Contents

		Page
6	Waste Management Implications	1
6.1	Legislation, Standards and Guidelines	1
6.2	Construction Phase	5
6.3	Operational Phase	25
6.4	Conclusion	27

Appendices

Appendix 6.1 Approved SSTP

Appendix 6.2 Summary of Chemical Screening Test Results

Appendix 6.3 Actual Sediment Sampling Locations

Appendix 6.4 Estimated Volume of Land-based Marine Sediment to be Generated

Appendix 6.5 Updated Excavation Area and Location of Marine Sediment

6 Waste Management Implications

6.1 Legislation, Standards and Guidelines

6.1.1 General

6.1.1.1 The relevant legislation, standards and guidelines applicable to the study for the assessment of waste management implications include:

- Criteria and guidelines for evaluating and assessing waste management implications as specified in Annexes 7 and 15 of the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM);
- Waste Disposal Ordinance (WDO) (Cap. 354) and subsidiary Regulations;
- Land (Miscellaneous Provisions) Ordinance (Cap. 28);
- Public Health and Municipal Services Ordinance (Cap. 132) – Public Cleansing and Prevention of Nuisances Regulation;
- Dumping at Sea Ordinance (DASO) (Cap. 466);
- Practice Note for Authorized Persons and Registered Structural Engineers on Management Framework for Disposal of Dredged/ Excavated Sediment (PNAP ADV-21); and
- Works Bureau Technical Circular (WBTC) No. 12/2000 Fill Management.

6.1.1.2 Relevant regulations under the WDO include:

- Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C); and
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N).

6.1.2 Criteria and Guidelines for Evaluating and Assessing Waste Management Implications as specified in Annexes 7 and 15 of the EIAO-TM

6.1.2.1 Annex 7 of the EIAO-TM describes the criteria for assessing waste management implication which include provision of adequate waste handling, storage, collection, transfer, treatment and disposal facilities during both construction and operational phases, provision of adequate facilities to facilitate waste reduction, exploration of beneficial use of waste generated as well as alternatives which generate minimal amount of waste.

6.1.2.2 Annex 15 of the EIAO-TM describes the approaches and methodologies for assessment of waste management implications arising from the project.

6.1.3 Waste Disposal Ordinance

6.1.3.1 The WDO prohibits any unauthorised disposal of wastes. Construction waste, defined under Cap. 354N of the WDO, refers to a substance, matter or thing which is generated from construction works. It includes all abandoned materials, whether processed or stockpiled or not, before being abandoned, but does not include sludge, screenings or matter removed or generated from desludging, desilting or dredging works.

6.1.3.2 Under the WDO, wastes can only be disposed of at designated waste disposal facilities licensed by Environmental Protection Department (EPD). Breach of this Ordinance can lead to a fine and/ or imprisonment. The WDO also stipulates the requirements for issuing licenses for the collection and transportation of wastes.

6.1.4 Waste Disposal (Chemical Waste) (General) Regulation

6.1.4.1 Issued under the WDO, the Waste Disposal (Chemical Waste) (General) Regulation controls the possession, provides regulations for chemical waste control, and administers the possession, storage, collection, transport and disposal of chemical wastes. EPD has also issued a "guideline" document, the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes (1992), which details how the Contractor should comply with the regulations on chemical wastes.

6.1.5 Waste Disposal (Charges for Disposal of Construction Waste) Regulation

6.1.5.1 Under the Waste Disposal (Charges for Disposal of Construction Waste) Regulation, construction waste delivered to a landfill for disposal must not contain more than 50% by weight of inert material. Construction waste delivered to a sorting facility for disposal must contain more than 50% by weight of inert material, and construction waste delivered to a Public Fill Reception Facility for disposal must consist entirely of inert material.

6.1.6 Land (Miscellaneous Provisions) Ordinance

6.1.6.1 The inert portion of Construction and Demolition (C&D) materials may be taken to Public Fill Reception Facilities (PFRFs) operated by the Civil Engineering and Development Department (CEDD). The Ordinance requires Dumping Licenses (to be issued by CEDD) to be obtained by individuals or companies, who deliver inert C&D materials to the public filling facilities.

6.1.6.2 Individual licenses and windscreen stickers are issued for each vehicle involved. Public filling areas will accept only inert building debris, soil, rock and broken concrete. The material should, however, be free from marine mud, household refuse, plastic, metal, individual and chemical wastes, animal and vegetable matters and any other materials considered unsuitable by the Filling Supervisor.

6.1.7 Public Cleansing and Prevention of Nuisances Regulation

6.1.7.1 The regulation provides control on illegal dumping of wastes on unauthorised (unlicensed) sites.

6.1.8 Dumping at Sea Ordinance

6.1.8.1 According to the DASO, a permit from EPD is required if any waste producer intends to dump materials from vessels to designated marine dumping areas. The Authority will consider a number of factors including sources and nature of materials to be dumped, dumping rates, need for inspection / testing, water pollution avoidance measures etc before determining whether such a permit would be granted and, where deemed necessary, any conditions to be complied with. Breach of the requirements in the permit would result in a fine and/or imprisonment.

6.1.9 Practice Note for Authorized Persons and Registered Structural Engineers on Management Framework for Disposal of Dredged/ Excavated Sediment (PNAP ADV-21)

6.1.9.1 PNAP ADV-21 sets out the procedure for seeking approval to dredge/ excavate sediment and the management framework for marine disposal of such sediment. It outlines the requirements for sediment quality assessment and provides guidelines for the classification of sediment based on their contaminant levels. It also explains the disposal arrangement for the classified sediment.

6.1.10 Works Bureau Technical Circular No. 12/2000 Fill Management

6.1.10.1 WBTC No. 12/2000 explains how fill resources, C&D material, and dredged/excavated sediment disposal are managed.

