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ACE-EIA Paper 3/2013
For advice

Environmental Impact Assessment Ordinance (Cap. 499)
Environmental Assessment Report
Cross Bay Link, Tseung Kwan O

PURPOSE

This paper presents the key findings and recommendations of the Environmental Impact Assessment (EIA) report for the proposed "Cross Bay Link, Tseung Kwan O" (CBL) (hereafter known as 'the Project') submitted under section 6(2) of the Environmental Impact Assessment Ordinance (EIAO) (Application No. EIA-209/2013). Civil Engineering and Development Department (CEDD) (the applicant) and their consultants will present the report at the meeting of the EIA Subcommittee, if necessary.

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 (ACE) in deciding whether or not to approve the EIA report under Section 8(3) of the EIAO.

BACKGROUND

3. CBL is a dual two-lane carriageway of approximately 1.8 km long across the Junk Bay mainly on viaduct, connecting Tseung Kwan O – Lam Tin Tunnel (TKO-LT Tunnel) to Wan Po Road at the south eastern part of TKO. The viaduct section

of CBL has a cycle track and a footpath in addition to the road carriageway. **Figure 1** illustrates the proposed alignment of CBL.

4. Together with Route 6, which includes the proposed Central Kowloon Route (CKR), the future Trunk Road T2 in Kai Tak Development and TKO-LT Tunnel, the CBL will provide an east-west highway link between Kowloon and TKO South.

5. The applicant has submitted the EIA report for the proposed CBL and the DEP, in conjunction with the relevant authorities, considers that the EIA report meets the requirements of the EIA Study Brief and the Technical Memorandum on EIA Process (TM). Together with the EIA report for CBL, the EIA reports for TKO-LT Tunnel and CKR will also be considered by the EIA Subcommittee of ACE at this meeting.

NEED FOR THE PROJECT

6. At present, the existing TKO Tunnel is the main connection between TKO and the urban areas of Kowloon and Hong Kong. The tunnel has nearly reached its capacity and can hardly cater for the further development of TKO, which is planned to house a total population of 450,000 besides the district's continued commercial and industrial developments. Therefore, a new external road network comprising the Project and TKO-LT Tunnel is recommended to meet the anticipated traffic flow.

7. According to traffic studies, the absence of the Project and TKO-LT Tunnel will result in serious congestion at the existing road network in Kowloon East and TKO due to the increasing population along with continued commercial and industrial developments in TKO. Without the Project, the future development of TKO New Town (e.g. TKO Town Centre South and TKO Industrial Estate) will be heavily constrained.

8. Traffic congestions have already occurred during peak hours at TKO Tunnel. The Legislative Council, Sai Kung District Council and the local community have been urging for early construction of the Project together with TKO-LT Tunnel such that these new roads will provide the much needed additional transport capacity for development of TKO.

BENEFITS OF THE PROJECT

9. The implementation of the Project and the Route 6 will alleviate the traffic congestion and meet the long-term traffic demand of TKO. In particular, the Project will divert heavy vehicles away from the TKO Tunnel – Wan Po Road route which cuts across the densely populated area of TKO. Therefore, CBL will bring the nuisance of the heavy trucks away from the city centre sensitive receivers. It is also estimated that the journey time from the junction of Wan Po Road and Wan O Road to Gascoigne Road, Yau Ma Tei, will be reduced from about 35 minutes to 15 minutes. The shortening of journey time and alleviation of traffic congestion will substantially reduce vehicular pollution in the region.

DESCRIPTION OF THE PROJECT

10. The main features of the Project include:

a). construction of an approximately 1.8 km long dual two-lane road mainly on viaduct with a footpath and a cycle track; and

b). the associated civil, structural, marine, ship impact protection, geotechnical, landscape, and environmental protection and mitigation works.

11. The Project covers the following designated project (DP) elements under Part I, Schedule 2 of the EIAO:

a). ***Item A.1*** – *"A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing roads."*

b). ***Item A.8*** – *"A road or railway bridge more than 100 m in length between abutments."*

CONSIDERATION OF ALTERNATIVE ALIGNMENTS AND OPTIONS

12. The EIA report has considered various alignment options with different structural forms to avoid and minimize environmental impacts. The selected alignment has taken into account traffic and land use planning constraints,

environmental impacts in terms of air, noise, water, marine ecology, visual and landscape aspects and comments from public and government departments. Key environmental benefits arising from the alternative alignments and structural forms are highlighted below.

