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ACE-EIA Paper 1/2025
For advice on 17 March 2025

Environmental Impact Assessment Ordinance (Cap. 499)
Environmental Impact Assessment Report

**Development of Tseung Kwan O Area 137
and Associated Reclamation Sites**

PURPOSE

This paper presents the key findings and recommendations of the Environmental Impact Assessment (EIA) report for the “Development of Tseung Kwan O Area 137 and Associated Reclamation Sites” (“the Project”) submitted under Section 6(2) of the Environmental Impact Assessment Ordinance (EIAO) (Application No. EIA-309/2024). The Civil Engineering and Development Department (CEDD) (“the Applicant”) and its consultants will present the EIA report at the meeting of the EIA Subcommittee.

ADVICE SOUGHT

2. Members’ views are sought on the findings and recommendations of the EIA report. The Director of Environmental Protection (DEP) will take into account comments from the public and the Advisory Council on the Environment in deciding whether or not to approve the EIA report under Section 8(3) of the EIAO.

BACKGROUND

3. The 2016 Policy Address (PA) proposed to carry out a re-planning for the development of the land in Tseung Kwan O Area 137 (TKO 137) and examine the feasibility of using TKO 137 for residential, commercial and other development purposes. To take forward the re-planning process, CEDD and the Planning Department (PlanD) jointly commissioned the “Planning and Engineering Study for Re-planning of TKO 137” (P&E Study) in December 2016 with a view to

ascertaining and optimising the development potential of the available land in TKO 137.

4. Subsequently, the 2022 PA proposed to develop TKO 137 into a new community primarily for housing purpose. To make way for the housing development in TKO 137, a review was conducted at the same time to identify suitable locations for accommodating the existing public facilities in TKO 137 and other location-specific public facilities. Based on the findings of the P&E Study, a Preliminary Outline Development Plan (PODP) was formulated for TKO 137 and the land to be created off TKO Area 132 (TKO 132) in January 2023. Taking into account the comments received from members of the Legislative Council and the Sai Kung District Council, the public and key stakeholders on the PODP and on-going liaison with relevant Government Bureaux/Departments, a Recommended Outline Development Plan (RODP) (**Figures 1 and 2**) was formulated and formed the basis of the EIA study of the Project.

5. The Applicant submitted on 13 November 2024 the EIA report for the Project for approval under the EIAO. The DEP, after taking advice from relevant authorities, considered that the EIA report met the requirements of the EIA Study Brief (SB) of the Project (No. ESB-360/2023) and the Technical Memorandum on EIA Process (EIAO-TM), for the purpose of its exhibition for public inspection under Section 7(4) of the EIAO.

NEED FOR THE PROJECT

6. The proposed development in TKO 137 is one of the major sources to increase land and housing supply as promulgated in the 2022 PA, providing about 50,000 residential units accommodating a population of about 135,000.

7. To make way for the development in TKO 137, it became necessary to identify suitable locations for accommodating the existing public facilities in TKO 137, and an opportunity was taken for locating other region-specific public facilities which require marine frontage for operation. TKO 132, being away from Tseung Kwan O (TKO) population centre and with its marine access, is an optimal location to accommodate the proposed five public facilities (hereafter referred as “Public Facilities”) that are region-specific and require marine frontage, namely **(i)** a construction waste handling facility (CWHF) upon the closure of South East New Territories (SENT) Landfill Extension (SENTX), **(ii)** electricity facilities (EFs) for housing power infrastructure to receive zero-carbon energy imported from the Mainland, **(iii)** a refuse transfer station (RTS) that mainly serves territory east (including TKO), as well as **(iv)** a public fill transfer facility (PFTF) (for re-provisioning of the existing TKO Fill Bank (TKOFB) in TKO 137) and **(v)** a concrete batching plant (CBP) (for re-provisioning of the existing temporary CBP in TKO 137).

DESCRIPTION OF THE PROJECT

8. The Project covers a total development area of about 123 hectare (ha), comprising (i) approximately 103 ha in TKO 137 (including approximately 20 ha of land to be formed by reclamation) for development of a new community primarily for housing purpose and provision of associated supporting engineering infrastructure (e.g. an effluent polishing plant (EPP), local roads and service reservoirs, etc.); and (ii) approximately 20 ha of new land formation in TKO 132 through reclamation and slope-cutting to accommodate the Public Facilities, construction of marine viaducts to connect the new land to the existing Tseung Lam Highway, and provision of supporting engineering infrastructure (e.g. a sewage pumping station (SPS) and local roads, etc.).

