Project Profile

for

Lam Tsuen Valley Sewage Pumping Station

Under

Lam Tsuen Valley Sewerage Project

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1. Basic Information

1.1 Project Title

The Lam Tsuen Valley Sewage Pumping Station (under Lam Tsuen Valley Sewerage Project)

1.2 Purpose and Nature of Project

The Lam Tsuen Valley Sewerage project is to be implemented as part of the North District and Tolo Harbour Sewerage Master Plan. The purpose of the project is to provide sewerage system for villages in the Lam Tsuen Valley to meet the demands of both existing and future developments in the area. It consists of construction of a sewage collection system of gravity sewers (3.2km long), rising mains (0.6km long), and nine pumping stations to convey sewage to the gravity sewers leading to the Tai Wo sewage pumping station proposed under Agreement No. CE 18/94, "Tolo Harbour Sewerage of Unsewered Areas Stage I, Phase II".

1.3 Name of the Project Proponent

Drainage Services Department is the works department and Environmental Protection Department is the client department.

1.4 Location and Scale of Project and History of Site

Enclosure A

A copy each of the location plan numbered DCM/2002/009A showing the location of the Lam Tsuen Valley sewage pumping station and its relationship with other phases of the sewerage works in Lam Tsuen is attached in Enclosure A. The proposed sewage pumping station is located at a fenced government open space which was used as working area for government construction contracts. The average dry weather flow of the pumping station is 5,606 cu.m/day. Two duty pumps and one standby pump will be installed underground inside the pumping station. The pumping station will be fully enclosed by a superstructure.

1.5 Number and type of designated project

The proposed Lam Tsuen Valley Sewage Pumping Station constitutes a Designated Project of type F.3 (b) in Schedule 2 of the EIA Ordinance. The rising mains, gravity sewers and access road are not designated projects and therefore will not be included in this project profile. In addition, the alignment of the access road will be consulted with Transport Department to minimize the disturbance of the surrounding traffic.

1.6 Name and Telephone Number of Contact Person

Ir C. M. CHAN
Engineer, Consultants Management Division, Drainage Services Department
Tel. No. 2594 7268
Fax. No. 2827 8526

2. Outline of Planning and Implementation Programme

A Design and Construction consultancy will be selected to carry out the design of the sewage pumping station and supervision of the construction of the sewage pumping station by qualified contractors. The Sewage Treatment 1 Division of Drainage Services Department will operate and maintain the new pumping station.

Design process of the proposed sewerage works is schedule to commence in end 2002. Construction for the Lam Tsuen Valley Sewage Pumping Station is scheduled to commence in mid 2005 for completion in end 2007 tentatively.

3. Possible Impacts on the Environment

3.1 Possible Environmental Impacts During construction stage

(a) Dust

Dust may be generated from the construction activities, mainly earthworks.

(b) Noise

The construction activities will generate some noise through the use of conventional construction plants and equipment.

(c) Water

A potential water quality impact form site discharge during the course of construction.

(d) Ecology

No impacts on ecology are expected during the construction stage.

(e) Cultural Heritage

No impacts on historical monuments or buildings are expected during the construction stage.

3.2 Possible Environmental Impacts During operation stage

(a) Odour

The wet well of the pumping station would be sources of odour nuisance if no mitigation measure is incorporated into the design of the pumping station.

(b) Water quality

The proposed pumping station is an integral part of Lam Tsuen Valley sewerage works. It will collect sewage generated from villages along Lam Kam Road to Tai Wo Sewage Pumping Station for further conveyance to Tai Po STW for treatment. Implementation of the pumping station will enhance the water quality of the surrounding environment, and will not cause any adverse impact except if sewage is bypassed. In such case, it will be discharged into the nearby stormdrain / water receiving body. However, with the implementation of preventive measures described in below, the probability of bypass will be extremely remote.

(c) Noise

The pumps and the extraction fans of the de-odourizer are potential noise sources during operation of the proposed pumping station.

(d) Waste

Screens will be installed at the inlet of the pumping station to prevent large solid materials in sewage from entering the pumps and causing damage. A small quantity of screenings will thus be generated.

(e) Visual Impacts

In order to minimize the visual impact of the proposed pumping station, aesthetics will be a key factor to be considered.

(f) Ecology

No impacts on ecology are expected during the operation stage.

(g) Cultural Heritage

No impacts on historical monuments or buildings are expected during the operation stage.

4. Environmental Protection Measures to be Incorporated in the Design and Further Environmental Implications

4.1 During construction stage

(a) Dust

The effect of dust generation from the construction works is expected to be insignificant with the implementation of proper mitigation measures. The impact will be minimized by the adoption of proper working methods such as regular water spraying and providing wheel-washing facilities. Relevant clauses will be incorporated into the contract documents in this regard.

