Environmental Impact Assessment (EIA) Ordinance, Cap 499
Application for Approval of EIA Report
Project Title: Tung Chung Line Extension (EIA-277/2021)

Further Information to EPD

Request for Further Information Item (1) - *Information on the traffic forecast supporting the construction stage air quality impact assessment, including clarification on whether construction traffic has been included.*

Further Information Item (1)

Emission from road vehicles have been assessed in the assessment on impacts to air quality in the construction phase as stipulated in the EIA SB (ESB-329/2020) and a traffic forecast has been developed to facilitate the study. During the construction period between Year 2023 and Year 2029, the cumulative traffic in the vicinity at Year 2029 would be highest before the opening of Tung Chung Line Extension as more population and developments in Tung Chung East and Tung Chung West would have been moved in. Year 2029 has therefore been adopted for a more conservative air quality assessment. The traffic demand has been projected to Year 2029 based on the planning data projection between Year 2026 and Year 2031. Information relating to traffic generated from population and construction traffic at Year 2029 (as provided by the respective project proponents including CEDD and PlanD) has been considered in the LATM. The methodology and key assumptions for the traffic projection for construction phase air quality impact assessment are listed below.

Traffic Modelling

- The Local Area Traffic Model (LATM) was validated to 2019 traffic condition, which has complied with the validation criteria of Base District Traffic Model (BDTM)
- Developed 2026 and 2031 LATM
- 2029 LATM = interpolation between 2026 and 2031 base LATM + Tung Chung New Town Extension (TCNTE) development traffic in 2029
- TCNTE development traffic calculated based on Transport Planning and Design Manuel (TPDM) trip rates

Model Assumptions

- 2016-based Territorial Population and Employment Data Matrix (TPEDM)
- Latest TCNTE development parameters provided by PlanD and CEDD
- Lantau Road P1 between Tung Chung and Tai Ho Interchange (open by 2029)
- Tung Chung East local roads planned to open by 2029
- Tung Chung West local roads (all open by 2029)

Model Scenario

- In 2029, as the worst assessment year for traffic in EIA, the Project induced construction traffic has already been added for the purpose of construction dust assessment

A summary of the traffic forecast for air quality impact assessment has been provided in the Appendix 3.4b of the EIA Report.

According to the assessment results in Table 3.7.1 of the EIA Report, the air quality at all the Air Sensitive Receivers (ASRs) would comply with AQO. Table 3.7.2 to Table 3.7.6 of the EIA Report has also tabulated the contributions from different sources. The contribution under the category of "Others" has included emissions from modification of the footbridge near Yu Tung Road, vehicular emission, chimney at North Lantau Hospital, marine vessels and major emission point source within 4km. It can be seen that the contribution from "Others" only constitute a very small proportion as compared to the cumulative impacts. The contribution from vehicular emissions would therefore be even smaller. Besides, there is still a buffer between the cumulative impacts against the respective AQO.

Request for Further Information Item (2) - *Elaboration on the considerations given for the siting of the Tunnel Boring Machine (TBM) launching shaft and choosing of the construction method for the tunnel section connecting the existing overrun tunnel, and the measures to mitigate the associated impacts*

Further Information Item (2)

The selection of the TBM launching shaft at the public open space near Tung Chung Crescent has been discussed in Section 2.5.4 of the EIA Report. During the ACE EIA subcommittee meeting on 11 April 2022, it was explained that a construction shaft would be required at the public open space near Tung Chung Crescent for the construction of the cut-&-cover tunnel section regardless of the location of the TBM launching shaft. The rationale for choosing cut-&-cover methodology for the construction shaft is listed below.

- Change in cross-section from Tung Chung Station overrun tunnel (with a rectangular cross section) to the TBM tunnel (with a circular cross section) beneath Shun Tung Road
- Insufficient soil cover for TBM method should it be adopted at the public open space near Tung Chung Crescent.
- Necessity to remove the existing precast panels at overrun tunnel end wall for the tunnel extension which cannot be demolished from the existing operating tunnels.
- GI works have identified presence of left-in obstructions from previous construction works. This makes TBM a much more risky method compared with cut & cover construction method.

It can be seen from the 4 reasons above, it is inevitable to have a construction shaft at the public open space near Tung Chung Crescent for the cut-&-cover tunnel section to connect the new TBM tunnel with the existing overrun tunnel at Tung Chung Station. Similar reasonings apply that it is inevitable to have a construction shaft in lieu of mined tunnel to connect with existing overrun tunnel at Tung Chung Station. As this construction shaft is inevitable, it would also be used for the TBM launching and tunnelling so as to minimise the associated environmental impacts. The construction shaft serves both the cut-&-cover tunnel section and TBM launching shaft.