Avoidance of Impacts

13. Four alignment options as illustrated in **Figure 2** were identified and appraised, namely (i) Option 1 - CBL at Fat Tong Chau, (ii) Option 2 - CBL to south of Area 86, (iii) Option 3 - CBL to north of Area 86 and (iv) Option 4 - no CBL scenario. Option 2 avoids all the environmental disbenefits associated with other options such as the ecological impacts and disturbance to Fat Tong Chau (south of the TKO Industrial Estate) where corals with higher ecological value are located. With the recommended alignment option, vehicles especially heavy trucks diverted away from the existing TKO Tunnel Road will not travel into TKO Town Centre and hence avoiding the air and noise impacts to TKO Town Centre.

Minimization of Impacts

14. The preferred alignment option which lands at the south of Area 86 was further considered in two alternative schemes, namely (i) Bridge Arrangement and (ii) Tunnel Arrangement. As the tunnel scheme will require dredging, reclamation and portal works, it will have more impacts in terms of water quality, waste management, marine ecology, fishery and air quality. To minimize all the above environmental impacts, the Bridge Arrangement was recommended.

15. The concrete approach viaducts and the steel main bridge will be constructed using off-site precast segments to minimize potential noise, water quality, air quality and ecological impacts on local residents and the local environment.

16. Deployment of large span piers to reduce the number of piers, also helps minimizing associated impacts on marine water quality and marine habitat loss.

SPECIFIC ENVIRONMENTAL ASPECTS TO HIGHLIGHT

Air Quality Impact

Construction Phase

17. A fugitive dust assessment was conducted for the construction phase. It is concluded that with the implementation of mitigation measures including frequent water spraying, covering of stockpiling areas, site hoarding, wheel wash facilities, continuous spray at a temporary barging point and paving of haul roads, the predicted Total Suspended Particulates (TSP) levels (1-hour, 24-hour and annual) at all air sensitive receivers (ASRs) will comply with the criteria in the EIAO-TM.

Operational Phase

18. The key pollutants of concern were identified to be Nitrogen Dioxide (NO_2) and Respirable Suspended Particulates (RSP) from vehicle emissions and emissions from various industries located at the TKO Industrial Estate during the operational phase. The EIA predicted the cumulative hourly, daily and annual NO_2 and RSP levels at all ASRs will comply with the prevailing Air Quality Objectives (AQOs). Diverting traffic away from TKO Tunnel Road will help achieve a better air quality in the TKO Town Centre.

19. While the Government is working with a view to having the proposed new AQOs to take effect in 2014, for the purpose of assessing the air quality impacts under the EIAO, consideration of the assessment criteria would be based on the AQOs prevailing at the time of the decision.

Noise Impact

Construction Phase

20. Construction noise exceedance is not anticipated at residential noise sensitive receivers (NSRs) when good site practices, quiet plant and other noise mitigation measures recommended in the EIA report are implemented. Depending on the development programmes of the proposed schools in Lohas Park, the construction noise level at these schools might exceed the noise criteria during the examination period by 1-2 dB(A). Should the schools be occupied before the CBL works, the

CBL Contractor will be required to liaise with the affected schools and avoid noisy work during examination periods.

Operational Phase

21. During the operational phase, without traffic noise mitigation measures, a number of NSRs at Lohas Park are predicted to be affected by traffic noise exceeding the criteria. With the implementation of direct mitigation measures, including low noise road surfacing and semi-noise enclosure at CBL and Road D9 (linking Wan Po Road & CBL), the operational noise level will not exceed the relevant noise criteria set out in EIAO-TM. **Figure 3** illustrates the proposed noise mitigation measures of the Project.

