

ENVIRONMENTAL PROTECTION DEPARTMENT

Development of Integrated Waste Management Facilities Phase 2

Project Profile

January 2022

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1 BASIC INFORMATION

1.1 Project Title

1.1.1 Development of Integrated Waste Management Facilities Phase 2 (hereinafter named as “the Project”).

1.2 Purpose and Nature of the Project

Background

- 1.2.1 The Government promulgated the “Waste Blueprint for Hong Kong 2035” (the Waste Blueprint) in February 2021, advocating the vision of “Waste Reduction · Resources Circulation · Zero Landfill”. The Waste Blueprint sets out targets for per capita municipal solid waste (MSW) disposal and recovery rate, and the goal of developing adequate waste-to-energy (WtE) facilities, with the aim to move away from the reliance on landfills for MSW disposal by 2035.
- 1.2.2 The Government also announced in October 2021 “Hong Kong’s Climate Action Plan 2050” (the Climate Action Plan), setting out the vision of “Zero-carbon Emissions · Liveable City · Sustainable Development” and outlining four major decarbonisation strategies and measures, namely net-zero electricity generation, energy saving and green buildings, green transport and waste reduction, for achieving carbon neutrality.
- 1.2.3 As set out in the Waste Blueprint and the Climate Action Plan, development of more advanced waste-to-energy facilities is an important strategy to phase out landfilling for MSW disposal in order to reduce carbon emissions and turn waste into electricity. To move away from the reliance on landfills for MSW disposal by around 2035 and to achieve carbon neutrality in waste management before 2050, the Government is not only committed to promoting waste reduction and various means of recycling, but also developing sufficient WtE facilities with a view to transforming unavoidable and non-recyclable MSW into resources comprehensively.
- 1.2.4 The Integrated Waste Management Facilities Phase 1, I·PARK1, which is now being built near Shek Kwu Chau, will be the first WtE facility that adopts advanced incineration technology to treat MSW in Hong Kong. I·PARK1 is targeted for commissioning in 2025 with a treatment capacity of 3 000 tonnes of MSW daily. When planning for the development of I·PARK1, an in-depth study had been carried out for the middle ash lagoon at Tsang Tsui in Tuen Mun as one of the potential sites for consideration. Given that Hong Kong needs to build more WtE facilities to achieve the goal of moving away from the reliance on landfills for MSW disposal by around 2035, investigation and Environmental Impact Assessment (EIA) studies will be carried out for the development of the second phase of the IWMF at the Tsang Tsui site.

Purpose and Nature

- 1.2.5 The Project comprises the construction and operation of the IWMF Phase 2 which will have a design treatment capacity sufficient to handle around 4 000 tonnes per day (tpd) of MSW.
- 1.2.6 This Project will adopt state-of-the-art incineration technology to substantially reduce the bulk size of waste. The energy from waste incineration will be recovered for electricity generation. Apart from meeting the electricity demand of the facility, the surplus electricity from the Project will be exported to the public power grid, thereby boosting up the portion of electricity generation from WtE source. Moreover, appropriate community amenities will be integrated into the Project for public enjoyment.

1.3 Name of Project Proponent

The Waste Infrastructure Planning Division of Environmental Protection Department (EPD), the Government of the Hong Kong Special Administrative Region.

1.4 Location and Scale of Project and History of Site

- 1.4.1 The Project site is located in the middle ash lagoon at Tsang Tsui, Tuen Mun. The middle ash lagoon, along with the east and west ash lagoons, was constructed in the 1980s and leased to the Castle Peak Power Company Limited (CAPCO) for storage of pulverised fuel ash (PFA). The middle ash lagoon was surrendered to the Government in 2015.
- 1.4.2 The west portion of the middle ash lagoon has been developed into the Tsang Tsui Columbarium and Garden of Remembrance in 2020 and 2021, respectively. The Project site occupies the remaining portion of the middle ash lagoon, with an area of approximately 18 hectares (ha) (see **Figure 1.1**).