9. The Project is a designated project (DP) under Item 1, Schedule 3 of the EIAO¹. The Project also covers the following individual DPs under Schedule 2 of the EIAO² (Figures 3 and 4):

Proposed marine viaduct in TKO 132

- (a) Item A.8³ – Construction and operation of a marine viaduct in TKO 132 with a minimum length of about 700 m between abutments and supported by piers over the sea;

Proposed reclamation works in TKO 137 and TKO 132

- (b) Item C.1⁴ – Reclamation of about 20 ha and about 19 ha of land in TKO 137 and TKO 132 respectively;
- (c) Item C.2⁵ – Reclamation of about 19 ha of land in TKO 132, where the boundary of the reclamation works is about 30 m from an existing residential area (i.e. On Luen Village);

Proposed EPP in TKO 137

- (d) Item F.1⁶ – Construction and operation of a new EPP in TKO 137 with proposed treatment capacity of 54,000 m³/day;
- (e) Item F.2⁷ – Construction and operation of a new EPP in TKO 137 with proposed treatment capacity of 54,000 m³/day, where the boundary of

¹ Item 1 of Schedule 3 – “An urban development or redevelopment project covering an area of more than 50 ha”.

² A Schedule 2 DP under the EIAO would require an environmental permit (EP) for its construction and operation. Applications for the EPs for the DPs including the proposed marine viaduct; reclamation works; and the EPP would be supported by the EIA of the Project. Applications for the EPs for the DPs including the proposed RTS, CWHF and EFs would be supported by separate EIA studies to be conducted by respective project proponents.

³ Item A.8 of Part I, Schedule 2 – “A carriageway bridge for motor vehicles, or a railway bridge, the length between abutments for which is more than 100 m, with bridge piers over the sea supporting the bridge”.

⁴ Item C.1 of Part I, Schedule 2 – “Reclamation works (including associated dredging works) more than 5 ha in size”.

⁵ Item C.2 of Part I, Schedule 2 – “Reclamation works (including associated dredging works) that are of more than 1 ha in size, and a boundary of which is ... (c) less than 100 m from the nearest boundary of an existing residential area”.

⁶ Item F.1 of Part I, Schedule 2 – “Sewage treatment works with an installed capacity of more than 15,000 m³ per day”.

⁷ Item F.2 of Part I, Schedule 2 – “Sewage treatment works (a) with an installed capacity of more than 5,000 m³ per day; and (b) a boundary of which is less than 200 m from the nearest boundary of an existing or planned (i) residential area; ... (iii) educational institution”.

the EPP is about 100 m and 60 m from a planned residential area and a planned educational institution respectively;

Proposed RTS in TKO 132

- (f) Item G.2⁸ – Construction and operation of a new RTS in TKO 132;

Proposed CWHF in TKO 132

- (g) Item G.5⁹ – Construction and operation of a CWHF in TKO 132 with designed handling capacity of about 3,000 tonnes/day and less than 200 m from an existing residential area (i.e. On Luen Village); and

Proposed EFs in TKO 132

- (h) Item H.1¹⁰ – Construction and operation of new EFs housing electricity substations of up to 400 kV in TKO 132.

ENVIRONMENTAL BENEFITS

10. The EIA report concludes that the construction and operation of the Project will be fully compliant with the EIAO requirements with no adverse residual environmental impacts. The Project is expected to yield several environmental benefits, including:

(a) **Reducing traffic of heavy vehicles at Wan Po Road and residential areas in TKO**

With the conversion of TKOFB in TKO 137 into housing developments together with the collective provision of Public Facilities in TKO 132 having direct access to Tseung Lam Highway, the majority of the existing traffic of heavy vehicles at Wan Po Road and the traffic of heavy vehicles induced by the Public Facilities would be diverted away from the residential areas in TKO, and thus the potential environmental impacts such as traffic emissions and noise on local residents would be minimised;

(b) **Co-locating five public facilities for operational synergy**

Co-locating the five Public Facilities, that are region-specific requiring marine frontage for water transport, in TKO 132 can generate significant operational synergy by allowing shared use of access road and berthing areas, reducing the potential environmental impact arising from the construction and operation of the necessary supporting infrastructure/facilities;

⁸ Item G.2 of Part I, Schedule 2 – “A refuse transfer station”.

