

**Tolo Harbour Sewerage of Unsewered Areas, Stage II - Investigation, Design and Construction** 

Sai O Trunk Sewer Sewage Pumping Station

Environmental Impact Assessment Report Volume II – Figures & Appendices

**AECOM Asia Co. Ltd.** 

March 2021

## **List of Figures**

Figure 2.1	Location of the Proposed Sai O Trunk Sewer Sewage Pumping Station
Figure 3.1	Locations of Representative Air Sensitive Receivers
Figure 3.2	Contour of the Predicted Maximum 5-second Average Odour Concentration
	(OU/m³)
Figure 4.1	Locations of the Representative Noise Sensitive Receivers
Figure 5.1	Locations of EPD's Marine Water Quality Monitoring Stations
Figure 5.2	Locations of the Representative Water Sensitive Receivers and Baseline Water
	Quality Survey Stations
Figure 7.1	Photographic Records of Site Walkover
Figure 8.1	Assessment Area for Ecological Assessment and Locations of Ecology Surveys
Figure 8.2	Habitat Map and Locations of Species of Conservation Importance Recorded
Figure 9.1	Location of Project Site and Hazardous Installations
Figure 9.2	Hazard Assessment Approach Flow Chart
Figure 9.3	Societal Risk Guideline (EIAO-TM)
Figure 9.4	Individual Risk of Underground High Pressure Town Gas Pipeline
Figure 9.5	Individual Risk of Sai O Offtake and Pigging Station
Figure 9.6	Cumulative Individual Risk of Underground High Pressure Town Gas Pipeline
	and Sai O Offtake and Pigging Station
Figure 9.7	Individual Risk of the MOSWTW
Figure 9.8	Societal Risk Results of Underground High Pressure Town Gas Pipeline
Figure 9.9	Societal Risk Results of Sai O Offtake and Pigging Station
Figure 9.10	Cumulative Societal Risk Results of Underground High Pressure Town Gas
	Pipeline and Sai O Offtake and Pigging Station
Figure 9.11	Societal Risk Results of MOSWTW (Construction Case)
Figure 9.12	Societal Risk Results of MOSWTW (Operation Case)
Figure 10.1	Review of Planning and Development Control Framework
Figure 10.2	Landscape Resources Plan
Figure 10.3	Landscape Resources Plan Overlaid with Aerial Photo
Figure 10.4	Photos of Landscape Resources
Figure 10.5	Landscape Character Area Plan
Figure 10.6	Landscape Character Area Plan Overlaid with Aerial Photo
Figure 10.7	Photos of Landscape Character Areas
Figure 10.8	Visually Sensitive Receivers
Figure 10.9	Landscape and Visual Mitigation Plan during Construction Phase
Figure 10.10	Landscape and Visual Mitigation Plan during Operational Phase
Figure 10.11	Photomontage P1
Figure 10.12	Photomontage P2
Figure 10.13	Photomontage P3
<u>Figure 11.1</u>	Locations of Cultural Heritage Resources