1.5 Number and Types of Designated Projects to be Covered by the Project Profile

- 1.5.1 The Project involves the construction and operation of the IWMF Phase 2. The following elements of the Project are classified as Designated Projects (DP) under the Environmental Impact Assessment Ordinance (EIAO), Cap.499:-
- Public utility electricity power plant (under item D.1 of Part I, Schedule 2 of the EIAO);
 - An activity for the reuse of treated sewage effluent from a treatment plant (under item F.4 of Part I, Schedule 2 of the EIAO);
 - An incinerator with an installed capacity of more than 50 tonnes per day (under item G.3 of Part I, Schedule 2 of the EIAO);
 - A waste disposal facility for refuse (under item G.4(a) of Part I, Schedule 2 of the EIAO);

- A waste disposal facility for pulverised fuel ash, furnace bottom ash or gypsum (under item G.6 of Part I, Schedule 2 of the EIAO); and
- Decommissioning Project: A waste disposal facility for pulverised fuel ash, furnace bottom ash or gypsum (under item 8 of Part II, Schedule 2 of the EIAO).

1.5.2 The EIA study may also investigate the potential of the Project under the following DPs:-

- Reclamation works (including associated dredging works) more than 5 ha in size (under item C.1 of Part I, Schedule 2 of the EIAO); and
- A dredging operation exceeding 500,000 m³ (under item C.12 of Part I, Schedule 2 of the EIAO).

1.5.3 The above lists of DP items will be re-visited during the EIA study, taking into account the findings of the investigation study to be conducted concurrently with the EIA study.

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2 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 Project Planning and Implementation

2.1.1 The Project Proponent will employ consultancy firms to conduct the investigation and EIA studies. Subject to the findings of the investigation study, the Project is intended to be

procured under a Design-Build-Operate (DBO) contract. The Contractor will be selected through a competitive tendering exercise. Under the contract, the Contractor will be responsible for:

- i) detailed design for the formation of the Project site and all facilities of the Project;
- ii) construction works for the forming of the Project site;
- iii) construction, provision and installation of all the facilities;
- iv) testing and commissioning of all the facilities;
- v) operation and maintenance of all the facilities; and
- vi) monitoring of operation.

2.2 Project Programme

2.2.1 The tentative Project implementation programme is shown in **Table 2.1** below.

Table 2.1 – Project Implementation Programme

Activity Description	Indicative Milestones
Appointment of Consultants / Commencement of Investigation and EIA Studies	2022
Completion of Investigation and EIA Studies	2024
Tendering for the Contract	2025
Commencement of Design and Construction of the Project	2026
Commencement of the Operation of the Project	Mid 2030s

2.3 Interfacing with Other Projects

2.3.1 The Project is located in the remaining portion of the middle ash lagoon and potential major projects that would have interface with the Project have been identified and are listed below-

- i) West New Territories (WENT) Landfill;
- ii) T•PARK (Sludge Treatment Facility);
- iii) Tsang Tsui Columbarium and Garden of Remembrance;
- iv) Proposed WENT Landfill Extension;
- v) Proposed Nim Wan Road (South); and
- vi) Proposed upgrading of Nim Wan Road (North) and Deep Bay Road.

2.3.2 The above list will be re-visited during the EIA study to ensure all relevant projects are incorporated. Any cumulative impacts arising from these projects during the construction and operation phases of the Project would be identified and addressed as appropriate.

3 POSSIBLE IMPACT ON THE ENVIRONMENT

3.1 General Description of the Project

3.1.1 The IWMF Phase 2 will comprise the following key components, which would be installed inside enclosed buildings. An indicative schematic flow diagram of waste-to-energy facilities is shown in **Figure 3.1**:-

- Waste reception, storage and feeding system;
- Incineration system;
- Waste heat recovery, turbine generator and cooling system;
- Electricity export system;
- Flue gas treatment and emission system;
- Reagent reception and storage system;
- Incinerator bottom ash, fly-ash and flue gas cleaning residues storage, handling and treatment system; and
- Process control and monitoring system.

3.1.2 Subject to the findings of the investigation study, the following ancillary facilities may be included to support the operation of the IWMF Phase 2:-

- Berthing facility;
- Weighbridge;
- Fuel storage tanks;
- Wastewater treatment and recycling system;
- Water supply system;
- Drainage and sewerage system;
- Odour control system
- Utilities provision;
- Vehicle and container washing facilities;
- Refuse container storage facilities;
- Maintenance workshops;
- Administration building;
- Community facilities;
- Decarbonisation system/Carbon capture/utilisation/storage system;
- Enhanced treatment facility(ies) for ash/residues and;
- Security system.

