## **TRAFFIC IMPLICATIONS**

13. To reduce repeated road openings and interface problems arising from two contractors working on the same site, we will incorporate the proposed mainlaying works into **720TH** so that they would be carried out in conjunction with the roadworks contract. During construction, we will maintain smooth traffic flow through implementing temporary traffic management measures and will display notice boards on site to explain the reasons of temporary traffic arrangements and indicate the expected completion dates of the concerned sections of works. In addition, we will set up telephone hotlines for public enquiries or complaints. We will carry out construction works in busy road sections during non-peak hours. Moreover, trenchless method will be used for laying of watermains across busy road junctions.

## **HERITAGE IMPLICATIONS**

14. The mainlaying works will not affect any heritage site, 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.

## **PUBLIC CONSULTATION**

15. We consulted the Lam Tsuen Valley Committee, village representatives of Wai Tau Tsuen and Tai Hang Tsuen as well as the concerned District Council member on the proposed works through District Office/Tai Po in July 2008. They supported the proposed works.

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<sup>3</sup> This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m<sup>3</sup>), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.

## LAND ACQUISITION

16. No land resumption will be required for the proposed mainlaying works which will be implemented within the project boundary of **720TH**.

## BACKGROUND INFORMATION

17. We included **237WF** in Category B in October 1999. The full scope of **237WF** comprises –

- (a) laying of about 3.3 km long of 1 200 mm diameter fresh water mains along Fanling Highway and Tai Wo Service Road; and
- (b) laying of about 1.4 km long fresh water mains in diameter ranging from 1 200 mm to 1 400 mm in the verge along Tai Po Road, under the footpath in Mui Shue Hang Playground and near She Shan Tsuen.

18. We have planned to implement the proposed works under **237WF** on two fronts. The works described in paragraph 17(a) fall within the project boundary of **720TH** and will therefore be entrusted to Highways Department to synchronise with the roadworks programme to reduce repeated road openings and interface problems.

19. We engaged a consultant through **720TH** to undertake the site investigation and design of the entrusted mainlaying works in 2001 at a total cost of about \$2.3 million. We charged this amount to block allocation Subhead **9100WX** “Waterworks, studies and investigations for items in Category D of the Public Works Programme”. The consultant has substantially completed the design of the mainlaying works described in paragraph 2 above.

20. On a separate front, the works described in paragraph 17(b) above will be undertaken by Water Supplies Department. The department has completed ground investigation and is designing the works using in-house resources. We will programme the completion of the works to tie in with that to be implemented by Highways Department under the roadworks contract.

21. The proposed mainlaying works will not involve any tree removal or planting proposals.

22. We estimate that the proposed works will create about 26 jobs (21 for labourers and another 5 for professional/technical staff) providing a total employment of 1030 man-months.

### **WAY FORWARD**

23. Members are invited to support the proposed part-upgrading of **237WF** to Category A for consideration by the Public Works Sub-committee in January 2009 with a view to seeking funding approval from the Finance Committee in February 2009.

**Development Bureau**  
**November 2008**





圖例 LEGEND:	
	上水濾水廠供水區 SHEUNG SHUI WATER TREATMENT WORKS SUPPLY ZONE
	擬議的食水管道(委託路政署720TH項目下敷設) PROPOSED FRESH WATER MAINS (TO BE ENTRUSTED TO HyD UNDER PROJECT 720TH)
	餘下的食水管道(將於稍後提升至甲級) REMAINING FRESH WATER MAINS (TO BE UPGRADED TO CATEGORY A LATER)
	現有的食水管道 EXISTING FRESH WATER MAINS

上水濾水廠  
SHEUNG SHUI WATER TREATMENT WORKS

上水  
SHEUNG SHUI

粉嶺  
FANLING

請參閱附件的第二張  
PLEASE REFER TO SHEET 2 OF ENCLOSURE

往大埔東  
TO TAI PO EAST

大埔頭食水主配水庫  
TAI PO TAU PRIMARY FRESH WATER SERVICE RESERVOIR

社山村  
SHE SHAN TSUEN

大埔  
TAI PO

大埔濾水廠  
TAI PO WATER TREATMENT WORKS

比例尺 SCALE 1 : 100,000

核准 APPROVED

總工程師/設計 CE / DWS

14 / 11 / 2008

(甲級工程)  
(CAT 'A' Submission)