⁹ Item G.5 of Part I, Schedule 2 – “A facility for the treatment of construction waste (a) with a designed capacity of more than 500 tonnes per day; and (b) a boundary of which is less than 200 m from the nearest boundary of an existing or planned (i) residential area”.

¹⁰ Item H.1 of Part I, Schedule 2 – “A 400 kV electricity substation and transmission line”.

- (c) **Facilitating low carbon transition**
The reclaimed land in TKO 132 would create land to accommodate the important strategic Electricity Facilities for enhancing Hong Kong's capability to import zero-carbon energy for meeting the decarbonisation target of reducing Hong Kong's carbon emissions by 50% before 2035 as compared to the 2005 level, with a view to achieving carbon neutrality before 2050;
- (d) **Enhancing ecological resources**
Ecological enhanced seawall will be provided to the proposed reclamation off TKO Area 132 and eco-shoreline will be provided to the proposed reclamation at TKO Area 137, which will create suitable marine habitats for enhancing ecological resources in the areas; and
- (e) **Green communal network**
A comprehensive pedestrian walkway and cycle track network linking up key destinations (e.g. key public transport nodes, major employment nodes, residential communities, etc.) is planned throughout the TKO 137 to reduce mechanised vehicular trips and hence carbon emissions.

CONSIDERATION OF ALTERNATIVE OPTIONS

11. The EIA report has described the consideration of different development options for the Project, including land use, layout, configuration, design and construction method, etc. to avoid and minimise potential environmental impacts. The environmental benefits and dis-benefits of the options have been evaluated. The recommended options have taken into account environmental considerations, site limitation and operational constraints, as well as comments received from the public. The key approaches adopted to avoid or minimise environmental impacts are summarised below:

Avoidance of Impact

- (a) To avoid encroachment onto the Clear Water Bay Country Park, the natural terrain mitigation works, which was initially planned to be carried out within Clear Water Bay Country Park, has been relocated within the EPP site which falls outside the Clear Water Bay Country Park;
- (b) To avoid impact on ecologically sensitive sites, the reclamation extent of TKO 132 has been optimised without encroaching onto the coral recipient site at western Junk Bay;

- (c) To avoid potential impact on *Stiphodon atropurpureus* (also known as Neon Goby)¹¹, which is a freshwater fish species of conservation importance, the pier location of the proposed marine viaduct would avoid encroachment onto the natural watercourse which is a key habitat of the Neon Goby, and a 20 m buffer zone from the natural watercourse would be established as a precautionary measure;
- (d) To avoid the use of roadside noise barriers or enclosures which may lead to potential concern over visual impact and bird collision risk, appropriate planning on building configuration and setback from roads with mitigation measures including low-noise road surfacing, acoustic windows at the planned sensitive receivers, etc. have been adopted in the Project to alleviate road traffic noise to within established noise standards;

Minimisation of Impacts

- (e) To minimise the potential environmental impact arising from the traffic induced by the region-specific Public Facilities on local residents, the collective provision of the Public Facilities in TKO 132 having direct access to Tseung Lam Highway, will enable the traffic induced by the Public Facilities to be diverted from the existing road network in the TKO New Town;
- (f) To minimise impact on the natural shoreline and coral communities, the reclamation extent and configuration in TKO 132 is reduced and optimised to reduce the impact on the natural shoreline from around 790 m to around 512 m and minimise the direct impact on areas with high coral coverage;
- (g) To minimise the water quality impact from reclamation works, non-dredged reclamation (i.e. deep cement mixing) have been adopted to reduce the extent of dredging operation and minimise the need of disposal of marine sediment;
- (h) To minimise potential impact on/disturbance to sensitive receivers during the construction of the proposed marine viaduct, precast construction method would be adopted to shorten construction duration and reduce on-site construction and demolition material;
- (i) To minimise the potential ecological impact on terrestrial ecology at Devil's Peak, the design of natural terrain hazard mitigation works in TKO 132 have been optimised and would be limited to the toe of Devil's Peak;

¹¹ *Stiphodon atropurpureus* recorded in past study based on literature review was not recorded during the baseline ecological survey of the Project.

- (j) To minimise the potential environmental impact from the TKO InnoPark to the sensitive receivers in TKO 137, the Project layout has been designed to position Government, Institution and Community (G/IC) facilities and open spaces between the TKO InnoPark and the residential sites in TKO 137 to provide a buffer area; and
- (k) To minimise the odour impact, the proposed EPP in TKO 137 would be equipped with deodorising unit and the exhaust would be positioned away from nearby sensitive receivers.