Construction Phase

- 3.1.3 The Project will involve the formation of land and the associated roads, drains and other essential utilities, followed by foundation works, construction of buildings and installation of plants and equipment for the various systems as mentioned in paragraphs 3.1.1 to 3.1.2 above.
- 3.1.4 Reclamation at the sea frontage of the Project site may be required for the construction of a designated berthing facility (if required) for loading and unloading of waste, incineration ashes and recycled products by marine vessels. Subject to the findings of the investigation study, the reclamation works may involve dredging of marine mud, forming of seawall, followed by filling of sand and suitable materials to the designed ground level for the designated berthing facility (if any).
- 3.1.5 Regarding utilities, it is envisaged that trench excavation and filling on land outside the Project site would be carried out for connection of electricity cable, potable water supplies, telecommunication cables and other provisions to support the operation of the IWMF Phase 2.

Operation Phase

- 3.1.6 The Project will receive and handle MSW as its normal feed stock.
- 3.1.7 The major source of waste will be transported in containers to the Project site via marine access and subsequently to the IWMF Phase 2 by way of container trucks or other on-site automated transfer device. It will also receive via road access a smaller portion of waste from nearby districts; the waste will mostly be transported by refuse collection vehicles or container trucks.
- 3.1.8 Waste delivered to the Project site will be unloaded to the storage bunker, from which it will be conveyed to the high temperature incineration system for combustion. Ashes remaining will be collected at the bottom of the incineration system for enhanced treatment for beneficial use.
- 3.1.9 The hot flue gases from the combustion chamber of the incineration system will pass through the waste heat boiler system for energy recovery. The thermal energy so recovered will transform water into steam in the boiler system which will be used to drive the steam turbine for electricity generation. The cooled flue gases will be treated by advanced flue gas treatment system to meet the stringent regulatory control limits before releasing to the atmosphere via the stack. The fly ash and flue gas cleaning residues collected from the boiler and the flue gas cleaning system are hazardous materials and they would be explored for enhanced treatment into recycled products for reuse or solidified with cement / stabilised with chemicals for final disposal as last resort.
- 3.1.10 Subject to the findings of the investigation study and space availability of the Project site, the Project may also receive incinerator bottom ash, fly ash and flue gas cleaning residues from

I-PARK1 for enhanced treatment for beneficial use.

3.2 Air Quality

Construction Phase

- 3.2.1 The main potential air quality impacts would be (a) dust emission associated with sea reclamation, site formation and construction activities; and (b) gaseous pollutants due to the operation of diesel-powered construction equipment. These impacts will be assessed and appropriate dust suppression measures will be proposed in the EIA study.

Operation Phase

- 3.2.2 Flue gas emission from the incineration system would be the major source of potential air quality impact in the operation phase. Detailed air quality impact assessment would be required to predict the concentrations of air pollutants at the air sensitive receivers (ASRs) and to assess compliance with the Air Quality Objectives (AQOs) and the relevant air quality criteria for non-AQO pollutants. The assessment would include cumulative impacts of stack emissions from the Project, emission from ash/residues management system, marine and vehicular emission from transportation and existing and planned emission sources nearby, such as the Black Point Power Station and Castle Peak Power Stations, T•PARK, and the WENT Landfill and its extension.
- 3.2.3 Fugitive emission and odour nuisance may arise from the transportation of waste, operation of on-site wastewater treatment and recycling system, waste reception and storage system and ash/residues handling and treatment system as well as the enhanced treatment facility(ies) for ash/residues. Assessment of fugitive emission and odour impact is required.

3.3 Noise

Construction Phase

- 3.3.1 Noise would be generated from construction activities through the use of powered construction plant and equipment. Having considered the remote location of the Project site and upon introduction of appropriate mitigation measures, there is unlikely to be any significant construction noise impacts associated with the Project.

Operation Phase

- 3.3.2 The facilities will operate 24 hours a day and the waste reception is expected to be limited to around 12 hours a day mostly during daytime. The key potential noise sources during the operation phase will include those from waste reception facilities and operation of process equipment. Operation noise may also arise during container handling by cranes at the berthing facility. The potential noise impact and the need for further mitigation measures will

be assessed in the EIA study.