6.1.11 Other Relevant Guidelines

6.1.11.1 The following documents and guidelines in **Table 6.1** are also related to waste management and disposal:

Table 6.1 Other relevant documents and information

Bureau / Department	Documents / Guidelines / Technical Circulars
Development Bureau	• WBTC No. 2/93, Public Dumps • WBTC No 2/93B, Public Filling Facilities • WBTC No. 16/96, Wet Soil in Public Dumps • WBTC Nos. 4/98 and 4/98A, Use of Public Fill in Reclamation and Earth Filling Project • WBTC No. 19/2001, Metallic Site Hoardings and Signboards • WBTC No. 12/2002, Specification Facilitating the Use of Recycled Aggregates

Bureau / Department	Documents / Guidelines / Technical Circulars
	• ADV-19, Practice Note for Authorized Persons and Registered Structural Engineers on Construction and Demolition Waste • DEVB TCW No. 06/2010, Trip-ticket System for Disposal of Construction and Demolition Material • DEVB TCW No. 08/2010, Enhanced Specification for Site Cleanliness and Tidiness • DEVB TCW No. 09/2011, Enhanced Control Measures for Management of Public Fill
CEDD	• Project Administration Handbook for Civil Engineering Works, Management of Construction/ Demolition Materials including Rocks • CEDD TC No. 11/2019, Management of Construction and Demolition Materials
Environment Bureau	• ETWB TCW No. 19/2005, Environmental Management on Construction Sites • A Guide to the Chemical Waste Control Scheme • A Guide to the Registration of Chemical Waste Producers • Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes • Monitoring of Solid Waste in Hong Kong 2019

6.2 Construction Phase

6.2.1 Assessment Methodology

General

6.2.1.1 The assessment of waste management implications has been undertaken in accordance with Annexes 7 and 15 of the EIAO-TM and the EIA Study Brief No. ESB-329/2020.

Waste Management Hierarchy

6.2.1.2 The waste management hierarchy has been applied in the assessment and development of mitigation measures for waste. The waste management hierarchy is a concept which shows the desirability of various waste management methods and comprises the following in order of preference:

- Avoidance;
- Minimization;
- Recycling/reuse;
- Treatment; and
- Disposal.

Avoiding, Reducing, Reusing and Recycling Opportunities

6.2.1.3 All opportunities for avoiding, reducing, reusing and recycling of waste have been explored based upon the following factors:

- Avoiding or minimizing sediment and waste generation throughout design, construction and operational phases;
- Adopting better management practices to promote segregation materials;
- Reuse and recycling on site or other projects; and
- Diverting any C&D materials to public fills as far as possible.

Analysis of Activities and Waste Generation

6.2.1.4 The quantity, quality and timing of the waste arising as a result of the construction activities of the Project and its associated works have been estimated, based on the sequence and duration of these activities.

6.2.1.5 The design, general layout, construction methods and programme to minimize the generation of inert C&D materials for the construction works have been considered.

6.2.1.6 The potential waste management implications associated with the handling, transportation and disposal of non-inert C&D materials arising from the construction works have been assessed with reference to the following approach:

- Estimation of the types, timing and quantities of the non-inert C&D materials to be generated; and
- Assessment of the potential waste management implications on the collection, transfer and disposal of non-inert C&D materials.

Proposal for Waste Management

6.2.1.7 Prior to considering the disposal options for various types of wastes, opportunities for reducing waste generation, on-site or off-site reuse and recycling have been evaluated. Measures which can be taken in the design phase (e.g. modifying the design approach) and in the construction phase for maximising waste reduction have been separately considered.

6.2.1.8 After considering the opportunities for reducing waste generation and maximizing reuse, the types and quantities of the remaining wastes required to be disposed of have been estimated and the disposal options for each type of wastes have been described. The disposal method recommended for each type of wastes has taken into account the result of the assessment.

6.2.1.9 The impacts caused by handling (including labelling, packaging and storage), collection, and reuse/disposal of waste have been addressed and appropriate mitigation measures have been proposed.

6.2.2 Identification and Evaluation of Waste Management Implications

General

6.2.2.1 The construction of the Project would generate the following categories of wastes:

- C&D material;
- Land-based marine sediment;
- Chemical waste; and
- General refuse.

Main Construction Activities and Waste Generation

6.2.2.2 During construction phase, the main activities which would potentially result in the generation of waste include tunnelling, construction of Emergency Access Point (EAP)/ Emergency Egress Point (EEP) building, Tung Chung Waterfront Road Barging Point (TCWRBP) as well as stations and associated facilities. **Section 2.7** has presented a detailed description of the key elements of the Project and the associated construction methodology. A summary of the construction

methodology for various key project elements and the associated waste to be generated is given below.

Table 6.2 Summary of waste to be generated during construction phase

Key Project Elements	Construction Activities	Potential Types of Waste to be Generated
TCW (including TCWRBP Area)		
TCW Station	• Site clearance • D-Wall • Foundation works • Excavation and lateral support • In-situ concreting • Drill-&-blasting (if required) • Superstructure construction • Back filling • Site Reinstatement • Track installation • Precast concrete unit installation	• C&D material • Chemical waste • General refuse
Tunnel between Tung Chung Station and TCW Station	• TBM tunnelling • Track installation	• C&D material (including bentonite slurry waste) • Chemical waste • General refuse
EAP/ EEP Building	• Site clearance • Foundation works • Excavation and lateral support • In-situ concreting • Mined construction for the vertical shaft • Drill-&-blasting (if required) • Superstructure construction • Back filling • Site Reinstatement • Pipe piling • Rock dowelling • Soil nailing	• C&D material • Chemical waste • General refuse
Launching shaft at Tung Chung Crescent	• Site clearance • Foundation works • Excavation and lateral support • In-situ concreting • Back filling • Site Reinstatement • Pipe piling • D-wall	• C&D material • Chemical waste • General refuse
TCWRBP	• Site clearance • Facility installation • Demolition of Facility • Site Reinstatement	• C&D material • Chemical waste • General refuse
TCE		
TCE Station (at-grade)	• Site clearance • Foundation works • Site formation • In-situ concreting • Superstructure construction • Site reinstatement	• C&D material • Land-based marine sediment • Chemical waste • General refuse

Key Project Elements	Construction Activities	Potential Types of Waste to be Generated
Existing rail track realignment	• Site clearance • Foundation works • Removal of existing noise barrier • Installation of new noise barrier • Track installation • Site reinstatement	• C&D material • Chemical waste • General refuse

6.2.2.3 The design, general layout, construction methods and programme adopted for the Project has minimized the generation of waste. Some key features of the Project which has been adopted to minimize the generation of waste include:

- General layout has been designed such that minimal amount of waste including land-based marine sediment would be generated;
- TCE Station has been designed to be located above-ground to reduce inert C&D materials and land-based marine sediment generation;
- A flat top barge arrangement has been designed for the TCWRBP such that no dredging and marine works are necessary which eliminate marine sediment generation; and
- TBM tunnelling underneath Ma Wan Chung is proposed in place of other construction methods including open cut, cut-&-cover or immersed tube to reduce inert C&D materials and marine sediment generation.

