

# **Drainage Services Department**

## **TAI PO SEWAGE TREATMENT WORKS STAGE V**

### **PROJECT PROFILE**

**May 2001**

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### **ANNEX A**

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## **1. BASIC INFORMATION**

### **1.1 Project Title**

Tai Po Sewage Treatment Works, Stage V hereinafter referred to as the “Project”.

### **1.2 Purpose and Nature of the Project**

This Project aims to upgrade the existing Tai Po Sewage Treatment Works (STW) to provide additional treatment capacity to meet the projected population and catchment area increases up to year 2011, plus an additional 30% reserve capacity for further developments.

### **1.3 Name of Project Proponent**

Consultants Management Division, Drainage Services Department

### **1.4 Location and Scale of Project**

The Project will be constructed within the existing Tai Po Sewage Treatment Works located in the Tai Po Industrial Estate. A location plan is attached at Annex A. The Project site was formed by reclamation and has been used as a sewage treatment works since the commissioning of the Stage I plant in 1979.

The Project will provide additional sewage treatment capacity for an increase in daily average flow from the present 88,000 to around 130,000 cubic metres per day.

### **1.5 Types of Designated Project Involved**

The Project constitutes a single Designated Project of type F.1 under Part 1 of Schedule 2 of the Environmental Impact Assessment Ordinance, i.e. “sewage treatment works with an installed capacity of more than 15,000 m<sup>3</sup> per day”.

### **1.6 Contact Person**

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## **2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME**

- 2.1** Design and construction supervision of the Project will be carried out by the Sewerage Projects Division and the Electrical and Mechanical Projects Division of Drainage Services Department. Construction will be contracted out, and is scheduled to commence in mid 2004 for completion in early 2010.
- 2.2** Operation and maintenance of the completed works will be taken up by the Sewage Treatment 1 Division and the Hong Kong & Islands Division of Drainage Services Department.

## **3. POSSIBLE IMPACT ON THE ENVIRONMENT**

### **3.1 Project Outline and Preliminary Environmental Review**

The Project comprises

- (a) expansion of and modifications to the existing secondary sewage treatment process, and
- (b) upgrading the sewage treatment process by the addition of ultra-violet irradiation effluent disinfection facilities.

To this end, additional sewage treatment and sludge treatment process units will be constructed, and part of the existing units will be demolished and re-constructed.

In the Preliminary Project Feasibility Study of the Project, a Preliminary Environmental Review (PER) was conducted to identify the possible impacts on the environment. The PER concluded that no insurmountable environmental impacts were identified for either construction or operation of the proposed works, but mitigation measures should be formulated to reduce environmental impacts to acceptable levels.

### **3.2 Possible Environmental Impacts during Construction Phase**

- (a) Air quality impact

No gaseous or odour emissions will arise from construction of the Project.

Dust may be generated from some construction activities, mainly earthwork and demolition works. In view of the modest scale of construction, the potential dust impact can be contained through good construction practices.

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(b) Noise impact

The construction activities will generate some noise through the use of conventional construction plant and equipment, like air compressors, breakers, etc.

(c) Water quality impact

Runoff from the site during construction may contain sediments and silts arising from earthworks and oil and lubricants from construction vehicles and plant.

(d) Traffic impact

Some traffic will be generated by the construction of the Project. Nevertheless, in view of the modest scale of construction works, the impact on traffic in the area will be minimal.

(e) Generation of waste

Construction of the Project will generate some construction waste comprising wood, bamboo, rags, paper, and so on.

Spoil material from earthworks and inert materials from demolition of the existing process units will also be generated.

### **3.3 Possible Environmental Impacts during Operation Phase**

(a) Air quality impact

The treatment process, principally the primary sedimentation tanks and solids handling facilities, can be a source of odour impacting on air quality.

(b) Noise impact

Sewage pumps, sludge pumps and ventilation fans are potential noise sources during the operation of the STW. Nevertheless, owing to the large footprint of the plant no significant noise impact to the environment is envisaged.

(c) Water quality impact

Treated effluent from the existing Tai Po Sewage Treatment Works is being connected into the Tolo Harbour Effluent Export Scheme which in turn discharges into the Kai Tak Nullah, with an emergency bypass into the Tolo Harbour. When the Project is in operation, the quantity of effluent discharged will be increased. Notwithstanding this, owing to the addition of effluent

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disinfection process under the Project, the bacterial concentration of the effluent quality and hence the receiving waterbody will be improved.

The effect of effluent discharge from the Tai Po Sewage Treatment Works into Kai Tak Nullah has been addressed in the EIA for the Sha Tin Sewage Treatment Works Stage III Extension project. The EIA Report, approved on 5 November 1999 under the EIA Ordinance, will be reviewed for the purposes of the present EIA.