- 3.3.3 Majority of waste would be containerised and delivered to the berthing facility along the sea frontage of the Project site by marine transport and subsequently by land transport of short distance to the Project site. Hence, it is expected that the waste delivery arrangements would not significantly increase waste collection vehicles traffic. A relatively small portion of the waste will come from nearby districts direct through land transportation. Subject to the findings of the investigation study and space availability of the Project site, ashes / residues from I-PARK1 may also be delivered to the Project via the berthing facility. Potential traffic noise impact arising from marine traffic, on-site and off-site vehicle movements of the Project will be assessed in the EIA study as appropriate.

3.4 Waste Management

Construction Phase

- 3.4.1 The types of waste that would be generated during the construction phase of the Project include construction and demolition (C&D) materials from the construction activities, general refuse from the workforce and chemical wastes from the construction plant and equipment.
- 3.4.2 There may be impact associated with the handling and dumping of marine sediment arising from any dredging works at the shoreline of the Project site for construction of the designated berthing facility. The potential waste management implications will be assessed and appropriate mitigation measures proposed to minimise the impact in the EIA study as appropriate.
- 3.4.3 Based on available information, the middle ash lagoon have been used solely for PFA disposal since its formation and potential land contamination associated with previous uses is therefore not anticipated.

Operation Phase

- 3.4.4 The major waste arising during the operation phase of the Project would be incinerator bottom ash, fly ash and flue gas cleaning residues generated from the incineration process.
- 3.4.5 The Project may sort out non-combustible waste or inert materials that are not suitable for incineration. The amount of such waste is expected to be small and would be disposed of at landfills. The operation of the Project will also generate general refuse from the workforce and a relatively small amount of chemical waste such as waste lubricating oil and used batteries.
- 3.4.6 While small amount of chemical waste will be produced during the construction phase and operation phase of the Project, it is envisaged that by adopting good practices and appropriate

preventive measures, the Project will not give rise to any potential land contamination issue.

3.5 Water Quality

Construction Phase

3.5.1 The potential sources of water quality impact of the Project consist of site runoff and drainage, debris, refuse and liquid spillages from general construction activities; and sewage effluent from the construction workforce.

3.5.2 The marine dredging works, reclamation and filling works (if any) may potentially cause disturbance and re-suspension of marine sediments. The water quality impacts on the nearby water sensitive receivers and oyster rafts will be evaluated and appropriate mitigation measures proposed to minimise the impacts in the EIA study as appropriate.

Operation Phase

3.5.3 The Project is located within the Deep Bay Water Control Zone. Wastewater generated from the operation of the Project such as surface runoff, sewage from the workforce and floor / vehicle washing would be treated by on-site wastewater treatment plant without any effluent discharge. Process water generated from the incineration plant such as cooling system would also be properly treated and recycled on site.

3.5.4 The Project will explore various options for providing potable and process water in the investigation study. If an on-site desalination facility is required for the Project, there will be discharge of concentrated brine at a relative low volume.

3.6 Human Health

Construction Phase

3.6.1 The Project site is primarily formed by PFA and excavation of PFA may be required during site formation. Potential health risks associated with PFA has been evaluated under the approved EIA Report of "Development of the Integrated Waste Management Facilities Phase 1". No significant radiological hazard is anticipated to workers working in the Project site.

Operation Phase

3.6.2 Potential health impacts may arise from the following sources during the operation phase of the Project and they will be evaluated in the EIA study:

- Aerial emissions and dispersion from the stack;
- Fugitive emissions during transportation, storage and handling of the waste and incinerator bottom ash/fly ash/flue gas cleaning residues; and
- Potential accidental events such as fire in the waste storage area, explosion in the furnace

and potential failure of the air pollution control system.

3.7 Terrestrial Ecology

Construction and Operation Phases

- 3.7.1 The PFA lagoons were identified in previous EIA studies as roosting and foraging sites for various birds, mammals, herpetofauna, etc. The ash lagoons also provide nesting and breeding ground for Little Grebe. However, from a more recent Environmental Monitoring & Audit report of “Decommissioning of West Portion of The Middle Ash Lagoon at Tsang Tsui, Tuen Mun”, no Little Grebe, juveniles, nests, signs of breeding or any breeding activities were observed at the middle ash lagoon during the entire monitoring period from October 2016 to May 2017.
- 3.7.2 It is intended that ecological impact assessment will be carried out under the EIA study to assess the potential direct loss of habitat to fauna within the Project site. Indirect impacts such as noise, wastewater and human disturbance arise from construction and operation of the Project will be evaluated. Mitigation measures would be proposed as appropriate to minimise potential impacts to the surrounding habitats and associated fauna.

