**ENVIRONMENTAL IMPACT ASSESSMENT ORDINANCE (CAP 499)**
**S. 5(1)(a)**

**PWP Item No. 7681CL**

**Formation, Roads and Drains in Area 54,**
**Tuen Mun – Phase 2**

# Project Profile for
# Tuen Mun Area 54 Sewage Pumping Station

**Land Works Division**
**Civil Engineering Office**
**Civil Engineering and Development Department**


**October 2006**

# 1. BASIC INFORMATION

## 1.1 Project Title

Tuen Mun Area 54 Sewage Pumping Station (hereinafter referred to as “the Project”)

## 1.2 Purpose and Nature of the Project

**1.2.1** In 1999, the then Territory Development Department completed the "Planning and development study of potential housing site in Area 54, Tuen Mun" (hereinafter referred to as "the Study") under Agreement No. CE 21/97. The Study put forward proposals on housing types, development parameters and planning layouts, and assessed the development impacts on transport network, infrastructural capacities and environmental quality.

**1.2.2** The Study fell under Item 1 of Schedule 3 under the Environmental Impact Assessment Ordinance, i.e. engineering feasibility study of urban development project with a study area covering more than 20 hectares or involving a total population of more than 100 000. It was a designated project requiring environmental impact assessment report. The environmental impact assessment report conducted under the Study was approved in 1999. According to that report, the construction and operation of the Project requires separate environmental impact assessment report under separate cover.

**1.2.3** The Project will serve to convey the sewage collected from Tuen Mun Area 54 and the proposed Tuen Mun North Sewage Pumping Station to the existing trunk sewers at Ming Kum Road.

## 1.2 Name of Project Proponent

Land Works Division, Civil Engineering Office, Civil Engineering and Development Department.

## 1.3 Location and Scale of the Project

The Project is located in the eastern part of Site 4A of Tuen Mun Area 54, north of Kei Lun Wai, south of Tsz Tin Tsuen and west of Site 2 of Tuen Mun Area 54. The location is shown on the attached Drawing No. LW 7513. Site 4A is zoned “Government, Institution or Community” (G/IC) on the Tuen Mun Outline Zoning Plan (OZP) No. S/TM/21 and is reserved for school development. Site 2 is zoned “Residential (Group A)” on the Tuen Mun OZP No. S/TM/21. The design capacity of the sewage pumping station is about 1.05 $m^3/s$.

## 1.4 Number and Type of Designated Project

The Project is classified as a Designated Project under Schedule 2, Part I, F.3(b) of the Environmental Impact Assessment Ordinance.

## 1.5 Name and Telephone Number of Contact Person(s)

Mr C T LAU Senior Engineer/4
Land Works Division,
Civil Engineering Office,
Civil Engineering and Development Department
Tel. No.: 2762 5656

# 2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

## 2.1 Project Implementation

The Project Proponent will engage consultants to conduct an environmental impact assessment study for the Project. The study is scheduled to commence by end 2006/early 2007. Works are scheduled to commence in 2010 for completion in 2013.

## 2.2 Interactions with Other Projects

There are likely interactions with the following projects:

- Sewerage upgrading works in Tuen Mun managed by Drainage Services Department
- Formation, roads and drains in Tuen Mun Area 54 managed by Civil Engineering and Development Department
- Housing development in Site 2 of Tuen Mun Area 54 managed by Housing Department

# 3. POSSIBLE IMPACT ON THE ENVIRONMENT

## 3.1 Construction Phase

### 3.1.1 Air Quality

Construction activities, such as earthworks, handling and transportation of construction and demolition materials, may generate dust.

### 3.1.2 Noise

Constructional activities with the use of powered mechanical equipment may generate noise.

### 3.1.3 Water Quality

Site runoff, wastewater from construction activities and sewage from workforce may affect water quality.

### 3.1.4 Waste

Construction and demolition materials and wastes, such as excavated spoil (soil and rock), concrete, unused wood, metal scraps, packaging materials and chemical waste from maintenance of plant and equipment will be generated.

### 3.1.5 Ecology

The site of the Project has been disturbed by human activities and is not surrounded by areas of ecological value (e.g. woodland, natural stream). No adverse ecological impact is expected.

### 3.1.6 Landscape and Visual

Construction plant and material, spoil heaps, site traffic and lighting on site may generate landscape and visual impacts.