C&D Material

6.2.2.4 The works for the Project would tentatively commence in 2023. Major construction activities which would generate C&D materials include:

TCW (Including TCWRBP Area)

- Construction of TCW Station;
- TBM tunnelling;
- Construction of EAP/ EEP Building at Shun Tung Road;
- Construction of launching shaft with cut-and-cover tunnel at Tung Chung Crescent; and
- Formation of TCWRBP.

TCE

- Construction of TCE Station;
- Construction of linkbridge;
- Construction of retaining wall;
- Site formation;

- Demolition and modification of noise barrier, overhead lines (OHL) masts, cable containment; and
- Demolition and modification of Tung Chung Line (TCL) tracks.

6.2.2.5 Summary of estimated amount of C&D materials to be generated during construction phase and their estimated yearly amount are shown in **Table 6.3** and **Table 6.4** below.

Table 6.3 Summary of estimated amount of C&D materials to be generated during construction phase

Activity	Estimated Amount of C&D Material to be Generated, m^3 [6]							
	Inert C&D Material [1]				Non-inert C&D Material [2]			
	Soft Inert Material [3]	Mixed Ground [4]	Rock	AHM [5]	Top Soil	Vegetation	Timber	Steel
TCW (including TCWRBP Area)								
Construction of TCW Station	253,000	9,500	13,700	3,500	6,000		6,500	0
TBM tunnelling	17,200	0	48,200	0	0		0	0
Construction of EAP/ EEP Building at Shun Tung Road	4,300	10,500	7,200	2,500	1,400		300	0
Construction of launch shaft with cut-and-over tunnel at Tung Chung Crescent	16,800	7,800	11,000	1,500	800		300	0
Formation of Tung Chung Waterfront Road Barging Point	0	0	0	3,800	0		0	0
TCE								
Construction of TCE Station	16,600	0	7,300	0	0		2,200	0
Construction of linkbridge	5,100	0	800	0	0		250	0
Construction of retaining wall	8,800	0	200	0	0		1,300	0
Site formation	6,600	0	0	0	0		500	0
Demolition and modification of noise barrier, OHL masts, cable containment	0	0	0	100	0		50	9
Demolition and modification of TCL tracks	0	0	0	0	0		0	1
Total	328,400	27,800	88,400	11,400	8,200		11,400	10

Note:
[1] "Inert C&D Material", also known as public fill, includes debris, rubble, earth, concrete and TBM excavated spoil after treatment to remove the bentonite slurry which is suitable for land reclamation and site formation.
[2] "Non-inert C&D Material" involved in the Project includes top soil, vegetation, timber and steel. In contrast to public fill, non-inert waste is not suitable for land reclamation and subject to recovery of reusable/ recyclable items, is disposed of at landfills.
[3] "Soft Inert C&D Material" mainly refers to excavated soil, etc.
[4] "Mixed Ground" refers to simultaneous occurrence of two or more geological formations with different properties in rock/ soil mechanics, or the same geological formation with different weathering grades.
[5] "AHM" includes, but not limited to, broken concrete, asphalt, bitumen, granular materials, debris, and rubble, etc.
[6] In-situ volume is used.

Table 6.4 Summary of yearly estimated amount of C&D materials to be generated during construction phase

C&D Material		**Estimated Amount of C&D Material to be Generated, m^3 [6]**							
		2023	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**Total**
Inert C&D Material [1]	Soft Inert Material [3]	15,700	50,500	39,100	198,100	22,800	2,200	0	328,400
	Mixed Ground [4]	750	12,900	10,400	3,000	750	0	0	27,800
	Rock	2,600	17,200	25,800	42,700	100	0	0	88,400
	AHM [5]	9,500	1,500	50	300	0	50	0	11,400
Non-inert C&D Material [2]	Top Soil	6,500	1,700	0	0	0	0	0	8,200
	Vegetation								
	Timber	50	2,400	2,400	5,300	1,100	150	0	11,400
	Steel	0	0	9	0	0	1	0	10

Note:
[1] "Inert C&D Material", also known as public fill, includes debris, rubble, earth, concrete and TBM excavated spoil after treatment to remove the bentonite slurry which is suitable for land reclamation and site formation.
[2] "Non-inert C&D Material" involved in the Project includes top soil, vegetation, timber and steel. In contrast to public fill, non-inert waste is not suitable for land reclamation and subject to recovery of reusable/ recyclable items, is disposed of at landfills.
[3] "Soft Inert C&D Material" mainly refers to excavated soil, etc.
[4] "Mixed Ground" refers to simultaneous occurrence of two or more geological formations with different properties in rock/ soil mechanics, or the same geological formation with different weathering grades.
[5] "AHM" includes, but not limited to, broken concrete, asphalt, bitumen, granular materials, debris, and rubble, etc.
[6] In-situ volume is used.

6.2.2.6 It is envisaged that bentonite slurry would be used as drilling fluid during TBM tunnelling works. The slurry is normally recycled and reused during the drilling process such that there will be no wastewater generated. The storage, treatment and recycling of the bentonite slurry will mainly be conducted at the slurry treatment plant. The TBM excavated spoil after treatment to remove the bentonite slurry will be delivered to PFRFs as normal spoil. The waste and wastewater generated, if any, will be handled in accordance with the WDO and WPCO. The detailed arrangement of the bentonite slurry treatment will be further reviewed and designed by the Contractor subject to the site condition and detailed construction methods.

6.2.2.7 Major construction activities which would require fill materials include:

TCW

- Construction of TCW Station; and
- Construction of launching shaft with cut-and-cover tunnel at Tung Chung Crescent.

TCE

- Construction of TCE Station;
- Construction of linkbridge; and
- Site formation.