3.8 Marine Ecology and Fisheries

Construction Phase

- 3.8.1 The major direct impacts associated with the Project would be the potential loss of aquatic habitats due to land formation for the designated berthing facility (if required). The dredging and reclamation works would have a potential impact on the marine water quality affecting the nearby marine ecology and fisheries. It will be evaluated in the EIA study.

Operation Phase

- 3.8.2 Surface runoff and discharge from the facility may arise during the operation phase of the Project. Marine vessel traffic mainly from waste delivery, though limited, may cause indirect disturbance to aquatic wildlife. With proper implementation of control and mitigation measures on wastewater discharge, it is envisaged that any adverse impacts on marine ecology and fisheries would be contained by following the regulatory requirements of the Water Pollution Control Ordinance, Cap. 358. All potential impacts to marine ecology and fisheries will be addressed in more detail in the EIA study.

3.9 Landscape and Visual

Construction Phase

- 3.9.1 Trees and vegetation within the Project site may be removed or transplanted during the construction phase of the Project. Trees affected will be assessed under the EIA study.

Temporary aesthetic concerns may be associated with the construction activities including site clearance and construction of the facilities.

Operation Phase

- 3.9.2 The buildings, stack or any above-ground structures of IWMF Phase 2 may induce visual impacts to the surroundings. As the Project site is located in an industrial setting with low landscape value and Visual Sensitive Receivers (VSRs) are limited to a few distant villages like Ha Pak Nai and Lung Kwu Sheung Tan, it is expected that with the implementation of appropriate architectural design and other measures such as landscape planting, the residual landscape and visual impacts would be acceptable.

3.10 Cultural Heritage

- 3.10.1 There is no site of cultural heritage, i.e. all declared monuments, proposed monuments, graded historic sites/buildings and Government historic sites within or in the vicinity of the Project site. The Project site does not encroach on the Tsang Tsui Site of Archaeological Interest, which is located about 100m South-West from the Project site. Cultural heritage impact is not anticipated.

3.11 Landfill Gas Hazard

Construction Phase

- 3.11.1 The Project site falls within the 250m consultation zone of the proposed WENT Landfill Extension. The potential sensitive receivers to landfill gas hazard are the workers in the construction sites and the construction works will mainly be carried out in an outdoor environment.

Operation Phase

- 3.11.2 The potential sensitive receivers are the operation and maintenance staff and visitors of community facilities.
- 3.11.3 Landfill gas hazard assessment associated with landfill gas migration from the proposed WENT Landfill Extension to the Project site has been conducted under the approved EIA Report of "Development of the Integrated Waste Management Facilities Phase 1". With the implementation of appropriate mitigation measures, adverse impact of landfill gas hazard during construction and operation phase is not anticipated.

3.12 Hazard to Life

Construction Phase

- 3.12.1 The Project site is not located within consultation zone of any Potentially Hazardous

Installations. The Landfill Gas Power Generation Project at the WENT Landfill is located more than 500 m away from the boundary of the Project site. The Project will not involve any blasting works and use of explosives is not expected.

Operation Phase

- 3.12.2 Fuel oils will be used for auxiliary burners during any start-up and shutdown of the incineration operation. The Project is not expected to introduce any plant and equipment that are classifiable as Potentially Hazardous Installation, and potential hazard to life from its operation is not anticipated.

4 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 General

- 4.1.1 The Project site is located at the middle ash lagoon, Tsang Tsui, Tuen Mun. The west portion of the middle ash lagoon has been decommissioned for the Tsang Tsui Columbarium and Garden of Remembrance and this Project occupies the remaining portion of the middle ash lagoon, with an area of approximately 18 ha. Other industrial facilities in the area include the Black Point Power Station owned and operated by CAPCO to the southwest, the T•PARK located on the east ash lagoon, and the WENT Landfill and its extension to the further east and south side of the Project site.

