6 WASTE MANAGEMENT IMPLICATIONS

6.1 INTRODUCTION

6.1.1 This *Section* identifies the potential wastes arising from the construction of the Project and evaluates the potential environmental impacts associated with the storage, handling, transportation and disposal of the wastes. Waste is not expected to be generated during the operation phase of the Project.

6.2 LEGISLATIONS, STANDARDS AND GUIDELINES

6.2.1 The criteria for evaluating waste management implications are stated in *Annex 7* of the *EIAO-TM*. *Annex 15* of the *EIAO-TM* prescribes the general approach and methodology for assessing the waste management implications caused by a project or proposal.

6.2.2 The following legislations relate to the handling, treatment and disposal of wastes in Hong Kong and are used in assessing potential impacts related to waste management of the Project implications:

- Waste Disposal Ordinance (CAP.354);
- Waste Disposal (Chemical Waste) (General) Regulation (CAP.354C);
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation (CAP.354N);
- Land (Miscellaneous Provisions) Ordinance (CAP.28); and
- Public Health and Municipal Services Ordinance (CAP.132) - Public Cleansing and Prevention of Nuisances Regulation;

Waste Disposal Ordinance (WDO) (CAP.354)

6.2.3 The *WDO* prohibits the unauthorised disposal of wastes, with waste defined as any substance or article which is abandoned. Under the *WDO*, wastes can only be disposed of at licensed waste disposal facilities licensed by Environmental Protection Department (EPD).

Waste Disposal (Charges for Disposal of Construction Waste) Regulation (CAP.354N)

6.2.4 The *Waste Disposal (Charges for Disposal of Construction Waste) Regulation* defined construction waste as any substance, matters or things that is generated from construction work and abandoned, whether or not it has been processed or stockpiled before being abandoned, but does not include any sludge, screening, or matter removed in or generated from any desludging, desilting or dredging works.

6.2.5 Depending on the percentage of inert materials in the material, construction waste can be disposed of at public fill reception facilities, construction waste sorting facilities, landfills and outlying islands transfer facilities, where differing disposal costs would be applied. This scheme encourages waste reduction and hence minimise the costs of the Contractor or Project Proponent.

6.2.6 **Table 6.1** summarises the Government waste disposal facilities for construction waste.

Table 6.1 Government Waste Disposal Facilities for Construction Waste

Government Waste Disposal Facilities	Type of Construction Waste Accepted
Public fill reception facilities	Consisting entirely of inert construction waste [(a)]
Sorting facilities	Containing more than 50% by weight of inert construction waste [(a)]
Landfills [(b)]	Containing not more than 50% by weight of inert construction waste [(a)]
Outlying Islands Transfer Facilities [(b)]	Containing any percentage of inert construction waste [(a)]

Notes:

(a) Inert construction waste means rock, rubble, boulder, earth, soil, sand, concrete, asphalt, brick, tile, masonry or used bentonite.

(b) If a load of waste contains construction waste and other wastes, that load will be regarded as consisting entirely of construction waste for the purpose of calculating the applicable charge.

Waste Disposal (Chemical Waste) (General) Regulation (CAP.354C)

6.2.7 Chemical waste as defined under the *Waste Disposal (Chemical Waste) (General) Regulation* includes any substance being scrap material, or unwanted substances specified under Schedule 1 of the Regulation, if such a substance or chemical occurs in such a form, quantity or concentration so as to cause pollution or constitute a danger to health or risk of pollution to the environment.

6.2.8 Chemical waste producers shall register with the EPD. Any person who contravenes this requirement commits an offence and is liable to a fine and imprisonment. Producers of chemical wastes must treat their wastes, utilising on-site plants licensed by the EPD or have a licensed collector take the wastes to a licensed facility. For each consignment of wastes, the waste producer, collector and disposer of the wastes must sign all relevant parts of a computerised trip ticket. The system is designed to allow the transfer of wastes to be traced from cradle-to-grave.

6.2.9 The *Regulation* prescribes the storage facilities to be provided on site including labelling and warning signs. To minimise the risks of pollution and danger to human health or life, the waste producer is required to prepare and make available written procedures to be observed in the case of emergencies due to spillage, leakage or accidents arising from the storage of chemical wastes. He/she must also provide employees with training in such procedures.