SPECIFIC ENVIRONMENTAL ASPECTS TO HIGHLIGHT

12. The key EIA findings of specific environmental aspects are highlighted below:

Ecology

13. The Project area in TKO 137 largely comprises of developed area and shrubland on land and subtidal soft substrata within the reclamation area, while the Project area in TKO 132 largely comprises natural terrestrial habitats including mixed woodland, shoreline habitats, and subtidal hard and soft substrata.

14. For marine ecology, about 47.3 ha and 7.9 ha of marine habitats within the Project boundary would be permanently and temporarily lost respectively. Most of the potential ecological impacts on the identified marine habitats are “low” except the subtidal hard substrata habitat in TKO 132. Although the Project will have direct impact on the hard coral communities in the subtidal hard substrata habitat in TKO 132, they are common and abundant in Hong Kong waters with no rare coral species nor species with restricted distribution. Therefore, the impact on the subtidal hard substrata habitat in TKO 132 is anticipated to be “low to moderate”. “Low to moderate” level of indirect impact (e.g. disturbance impact on water quality) to coral recipient sites is also anticipated given the close proximity between the marine works area of the Project and the coral recipient sites.

15. For terrestrial ecology, about 90 ha and 4.6 ha of terrestrial habitats within the Project boundary would be permanently and temporarily lost respectively. The significance of potential ecological impacts on all identified terrestrial habitats are “low”, given the “low” and “low to moderate” ecological values of the affected terrestrial habitats. For the floral species of conservation importance (i.e. *Diospyros vaccinioides*, also known as Small Persimmon, that is mostly common and widespread in Hong Kong) recorded in low abundance within the Project boundary that is subject to direct impact, the impact significance is “moderate”. “Low to moderate” level of indirect impact (e.g. noise, dust, disturbance, etc.) to Clear Water Bay Country Park is also anticipated given the close proximity of the Project boundary to the Clear Water Bay Country Park.

16. As a design measure, the Project has optimised the reclamation extent and configuration in TKO 132 to avoid direct encroachment onto the coral recipient site and minimise direct impact in areas with high coral coverage. In addition, mitigation measures (e.g. in-situ preservation / transplantation of flora species of conservation importance; translocation of coral species of conservation importance; and deployment of silt curtain to minimise water quality impacts, etc.) would be implemented to further alleviate the potential direct and indirect ecological impacts. Furthermore, precautionary measures (e.g. provision of a 20 m buffer zone from the natural watercourse where Neon Goby was recorded in a previous study) and enhancement measures (e.g. establishment of eco-shoreline / ecologically enhanced seawall) have also been recommended.

17. With the implementation of the recommended measures, the significance of overall ecological impacts would be reduced to “low” and the EIA has concluded that unacceptable adverse residual ecological impact is not anticipated from the Project.

Water Quality

18. The key water quality concern during construction of the Project would be potential water quality impact arising from the proposed reclamation works in TKO 137 and TKO 132, and dredging works for new berthing facilities in TKO 132. To minimise the impact, the EIA has recommended to adopt non-dredged method for seawall construction and reclamation works. With the implementation of the recommended mitigation measures including deployment of silt curtain and performing filling works behind leading seawall, the EIA has predicted full compliance with the water quality assessment criteria at all water sensitive receivers during the construction phase.

19. During the operation phase, the key water quality concern of the Project would be the effluent discharge from the operation of the proposed EPP in TKO 137. The proposed EPP will adopt biological sewage treatment with nitrogen removal and disinfection. The water quality modelling results have predicted that the change in coastline configuration in TKO 137 and TKO 132 with the effluent discharge from the proposed EPP would not cause any significant change in the hydrodynamics and water quality of the receiving water body.

20. With the implementation of the recommended measures mentioned above, the EIA concluded that adverse water quality impact is not anticipated from the Project.

Landscape and Visual

21. The key visual impact of the Project mainly arises from the existence of the permanent aboveground structures. Mitigation measures (e.g. aesthetic design of structures, provision of greenery along planned open spaces, compensatory tree planting, shoreline treatment, etc.) are recommended to reduce the visual impact.

22. About 5,497 trees were found within the 100 m landscape impact assessment area, with no Old and Valuable Trees (OVT) nor trees of particular interest (TPI) identified. The key landscape impact of the Project arises from the direct impact to approximately 1,250 trees within the Project area during the construction phase. The affected trees would be transplanted as far as practicable or removed with compensatory tree planting within the Project site in a tree compensation ratio of 1:1 following the prevailing mechanism along with other mitigation measures (e.g. aesthetic design of structures, provision of greenery along planned open spaces, compensatory tree planting, shoreline treatment, etc.).