4.2 Potential Existing and Planned Environmental Sensitive Receivers

- 4.2.1 The existing environment of the Project site and its surrounding were reviewed and the potential sensitive receivers identified in the following paragraphs. They are by no means exhaustive and will be reviewed in more detail during the EIA study.
- 4.2.2 The nearby potential ASRs and noise sensitive receivers include (a) site office and administration building of the Tsang Tsui Columbarium and Garden of Remembrance; (b) environmental and education centre of the T•PARK; and (c) site offices of the WENT Landfill and its extension.
- 4.2.3 The Project site is situated at the mouth of the Deep Bay within the Deep Bay Water Control Zone. Two moderate sized streams are located at the southern part of ash lagoon and discharged into a tidal channel to the east of the ash lagoon area. A seawater intake of T•PARK is located at about 300 m to the east of the Project site.
- 4.2.4 An Area of Oyster Production at Deep Bay is located at around 2.5 km away from the Project

site. In recent years, off-shore oyster rafts are also found in waters off the Project site.

4.2.5 The Project site is located in an industrial setting and surrounded by various industrial developments. Other land uses such as man-made ash lagoons, wasteland and some natural habitats of moderate ecological importance, including plantation, secondary woodland, grassland, shrub, stream courses and some mangrove, are in the vicinity of the Project site. Bird species of conservation concerns such as Little Egret, Chinese Pond Heron and Kentish Plover were recorded in the area under previous studies.

5 ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS

5.1 Air Quality

Construction Phase

5.1.1 Good site practices, dust control and suppression measures will be implemented to minimise potential dust impacts. Reference would be made to the requirements stipulated in the Air Pollution Control (Construction Dust) Regulation.

Operation Phase

5.1.2 The design of the incineration system will meet the requirements of the Best Practicable Means (BPM) Guidance Note for Incinerators¹ and/or other standards as appropriate. Combustion process controls will be specified in the design requirements so as to achieve a furnace combustion zone operating at no less than 850°C with a residence time of at least 2 seconds for effective destruction of organic pollutants. Advanced air pollution control system and flue gas monitoring system will be proposed to ensure compliance to the proposed emission limits under the BPM(s).

5.1.3 Facilities that have the potential to cause fugitive emission or odour nuisance will be fully enclosed and equipped with deodourising units or odour filtration system. The waste reception areas will be operated under negative pressure to prevent odour leaking to the outdoor environment. Odourous air will be fed to the incineration system and treated by combustion directly.

¹ A Guidance Note on the Best Practicable Means for Incinerators (Municipal Waste Incineration), BPM 12/1 (08), EPD/APG, September 2008

5.2 Noise

Construction Phase

- 5.2.1 Mitigation measures including temporary noise barriers, quiet construction plant and scheduling of works will be recommended, where necessary.

Operation Phase

- 5.2.2 Majority of the waste treatment processes are expected to be undertaken in enclosed structures to avoid any potential adverse noise impacts. Location of fixed plant at the designated berthing facility (if any) will be carefully reviewed and mitigation measures such as barriers and restriction on plant usage will be considered as appropriate. Appropriate mitigation measures will be proposed to minimise the potential noise generated from operation-related traffic as appropriate.

5.3 Waste Management

Construction Phase

- 5.3.1 Consideration will be taken during the design phase to minimise the generation of all kinds of C&D materials, including PFA and recover inert materials for reuse. The Contractor will be required to develop a Waste Management Plan prior to the commencement of construction works. Apart from good site practice, waste reduction measures and provisions to reuse/recycle materials would have to be implemented. The various types of waste produced would be handled, transported and disposed of using approved methods in compliance with statutory requirements.
- 5.3.2 Dredged marine sediment generated from reclamation works will properly be managed and disposed of in accordance with the procedures and requirements specified in ETWB TC 34/2002 and the Dumping at Sea Ordinance (Cap.466).

Operation Phase

- 5.3.3 Incinerator bottom ash would be treated into recycled products for reuse to maximise resource recovery and avoid landfill disposal. Fly ash and flue gas cleaning residues which are hazardous materials would be explored for enhanced treatment into recycled products as far as practicable and relevant plant and equipment for such purpose may be installed in the operation phase of the Project. As a last resort, the fly ash and flue gas cleaning residues would be solidified with cement or stabilised with chemicals for disposal at landfill. These solidified / stabilised end products would be tested in accordance with the requirements of the proposed Incineration Residue Pollution Control Limits² prior to landfill disposal.