(b) Noise

The construction activities involved in the project will include earthworks and general concrete building works. Common construction plant including backhoe, concrete mixer, vibratory poker, pneumatic breaker and the like will be used. It is anticipated that only minor noise impacts will be generated. Notwithstanding this, clauses 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 (EIAO) and other relevant regulations so as to control the noise level within acceptable limit during the construction stage.

(c) Water

It is anticipated that minor water quality impact will be generated during excavation works. The contractor should be required to 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 on site before commencement of the excavation. The assessment shall be carried out in accordance with ProPECC PN 1/94 " Construction Site Drainage"

4.2 During operation stage

(a) Odour

To minimize odour impacts, the wet well of the proposed pumping station will be located underground and enclosed by air-tight covers. A reinforced concrete superstructure will be provided to enclose the underground substructures including the wet well, inlet chamber, screening chamber, etc. In addition, a de-odourizer and a forced ventilation system will be installed to remove odour before discharging air from the pumping station to open air. With these measures incorporated into the design of the pumping station, it is anticipated that potential odour impacts can be mitigated.

(b) Water quality

To minimize water quality impacts arising from the bypass of sewage, a standby pump should 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 should be provided. In addition, a telemetry system should also be provided in order to send signals showing irregularity or any operation problem of the pumping station to the existing Tai Po Sewage Treatment Works or closest manned pumping station such that immediate actions could be taken in case of emergency. Besides that, the rising mains are designed as twin so as to facilitate inspection, maintenance and pipe replacement works by closing one main and operating the other. With all these measures incorporated into the design of the pumping station, it is anticipated that the chance of emergency sewage bypass will be extremely remote. As the site is located within water gathering ground, the location of the bypass will be consulted with Water Supplies Department (WSD). In addition, water gathering impact assessment will be carried out to seek WSD's comments/apprvoal.

(c) Noise

To minimize potential noise impact from operating pumps, all the pumps should be located underground and be enclosed inside the pumping station superstructure. Acoustic filters should be installed at the extraction fans of the de-odourizer if necessary. The treated air outlet and extraction fans of the de-odourizer will be located at the southern-east or southern-west side of the pumping station to minimize the disturbance of the nearby village houses.

(d) Waste

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

(e) Visual impacts

Aesthetics should be a major consideration in the design of the pumping station. Architectural aspects of the pumping station including colour scheme, types of external finishing and layout of the pumping station should be carefully designed taking into account the features of surrounding land and buildings. The structure will be restricted to 2 storeys (not greater than 15m height). Moreover, plantation should also be provided to further improve the aesthetic appearance of the pumping station.

4.3 Summary of potential environmental impacts and mitigation measures

The potential environmental impacts and proposed mitigation measures to be incorporated into the design and construction contract of the proposed Lam Tsuen Valley Sewage Pumping Station are summarized in the following Table 1:

Table 1

Project Stage	Potential Environmental Impact	Mitigation Measures	Relevant Section in the Project Profile
Construction	Minor dust nuisance	Control by contract specification	4.1 (a)
	Minor noise impact	Control by contract specification	4.1 (b)
	Minor water impact	Control by contract specification	4.1 (c)
Operation	Odour nuisance	1. Enclosing odour source. 2. A de-odourizer will be installed to remove odour from the air.	4.2 (a)
	Water quality impact from emergency sewage bypass	1. A standby pump will be provided. 2. Power supply will be supplied from a ring circuit. 3. A telemetry system will be provided to send signals showing irregularity or any operation problem from the pumping station to the existing Tai Po Sewage Treatment Works or closest manned pumping station. 4. The rising mains are designed as twin so as to facilitate maintenance and repair by closing one main and operating the other.	4.2 (b)
	Minor noise impact	1. Enclosing the pumping station by a superstructure and using acoustic filter to further reduce noise level of extraction fans.	4.2 (c)
	Generation of small quantity of screenings	1. Containment. 2. Proper disposal.	4.2 (d)
	Visual impacts	1. Architectural aspects of the pumping station including colour scheme, types of external finishing and layout of the pumping station will be carefully designed taking into account the surrounding land features and buildings. 2. The structure will be restricted to 2 storeys (not greater than 15m height). 3. Peripheral planting.	4.2 (e)

With the above-mentioned mitigation measures incorporated into the design and construction contract, the proposed Lam Tsuen Valley Sewage Pumping Station will cause insignificant environmental impacts on the surrounding environment. In conclusion, the above preventive and mitigation measures are considered sufficient to mitigate the possible environmental impacts that may arise from the pumping station.

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