Water Quality Impact

Construction Phase

22. No reclamation is required for the Project and the need for dredging is avoided through construction of marine pile caps above seabed level. Piles and pile caps will be constructed within cofferdams, which will be enclosed by silt curtain to further minimise risk of sediment release into the water column. Good site practices will be implemented to minimise construction runoff and proper sanitary facilities will be provided for the workforce. The water quality assessment predicted that suspended solid elevation, sedimentation rate and dissolved oxygen depletion due to the Project and concurrent TKO-LT Tunnel works will be well within acceptable limits. Hence, adverse water quality impact is not anticipated.

Operational Phase

23. The change in the hydrodynamic regime and water quality regime due to the physical presence of the Project's bridge piers will be insignificant. To prevent road surface runoff, a proper drainage system with silt traps and oil interceptors will be constructed.

Marine Ecological and Fisheries Impact

24. There are no Conservation Zone, Site of Special Scientific Interest, Country Park or Marine Park within the study area and no ecological sensitive areas, e.g. high value coral communities within or close to the CBL alignment.

Marine Ecological Impact

25. Reclamation is not required for the Project and the proposed bridge alignment has avoided sensitive areas with high ecological value and impacts to the seabed by minimizing the number of bridge piers. The direct loss of less than 0.3ha soft substrate seabed is considered insignificant due to the small size and low ecological value. The new seawalls at the landing points along Road D9 will provide artificial intertidal / subtidal hard substrate habitat for intertidal fauna and coral colonisation after the construction work finishes.

26. Since there is no reclamation work and only 12 bridge piers will be constructed within cofferdam walls with silt curtains, there will not be significant deterioration of water quality causing marine ecological impacts.

Fisheries Impact

27. There are no fish culture zone, spawning and nursery grounds for fisheries species in the vicinity of the proposed marine works area, while the closest fish culture zone at East Tung Lung Chau is more than 4 km away. The permanent loss of less than 0.3ha of fishing ground with low to moderate production is assessed to be insignificant. Whilst construction is taking place, there will be a temporary loss of fishing grounds of about 9.6 ha due to restricted access to the works areas for about nine months. Based upon the relative size and the temporary nature, the temporary fisheries impact during construction of the Project will be insignificant.

Landscape and Visual Impact

28. There are no Champion Trees, Registered Old and Valuable Trees, or Protected Species under Cap. 586 Protection of Endangered Species of Animals and Plants Ordinance within the proposed works boundary. About 308 trees, mostly Leucaena leucocephala and common trees, will unavoidably be affected by the Project. Among them, 58 trees of medium to high amenity value with moderate survival rate will be transplanted and 250 no. of trees are proposed to be felled. More than 60 heavy standard trees will be planted as compensatory tree planting. The overall residual impact on trees after mitigation is considered acceptable.

Construction Phase

29. To mitigate potential landscape and visual impacts, mitigation measures including minimising construction worksite area and duration, site hoarding and advance screen planting where practicable will be provided. Control of night-time lighting and glare will also be exercised.

Operational Phase

30. For the operational phase, landscape mitigation measures include refinement of the structure layout to create planting strips alongside the road to enhance greenery, sensitive design of structures and streetscape elements as well as lighting to minimise unnecessary light spill. With the implementation of the recommended mitigation measures, residual landscape impacts will largely be reduced to insubstantial to slight after ten years of operation.

31. Visual impact mitigation measures for the Project include the refinement of the engineering design to avoid excessive height and bulk of structures, glare from vehicles using the road and the use of unobtrusive building material. After mitigation, the visual sensitive receivers will receive insubstantial to moderate visual impacts from the Project.

Other Environmental Impacts

32. Other impacts including waste management, sediment quality, cultural heritage and landfill gas have been addressed in the EIA report. With the implementation of recommended mitigation measures, the Project will comply with the relevant requirements under the TM.

ENVIRONMENTAL MONITORING AND AUDIT

33. The EIA report includes an Environmental Monitoring and Audit (EM&A) Manual, which recommends an EM&A programme during the construction and operation stages of the Project to check the effectiveness of the recommended mitigation measures. Key recommended EM&A requirements include (i) landscape and visual mitigation measures; (ii) precautionary requirements against landfill gas hazards; (iii) noise, air and water quality monitoring during construction phase; (iv)

reuse, recycle and disposal of construction waste and (v) road traffic noise monitoring at the Project operation stage.