² The proposed Incineration Residue Pollution Control Limits are derived with reference to those adopted for I · PARK1.

5.3.4 Chemical waste would be properly handled and disposed of in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. Recycle bins for general refuse will be placed in the Project site.

5.4 Water Quality

Construction Phase

- 5.4.1 The water quality impacts due to the design of the designated berthing facility (if any) and those arising from dredging, reclamation and filling works during its construction would be evaluated. Appropriate design and mitigation measures such as provision of silt curtains or control of dredging and filling operations would be identified and implemented to ensure acceptable residual water quality impact.
- 5.4.2 For land-based activities, the construction activities in the Project may include excavation, earthworks and/or building works. Necessary silt removal facilities will be provided to remove any silt before the discharge of site runoff. The design of temporary on-site drainage and silt removal facilities will comply with the guidelines stipulated in EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). With proper site management and implementation of control and mitigation measures, adverse impacts on water quality would not be expected.

Operation Phase

- 5.4.3 All wastewater generated from the Project will be treated at the on-site wastewater treatment plant for cleansing and landscape irrigation reuses without any effluent discharge. Process water generated from the incineration plant such as cooling system will also be properly treated and recycled.
- 5.4.4 If on-site desalination facility is required for the Project, the small volume of concentrated saline effluent from the facility will be properly discharged.

5.5 Human Health

- 5.5.1 Appropriate safeguards and risk control measures will be identified and implemented as appropriate.
- 5.5.2 Measures to prevent radon influx from the PFA to the Project buildings will be considered and implemented as appropriate. Sufficient ventilation will be provided and regular maintenance will be conducted to avoid accumulation of radon.

5.6 Ecology and Fisheries

- 5.6.1 The mitigation measures that are to be implemented to address the impacts on air, noise, waste and water quality will help to alleviate any potential ecological and fisheries impacts. Proper design will also be applied to avoid sensitive parts of the natural environment as far as practicable. Nevertheless, the ecological and fisheries impacts will be assessed and the need of any mitigation measures will be identified in the EIA study.
- 5.6.2 Impact of the Project on marine ecology and fisheries (if any) will be minimised via appropriate measures that mitigate water quality impacts which are depicted in paragraphs 5.4.1 – 5.4.4 above.

5.7 Landscape and Visual

Construction Phase

- 5.7.1 Appropriate mitigation measures such as landscape planting and good site practices will be identified and implemented as appropriate. The natural environmental features of the area adjoining and in the vicinity of the Project site will be restored if disturbed during construction.

Operation Phase

- 5.7.2 The landscape and visual impacts of the architectural and landscape designs of the Project will be assessed. Landscape proposal and aesthetic architectural design will be included such that the Project would blend in with the surrounding landscape as much as possible.

5.8 Cultural Heritage

- 5.8.1 There is no site of cultural heritage within or in the vicinity of the Project site. Hence, cultural heritage impact is not anticipated and specific mitigation measure is considered not required.

5.9 Landfill Gas Hazard

- 5.9.1 It is understood that the proposed WENT Landfill Extension will be designed as a containment landfill with active landfill gas collection system installed to extract landfill gas and eliminate its off-site migration. Site safety measures, routine monitoring of landfill gas at excavation areas and installation of building protection measures will be proposed as appropriate.