## **List of Appendices**

Appendix 2.1	General Layout and Sections of the Proposed Sai O Trunk Sewer Sewage
	Pumping Station
Appendix 2.2	Confirmation of No Change in EIA Study Brief
Appendix 2.3	Alternative Locations of the Proposed Sai O Trunk Sewer Sewage Pumping
	Station
Appendix 2.4	Alternative Design Options of the Proposed Sai O Trunk Sewer Sewage
	Pumping Station
Appendix 2.5	Tentative Construction Programme
Appendix 3.1	Identified Air Sensitive Receivers within Assessment Area
Appendix 3.2	Emission Parameters for Odour Modelling
Appendix 3.3	Determination of Surface Characteristics Parameters for AERMET
Appendix 3.4	Predicted Odour Concentration at Representative Air Sensitive Receivers
Appendix 4.1	Determination of Fixed Plant Noise Criteria
Appendix 4.2	Identified Noise Sensitive Receivers within Assessment Area
Appendix 4.3	Photographs of Representative Noise Sensitive Receivers
Appendix 4.4	Proposed Construction Plant Inventory without Mitigation Measures
Appendix 4.5	Proposed Operational Fixed Plant Inventory without Mitigation Measures
Appendix 4.6	Calculations of Construction Noise Levels without Mitigation Measures
Appendix 4.7	Calculations of Operational Fixed Plant Noise Levels without Mitigation
A 1' 4 - O	Measures
Appendix 4.8	Proposed Construction Plant Inventory with Mitigation Measures
Appendix 4.9	Calculations of Construction Noise Levels with Mitigation Measures
Appendix 4.10	Cumulative Construction Noise Impact
Appendix 4.11	Proposed Operational Fixed Plant Inventory with Mitigation Measures
Appendix 4.12	Calculations of Operational Fixed Plant Noise Levels with Mitigation Measures
Appendix 5.1	DSD's "Contingency Plan for Incidents Possibly Encountered in Sewage Treatment Facilities having a Potential of Generating an Environmental
	Nuisance"
Appendix 7.1	Aerial Photographs
Appendix 7.1 Appendix 7.2	EPD's Reply on Land Contamination Records
Appendix 7.3	• •
	FSD's Renly on Land Contamination Records
	FSD's Reply on Land Contamination Records Site Walkover Checklist
Appendix 7.4	Site Walkover Checklist
Appendix 7.4 Appendix 8.1	Site Walkover Checklist Ecological Survey Schedule
Appendix 7.4 Appendix 8.1 Appendix 8.2	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3 Appendix 8.4	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area Avifauna, Mammal, Butterfly, Odonate Species and Freshwater Fauna
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3 Appendix 8.4 Appendix 8.5	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area Avifauna, Mammal, Butterfly, Odonate Species and Freshwater Fauna Recorded within the Assessment Area
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3 Appendix 8.4	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area Avifauna, Mammal, Butterfly, Odonate Species and Freshwater Fauna Recorded within the Assessment Area Intertidal Fauna Recorded during the Walk-through Survey and Quantitative
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3 Appendix 8.4 Appendix 8.5 Appendix 8.6	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area Avifauna, Mammal, Butterfly, Odonate Species and Freshwater Fauna Recorded within the Assessment Area Intertidal Fauna Recorded during the Walk-through Survey and Quantitative Survey
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3 Appendix 8.4 Appendix 8.5 Appendix 8.6 Appendix 8.6	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area Avifauna, Mammal, Butterfly, Odonate Species and Freshwater Fauna Recorded within the Assessment Area Intertidal Fauna Recorded during the Walk-through Survey and Quantitative Survey Raw Data Recorded during the Intertidal Surveys within the Assessment Area
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3 Appendix 8.4 Appendix 8.5  Appendix 8.6  Appendix 8.7 Appendix 8.8	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area Avifauna, Mammal, Butterfly, Odonate Species and Freshwater Fauna Recorded within the Assessment Area Intertidal Fauna Recorded during the Walk-through Survey and Quantitative Survey Raw Data Recorded during the Intertidal Surveys within the Assessment Area Benthos Survey Results (Abundance/Biomass)
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3 Appendix 8.4 Appendix 8.5 Appendix 8.6 Appendix 8.6	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area Avifauna, Mammal, Butterfly, Odonate Species and Freshwater Fauna Recorded within the Assessment Area Intertidal Fauna Recorded during the Walk-through Survey and Quantitative Survey Raw Data Recorded during the Intertidal Surveys within the Assessment Area Benthos Survey Results (Abundance/Biomass) Representative Photos of Habitats and Species Recorded during Dive Surveys
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3 Appendix 8.4 Appendix 8.5  Appendix 8.6  Appendix 8.7 Appendix 8.8 Appendix 8.8 Appendix 8.9	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area Avifauna, Mammal, Butterfly, Odonate Species and Freshwater Fauna Recorded within the Assessment Area Intertidal Fauna Recorded during the Walk-through Survey and Quantitative Survey Raw Data Recorded during the Intertidal Surveys within the Assessment Area Benthos Survey Results (Abundance/Biomass)
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3 Appendix 8.4 Appendix 8.5  Appendix 8.6  Appendix 8.7 Appendix 8.8 Appendix 8.9 Appendix 8.10	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area Avifauna, Mammal, Butterfly, Odonate Species and Freshwater Fauna Recorded within the Assessment Area Intertidal Fauna Recorded during the Walk-through Survey and Quantitative Survey Raw Data Recorded during the Intertidal Surveys within the Assessment Area Benthos Survey Results (Abundance/Biomass) Representative Photos of Habitats and Species Recorded during Dive Surveys Other Invertebrates Recorded at the Spot-check Dive Sites
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3 Appendix 8.4 Appendix 8.5  Appendix 8.6  Appendix 8.7 Appendix 8.8 Appendix 8.8 Appendix 8.9 Appendix 8.10 Appendix 8.11	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area Avifauna, Mammal, Butterfly, Odonate Species and Freshwater Fauna Recorded within the Assessment Area Intertidal Fauna Recorded during the Walk-through Survey and Quantitative Survey Raw Data Recorded during the Intertidal Surveys within the Assessment Area Benthos Survey Results (Abundance/Biomass) Representative Photos of Habitats and Species Recorded during Dive Surveys Other Invertebrates Recorded at the Spot-check Dive Sites Representative Photographs of Species of Conservation Importance Recorded
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3 Appendix 8.4 Appendix 8.5  Appendix 8.6  Appendix 8.7 Appendix 8.8 Appendix 8.8 Appendix 8.9 Appendix 8.10 Appendix 8.11 Appendix 9.1	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area Avifauna, Mammal, Butterfly, Odonate Species and Freshwater Fauna Recorded within the Assessment Area Intertidal Fauna Recorded during the Walk-through Survey and Quantitative Survey Raw Data Recorded during the Intertidal Surveys within the Assessment Area Benthos Survey Results (Abundance/Biomass) Representative Photos of Habitats and Species Recorded during Dive Surveys Other Invertebrates Recorded at the Spot-check Dive Sites Representative Photographs of Species of Conservation Importance Recorded Hazard to Life Assessment of Town Gas Installations
Appendix 7.4 Appendix 8.1 Appendix 8.2 Appendix 8.3 Appendix 8.4 Appendix 8.5  Appendix 8.6  Appendix 8.7 Appendix 8.8 Appendix 8.8 Appendix 8.9 Appendix 8.10 Appendix 8.11 Appendix 9.1 Appendix 9.2	Site Walkover Checklist Ecological Survey Schedule Rapid Ecological Assessment Representative Photographs of Habitats Plant Species Recorded within the Assessment Area Avifauna, Mammal, Butterfly, Odonate Species and Freshwater Fauna Recorded within the Assessment Area Intertidal Fauna Recorded during the Walk-through Survey and Quantitative Survey Raw Data Recorded during the Intertidal Surveys within the Assessment Area Benthos Survey Results (Abundance/Biomass) Representative Photos of Habitats and Species Recorded during Dive Surveys Other Invertebrates Recorded at the Spot-check Dive Sites Representative Photographs of Species of Conservation Importance Recorded Hazard to Life Assessment of Town Gas Installations Review of Hazard to life Impact from MOSWTW

AECOM i Mar 2021