6.2.2.8 Fill materials are required from Year 2023 to 2025 for the construction works at TCE and in Year 2028 for the construction works at TCW. Most fill materials are required at the proposed road above TCW Station and site formation at TCE. The construction programme adopted for the Project has already been adjusted to minimize the generation of waste including inert C&D material and maximize the reuse of inert C&D material on site/ off site. Taking into account the limited availability of temporary stockpiling area on site, surplus materials will be delivered to PFRF for off-site reuse while some backfilling materials will be imported.

6.2.2.9 Summary of estimated amount of imported fill required for the construction works is about 93,900m^3 and is summarized in **Table 6.5**. Nevertheless, this amount of imported filling materials should be consulted with fill management authority of CEDD.

Table 6.5 Summary of estimated amount of imported fill required during construction phase

Activities	Estimated Amount of Imported Fill Required, m^3
TCW	
Construction of TCW Station	46,500
Construction of launch shaft with cut-and-over tunnel at Tung Chung Crescent	22,500
TCE	
Site formation	22,300
Construction of TCE Station	2,000
Construction of linkbridge	600
Total	93,900

Land-based Marine Sediment

6.2.2.10 A Sediment Sampling and Testing Plan (SSTP) was submitted to EPD on 7 September 2020 and subsequently approved by EPD on 10 September 2020. The approved SSTP is provided in **Appendix 6.1**. Environmental site investigation (SI) works were conducted in October to November 2020 and April to May 2021 based on the approved SSTP. Among the 10 boreholes proposed in the approved SSTP,

land-based marine sediment was only encountered at TCE at the borehole NEX1079-TCE-EDH109. The summary of chemical screening test results is attached in **Appendix 6.2**. Location of the borehole NEX1079-TCE-EDH109 is provided in **Appendix 6.3**. It is anticipated that only approximately 140m^3 of land-based marine sediment would be generated through mucking out activity during piling at part of the proposed TCE Station and its associated facilities. Summary of the estimation of the volume of land-based marine sediment to be generated is provided in **Appendix 6.4**.

6.2.2.11 Excavated land-based marine sediment should be reused as far as possible within the Project Site before considering disposal. Subject to availability of suitable location and review on the backfilling method, part or all of the land-based marine sediment would be reused on site. Possible methods for the reuse of land-based marine sediment on site including the reuse of land-based marine sediment as backfilling materials after mixing with cement should be explored. Marine disposal option for the land-based marine sediment should only be considered as the last resort upon exhaustion of reuse options.

6.2.2.12 Based on the chemical testing results as summarized in **Appendix 6.2**, only Category L sediment was found. A Sediment Quality Report (SQR) has been submitted to EPD and copied to the Secretary of Marine Fill Committee (MFC) for review and comments. The SQR provides an evaluation/ categorization of the sediment quality conditions based on the chemical screening test results and proposes disposal arrangement for the sediment to be generated for EPD's agreement. Nevertheless, the sediment sampling and testing conducted only serve the purpose of fulfilling the EIA Study for this Project under the EIAO. Should marine disposal of sediment be unavoidable upon exhaustion of reuse options, separate submissions should be submitted to EPD's Marine Dumping Control Section/ Territorial Control Office (TCO) when applying for the dumping permit under DASO. The rationale for sediment removal/ disposal will also need to be submitted to the MFC/ CEDD for agreement in accordance with PNAP ADV-21.

6.2.2.13 Since the approval of the SSTP, the proposed excavation area for the TCW Station and its associated facilities has been updated, and a small part of the updated excavation area to the north of Yat Tung Estate and to the west of Ma Wan Chung falls outside of the sampling grid for approximately 20m. Nevertheless, other ground investigation (GI) works were also conducted at the western section of the Project in the vicinity of the footprint of the proposed TCW Station and its associated facilities, including NEX1079-TCW-DH25, NEX1079-TCW-DH24, NEX1079-TCW-IDH06 and NEX1079-TCW-DH08, but no land-based marine sediment was encountered. The updated excavation area and locations of drillholes in the vicinity of the updated excavation area are provided in **Appendix 6.5**. Therefore, it is considered that the quality and quantity of sediment to be generated by this Project as addressed in the SQR and this section remain valid. Should marine disposal of sediment be unavoidable upon exhaustion of reuse options,

separate submissions should be submitted to EPD's Marine Dumping Control Section/ Territorial Control Office (TCO) when applying for the dumping permit under DASO. The rationale for sediment removal/ disposal will also need to be submitted to the MFC/ CEDD for agreement in accordance with PNAP ADV-21.

Chemical Waste

6.2.2.14 Materials classified as chemical waste are listed in the Waste Disposal (Chemical Waste) (General) Regulation. The main chemical waste types arising from the construction of the Project may include the following:

- Scrap batteries;
- Spent hydraulic oils and waste fuel;
- Spent lubrication oils and cleaning fluids from mechanical machinery; and
- Spent solvent from equipment cleaning activities.

6.2.2.15 Chemical waste may pose the following environmental, health and safety hazards if not stored and disposed of appropriately:

- Toxic effects to workers;
- Adverse effects on water and land from spills; and
- Fire hazards.

6.2.2.16 It is difficult to quantify the amount of chemical waste as it will be highly dependent on the Contractor's on-site maintenance practice and the quantities of plant and vehicles utilized. Nevertheless, it is anticipated that the quantity of chemical waste, such as lubricating oil and solvent produced from plant maintenance, will be in the order of few hundred litres per month.

6.2.2.17 The estimated amount of chemical waste to be generated during construction phase is summarized in **Table 6.6**.

Table 6.6 Summary of estimated amount of chemical waste to be generated during construction phase

Chemical Waste	Estimated Amount of Chemical Waste to be Generated
Scrap Batteries	A few hundred kilograms per month
Spent Hydraulic Oil and Waste Fuel	A few hundred litres per month
Spent Lubrication Oil and Cleaning Fluids	
Spent Solvent	

6.2.2.18 Mitigation measures for chemical wastes are detailed in **Section 6.2.3**. Provided that the handling, storage and disposal of chemical wastes are in accordance with these requirements, adverse environmental impacts are not expected.

General Refuse

6.2.2.19 The construction workers would generate refuse comprising of food waste, waste paper, aluminium cans and plastic bottles during the construction period.