5.10 Hazard to Life

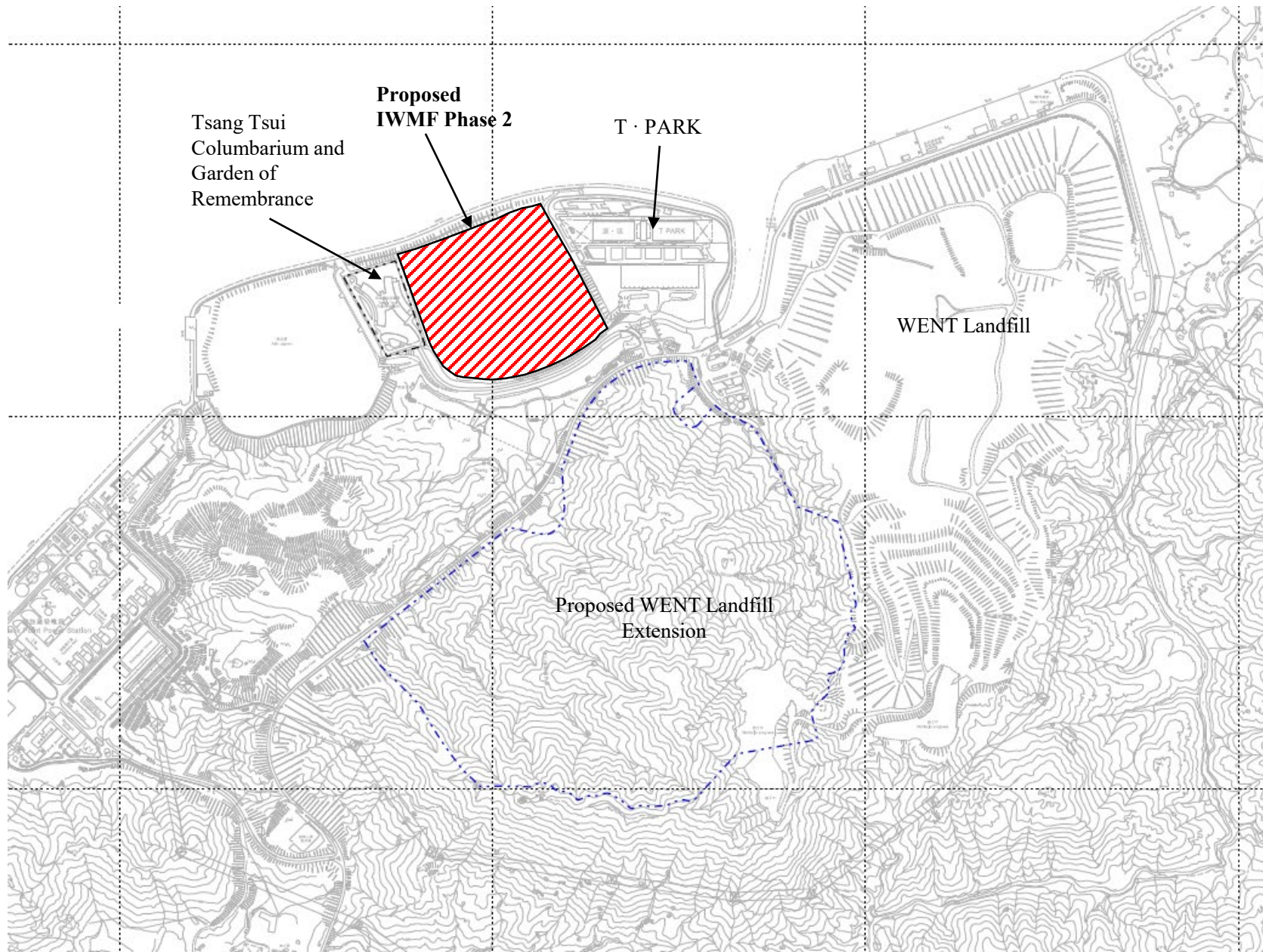
- 5.10.1 Potential hazard to life is not anticipated and specific mitigation measure is considered not required.

6 USE OF PREVIOUSLY APPROVED EIA REPORTS

6.1.1 *AEIAR-163/2012 - Development of the Integrated Waste Management Facilities Phase 1* - The EIA study was conducted for development of the IWMF with a design capacity of 3 000 tpd at two potential sites, namely the artificial island near Shek Kwu Chau and the northern portion of the middle ash lagoon at Tsang Tsui, Tuen Mun. The results of the EIA study indicated that developing the IWMF with a design capacity of 3,000 tpd at either or both of the above two sites will be environmentally acceptable, provided that advanced technologies are installed and appropriate mitigation measures are implemented. The EIA report was approved on 17 January 2012.

6.1.2 Reference may also be made within the study area from the following reports:

- AEIAR-186/2015 - Decommissioning of West Portion of The Middle Ash Lagoon at Tsang Tsui, Tuen Mun, approved on 28 January 2015;
- AEIAR-147/2009 - West New Territories (WENT) Landfill Extensions, approved on 20 November 2009; and
- AEIAR-129/2009 – Sludge Treatment Facilities (T•PARK) , approved on 19 February 2009



「轉廢為能」設施 - 流程圖

Waste-to-Energy (WtE) Facilities

Process Flow Diagram