23. With the localised geographical extent of the landscape impact and the long viewing distance/few number of public views of visual impacts together with the implementation of the recommended mitigation measures mentioned above, the EIA has concluded that unacceptable adverse residual landscape and visual impacts are not anticipated from the Project.

Air Quality

24. For air quality, the EIA has concluded that adverse construction dust impact would not be anticipated with the implementation of the recommended control measures, such as good site practices, watering of exposed areas and careful scheduling of works. As for the key air quality concerns during the operation phase of the Project including emissions from the proposed Public Facilities as well as road and marine traffic emissions arising from the proposed development, the EIA has predicted full compliance with air quality objectives (AQO) at all existing and planned air sensitive receivers (ASRs) with the implementation of the design and control measures (e.g. provision of dust collector and enclosures to dust-generating operations, positioning of ventilation exhaust/emission sources away from sensitive receivers, etc.). Besides, the EIA has also predicted that the concentration of non-AQO criteria pollutants associated with the proposed EPP, existing SENTX, and industrial sources (including methane, hydrogen chloride, hydrogen fluoride, formaldehyde, vinyl chloride, acetaldehyde and benzene) at all existing and planned ASRs would comply with the respective international standards.

25. As for the potential odour impact arising from the operation of the proposed RTS, EPP and sewage pumping stations, the EIA has predicted that the cumulative odour concentration at all existing and planned ASRs would comply with the relevant criterion set out in the EIAO-TM with the implementation of deodorisers at these facilities.

26. With the implementation of the recommended measures, the EIA has concluded that adverse air quality impact is not anticipated from the Project.

Noise

27. The EIA has concluded that adverse construction noise impact would not be anticipated with the implementation of the recommended mitigation measures such as the use of quieter construction methods and plants, good site management and schedule of works.

28. As for the potential operational noise impact of the Project, the EIA has predicted that marine traffic noise levels at all planned and existing noise sensitive receivers (NSRs) would comply with relevant noise standard. The EIA has recommended measures to mitigate road traffic noise impact which include adopting low noise road surfacing; provision of acoustic windows/blank wall at affected planned public housing units; provision of noise insulation with suitable window type and air-conditioning at affected classrooms of the proposed schools. With these mitigation measures in place, the EIA has predicted that the mitigated road traffic noise level at all existing and planned NSRs would comply with relevant EIAO-TM criteria and adverse traffic noise impact is not anticipated.

29. On fixed noise sources impact arising from the operation of the proposed infrastructure/facilities such as the EPP and the proposed Public Facilities in TKO 132, the EIA has recommended mitigation measures such as use of quieter plant, directing ventilation exhaust for fixed plants away from noise sensitive uses, installation of silencer and/or acoustic louvre. With the implementation of the recommended mitigation measures, and taken into account the separation distance and line of sight between the fixed noise sources and the nearest NSRs as well as the noise mitigation measures at existing fixed noise sources, the EIA has demonstrated that adverse fixed noise sources impact is not anticipated from the Project.

30. For rail noise, while no airborne railway noise impact would be anticipated from the underground operation of the planned concurrent project – Tseung Kwan O Line Southern Extension (TKLSE)¹², the EIA has concluded that given the separation distance between the planned TKLSE and nearest NSRs, adverse ground-borne noise impact is not anticipated.

31. With the implementation of the recommended measures, the EIA concluded that adverse noise impact is not anticipated from the Project.

Other Environmental Aspects

32. The potential impacts of other environmental aspects including sewerage, waste management, land contamination, fisheries, cultural heritage, hazard to life, landfill gas hazard, and electric and magnetic field have been assessed in the EIA report. With the implementation of recommended mitigation measures, the Project will comply with the relevant requirements of the EIA SB and the EIAO-TM and adverse environmental impacts are not anticipated.

¹² Tseung Kwan O Line Southern Extension is a designated project under Schedule 2 of the EIAO. The Project would be subject to the statutory EIAO process and a separate EIA study would be conducted separately by the project proponent.