Land (Miscellaneous Provisions) Ordinance (CAP.28)

6.2.10 The inert portion of construction waste [(1)] (also called public fill) may be taken to public fill reception facilities. Public fill reception facilities are operated by the Civil Engineering and Development Department (CEDD). The *Land (Miscellaneous Provisions) Ordinance* requires that individuals or companies who deliver public fill to the public fill reception facilities to obtain Dumping Licences. The licences are issued by the CEDD under delegated authority from the Director of Lands.

6.2.11 Under the licence conditions, public fill reception facilities will only accept inert earth, soil, sand, rock, boulder, rubble, brick, tile, concrete, asphalt, masonry or used bentonite. In addition, in accordance with paragraph 11 of *Development Bureau (DevB) Technical Circular (Works) (DevB TC(W)) No.6/2010)*, the Public Fill Committee will advise on the acceptance criteria (eg

(1) "Construction waste" refers to materials arising from any land excavation or formation, civil/building construction, road works, building renovation or demolition activities. It includes various types of reusable materials, building debris, rubble, earth, concrete, timber and mixed site clearance materials. When sorted properly, materials suitable for land reclamation and site formation (known as public fill) should be reused at public fill reception facilities. The rock and concrete can be crushed and processed to produce aggregates for various civil and building engineering applications. The remaining construction waste (comprising timber, paper, plastics, and general refuse) are to be disposed of at landfills.

no mixing of construction waste, nominal size of the materials less than 250mm, etc.). The material should, however, be free from marine mud, household refuse, plastic, metal, industrial and chemical wastes, animal and vegetable matter and any other materials considered unsuitable by the public fill reception facility.

Public Cleansing and Prevention of Nuisances Regulation (CAP.132)

6.2.12 This *Regulation* provides further control on the illegal dumping of wastes on unauthorised (unlicensed) sites. The illegal dumping of wastes can lead to a fine and/or imprisonment.

Other Relevant Guidelines and Documents

6.2.13 Other relevant guidelines/ circulars applicable to waste management and disposal for this Project include:

- Works Branch Technical Circular (WBTC) No.2/93, Public Dumps;
- WBTC No.2/93B, Public Filling Facilities;
- WBTC Nos.4/98 and 4/98A, Use of Public Fill in Reclamation and Earth Filling Projects;
- WBTC No.12/2000, Fill Management;
- WBTC No.19/2001, Metallic Site Hoardings and Signboards;
- WBTC No.12/2002, Specification Facilitating the Use of Recycled Aggregates;
- ETWB TC(W) No.19/2005, Environmental Management on Construction Sites;
- Development Bureau Technical Circular (Works) (DEVB TC(W)) No. 6/2010, Trip Ticket System for Disposal of Construction and Demolition Materials;
- DEVB TC(W) No.8/2010, Enhanced Specification for Site Cleanliness and Tidiness;
- DEVB TC(W) No.2/2011, Encouraging the Use of Recycled and other Green Materials in Public Works Projects;
- DEVB TC(W) No.9/2011, Enhanced Control Measures for Management of Public Fill;
- CEDD TC No.11/2019, Management of Construction and Demolition Materials;
- Project Administration Handbook (PAH) for Civil Engineering Works (2020 Edition), Section 4.1.3 of Chapter 4 – Management of Construction and Demolition Material Including Rock;
- Hong Kong Planning Standards and Guidelines, Chapter 9 (Section 6 – Waste Management); and
- Code of Practice on the Packaging, Labelling and Storage of Chemical Waste.

6.2.14 In accordance with policies relating to construction and demolition (C&D) materials disposal documented in the WBTC No.2/93 Public Dumps, inert C&D materials (i.e., public fill) should be transported to Public Fill Reception Facilities (PFRFs) instead of disposing of at landfill. According to *The Land (Miscellaneous Provisions) Ordinance*, individuals or companies delivering public fill to PFRFs are required to hold dumping licences issued under delegated powers from the Director of Lands.

6.2.15 Under DevB TCW No.6/2010 Trip Ticket System for Disposal of Construction and Demolition Materials, for all contracts that are expected to generate inert C&D materials requiring disposal from site, the project office shall write to the Public Fill Committee (PFC) through Secretary of the PFC to request a designated disposal ground for incorporation into the tender documents. For contracts where the estimated amount of non-inert C&D materials requiring disposal at landfill facilities equals to or exceeds 50m^3, the project office shall seek confirmation from the Director of Environmental Protection (DEP) in terms of the availability of landfill facilities for disposal of such materials and the DEP will designate landfill facilities, if available, for the contracts. For contracts where the estimated amount of non-inert C&D materials to be

generated from the contract is less than 50m^3, the project office is not required to apply to DEP for designated landfill facilities but it should still specify in the tender documents of the appropriate landfill facilities for disposal.