In Section 2.5.4 of the EIA Report, option for locating launching shaft at Tung Chung West was discussed. However, Option 1 (i.e. launching shaft near Tung Chung Crescent) is preferred but not Option 2 (i.e. launching shaft at Tung Chung West) since additional land resumption in Ma Wan Chung is required and longer time for completion of TBM launching shaft prior to commencement of tunnelling is required for Option 2 with knock on effect to the opening of Tung Chung West Station.

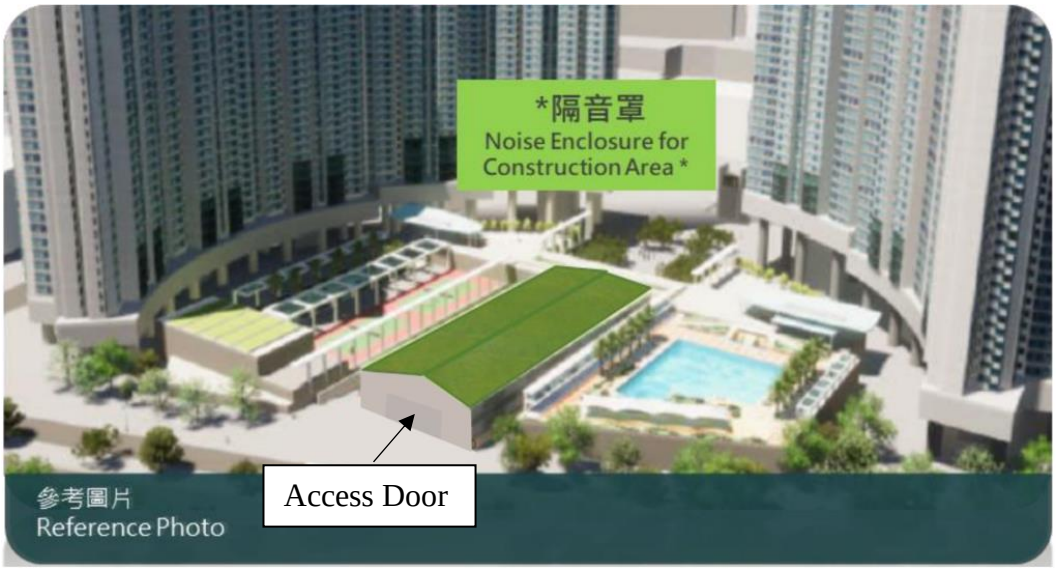
The EIA has acknowledged the potential impacts that may be caused during the construction of the TBM launching shaft. To mitigate the associated impacts, the EIA has recommended a temporary noise enclosure to be constructed to minimize the air quality and noise impacts on the neighbouring sensitive receivers including the residents in Tung Chung Crescent.

Request for Further Information Item (3) - *Elaboration on the tentative construction programme and design of the noise enclosure for the TBM launching shaft site in vicinity of Tung Chung Crescent, in particular as measures to mitigate noise, air and visual impact to the nearby residents during the construction phase.*

Further Information Item (3)

As explained during the ACE EIA subcommittee meeting on 11 April 2022, the temporary noise enclosure at the public open space near Tung Chung Crescent would be constructed as early as practicable. According to the latest engineering information available at this stage, it is tentatively scheduled to be completed in about 1.5 years. Once this temporary noise enclosure is completed, it would contain the construction plants to be operated inside. Construction access would be facing Shun Tung Road instead of Tung Chung Crescent. Hence, this temporary enclosure would help to alleviate the air quality and noise impacts emanating from the excavation and tunnelling works.

The reference design of the temporary noise enclosure for the TBM launching shaft site in the vicinity of Tung Chung Crescent is given below. The tentative size of the temporary noise enclosure is about 93m(L) x 35m(W) x 15m(H), subject to the Contractor's design during construction stage. This temporary noise enclosure has sufficient dimension to cover the construction shaft and the required supporting activities. The Contractor will be required to submit their design to the Project Proponent for approval prior to construction.



As the erection of the temporary noise enclosure would also require the use of construction plant for works such as site clearance and foundation works etc, the EIA has included a quantitative construction noise assessment. The air quality assessment has taken the worst-case scenario without the presence of this temporary noise enclosure. Results indicate that neither adverse construction noise impact (i.e. Table 4.4.9 of the EIA Report) nor construction dust impacts (i.e. Table 3.7.1 of the EIA Report) would be anticipated with the implementation of mitigation measures.

Other than construction noise and fugitive dust, the roof top of the noise enclosure would also be provided with suitable green elements to improve its aesthetics.