ENVIRONMENTAL MONITORING AND AUDIT

33. The EIA report has included an Environmental Monitoring and Audit (EM&A) Manual, which recommends an EM&A programme during the construction and operational phases of the Project, including construction monitoring and site audit for air quality, noise, water quality, ecology, landscape, cultural heritage, and landfill gas issues. Also, the operational phase EM&A has covered odour and stack emission monitoring at EPP, road traffic noise monitoring, water quality monitoring of the EPP, and landfill gas monitoring at facilities within the landfill gas consultation zone.

PUBLIC CONSULTATION

34. The Applicant has made the EIA report, EM&A Manual and Executive Summary available for public inspection under the EIAO from 3 January 2025 to 11 February 2025. A summary of all the public comments received by the Environmental Protection Department during the public inspection period and a gist of the main concerns raised in the public comments will be provided separately.

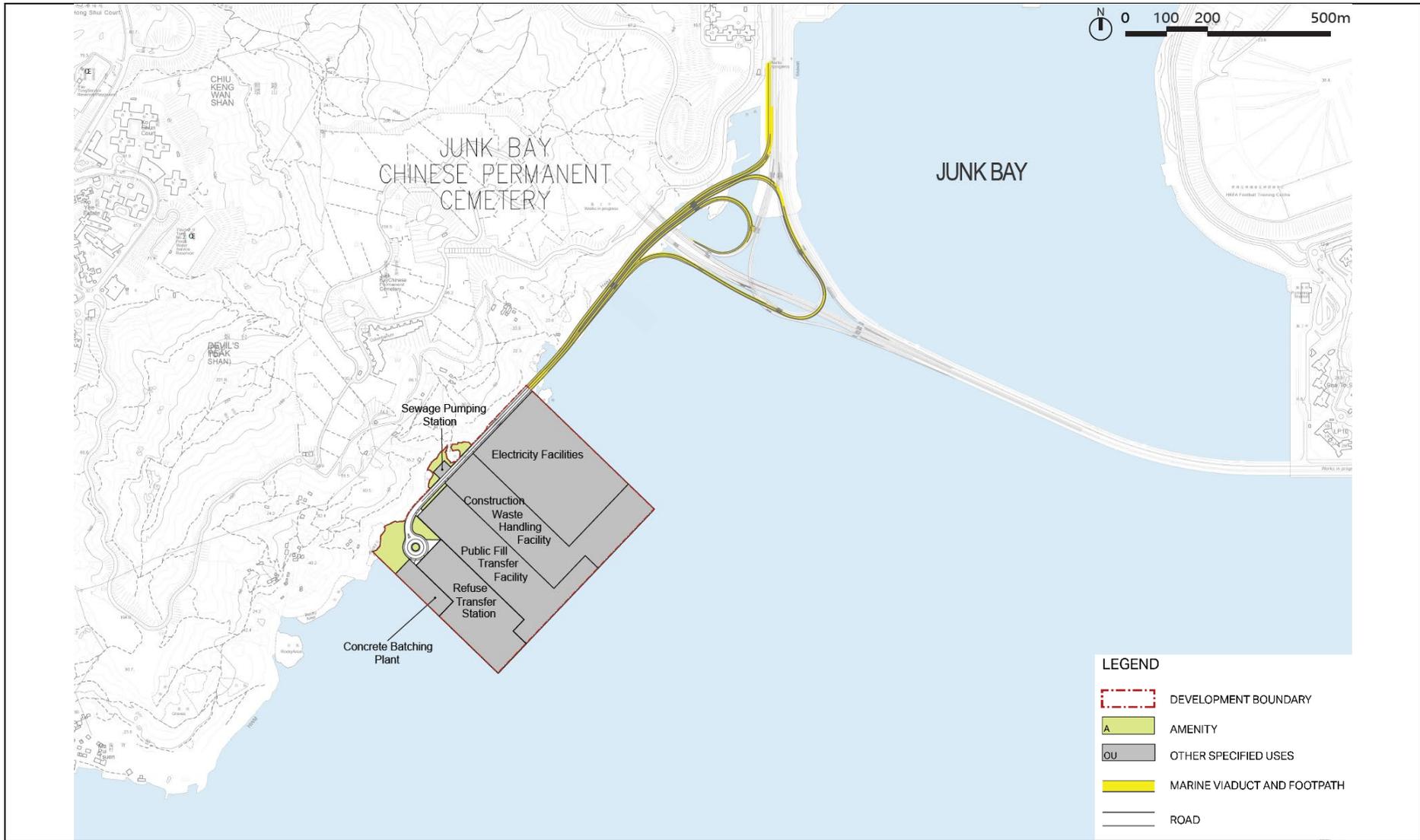
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Environmental Protection Department



