

1. INTRODUCTION

1.1 Project Background

1.1.1 The Drainage Services Department (DSD) is undertaking a project named Expansion of Sha Tau Kok Sewage Treatment Works, Phase 1 – Investigation, Design and Construction (the Project) under Agreement No. 63/2012(DS). The Project is to expand the treatment capacity of the existing Sha Tau Kok Sewage Treatment Works (STKSTW) from 1,660 m³/day to 10,000 m³/day in 2 phases. In June 2013, Black & Veatch Hong Kong Limited (B&V) was commissioned by DSD as the consultant for this project.

1.1.2 The Project is to increase the capacity of STKSTW to cope with the forecast increase in sewage flow upon completion of sewerage under project “North District Sewerage, Stage 2 Part 2A – Pak Hok Lam Trunk Sewer and Sha Tau Kok Village Sewerage” in Sha Tau Kok areas, extensions of village sewerage in the areas planned by EPD, and the proposed housing developments in Sha Tau Kok Town. STKSTW will not receive sewage flow from existing catchment of other sewage treatment works.

1.1.3 The project is anticipated to be implemented in accordance with the below table:

	Treatment Capacity (m³/day)		Tentative Year of Commissioning
	Increased by	Total	
Existing STKSTW	-	1,660	-
Temporary Sewage Treatment Plant	-	2,500	2019
Phase 1 Expansion*	3,340	5,000	2021
Phase 2 Expansion	5,000	10,000	End 2030

*Note: * Proposed submarine outfall will also commission together with the phase 1 expanded STKSTW.*

Tentatively, the construction of the Project will last for 49 months and is scheduled to commence in 3rd quarter of 2017.

1.1.4 The proposed expansion has been identified as a designed project (DP), hence it requires an Environmental Permit (EP) from the Director of Environmental Protection Department for construction and operation. In relation to this, DSD has prepared a Project Profile for Application for an Environmental Impact Assessment (EIA) Study Brief which has been submitted to the Environmental Protection Department (EPD) on 5 November 2012. The EIA Study Brief (No. ESB-253/2012) has been issued by EPD on 17 December 2012.

1.2 Background to this EIA

1.2.1 The Project Profile prepared by the Drainage Service Department has identified the potential environmental impact on air quality, noise, water quality, waste generation, ecology, fisheries, landscape and visual, and cultural heritage during both the construction and operation phases of the Project.

1.2.2 The Project Profile also identified the designated project (DP) components of the Expansion of Sha Tau Kok Sewage Treatment Works under the Environmental Impact Assessment Ordinance (EIAO).

1.2.3 The scope of works for the Project is listed as below:

- Increase the treatment capacity of Sha Tau Kok Sewage Treatment Works (STKSTW) to 5,000 m³/day at ADWF by 2021, with suitable allowance to cater for a further increase of treatment capacity to 10,000 m³/day at ADWF after 2030 in Phase 2;

Expansion of Sha Tau Kok Sewage Treatment Works

- Construct a temporary sewage treatment plant (TSTP) of treatment capacity of 2500 m³/day to cope with the sewage flow when the existing STKSTW is isolated for expansion and decommission after STKSTW is operated;
 - Demolish the existing Sha Tau Kok Sewage Pumping Station (STKSPS) and decommission the rising main between STKSPS and STKSTW;
 - Construct a length of 520m new gravity sewer; and
 - Abandonment of the existing submarine outfall and construct a length of 1700m new submarine outfall.
- 1.2.4 This EIA report will follow the requirements of the EIA Study Brief No. ESB-253/2012.
- 1.2.5 The Project comprises of both DP and non-DP components. Environmental Permits (EPs) are required before the commencement of the construction and operation of the DP components. The DP and non-DP components of the Project are listed in **Table 1.1**.