6.2.16 Under Section 4.1.3 of Chapter 4 of PAH for Civil Engineering Works (2020 Edition), measures have been introduced to enhance the management of C&D materials, and to minimise its generation at source. The enhancement measures include:

- Drawing up a Construction and Demolition Materials Management Plan (C&DMMP) at an early design stage to minimise C&D materials generation and to encourage proper management of such materials;
- Vetting of the C&DMMP prior to upgrading of the project to Category A in the Public Works Programme; and
- Providing the contractor with information from the C&DMMP in order to facilitate the preparation of Waste Management Plan (WMP) and to minimise C&D materials generation during construction.

6.2.17 The ETWB TCW No.19/2005 Environmental Management on Construction Sites introduces additional measures to enhance waste management on construction sites. The circular sets out the policies and procedures that require the contractors to prepare and implement an Environmental Management Plan (EMP), which includes the WMP to encourage on-site sorting of C&D materials and to minimise generation of C&D materials during the course of construction.

6.3 EXPECTED WASTE ARISING DURING THE CONSTRUCTION PHASE

6.3.1 The types of wastes expected to be generated during the construction phase include:

- C&D materials;
- Chemical waste; and
- General refuse.

No dredged sediment or excavated sediment would be generated during the construction of the Project.

C&D Materials

6.3.2 C&D materials will be generated from different construction works of the Project, including site clearance, minor slope and excavation works, as well as piling and superstructure works. The C&D materials would comprise both inert C&D materials (i.e. excavated soil, rock, broken concrete) and non-inert C&D materials (i.e. vegetation, wood, plastics, packaging materials, etc). Earthworks such as slope works and external lateral support (ELS) works would be carried out in phases throughout the construction period to avoid generation of large quantity of excavated materials in short period of time. Excavated materials generated would be stored temporarily on site and used for subsequent backfilling as far as possible. No barging point or conveyor system would be used during the construction of the Project.

6.3.3 Based on the latest construction scheme, it is estimated that a total of 59,378m^3 of C&D materials will be generated during the construction phase. A summary the estimated generation of the C&D materials is provided in **Table 6.2**. It should be noted that these quantities are initial estimates only and would require further review by the Contractor.

Table 6.2 Summary of Estimated Generation of C&D Materials during Construction Phase

Type of C&D Materials		Volume (m^3)
Inert C&D materials	On-site reuse (e.g. backfilling)	25,360
	Disposed of at public fill reception facilities	28,328
	Sub-total:	53,688
Non-inert C&D materials		5,690
	Total:	**59,378**

6.3.4 The C&D materials generated on site will be sorted into inert portion (i.e. public fill comprising excavated soil, rock and broken concrete) and non-inert portion (i.e. construction waste comprising vegetation, wood, plastics, packaging materials, etc).

6.3.5 It is estimated that a total of 53,688m^3 of inert C&D materials will be generated during the construction phase. As shown in **Table 6.2**, a significant amount of inert C&D materials generated could be reused on site for backfilling (i.e. 25,360m^3), while the remaining surplus inert C&D materials (i.e. 28,328m^3) will require off-site disposal. The surplus inert C&D materials will be delivered to the public fill reception facilities (i.e. Tuen Mun Area 38 Fill Bank) for subsequent reuse by other construction projects.

6.3.6 It is estimated that a total of 5,690m^3 of non-inert C&D materials will be generated during the construction phase. Recyclables from non-inert C&D materials, such as plastics and packaging materials, will be segregated on site for recycling as far as practicable. The non-inert C&D materials will be delivered to landfills (i.e. North East New Territories Landfill (NENT) or the proposed NENT extension) for disposal, while the recyclables will be sent to the recyclers for recycling.

6.3.7 In view of the relatively small quantity of C&D materials to be disposed off-site (i.e. 34,018m^3), it is not expected that the disposal of the anticipated quantity of C&D materials to the public filling reception facilities and landfills will cause adverse impact to the operation of these facilities.