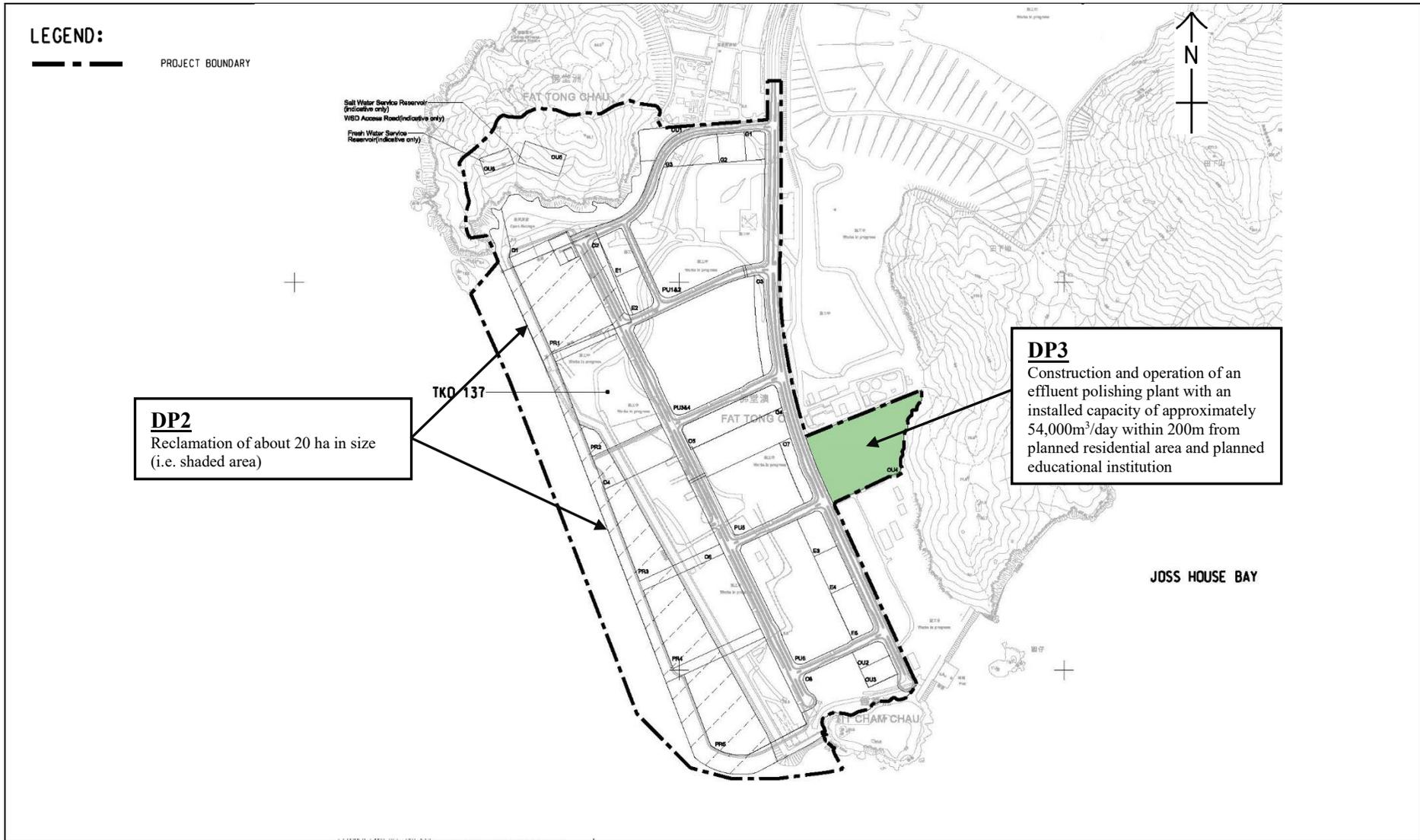
Project Title:	Development of Tseung Kwan O Area 137 and Associated Reclamation Sites	EIA Application No.:	
Figure 1	Recommended Outline Development Plan (TKO Area 137) [Remark: This figure is prepared based on Figure 2.4 of the EIA report]	EIA-309/2024	