Table 1.1 Designated Project Status of the Project Components

Project Component	DP/ Non-DP	Remarks
Increase the treatment capacity of STKSTW to 5,000 m ³ /day at ADWF by 2021 (Phase 1 Expansion);	DP	Sewage treatment works with an installed capacity of more than 5,000 m ³ /day and a boundary of which is less than 200 m from the nearest boundary of an existing residential area under Schedule 2 Part I Item F.2 of the EIAO
Increase the treatment capacity of STKSTW to 10,000 m ³ /day at ADWF by 2030 (Phase 2 Expansion);	DP	Sewage treatment works with an installed capacity of more than 5,000 m ³ /day and a boundary of which is less than 200 m from the nearest boundary of an existing residential area under Schedule 2 Part I Item F.2 of the EIAO
Marine construction works for the diffuser	Non-DP	The works is more than 500m from the nearest boundary of an existing or planned area under Schedule 2 Part I Item C.2(a) of the EIA and it is more than 100m from a seawater intake point
Construct a TSTP	Non-DP	Sewage treatment works with an installed capacity not more than 5,000 m ³ /day
Demolish the STKSPS and decommission the rising mains between STKSPS and STKSTW	Non-DP	The works would not fall partly or wholly within any of the sensitive areas as stated in Schedule 2 Part 1 Item Q.1 of the EIAO
Construct new gravity sewer	Non-DP	The works would not fall partly or wholly within any of the sensitive areas as stated in Schedule 2 Part 1 Item Q.1 of the EIAO
Construct a new submarine outfall	DP	Schedule 2 Part I Item F.6 of the EIAO
An activity for the reuse of treated sewage effluent from a treatment plant	DP	Schedule 2 Part I Item F.4 of the EIAO

1.3 Purpose and Approach of the EIA Study

1.3.1 The purpose of this EIA Study is to provide information on the nature and extent of environmental impacts arising from the construction and operation of the Project and its related activities. The location of the Project and the associated works are shown in [Figure 1.1](#). This information will contribute to decisions by the Director of Environmental Protection on:

- The overall acceptability of any adverse environmental consequences that are likely to arise as a result of the proposed Project;
- The conditions and requirements for the detailed design, construction and operation of the proposed Project to mitigate against adverse environmental consequences, as practicable; and
- The acceptability of residual impacts after implementation of the proposed mitigation measures.

1.3.2 This EIA Study has been conducted to achieve specific objectives in the EIA Study Brief No. ESB-253/2012. These specific objectives are:

- to describe the Project and associated works together with the requirements and environmental benefits for carrying out the Project;
- to identify and describe elements of community and environment likely to be affected by the Project and/or likely to cause adverse impacts to the Project, including natural and man-made environment and the associated environmental constraints;
- to identify and quantify emission sources (including air quality, noise, water quality and waste, etc. as appropriate) and determine the significance of impacts on sensitive receivers and potential affected uses;
- to identify and quantify any potential loss or damage and other potential impacts to fisheries, flora, fauna and natural habitats;
- to identify any negative impacts on sites of cultural heritage and to propose measures to mitigate these impacts;
- to identify any potential landscape and visual impacts and to propose measures to mitigate these impacts;
- to propose the provision of infrastructure or mitigation measures to minimize pollution, environmental disturbance and nuisance during construction and operation of Project;
- to investigate the feasibility, practicability, effectiveness and implications of the proposed mitigation measures;
- to identify, predict and evaluate the residual environmental impacts (i.e. after practicable mitigation) and the cumulative effects expected to arise during the construction and operation phases of the Project in relation to the sensitive receivers and potential affected uses;
- to identify, assess and specify methods, measures and standards, to be included in the detailed design, construction and operation of the Project which are necessary to mitigate these residual environmental impacts and cumulative effects and reduce them to acceptable levels;
- to investigate the extent of the secondary environmental impacts that may arise from the proposed mitigation measures and to identify constraints associated

with the mitigation measures recommended in the EIA study, as well as the provision of any necessary modification;

- to design and specify environmental monitoring and audit requirements to check the effective implementation of the recommended environmental protection and pollution control measures; and
- to identify any additional studies necessary to implement the mitigation measures or monitoring and proposals recommended in the EIA report.

1.4 Structure of this EIA Study Report

1.4.1 The backgrounds, descriptions and justifications of this Project are provided in **Section 2**. The assessment results and recommended mitigation measures for each of the environmental parameters that have been identified are presented in the following sections:

- Section 3 – Air Quality
- Section 4 – Noise
- Section 5 – Water Quality
- Section 6 – Waste Management
- Section 7 – Ecology
- Section 8 – Fisheries
- Section 9 – Landscape & Visual
- Section 10 – Cultural Heritage
- Section 11 – Summary of Environmental Outcomes
- Section 12 – Environmental Monitoring and Audit Requirements
- Section 13 - Conclusions