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 April to 2 May 2013. During this inspection period, a total of 9 public comments were received by the Environmental Protection Department. The main concerns raised by the public will be summarised in a gist to be provided separately.

May 2013
Environmental Assessment Division
Environmental Protection Department

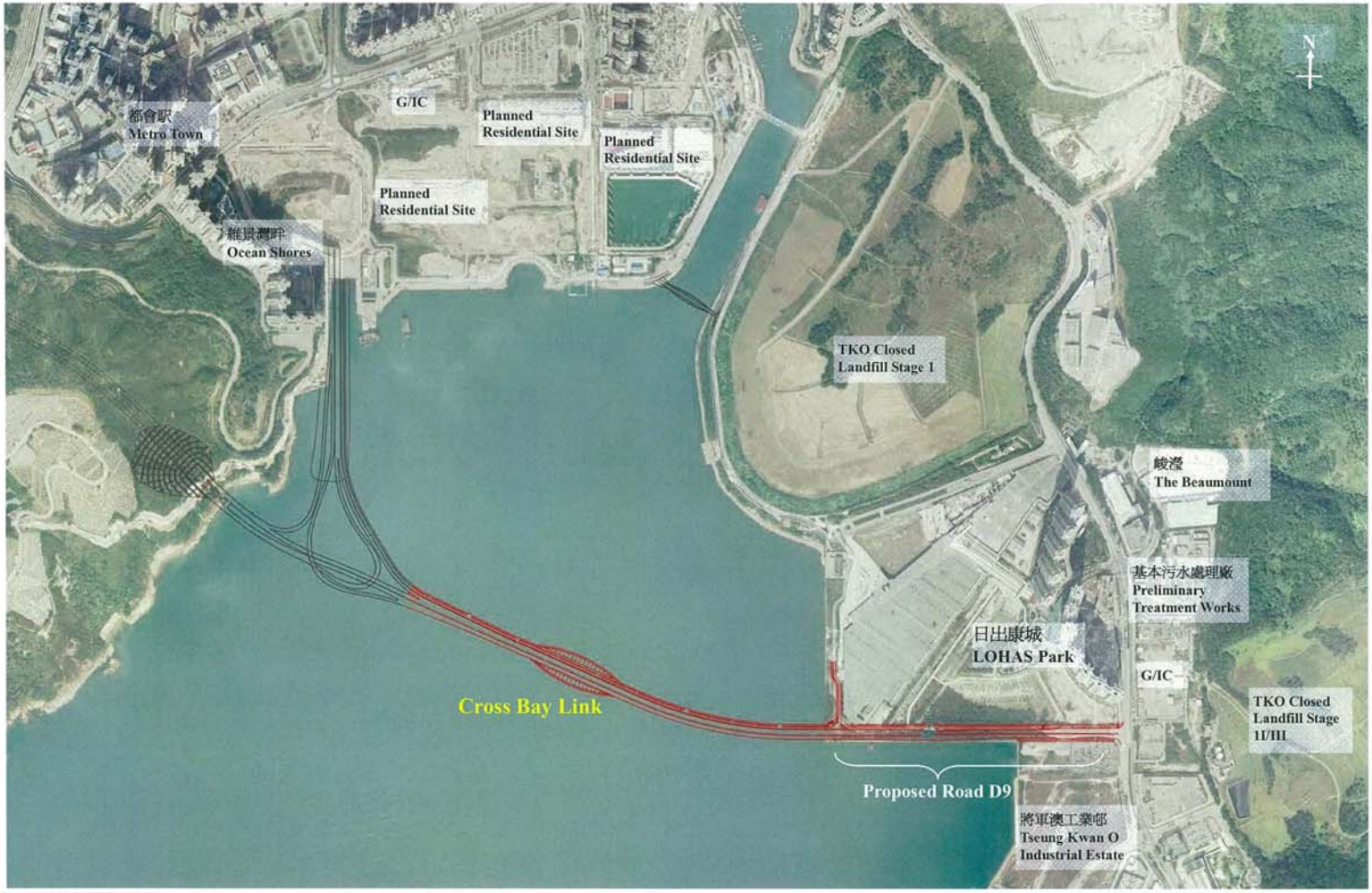

Figure 1: Overall View

Project Title: Cross Bay Link, Tseung Kwan O

Note: This figure is extracted from the EIA Report

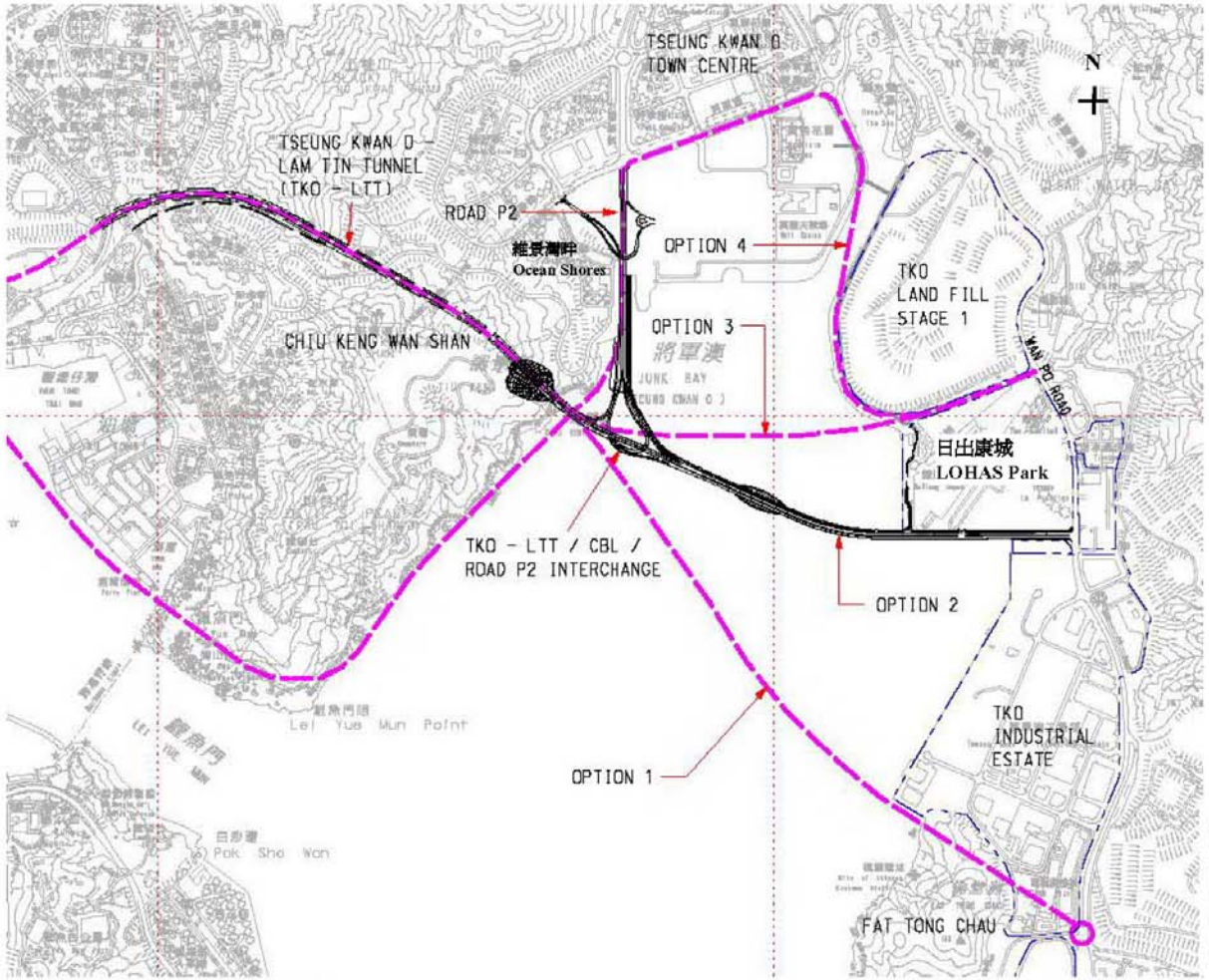

Figure 2: Cross Bay Link Alignment Options

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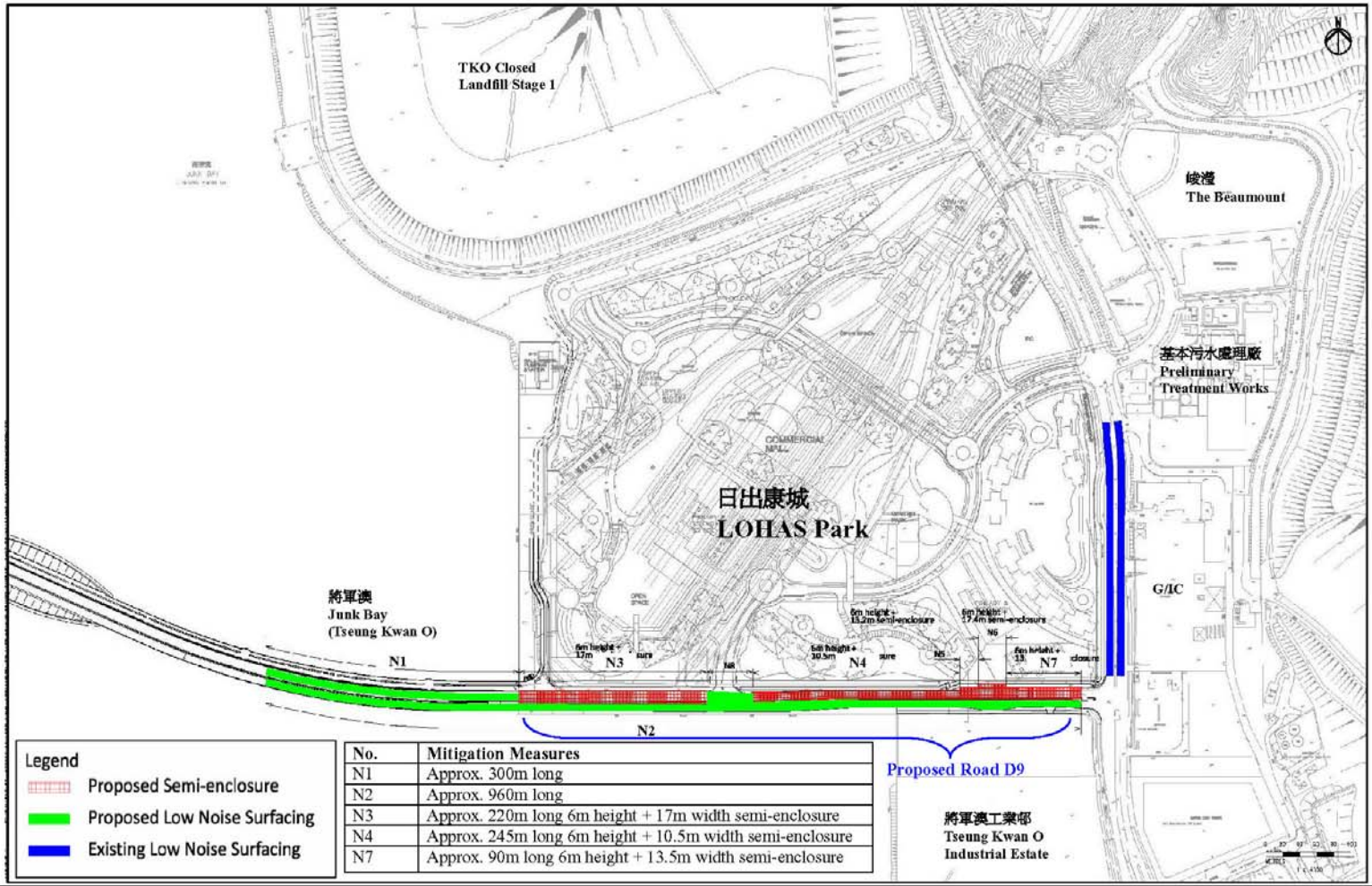

No.	Mitigation Measures
N1	Approx. 300m long
N2	Approx. 960m long
N3	Approx. 220m long 6m height + 17m width semi-enclosure
N4	Approx. 245m long 6m height + 10.5m width semi-enclosure
N7	Approx. 90m long 6m height + 13.5m width semi-enclosure

Figure 3: Noise Mitigation Package

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