(d) Ecological Impacts

By the same reasons as mentioned in paragraph 3.3 (c), no significant impact on ecology is anticipated from operation of the Project.

(e) Traffic impact

The impact on traffic in the operation phase of the Project is considered to be minimal.

(f) Generation of Waste

Following commissioning of the Project, additional screenings, grit and sludge will be generated as the amount of sewage treated increases.

(g) Hazardous Materials

Along with the increased amount of sewage, and hence sludge treated, operation of the Project will contribute to additional methane gas production from the sludge digestion process. The gas will be stored and used when needed, and the excess burnt off, in the same way as that being generated by the existing sewage treatment plant.

(h) Aesthetics

The Project is confined within the existing Tai Po Sewage Treatment Works located in the Tai Po Industrial Estate, an area of low visual quality. Furthermore, the Project works are shielded from the immediate vicinity by industrial areas and the Shuen Wan Landfill. Any concern for aesthetics would be visual impacts to viewers within the site itself and possibly those further away at higher attitudes.

## 4 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 The Project site is located to the south-eastern side of Tai Po Industrial Estate away from the town centre of Tai Po. The nearest sensitive receivers are located at a considerable distance, and none of them have a direct line of sight to the site. Main sensitive receivers within 1 km of the site are detailed below.

<i>Sensitive receiver</i>	<i>Approximate minimum distance apart</i>	<i>Remarks</i>
<b>Residential areas</b>		
Fortune Garden	550 m	shielded by the Shuen Wan Landfill in between
Casa Marina I	600 m	probably shielded by Shuen Wan Landfill in between
Casa Marina II	800 m	
Tycoon Place	700 m	
Forest Hill	800 m	
Richwood Park	600 m	
Ha Hang (village)	600 m	shielded by industrial area in between
<b>Educational facilities</b>		
A school near Tin Sam Village	900 m	shielded by industrial area in between
<b>Recreational facilities</b>		
Tai Po Waterfront Park and Promenade	200 m	shielded by industrial area in between
Tai Po Shuen Wan Temporary Golf Driving Range	100 m	-
A non-gazetted beach at Fortune Garden	700 m	-
<b>Planned areas (as stipulated on Outline Zoning Plan No. S/TP/13)</b>		
“Village Type Development” zones to the north of Ting Kok Road	500 m	shielded by industrial area and partly by Shuen Wan Landfill in between
A “Comprehensive Development Area” zone to the north of Ting Kok Road	750 m	
<b>Others</b>		
A seawater intake point for flushing water supply	at the seafront of the Tai Po Industrial Estate	-

### 4.2 Elements of the Surrounding Environment Affecting the Project

The Project site is situated next to the Shuen Wan Landfill, whereby there is a risk of landfill gas migration and leachate contamination.

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## **5 ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN OF THE PROJECT**

### **5.1 During construction stage**

(a) Air quality

Air quality impacts, mainly dust, generated by the construction activities will be minimized by the adoption of proper working methods such as regular water spraying, installation of wheel-washing facilities, and shielding of stockpiled materials. Provision will be made in the construction contract documents to this end.

(b) Noise

The contractors for the works will have to comply with the provisions of the Noise Control Ordinance.

(c) Water quality

The construction contract will incorporate provisions for removing of sand and debris from site runoff before it can be discharged outside the Project site.

(d) Generation of waste

Provisions in line with the prevailing policy will be made in the construction contract for the contractor to reuse and recycle construction waste material and to minimize the generation of such material.

(e) Proximity to the Shuen Wan Landfill

A risk analysis will be undertaken for the construction works in close vicinity to the Shuen Wan Landfill to address the possible risks due to landfill gas and leachate.

### **5.2 During operation stage**

(a) Air quality

Odour impact assessment will be conducted during design of the Project to identify the impact to sensitive receivers in the Project setting. Where necessary mitigation measures such as enclosure of odour sources will be incorporated as part of the Project works.



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(b) Water quality and ecology

To minimize water quality and ecological impacts arising from the bypass of sewage in case of power failure, backup power supply will be provided as far as practicable.

(c) Waste

The screenings and sludge handling facilities will be suitably expanded as part of the Project to deal with the increased amount of solid waste generated from sewage treatment process. Disposal of such waste at landfill will follow prevailing requirements regarding the minimum solids content.

(d) Hazardous materials

The digester gas storage and associated facilities will be suitably expanded if necessary to cater for any additional gas anticipated.