6.2.2.20 The storage of general refuse may give rise to adverse environmental impacts. These could include water quality, odour and visual impact in the form of windblown litter. The construction site may also attract pests and vermin if the storage areas are not well maintained and cleaned regularly. In addition, disposal of waste at sites other than the approved disposal facilities could also lead to similar adverse impacts at those sites.

6.2.2.21 The exact number of work force (clerical and workers) to be employed for the Project is not available at this stage, but is anticipated to be about 800 work force at peak time for works sites/ areas at TCW and TCE. Based on the generation rate of 0.65 kg/person/day, the total refuse generated per day would be about 520 kg/day at peak time for works areas at TCW and TCE. It is estimated that approximately 540 tons of general refuse would be generated for works sites/ areas at TCW and TCE during construction phase. Summary of yearly estimated amount of general refuse to be generated during construction phase is summarized in **Table 6.7**.

Table 6.7 Summary of yearly estimated amount of general refuse to be generated during construction phase

Type of Waste	Estimated Amount of General Refuse to be Generated, tons							
	2023	2024	2025	2026	2027	2028	2029	Total
General Refuse	50	110	110	120	70	60	20	540

6.2.2.22 Mitigation measures for general refuse are detailed in **Section 6.2.3**. Provided that the mitigation measures are adopted, the potential environmental impacts caused by the storage, handling transport and disposal of general refuse are expected to be minimal, and adverse environmental impacts caused by the storage, handling transport and disposal of general refuse are not expected.

Transportation Arrangement for Waste Disposal and Import of Fill Material

6.2.2.23 Before the commencement of TCWRBP tentatively by late 2023, land transportation would be used to deliver and dispose of the waste generated to the designated disposal outlets. Approximately 140 trucks per day and 11 trucks per day for transfer of inert C&D material and non-inert C&D material respectively are anticipated.

6.2.2.24 After the commencement of TCWRBP, both land and marine transportations would be used to deliver and dispose of the waste generated to the designated disposal outlets. It is anticipated that there would be a maximum of 66 trucks per hour for waste transportation from May 2026 to December 2026 during construction phase. Approximately 600 trucks per day and 11 trucks per day for

transfer of inert C&D material and non-inert C&D material respectively are anticipated.

6.2.2.25 The tentative transportation routings for the disposal of various types of wastes generated during the construction phase before and after the completion of TCWRBP are shown in **Table 6.8** and **Table 6.9** respectively. Only Category L sediment was found at the Project Site which is suitable for Type 1 – Open Sea Disposal, subject to the agreement of EPD and MFC. MFC will determine the most appropriate disposal sites and dedicated to Project Proponent for proper disposal, and the transportation routings for the disposal of land-based marine sediment will then be proposed. The transportation routings may change subject to the actual traffic conditions of the roads. Nevertheless, no adverse environmental impacts are anticipated due to the transportation of waste with the implementation of appropriate mitigation measures (e.g. using water-tight containers and dump trucks equipped with mechanical cover).

Table 6.8 Tentative transportation routings for waste delivery and disposal during construction phase before the completion of TCWRBP

Outlet	Type of Waste	Tentative Transportation Routing
Tuen Mun Area 38 Fill Bank	Inert C&D Material	TCE (land transportation route) Via Ying Hei Road, Yi Tung Road, North Lantau Highway, Shun Long Road, TM-CLK Link, Lung Mun Road
		TCW (land transportation route) Via Yu Tung Road, North Lantau Highway, Shun Long Road, TM-CLK Link, Lung Mun Road
NENT Landfill	Non-inert C&D Material [1] and General Refuse	TCE (land transportation route) Via Ying Hei Road, Yi Tung Road, North Lantau Highway, Shun Long Road, TM-CLK Link, Lung Fu Road, Wong Chu Road, New Territories Circular Road, Heung Yuen Wai Highway, Wo Keng Shan Road
		TCW (land transportation route) Via Yu Tung Road, North Lantau Highway, Shun Long Road, TM-CLK Link, Lung Fu Road, Wong Chu Road, New Territories Circular Road, Heung Yuen Wai Highway, Wo Keng Shan Road
Chemical Waste Treatment Centre (CWTC)/ Other Licensed Facilities	Chemical Waste	TCE (land transportation route) Via Ying Hei Road, Yi Tung Road, North Lantau Highway, Lantau Link, Tsing Sha Highway, Tsing Yi Road
		TCW Via Yu Tung Road, North Lantau Highway, Lantau Link, Tsing Sha Highway, Tsing Yi Road

Note:
[1] Exclude steel which would be collected by recycler.

Table 6.9 Tentative additional transportation routings for waste delivery and disposal during construction phase after the completion of TCWRBP

Outlet	Type of Waste	Tentative Transportation Routing
Tuen Mun Area 38 Fill Bank	Inert C&D Material	TCE (marine transportation route) Via Ying Hei Road, Yi Tung Road
		TCW (marine transportation route) Via Yu Tung Road, Yi Tung Road

6.2.2.26 Fill materials are required from Year 2023 to 2025 for the construction works at TCE and in Year 2028 for the construction works at TCW. Both land and marine transportations would be used to deliver the materials from Tuen Mun Area 38 Fill Bank to the Project Site. The tentative transportation routing for the import of inert C&D materials before and after the completion of TCWRBP is shown in **Table 6.10** and **Table 6.11** respectively.

Table 6.10 Tentative transportation routing for import of inert C&D material during construction phase before the completion of TCWRBP

Fill Material Source	Type of Waste	Tentative Transportation Routing
Tuen Mun Area 38 Fill Bank	Inert C&D Material	TCE (land transportation route) Via Lung Mun Road, TM-CLK Link, Shun Long Road, North Lantau Highway, Yi Tung Road, Ying Hei Road
		TCW (land transportation route) Via Lung Mun Road, TM-CLK Link, Shun Long Road, North Lantau Highway, Yu Tung Road

Table 6.11 Tentative additional transportation routing for import of inert C&D material during construction phase after the completion of TCWRBP

Fill Material Source	Type of Waste	Tentative Transportation Routing
Tuen Mun Area 38 Fill Bank	Inert C&D Material	TCE (marine transportation route) Via Yi Tung Road, Ying Hei Road
		TCW (marine transportation route) Via Yi Tung Road, Yu Tung Road

Summary of Construction Waste

6.2.2.27 A summary of construction waste arising from the Project with total quantities of each type of construction waste to be generated, reused and disposed of as well as recommendation for outlets is presented in **Table 6.12**.