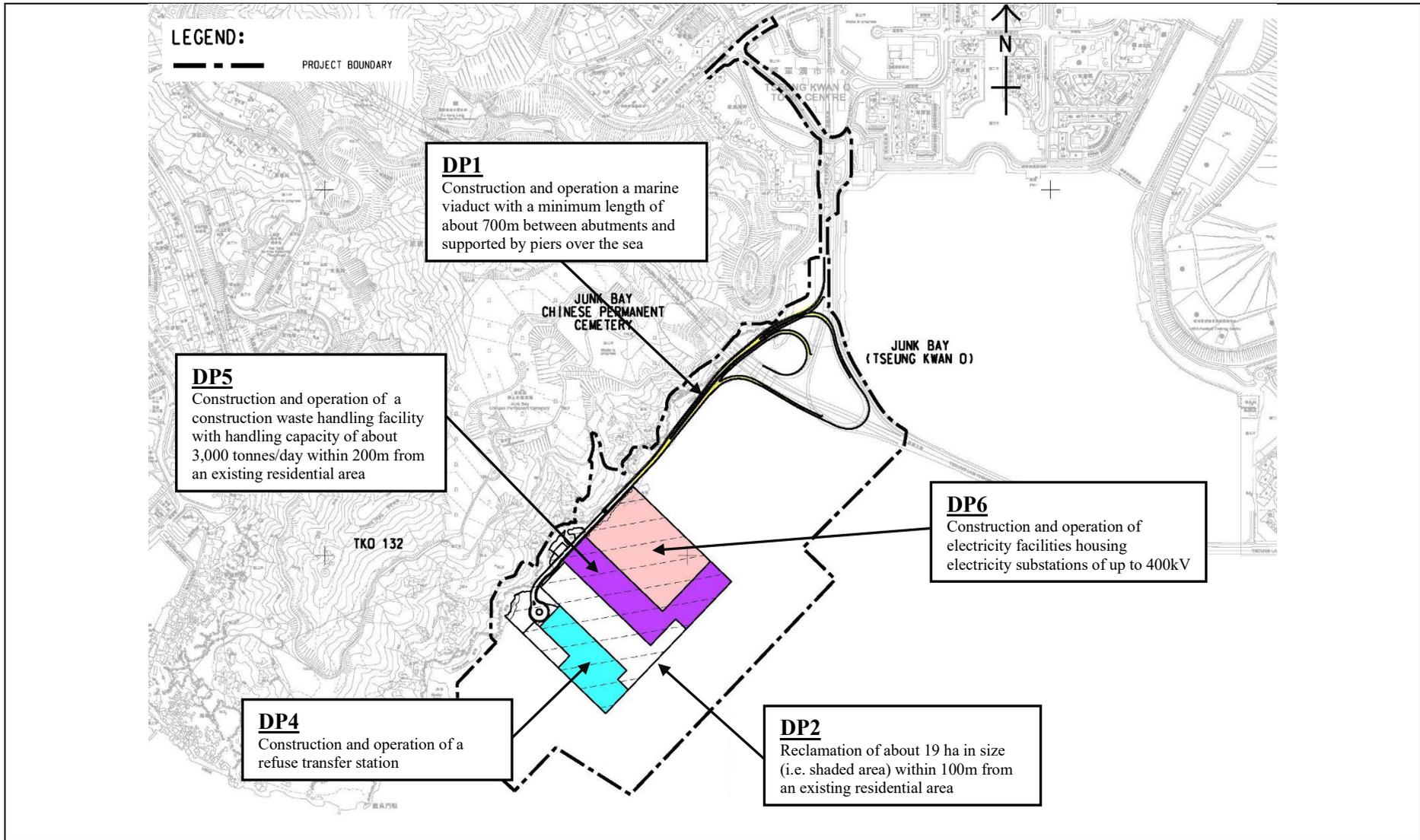
Project Title:	Development of Tseung Kwan O Area 137 and Associated Reclamation Sites
Figure 2	Recommended Outline Development Plan (TKO Area 132) [Remark: This figure is prepared based on Figure 2.5 of the EIA report]

EIA Application No.:
EIA-309/2024





Project Title:	Development of Tseung Kwan O Area 137 and Associated Reclamation Sites	EIA Application No.: EIA-309/2024	
Figure 3	Locations of Individual Designated Projects under Schedule 2 of the EIAO in TKO Area 137 [Remark: This figure is prepared based on Figure 1.3 of the EIA report]		



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Figure 4	Locations of Individual Designated Projects under Schedule 2 of the EIAO in TKO Area 137 [Remark: This figure is prepared based on Figure 1.2 of the EIA report]		