6.3.8 The inert C&D materials will primarily be generated when conducting ELS and slope works, which are anticipated to last for about 45 months during the construction phase. With an estimated 28,328m^3 of surplus inert C&D materials to be generated from the Project, about 5 truck trips per day will be required to deliver the surplus inert C&D materials to the public filling reception facilities during the construction phase. The non-inert C&D materials may be generated any time throughout the construction phase (i.e. 72 months). With an estimated 5,690m^3 of non-inert C&D materials to be generated from the Project, about 1 truck trip per day will be required to deliver the non-inert C&D materials to landfills or recyclers during the construction phase. In view of the limited truck trips required, adverse environmental impact (including potential hazard, air and odour emissions, noise and wastewater discharge) or public transport impact arising from handling, collection, transportation and reuse/ disposal of C&D materials is not anticipated with the implementation of good construction site practices.

Chemical Waste

6.3.9 Chemical waste, as defined under the *Waste Disposal (Chemical Waste) (General) Regulation*, includes any unwanted substances specified under Schedule 1 of the Regulation. Substances likely to be generated from the construction works of the Project will include:

- Used paint, engine oils, hydraulic fluids and waste fuel;
- Spent mineral oils/cleaning fluids from mechanical machinery; and
- Spent solvents/solutions from equipment cleaning activities.

6.3.10 Chemical wastes will pose environmental, health and safety hazards if not stored and disposed of in an appropriate manner as outlined in the *Waste Disposal (Chemical Waste) (General) Regulation* and the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*. These hazards may include:

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

6.3.11 Chemical waste may be generated any time throughout the construction phase of the Project (i.e. 72 months). The amount of chemical waste that will arise from the construction activities will be highly dependent on the Contractor's on-site maintenance activities and the quantity of plant and equipment utilised. With respect to the scale of the construction activities, it is anticipated that the quantity of chemical waste to be generated will be small (less than a few hundred litres per month). The chemical waste will be properly stored on site and will be collected by licensed chemical waste collectors regularly (about 1-2 trucks per month) for disposal at the licensed chemical waste treatment facilities (i.e. Chemical Waste Treatment Centre (CWTC) in Tsing Yi).

6.3.12 With the incorporation of suitable arrangements for the storage, handling, transportation and disposal of chemical wastes under the requirements stated in the *Waste Disposal (Chemical Waste) (General) Regulation* and the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*, adverse environmental impact (including potential hazard, air and odour emissions, noise and wastewater discharge) or public transport impact arising from the handling, collection, transportation and disposal of chemical waste is not anticipated.

General Refuse

6.3.13 The presence of a construction site with workers and associate site office will result in the generation of general refuse (mainly consists of food waste, plastic bottles, aluminium cans and waste paper) which requires off-site disposal. The storage of general refuse has the potential to give rise to adverse environmental impacts, if not properly managed. These include odour if the waste is not collected frequently, windblown litter and visual impact.

6.3.14 It is estimated that a maximum of about 350 construction workers will be working on site at any one time during the construction phase of the Project. With a general refuse generation rate of 0.65 kg per worker per day, the maximum amount of general refuse to be generated will be about 227.5kg per day. General refuse will be produced any time throughout the construction phase of the Project (i.e. 72 months).

6.3.15 In order to reduce the quantity of general refuse to be disposed of at landfill, recyclable materials (i.e. paper, plastic bottles, glass bottles and aluminium cans) will be segregated on site for off-site recycling. Adequate number of enclosed waste containers will be provided to facilitate on-site segregation and to avoid over-spillage of waste and/ or recyclable materials.

6.3.16 The non-recyclable refuse will be placed in bags and stored in enclosed containers, and disposed of at the landfills (i.e. NENT or proposed NENT extension) on a daily basis (1 truck trip per day). The recyclables collected will also be sent to the recyclers regularly for off-site recycling. Given that the quantity of general refuse to be disposed of at landfill is small, no adverse impact on the operation of the landfill is anticipated.

6.3.17 With the implementation of the mitigation measures recommended in **Section 6.5**, adverse environmental impacts (including potential hazard, air and odour emissions, noise and wastewater discharge) caused by handling, collection, transportation and reuse/ disposal of general refuse are not expected. Also, as the off-site disposal of the general refuse is estimated to only generate 1 truck per day, there will be no adverse impact on the local traffic and public transport.