Table 6.12 Summary of total quantities for each type of waste to be generated, respective handling methods and proposed outlets during construction phase

Waste Type		Total Amount to be Generated [6]	Handling Methods/Reuse	Proposed Outlets
Inert C&D Material [1]	Soft Inert Material [3]	328,400 m^3	• Segregation from non-inert C&D materials during stockpiling • Stockpile area (if required) should be well managed with covers and water spraying system • Reusable materials should be separated and reused as far as practicable [7]	To be delivered to Tuen Mun Area 38 Fill Bank for off-site reuse
	Mixed Ground [4]	27,800 m^3		
	Rock	88,400 m^3		
	AHM [5]	11,400 m^3		
Non-inert C&D Material [2]	Top Soil	8,200 m^3	• Segregation from inert C&D materials during stockpiling • Reusable materials should be separated and recycled as far as practicable	To be delivered to NENT Landfill
	Vegetation			
	Timber	11,400 m^3		
	Steel	10 m^3		To be collected by recycler
Land-based Marine Sediment		140 m^3	• Subject to availability of suitable location and review on the backfilling method, part or all of the sediment would be reused on site • Possible methods for the reuse of sediment on site including the reuse of sediment as backfilling materials after mixing with cement would be explored • Marine disposal option for the sediment will only be considered as last resort upon exhaustion of reuse options [8]	To be determined by MFC/EPD if off-site disposal is needed
Chemical Waste [9]		A few hundred kilograms / litres per month	• Store in compatible containers in designated area on site • To be collected and recycled by licensed collectors	To be collected by a licensed chemical waste collector and disposed of at a licensed chemical waste treatment and disposal facility
General Refuse		540 tons	• Provide on-site collection points together with recycling bins • To be collected by reputable waste collectors	To be delivered to NENT Landfill
Paper, Metal, Plastic, etc.				To be collected by recycler

Note:
[1] “Inert C&D Material”, also known as public fill, includes debris, rubble, earth, concrete and TBM excavated spoil after treatment to remove the bentonite slurry which is suitable for land reclamation and site formation.
[2] “Non-inert C&D Material” involved in the Project includes top soil, vegetation, timber and steel. In contrast to public fill, non-inert waste is not suitable for land reclamation and subject to recovery of reusable/ recyclable items, is disposed of at landfills.
[3] “Soft Inert C&D Material” mainly refers to excavated soil, etc.
[4] “Mixed Ground” refers to simultaneous occurrence of two or more geological formations with different properties in rock/ soil mechanics, or the same geological formation with different weathering grades.
[5] “AHM” includes, but not limited to, broken concrete, asphalt, bitumen, granular materials, debris, and rubble, etc.
[6] The volume is in-situ volume.
[7] Geotechnical Engineering Office (Mines Division) of CEDD have been consulted on possible re-use of good quality rock generated from the Project and re-use will be considered wherever the quantity and time matching. Other projects (e.g. Tung Chung New Town Extension and Airport Authority Hong Kong projects) have also been consulted and will be considered for possible re-use of the excavated soft and rock materials from the Project subject to matching.
[8] Only Category L sediment was found at the Project Site which is suitable for Type 1 – Open Sea Disposal, subject to the agreement of EPD and MFC. MFC will determine the most appropriate disposal sites and dedicated to Project Proponent for proper disposal.
[9] Chemical waste measured by volume (litres) includes spent hydraulic oil & waste fuel, spent lubrication oil & cleaning fluids, and spent solvent. Scrap batteries are measured by weight (kilograms).

6.2.3 Mitigation Measures

6.2.3.1 The mitigation measures for construction phase are recommended based on the waste management hierarchy principles. Recommendations of good site practices, waste reduction measures as well as the waste storage, collection and transportation are described in the following sub-sections.

Good Site Practices

6.2.3.2 Adverse waste management implications are not expected, provided that good site practices are strictly implemented. The following good site practices are recommended throughout the construction activities:

- Nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;
- Training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling;
- Provision of sufficient waste disposal points and regular collection for disposal;
- Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;
- Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;
- Provision of wheel washing facilities at site exit before the trucks leave the works areas to minimize dust disturbance due to the trucks transportation to the public road network; and
- The Contractor should prepare a Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) in accordance with the ETWB TCW No. 19/2005. The WMP should be submitted to the Engineer for approval. Mitigation measures proposed in the EIA Report and the EM&A Manual should be adopted.

Waste Reduction Measures

6.2.3.3 Amount of waste generation can be significantly reduced through good management and control. Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction:

- Segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;

- Proper storage and good site practices to minimize the potential for damage and contamination of construction materials;
- Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste;
- Sort out demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.); and
- Provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.

Storage, Collection and Transportation of Waste

6.2.3.4 Storage of waste on site may induce adverse environmental implications if not properly managed. The following recommendation should be implemented to minimize the impacts:

- Non-inert C&D materials such as top soil should be handled and stored well to ensure secure containment of the materials;
- Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and
- Different locations should be designated to stockpile each material to enhance reuse.

6.2.3.5 The collection and transportation of waste from works areas to respective disposal sites as well as imported fill materials from fill bank to works areas may also induce adverse environmental impacts if not properly managed. The following recommendation should be implemented to minimize the impacts:

- Remove waste in timely manner;
- Employ the trucks with cover or enclosed containers for waste transportation;
- Obtain relevant waste disposal permits from the appropriate authorities;
- Disposal of waste should be done at licensed waste disposal facilities; and
- All dump trucks engaged on site for delivery of inert C&D material from the site to PFRFs should be equipped with GPS or equivalent system for tracking and monitoring of their travel routings and parking locations by the Contractor to prohibit illegal dumping and landfilling of materials, particularly on ecological sensitive areas in Tung Chung Valley and South Lantau. The data collected by GPS or equivalent system should be recorded properly for checking and analysis by Environmental Team (ET) and Independent Environmental Checker (IEC) whenever requested. Possible way for efficient tracking and monitoring includes real-time GPS tracking system with data accessible through internet/intranet.

6.2.3.6 In addition to the above measures, other specific mitigation measures on handling the C&D materials, land-based marine sediment, chemical waste and general refuse generated from construction phase are recommended in the following sub-sections.