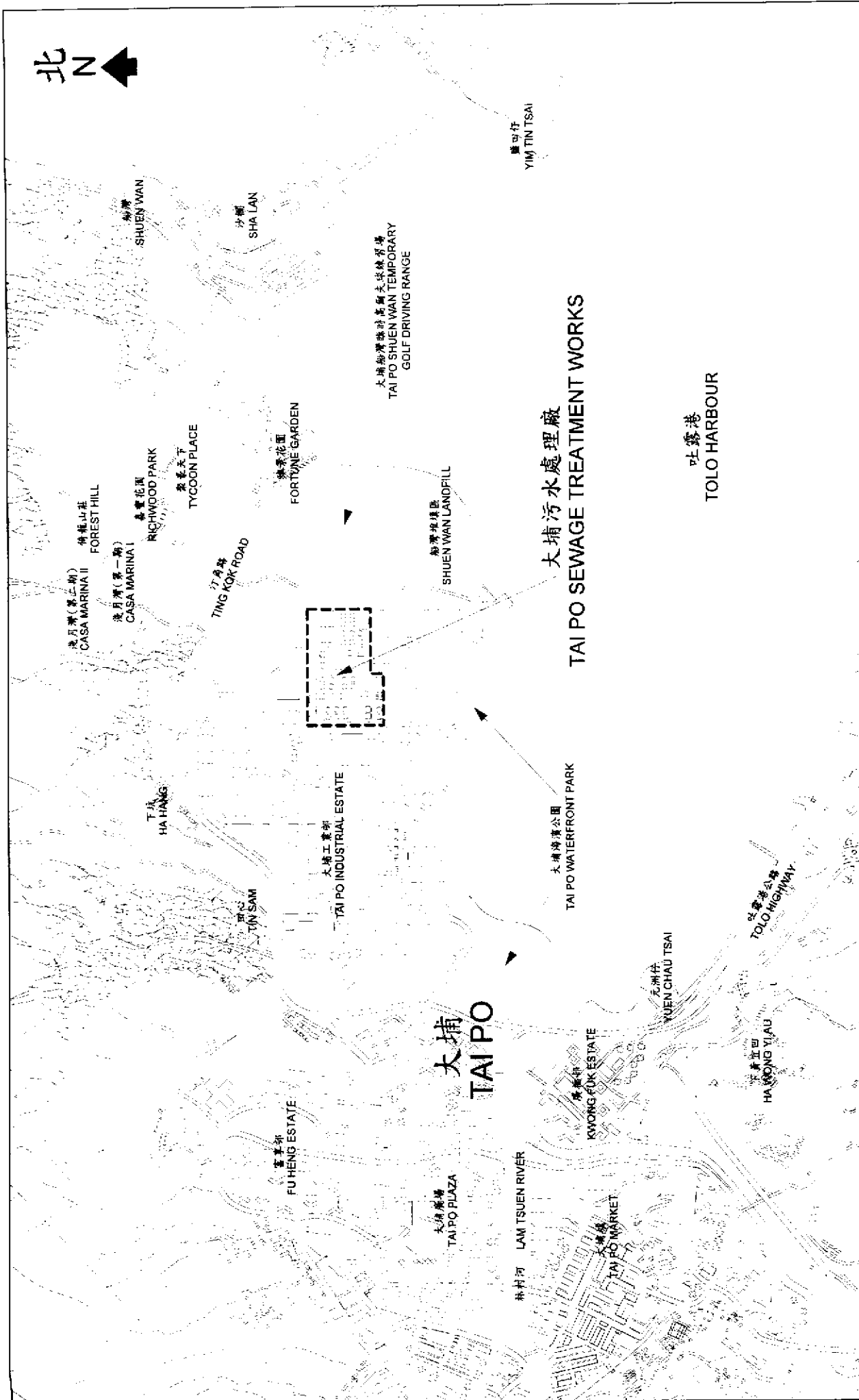
(e) Aesthetics

Aesthetic consideration will be input in the Project design to enhance the appearance of new buildings and landscape planting will be undertaken to enhance the general outlook of the sewage treatment plant.

## **6. USE OF PREVIOUSLY APPROVED EIA REPORTS**


Sha Tin Sewage Treatment Works, Stage III Extension Environmental Impact Assessment Study

# Annex A



大埔污水處理廠  
TAI PO SEWAGE TREATMENT WORKS

吐露港  
TOLO HARBOUR

繪圖日期 drawing date 12 - 03 - 2001		繪圖 drawing no DCM/2001/035		比例 scale 1 : 20 000
		核准 approved T. C. CHAN		
繪圖 drawing no DCM/2001/035		核准 approved C. H. WONG		香港特別行政區政府 GOVERNMENT OF THE HONG KONG  SPECIAL ADMINISTRATIVE REGION
顧問工程管理部 CONSULTANTS MANAGEMENT DIVISION				

大埔污水處理廠位置圖  
LOCATION PLAN OF TAI PO SEWAGE TREATMENT WORKS

圖則名稱  
drawing title