6.4 EXPECTED WASTE ARISING DURING THE OPERATION PHASE

6.4.1 No waste is expected to be generated during the operation phase of the Project. Waste management issues are not expected during the operation of the Project and thus there would be no adverse environmental impacts during the operation phase.

6.5 MITIGATION MEASURES

Waste Management Hierarchy

6.5.1 The various waste management options are categorised in terms of preference from an environmental viewpoint. The options considered to be most preferable have the least environmental impacts and are more sustainable in the long term. The hierarchy is as follows:

- Avoidance and reduction;
- Re-use of materials;
- Recovery and recycling; and
- Treatment and disposal.

6.5.2 The above hierarchy is used to evaluate and select waste management options. The aim is to reduce waste generation and reduce waste handling and disposal costs.

6.5.3 The Contractor will consult the relevant authorities for the final disposal of wastes and, as appropriate, implement the good site practices and mitigation measures recommended in this EIA Report and those given below.

- Nomination of approved personnel to be responsible for 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 proper waste management and chemical handling procedures;
- Provision of sufficient waste disposal points and regular collection for disposal;
- Appropriate measures to reduce windblown/ floating litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;
- Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Centre; and
- A recording system for the amount of wastes generated, recycled and disposed of and the disposal sites.

<u>Waste Reduction Measures</u>

6.5.4 Good management and control can prevent the generation of significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:

- Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance re-use or recycling of waste materials and their proper disposal;
- Encourage collection of aluminium cans and waste paper by individual collectors during construction with separate labelled bins provided to segregate these wastes from other general refuse by the workforce;
- Any unused chemicals, and those with remaining functional capacity, be recycled as far as possible;
- Use of reusable non-timber formwork to reduce the amount of C&D materials;
- Prior to disposal of C&D materials, wood, steel and other metals will be separated, to the extent practical for re-use and/or recycling to reduce the quantity of waste to be disposed in a landfill;
- Proper storage and site practices to reduce the potential for damage or contamination of construction materials; and

- Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste.

Construction Phase

6.5.5 The assessment indicates that with the implementation of the waste management practices at the construction work site, no adverse environmental impacts are envisaged for the handling, collection and disposal of waste arising during the construction phase of the Project.

6.5.6 This *Section* further describes the good construction site practices to avoid or further reduce the potential environmental impacts associated with the handling, collection and disposal of C&D materials, chemical waste and general refuse arising from the construction works.

6.5.7 The Contractor must ensure that all the necessary waste disposal permits or licences are obtained prior to the commencement of the construction works.

Management of Waste Disposal

6.5.8 The Contractor will open a billing account with the EPD in accordance with the *Waste Disposal (Charges for Disposal of Construction Waste) Regulation*. Every construction waste or public fill load to be transferred to Government waste disposal facilities (e.g. public fill reception facilities, sorting facilities and landfills) will be provided with a valid "chit" which contains the information of the account holder to facilitate waste transaction recording and billing to the waste producer. A trip-ticket system will also be established in accordance with *DevB TC(W) No. 6/2010* to monitor the disposal of construction waste at landfill and to control fly-tipping. In addition, all dump trucks should be equipped with GPS or equivalent system for monitoring of their transportation routes and parking locations to prohibit illegal dumping and landfilling of C&D materials. The Contractor should maintain a recording system to record the amount of C&D materials generated, recycled and disposed of at the disposal sites as well as the transportation routing and parking locations of the dump trucks. The trip-ticket system and the abovementioned recording system will be included as part of the contractual requirements and implemented by the Contractor(s).

6.5.9 Recyclables (e.g. plastics, cardboard) generated during the construction phase will be segregated and sent to recycler for recycling as far as practicable.

6.5.10 As per recommendation under *ETWB TC(W) No. 19/2005*, a WMP, with details of the amount of waste generated, recycled and disposed of (including the disposal sites), will be established and implemented during the construction phase as part of the EMP. The Contractor will be required to prepare the EMP and submit it to the Engineer under the Contract for approval prior to implementation.

Measures for Reduction of C&D Materials

6.5.11 C&D materials will be segregated on-site into public fill and non-inert C&D materials and stored in different containers or skips to facilitate re-use of the public fill and proper disposal of the non-inert C&D materials. Specific areas within the construction sites will be designated for such segregation and storage, if immediate re-use is not practicable. Prefabrication will be adopted as far as practicable to reduce the C&D materials arising.

