25. CONCLUSION

25.1 Introduction

The Environmental Impact Assessment Study for the construction and operation of the Eastern Access Road has determined the level of impact, the means of mitigating identified unacceptable impacts and the extent (if any) of residual environmental impact.

The conclusions of each of the technical areas of investigation are presented below.

25.2 Noise

Unmitigated construction activities associated with the Project would cause exceedances of daytime construction noise standards stipulated in EIA O TM at most of the nearby NSRs. Noise exceedances in the range of 1 to 16 dB(A) have been predicted during drainage and road construction works. The construction of proposed noise barriers along EAR would also cause adverse noise impacts by up to 23 dB(A). The critical noisy construction activities identified were excavation works during various construction stages, placement of road base and road paving in road construction.

Adequate control measures would be required for construction works to reduce the predicted noise impacts. Mitigation measures including good site practices, use of quiet plant, installation of temporary noise barriers, reduce the percentage of time of noisy equipment in operation, avoidance of simultaneous construction activities on sites and substitution of particular noisy equipment were recommended. However, residual noise impacts in the range of 1 to 7 dB(A) were still predicted at some of the NSRs along Kam Sheung Road, village house close to the proposed pedestrian subway and at Lutheran Kam Sheung Church. It is anticipated that the duration of works causing noise impacts would be short and additional control measures proposed by the Contractor, apart from those recommended in this Study, shall be adopted on site during the construction phase in order to keep the noise impacts to minimum. Regular monitoring of noise at NSRs would be required during the construction phase of the Project in order to ensure the environmental performance of the works. The monitoring requirements and implementation schedule for mitigation measures are addressed in *Sections 23* and *24* respectively.

Operational road traffic noise impact is a key issue raised by this EIA Study. Based upon the worst case traffic forecasts of year 2018, unmitigated noise impacts would be likely at some of the identified NSRs within the locality of the Project although the majority of these are already adversely affected by Kam Tin Road and Kam Sheung Road prior to the opening of the EAR. The use of direct technical remedies in the form of roadside barriers for the proposed scheme has been considered, taking account of existing and potential engineering

constraints of the site, and other controlling factors including visibility splay at junctions, presence of drainage reserve and bus-bay areas.

With an exhaustive research of direct measures being completed, the residual noise impacts predicted at the school close to Kam Tin By-pass roundabout, Lutheran Kam Sheung Church and village house of Ng Ka Tsuen (immediate north of Kam Sheung Road and close to the junction) have been assessed against the noise insulation criteria. The Study finds that these NSRs will be eligible for noise insulation. Type I and II noise insulation are required for EAR in order to satisfy the EIA O TM road traffic noise standards.

25.3 Air Quality

Dust nuisance would be the major air pollutants during construction phase. The major dust generating activities have been identified to be material handling, top soil removal and wind erosion. It is envisaged that as the volume of material to be handled on site and the excavation rate for road construction would be low, adverse dust impacts on the nearby Air Sensitive Receivers are not expected. However, mitigation measures have been recommended to ensure there is no exceedance of the specified dust criteria.

The operational air quality assessment concludes that the air quality levels at the identified ASRs would be within the AQO criteria.

25.4 Water Quality

No insurmountable water quality impacts are likely during the construction and operation of the EAR provided that the recommended mitigation measures are implemented.

25.5 Landscape and Visual Impact

The primary landscape impacts will be the loss of farmland located between Route 3 and Kam Tin Road. There will be some loss of mature trees adjacent to the Kam Tin River and its tributary. Whilst there is potential for mitigation measures to be undertaken in these areas there would appear to be insufficient land allocated for tree and shrub planting and there will therefore be a negative residual impact.

The Eastern Access Road and associated noise barriers will be clearly visible from VSRs using Route 3 which is elevated above the Kam Tin River basin. Visual impacts will also be experienced by VSRs using Kam Tin Road which will share a junction with the Eastern Access Road.

Visual impacts will be highest for residential VSRs within the western area of Ng Ka Tsuen, adjacent to which will be located noise barriers, and for residents at a church complex adjacent to Kam Sheung Road. There will be slight negative visual impacts to residential

VSRs at Tsz Tong Tsuen and a new estate to the south. Students and teachers at St Joseph's Primary School will receive slight to very slight negative impacts from the development.

The most effective method of landscape and visual mitigation at the Eastern Access Road is considered to be dense roadside tree and shrub planting. Current proposals would seem to allocate insufficient space for effective landscape and visual mitigation which would more effective if existing vegetation is reconnected by new planting that emulates natural landscape patterns as far as possible. However, to compensate for the limitations on landtake a range of other types of landscape mitigation measures are indicated in *Figure 18.3b*.

As a result of this study it is considered that the landscape and visual impacts associated with the Eastern Access Road development will be acceptable with mitigation measures as stated in Annex 10 of the Technical Memorandum on Environmental Impact Assessment Process.

25.6 Waste Management

The potential waste impacts arising from the construction and operational phases of the EAR have been assessed. Key issues include the need for effective waste management planning during the construction phase, effective management of chemical/industrial and other potentially hazardous wastes, and the strong preference for reuse of clean surplus material rather than disposing of it at public filling areas. Potential impacts can be avoided and controlled to acceptable levels provided that the recommended waste management methods and practices are implemented.

25.7 Land Contamination

Contaminated land issues have not been identified as a significant concern. The only outstanding issues relate to a number of potentially contaminating landuses identified within the study area, including vehicle repair or maintenance facilities, car junk yards, trailer storage yards and two factory complexes. The main potential concern relates to the possible presence of contamination, such as chemical spillages or leakages from these land uses.

Contamination concerns would only arise if spillages or leakages of chemicals from the above sources had migrated to locations where construction works or workers might come into contact with the contaminated soil. The type and degree of any potential contamination has not yet been identified. However, as the works related to the construction of the EAR are likely to comprise the use of mechanical equipment, the likelihood of contact with any potentially contaminated soils is small or likely to be restricted to a very limited period of time, and therefore contaminated land concerns are further reduced. The use of standard good practice would be likely to be sufficient to minimise any potential concerns.

In order to more fully determine the potential for contaminated land concerns it is recommended that, following EPD's approval of the stand alone Contamination Assessment

Plan (CAP) contained in *Annex I*, the site investigations defined in the CAP are implemented to investigate the potential for contaminated soil and groundwater on the site.

25.8 Ecology

The proposed EAR will encroach into a mosaic of disturbed or artificial habitats which are generally of low ecological value. Given that the area of ecological habitat to be affected is quite small, no adverse ecological impact is anticipated during either the construction or operational phases.

25.9 Cultural Heritage

No archaeological or cultural resources are known within the works boundary or the areas immediately adjacent to the proposed EAR.

However, following the gazettal of the Eastern Access Road alignment, and in advance of the construction works, it is recommended that archaeological field evaluation is undertaken to determine the presence and preservation of archaeological deposits. The field evaluation will be undertaken to a Field Evaluation Project Design to be submitted to the Antiquities & Monuments Office for approval. The findings of the field evaluation will determine the need for further mitigation of impacts to archaeological resources.