C&D Material

6.2.3.7 A Construction and Demolition Material Management Plan (C&DMMP) has been prepared in accordance with Section 4.1.3 "Construction and Demolition Materials" of the Project Administration Handbook for Civil Engineering Works and will be submitted together with the EIA Report to Public Fill Committee (PFC) for approval.

6.2.3.8 Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at PFRFs areas or reclamation sites. The following mitigation measures should be implemented in handling the C&D materials:

- Carry out on-site sorting;
- Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and
- Implement a trip-ticket system for each works contract in accordance with DEVB TCW No. 06/2010 to ensure that the disposal of C&D materials is properly documented and verified.

6.2.3.9 Details of the recommended on-site sorting and reuse of C&D materials are given below:

<u>On-site Sorting of C&D Materials</u>

6.2.3.10 Storage areas would be located within the site during construction phase for temporary storage of inert C&D materials.

6.2.3.11 All C&D materials arising from the construction would be sorted on-site to recover the inert C&D materials and reusable and recyclable materials prior to disposal off-site as far as practicable. Non-inert portion of C&D materials should also be reused whenever possible and be disposal of at landfills as a last resort.

6.2.3.12 The Contractor would be responsible for devising a system to work for on-site sorting of C&D materials and promptly remove all sorted and processed material arising from the construction activities to minimize temporary stockpiling on-site. It is recommended that the system should include the identification of the source of generation, estimated quantity, arrangement for on-site sorting and/ or collection, temporary storage areas, and frequency of collection by recycling contractors or frequency of removal off-site.

Reuse of C&D Materials

6.2.3.13 The following potential measures should be explored to maximize the reuse/ recycle of C&D materials generated from the Project:

- Reuse suitable inert C&D materials on-site as far as practicable;
- Reuse suitable excavated rock by reworking at approved quarries (e.g. crushed as aggregates);
- Sorting of demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (e.g. soil, broken concrete, metal); and
- Protect recyclable material to keep it in usable condition.

6.2.3.14 Geotechnical Engineering Office (Mines Division) of CEDD have been consulted on possible re-use of good quality rock generated from the Project and re-use will be considered wherever the quantity and time matching. Other projects (e.g. Tung Chung New Town Extension and Airport Authority Hong Kong projects) have also been consulted and will be considered for possible re-use of the excavated soft and rock materials from the Project subject to matching.

Specification of Inert C&D Materials to be Delivered Off-site

6.2.3.15 In case there are surplus inert C&D materials generated in the Project and are required to be delivered to the PFRFs, the inert C&D materials should fulfil the following requirements:

- Reclaimed asphalt pavement should not be mixed with other materials when delivered to the PFRFs;
- Moisture content of inert C&D materials should be lowered to 25% max. when delivered to the PFRFs;
- Inert C&D materials delivered to the PFRFs should be of a size less than 250mm; and
- Inert construction waste should not be in liquid form such that it can be contained and delivered by dump truck instead of tanker truck. Inert C&D materials in liquid form should be solidified before delivering to the PFRFs.

6.2.3.16 Nevertheless, the acceptance criteria of inert C&D materials to PFRFs are subject to the fill management authority of CEDD.

Use of Standard Formwork and Planning of Construction Materials Purchasing

6.2.3.17 Standard formwork should also be used as far as practicable in order to minimize the arising of non-inert C&D materials. The use of more durable formwork (e.g. metal hoarding) or plastic facing should be encouraged in order to enhance the possibility of recycling. The purchasing of construction materials should be carefully planned in order to avoid over ordering and wastage.

Land-based Marine Sediment

6.2.3.18 Excavated land-based marine sediment should be reused as far as possible within the Project Site before considering disposal. Subject to availability of suitable location and review on the backfilling method, part or all of the land-based marine sediment would be reused on site. Possible methods for the reuse of land-based marine sediment on site including the reuse of land-based marine sediment as backfilling materials after mixing with cement should be explored. The criteria for reuse of treated sediments are proposed with reference to the Unconfined Compressive Strength (UCS) and the Universal Treatment Standards (UTS), which specify the Toxicity Characteristics Leaching Procedure (TCLP) test limits as given in Section 4.1 and Table 4.6 of the Practice Guide for Investigation and Remediation of Contaminated Land.

6.2.3.19 Marine disposal option for the land-based marine sediment should only be considered as the last resort upon exhaustion of reuse options. Only Category L sediment was found at the Project Site which is suitable for Type 1 – Open Sea Disposal, subject to the agreement of EPD and MFC. MFC will determine the most appropriate disposal sites and dedicated to Project Proponent for proper disposal in case off-site disposal is unavoidable. Possible mitigation measures to handle the sediment are summarized as follows:

- All construction plant and equipment shall be designed and maintained to minimise the risk of sediments being released into the water column or deposited in the locations other than designated location.
- All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to minimise that undue turbidity is not generated by turbulence from vessel movement or propeller wash.
- Adequate freeboard shall be maintained on barges to ensure that decks are not washed by wave action.

6.2.3.20 The Contractor shall monitor all vessels transporting the excavated sediment to ensure that no dumping outside the approved location takes place. The Contractor shall keep and produce logs and other records to demonstrate compliance and that journeys are consistent with designated locations and copies of such records shall be submitted to the Engineers.

- The Contractor shall comply with the conditions in the dumping permit issued under the Dumping at Sea Ordinance.
- All bottom dumping vessels (hopper barges) shall be fitted with tight fittings seals to their bottom openings to prevent leakage of material.
- The excavated sediment shall be placed into the disposal pit by bottom dumping.

- Discharge shall be undertaken rapidly and the hoppers shall be closed immediately. Sediment adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site.

6.2.3.21 If mixing of land-based marine sediment with cement is to be used for backfilling on-site, the following mitigation measures should be followed:

- The loading, unloading, handling, transfer or storage of bulk cement should be carried out in an enclosed system as far as practicable.
- Mixing process and other associated material handling activities should be properly scheduled to minimise potential noise impact and dust emission.
- The mixing facilities should be sited as far apart as practicable from the nearby noise sensitive receivers and be sited under covers to minimise dust nuisance to the nearby receivers.