Measures for Management of Chemical Waste

6.5.12 The Contractor will register as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the *Code of Practice on the Packaging, Handling and Storage of Chemical Wastes* as listed below.

6.5.13 Containers used for storage of chemical wastes will:

- Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;

- Have a capacity of less than 450L unless the specifications have been approved by the EPD; and
- Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.

6.5.14 The storage area for chemical wastes will:

- Be clearly labelled and used solely for the storage of chemical waste;
- Be enclosed on at least 3 sides;
- Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;
- Have adequate ventilation;
- Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and
- Be arranged so that incompatible materials are appropriately separated.

6.5.15 Chemical waste will be disposed of:

- Via a licensed waste collector; and
- To a facility licensed to receive chemical waste, such as the CWTC which also offers a chemical waste collection service, and can supply the necessary chemical waste storage containers.

Measures for Management of General Refuse

6.5.16 General refuse will be stored in enclosed bins separately from C&D materials and chemical wastes. General refuse will be delivered separately from C&D materials and chemical wastes for offsite disposal on a daily basis to reduce odour, pest and litter impacts.

6.5.17 Recycling bins will be provided at strategic locations within the construction site to facilitate recovery of recyclable materials (including aluminium can, waste paper, glass bottles and plastic bottles) from the construction site. Materials recovered will be sold for recycling.

Staff Training

6.5.18 At the commencement of the construction works, training will be provided to workers on the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, re-use and recycling.

6.6 RESIDUAL IMPACT

6.6.1 No residual environmental impact related to waste management is envisaged during the construction and operation phases of the Project.

6.7 ENVIRONMENTAL MONITORING AND AUDIT

Construction Phase

6.7.1 It is recommended that regular site inspections of the waste management practices would be carried out during the construction phase to determine if wastes are being managed in accordance with the recommended good site practices and WMP. The site inspections will investigate all aspects of waste management including waste generation, storage, handling, recycling, transportation and disposal.

Operation Phase

6.7.2 Monitoring and audit related waste management is not required during the operation phase of the Project.

6.8 CONCLUSION

6.8.1 With the implementation of good site practices, adverse environmental impact (potential hazard, air and odour emissions, noise and wastewater discharge) arising from the management and disposal of waste during the construction phase is not anticipated. Adverse impact relating to waste management during the operation phase is also not anticipated as no waste is expected to be generated due to the operation of the Project.

6.8.2 The estimated waste arising and recommended waste management arrangements during the construction phase of the Project are summarised in **Table 6.3**.

Table 6.3 Summary of Estimated Waste Arising and Recommended Waste Management Arrangements during Construction Phase

Type of Waste	Waste Generated	Approximate Quantity and Timing of Generation	Waste Management Arrangements	Tentative Transportation Routings to Disposal Sites
C&D materials	Inert C&D materials (e.g. excavated soil, rock, broken concrete	53,688m^3 (2025 to 2029)	• On-site reuse for backfilling: 25,360m^3 • Sent to public fill reception facilities (i.e. Tuen Mun Area 38 Fill Bank): 28,328m^3	Via Fanling Highway, San Tin Highway, Yuen Long Highway, Tuen Mun Road, Wong Chu Road, Lung Fu Road, Lung Mun Road
	Non-inert C&D materials (e.g. vegetation, wood, plastics, cardboard)	5,690m^3 (2025 to 2030)	• On-site segregation and off-site recycling for recyclables • Disposed of at landfill sites for non-recyclables (i.e. NENT landfill or proposed NENT extension)	Via San Wan Road, Fanling Highway, Lung Shan Tunnel, Wo Keng Shan Road
Chemical waste	Cleaning fluids, solvents and lubrication oil from construction plant and equipment	Few hundred litres per month (2025 to 2030)	• Disposed of at CWTC or other licensed chemical waste treatment facilities	Via Fanling Highway, San Tin Highway, Tsing Long Highway, Tsing Sha Highway, Tsing Yi Road
General refuse	Food waste, plastic bottles, aluminium cans and waste papers from construction workers	227.5kg/day (2025 to 2030)	• On-site segregation and off-site recycling for recyclables • Disposed of at landfill sites for non-recyclables (i.e. NENT landfill or proposed NENT extension)	Via San Wan Road, Fanling Highway, Lung Shan Tunnel, Wo Keng Shan Road