### 3.1.7 Cultural Heritage

According to the Heritage Impact Assessment conducted by the Anthropology Department of the Zhongshan University, the site of the Project is located within the approximate boundary of archaeological deposits, though it is far away from any historical buildings, graves and shrine.

## 3.2 Operational Phase

### 3.2.1 Air Quality

The inlet chamber and wet well may be sources of odour nuisance.

### 3.2.2 Noise

Pumps and extraction fans of the ventilation system may generate noise.

### 3.2.3 Water Quality

Under normal operation, the Project will enhance the water quality of the surrounding environment. Under emergency situation, such as prolonged power failure, the sewage may be discharged into the nearby storm drains/water receiving body. However, with the implementation of appropriate preventive measures, the possibility of emergency bypass will be extremely remote.

### 3.2.4 Waste

Mechanical screens will be installed in the inlet chamber to prevent large solid materials in sewage from entering the pumps. A small quantity of screenings will thus be generated.

### 3.2.5 Ecology

Adverse ecological impacts are not expected during the operation of the sewage pumping station.

### 3.2.6 Landscape and Visual

The sewage pumping station will be designed with a superstructure for accommodating the control panel and mechanical parts. The dry/wet wells will be constructed underground. The superstructure may generate landscape and visual impacts.

### 3.2.7 Cultural Heritage

Adverse impacts on cultural heritage are not expected during operation of the sewage pumping station.

## 4. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

The Project site is located at Site 4A which is reserved for school development. The Project site is also in the vicinity of Site 2, Kei Lun Wai, Tsz Tin Tsuen, Siu Hong Court and some village typed residential development. Public housing will be developed at Site 2. There is an existing stream in the vicinity of the site which will be replaced by a twin-cell box culvert.

## 5. ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED

### 5.1 Air Quality

Dust generation will be the key potential air quality impact during the construction stage. However, the impact should be insignificant with the implementation of proper dust control requirements specified in the Air Pollution Control (Construction Dust) Regulation. The impact can be further minimized by adoption of proper working methods such as regular water spraying and providing wheel-washing facilities.

Odor will be the key potential air quality impact during the operation stage. To minimize the potential odor problem, the inlet chamber and wet well will be located underground and enclosed by air tight covers. In addition, a deodorizer with a forced ventilation system will be installed to remove odor before discharging into open air. The exhaust of the deodorizer should be located in a direction away from the sensitive receivers. With these measures incorporated, it is anticipated that potential odor impacts can be mitigated.

## 5.2 Noise

The construction activities will include earthworks and general concrete and building works. Common constructional plant such as backhoe, concrete trucks, vibratory poker and pneumatic breaker will be used. It is anticipated that insignificant noise impacts will be generated. Notwithstanding this, provisions will be incorporated into the construction contract requiring the contractor to comply with the Noise Control Ordinance, Technical Memorandum of the Environmental Impact Assessment Ordinance and other relevant regulations so as to control the noise level within acceptable limit during construction. Furthermore, temporary hoardings will be erected during construction to screen off any noise.

To minimize potential noise impact from operating pumps, all the pumps will be enclosed inside the infrastructure of the proposed sewage pumping station. Acoustic filters will be installed at the extraction fans of the deodorizer if necessary.

## 5.3 Water Quality

Adverse water quality impacts due to wastewater and sewage generated from construction activities and construction site runoff are expected to be insignificant with the adoption of good site arrangement and management practices. The contractor should provide, where necessary, a silt removal facility on site so as to remove the silt before discharging into the nearby stormwater drains. Such a silt removal facility should be provided by the contractor before commencement of the excavation.

To minimize water quality impacts arising from the bypass of sewage, a standby pump will be provided to cater for breakdown and maintenance of the duty pump so as to avoid sewage bypass. In order to minimize the chance of power failure, backup power supply in the form of dual power supply or automatic operated generator will be provided. In addition, a telemetry system should also be provided in order to send signals showing irregularity or any operation problem of the sewage pumping station thus immediate actions could be taken in case of emergency. With all these measures incorporated into the design of the sewage pumping station, it is anticipated that the chance of emergency sewage bypass will be extremely remote.

## 5.4 Waste Management

To minimize generation waste and C&D materials, good waste management plan and practices will be implemented to ensure proper handling and disposal of waste. Moreover, the contractor will be required to sort all C&D materials into different categories for disposal at public filling, landfills or recycling as appropriate.