工務計劃項目237WF號 — 沿粉嶺公路及在社山村附近進行的水管敷設工程  
P.W.P. ITEM NO. 237WF — MAINLAYING ALONG FANLING HIGHWAY AND NEAR SHE SHAN TSUEN



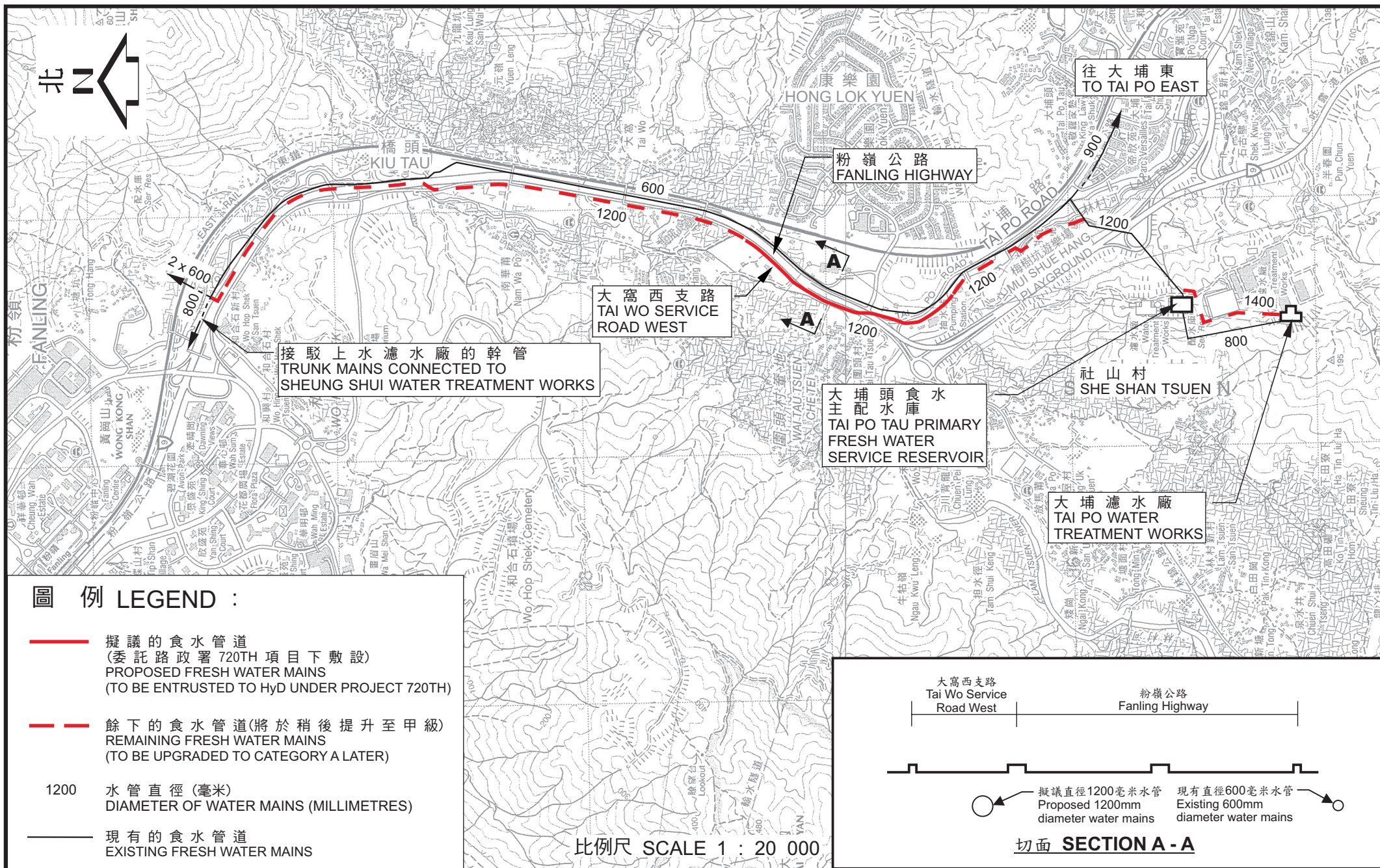
水務署  
WATER SUPPLIES DEPT.

草圖編號  
SKETCH NO.

SK 62008 / 088

REF. 62008-088.DWG





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*[Signature]*

總工程師/設計 CE / Des

14 / 11 / 2008

工務計劃項目第237WF號 — 沿粉嶺公路及在社山村附近進行的水管敷設工程

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