Chemical Waste

6.2.3.22 For those processes which generated chemical waste, it may be possible to find alternatives to eliminate the use of chemicals, to reduce the generation quantities or to select a chemical type of less impact on environment, health and safety as far as possible. Wherever possible, opportunities for the reuse and recycling of materials will be taken.

6.2.3.23 If chemical wastes are produced at the construction site, the contractors should register with EPD as chemical waste producers. Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published by the EPD. Chemical waste should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the CWTC, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.

General Refuse

6.2.3.24 General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a regular basis. Arrangements should be made with the recycling companies to collect the recycle waste as required. It is expected that such arrangements would minimize potential environmental impacts.

6.2.3.25 The Contractor should implement an education programme for workers relating to avoiding, reducing, reusing and recycling general waste. Participation in a local collection scheme should be considered by the Contractor to facilitate waste reduction.

6.2.4 Residual Waste Management Implications

6.2.4.1 With the implementation of recommended mitigation measures, adverse residual waste management implications and impacts on potential hazard, air and odour emissions, noise, wastewater discharge and public transport caused by handling (including stockpiling, labelling, packaging & storage), collection, transportation and reuse/ disposal of different types of waste are not anticipated for the construction phase.

6.3 Operational Phase

6.3.1 Assessment Methodology

General

6.3.1.1 The assessment of waste management implications has been undertaken in accordance with Annexes 7 and 15 of the EIAO-TM and the EIA Study Brief No. ESB-329/2020. The waste management hierarchy comprising avoidance, minimization, recycling/ reuse, treatment and disposal has also been adopted for the assessment.

Proposal for Waste Management

6.3.1.2 Prior to considering the disposal options for various types of wastes, opportunities for reducing waste generation, on-site or off-site reuse and recycling have been evaluated. After considering the opportunities for reducing waste generation and maximizing reuse, the types and quantities of the remaining wastes required to be disposed of have been estimated and the disposal options for each type of wastes have been described. The potential environmental impacts from the management of wastes have been assessed and relevant mitigation measures have been proposed.

6.3.2 Identification and Evaluation of Waste Management Implications

General

6.3.2.1 The operation of the Project would generate the following categories of wastes:

- Municipal solid waste; and
- Chemical waste.

Municipal Solid Waste

6.3.2.2 General refuse would arise from the public, station employees and commercial operators within the stations and the maintenance of the stations, tracks and EAP/EEP. The storage and handling of these wastes may cause adverse environmental impacts. The amount of general refuse that would arise during operation phase of the project cannot be confirmed at this stage since it would be subject to operational needs and the number of passengers, staff and any commercial operators in the future. The estimated number of staff would be around 200, subject to operational need in the future. However, taking reference from other MTR stations, it is anticipated that approximately a hundred kg of general refuse per day would be generated during operation phase, while the railway maintenance activities will generate a few hundred kg of waste per month, subject to further review. The general refuse and waste from railway maintenance activities would include food, paper, wood, plastic, office waste, metal containers, scrap materials, etc. Therefore, the total quantity of municipal solid waste to be generated will not be significant.

Chemical Waste

6.3.2.3 Maintenance of the stations, tracks and EAP/EEP would generate chemical waste including used fluorescent tubes, cleansing materials and discarded electronic equipment. In addition, lubricants, paints, used batteries, mineral oil, coolants, and solvents would be generated during the operational phase. These wastes may pose adverse environmental, health and safety hazard if not properly managed. Considering the maximum quantity of chemical waste to be generated during the operational phase would be a few hundred litres per month, subject to future operational needs, no adverse environmental impact is anticipated with proper storage, handling and disposal of this waste.

6.3.3 Mitigation Measures

Municipal Solid Waste

6.3.3.1 Recycling of waste paper, aluminium cans and plastic bottles should be encouraged. It is recommended to place clearly labelled recycling bins at designated locations which could be accessed conveniently. Scrap materials from railway maintenance activities should be sorted out and recovered for their resalable value as far as practicable. Routine cleaning for these areas should also be implemented to keep areas clean. General refuse should be separated from chemical waste by providing separated bins for storage to maximize the recyclable volume as far as practicable.

6.3.3.2 A reputable waste collector should be employed to remove municipal solid waste regularly to minimize odour, pest and litter impacts. Arrangements should be made

with the recycling companies to collect the recycle waste as required. It is expected that such arrangements would minimize potential environmental impacts.

Chemical Waste

6.3.3.3 For those processes which generated chemical waste, it may be possible to find alternatives to eliminate the use of chemicals, to reduce the generation quantities or to select a chemical type of less impact on environment, health and safety as far as possible. Wherever possible, opportunities for the reuse and recycling of materials will be taken. Subject to operational needs, if chemical waste is to be produced, MTRC shall register with EPD as chemical waste producers as appropriate in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.

6.3.3.4 The requirements given in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes should be followed, where applicable, in handling of these chemical wastes. A trip-ticket system should be operated in accordance with the Waste Disposal (Chemical Waste) (General) Regulation to monitor all movements of chemical wastes which will be collected by a licensed collector to a licensed facility for final treatment and disposal.

6.3.3.5 Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately.

6.3.3.6 Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidising, irritant, toxic, harmful, corrosive, etc.

6.3.3.7 Chemical waste (e.g. spent lubricant oil, used fluorescent tubes) should be collected and disposed of at appropriate facility like CWTC by licensed collectors.

6.3.4 Residual Waste Management Implications

6.3.4.1 With the implementation of recommended mitigation measures, adverse residual waste management implications and impacts on potential hazard, air and odour emissions, noise, wastewater discharge and public transport caused by handling (including stockpiling, labelling, packaging & storage), collection, transportation and reuse/ disposal of different types of waste are not anticipated for the operational phase.

6.4 Conclusion

6.4.1 Construction Phase

6.4.1.1 Potential waste management implications from the generation of waste during the construction phase have been evaluated. Measures, including the opportunity for on-site sorting, reusing C&D materials etc., are devised in the construction

methodology to minimize the surplus materials to be disposed. Recommendations have been made for implementation by the Contractor during the construction period to minimize waste generation and off-site disposal.

6.4.2 Operational Phase

6.4.2.1 Potential waste management implications from the generation of waste during the operational phase have been evaluated. Recommendations have been made to ensure proper treatment and disposal of these wastes.