The screenings of the sewage should be properly packed in plastic bags. This operation should be conducted inside the sewage pumping station. The screenings should then be transported to landfill site for disposal.

## 5.5 Landscape and Visual

The potential landscape and visual impacts are expected to be minimal and temporary in nature. These potential impacts would be minimized by erection of hoarding around the sewage pumping station. In addition, any C&D materials would be required to be removed off site promptly.

Architectural aspects of the sewage pumping station including colour scheme, type of external finishing, landscape and layout of the sewage pumping station should be carefully designed taking into account the features of surrounding land and buildings. Screenings such as plant screening will be provided to minimize visual impact. With appropriate architectural finishes and proper landscape, adverse landscape and visual impacts are not expected.

## 5.6 Cultural Heritage

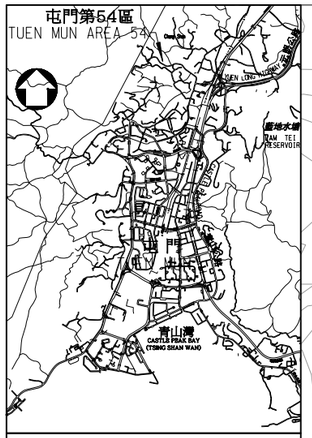
The Project site is far away from any historical buildings, structures and other cultural resources. The cultural heritage will not be affected.

Since the site of the sewage pumping station is near the approximate boundary of archaeological deposits identified in the approved environmental impact assessment report, archaeological impact is expected if no mitigation measures are proposed. It is therefore recommended to conduct an archaeological excavation in advance of construction activities. The investigation, survey and rescue work will be carried out by Antiquities and Monuments Office of Leisure and Cultural Services Department before construction of the sewage pumping station.

# 6. USE OF PREVIOUSLY APPROVED REPORTS

The following EIA study is relevant to the EIA Study for this Project:

- Planning and Development Study of Potential Housing Site in Area 54, Tuen Mun: EIA – Final Assessment Report (EIA-015/1999)




位置圖 LOCATION PLAN
比例 SCALE 1 : 100 000

**圖例 Legend :**

- 第一期工程範圍 LIMITS OF PHASE 1 WORKS
- 第二期工程範圍 LIMITS OF PHASE 2 WORKS
- 行人天橋 FOOTBRIDGE
- 污水抽水站 SEWAGE PUMPING STATION
- G/IC 政府、機構或社區 GOVERNMENT, INSTITUTION OR COMMUNITY
- R(A) 住宅(甲類) RESIDENTIAL (GROUP A)
- V 鄉村式發展 VILLAGE TYPE DEVELOPMENT

**註釋 NOTES :**

1. 所有水平均指水平基準,並以米爲單位。
   ALL LEVELS REFER TO PRINCIPAL DATUM (P.D.) AND ARE IN METRES.
2. 所有量度皆以米爲單位。
   ALL DIMENSIONS ARE IN METRES.

| 編號 no. | 日期 date | 內容摘要 description | 核對 checked | 核准 approved |
|---|---|---|---|---|

修訂 REVISION

| | 姓名 name | 簽署 initial | 日期 date |
|---|---|---|---|
| 設計 designed | S.H. KWAN | | |
| 繪圖 drawn | C.H. HO | | |
| 描摹 traced | | | |
| 核對 checked | C.T. LAU | | |

核准 approved

TONG Nai-piu
總工程師 Chief Engineer

日期 date :_____

合約編號 contract no.

檔案編號 file no.

工程編號 project no. 681CL

工程名稱 project
屯門第54區的土地開拓、道路及渠務工程，第1期及第2期
FORMATION, ROADS AND DRAINS IN AREA 54, TUEN MUN, PHASE 1 AND PHASE 2

圖則名稱 drawing title
總平面圖
GENERAL LAYOUT

圖則編號 drawing no.
LW 7513

比例 scale
1 : 7 500 OR AS SHOWN

辦事處 office
土木工程處 土地工程部
LAND WORKS DIVISION
CIVIL ENGINEERING OFFICE

21-08-2006

**PROVISIONAL**
**SUBJECT TO AMENDMENTS**



香港土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT HONG KONG

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%%Pentable%%
%%Date%%

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