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LIST OF APPENDIX

Appendix 16.1 Project Implementation Schedule

16 ENVIRONMENTAL MONITORING AND AUDIT

16.1 Introduction

16.1.1 This section discusses the requirements of environmental monitoring and audit (EM&A) for the construction and operational phases of the Project, based on the assessment results of various environmental issues.

16.1.2 The purpose of the EM&A programme is to ascertain and verify the assumptions implicit to, and accuracy of the predictions in the Environmental Impact Assessment (EIA) study. The EM&A programme includes the scope of the EM&A requirements for the Project to ensure compliance with the EIA study recommendations, to assess the effectiveness of the recommended mitigation measures and to identify any further need for additional mitigation measures or remedial action.

16.1.3 The following sections summarise the recommended EM&A requirements for the Project. Details of the requirements are provided in a stand-alone EM&A Manual.

16.2 Air Quality Impact

16.2.1 Construction dust monitoring and regular site audit should be conducted during construction phase to check compliance with the relevant legislative requirements. Details of the monitoring and audit programme are contained in a stand-alone EM&A Manual.

16.2.2 No adverse impact would be generated during the operational phase of the Project. No EM&A would be required during the operation of the Project.

16.3 Noise Impact

16.3.1 Construction noise monitoring is recommended as part of the EM&A programme to check compliance with the daytime construction noise criteria during the construction phase of the Project. Weekly site audit is also recommended to ensure the proper implementation of the recommended mitigation measures to be specified for daytime construction activities in Construction Noise Management Plan(s) (CNMP(s)). Details of the EM&A programme are provided in a stand-alone EM&A Manual.

16.3.2 Both at-source (i.e. low noise road surfacing and absorptive type noise barriers) and at-receiver (i.e. acoustic windows/balconies or acoustic windows/balconies lined with sound absorptive material) mitigation measures are recommended to mitigate the road traffic noise impact anticipated from Project roads. Road traffic noise levels should be monitored at the selected representative noise sensitive receivers (NSRs) located in the vicinity of the recommended at-source mitigation measures, during the first year of road opening and population intake of the planned NSRs under the Project. Details of the EM&A programme are provided in a stand-alone EM&A Manual.

16.3.3 Planned fixed noise sources under the Project would include a sewage pumping station (SPS), fire station cum ambulance depot, facilities within UniTown (including centralised cooling system, public transport terminus and sports grounds), indoor sport centre and transport interchange hub. Proper noise control measures should be considered during the detailed design stage and implemented

during construction stage to ensure compliance with relevant noise standards at all NSRs. Based on the latest information of the Project, there are no fixed noise sources to be provided under Designated Projects (DPs). For non-DP fixed noise sources, quantitative fixed noise impact assessment should be carried out via various planning/funding/land lease mechanism in accordance with the requirements of the Hong Kong Planning Standards and Guidelines (HKPSG).

16.3.4 With reference to the assessment results in the approved EIA reports for Northern Link (NOL) Main Line and High Speed Rail (HSR), no adverse airborne and ground-borne rail noise impact would be anticipated. Noise monitoring for rail noise is therefore not required during operational phase of the Project.

16.4 Water Quality Impact

16.4.1 Considering that the proposed revitalisation works would be carried out at Ngau Tam Mei Drainage Channel (NTMDC) and its branches, baseline and construction phase water quality monitoring at NTMDC is recommended. Details of the recommended water quality monitoring requirements are provided in a stand-alone EM&A Manual.

16.4.2 A Water Pollution Control Ordinance (WPCO) licence should be obtained if there would be construction drainage discharge. Self-monitoring and reporting should be carried out for monitoring the construction drainage discharge in accordance with the requirements of WPCO licence.

16.4.3 It is also recommended that regular site inspection should be undertaken during the construction phase to inspect the construction activities and works areas in order to ensure the recommended mitigation measures are properly implemented.

16.5 Sewerage and Sewage Treatment Implications

16.5.1 No adverse sewerage implications associated with the operation of the Project are expected, thus, no specific EM&A requirement would be required.

16.6 Waste Management Implications

16.6.1 Waste management would be the Contractor's responsibility to ensure that all wastes produced during the construction of the Project are properly handled, stored, transported and disposed of in accordance with good waste management practices and EPD's regulations and requirements. A trip ticket system in accordance with *DEVB TCW No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials,* should be in place. The monitoring and auditing requirement stated in *ETWB TCW No.19/2005, Environmental Management on Construction Sites,* and *DEVB TCW No. 6/2010* should be followed with regard to the management of construction and demolition (C&D) materials.

16.6.2 Weekly site audits should be conducted by the Environmental Team (ET) during construction phase. The audits should look at all aspects of on-site waste management practices on waste generation, storage, recycling, transport and disposal. Apart from site audits, documents including licences, permits, disposal and recycling records should be reviewed and audited to ensure compliance of relevant legislation and proper implementation of the recommended good site practice and other waste management mitigation measures.

16.7 Land Contamination

16.7.1 Remediation works, if necessary, would be carried out based on the recommended further works outlined in **Section 8.8**. Mitigation measures as recommended in the future approved Remediation Action Plan should be implemented during the remediation works. The EM&A requirements should be carried out in the form of weekly site inspection to ensure the recommended mitigation measures are properly implemented.

16.8 Ecological Implication (Terrestrial and Aquatic)

16.8.1 Key mitigation measures on specific ecological resources were recommended under **Section 9** of this EIA Report, such as wetland compensation, and transplantation / translocation / nest control measures of species of conservation importance. These measures should be monitored and audited by local ecologist(s)/botanist(s) with relevant experience during the construction and operational phases as appropriate to ensure proper implementation. Furthermore, regular site audit should be carried out throughout the construction phase to ensure proper implementation of the recommended avoidance and minimisation measures. In case of non-compliance, contractor(s) should be informed to strengthen the proposed measures accordingly. Details of EM&A requirements are discussed in a stand-alone EM&A Manual.

16.9 Fisheries Impact

16.9.1 With the implementation of mitigation and precautionary measures proposed in **Section 16.4**, the potential water quality impacts arising from the Project would be minimised. No specific EM&A programme is required for the potential water quality impact in association with fisheries impact. The monitoring and audit requirement have been covered by the EM&A programme for potential water quality impact recommended in **Section 16.4**.

16.10 Landscape and Visual Impact

16.10.1 The landscape and visual mitigation measures are recommended in **Section 11.8** to be undertaken during design, construction and operational phases of the Project. The design, implementation and maintenance of landscape and visual mitigation measures should be checked to ensure that they are fully realised such that any potential conflicts between the proposed landscape measures and any other project works as well as operation requirements could be resolved at the earliest possible date and without compromising the intention of the proposed mitigation measures.

16.10.2 The EM&A of the mitigation measures should be carried out during the construction phase as part of the site audit programme, while a 12-month establishment period of the landscape and visual mitigation measures by the corresponding implementation agency should be conducted during operational phase to ensure the proposed mitigation measures in the EIA and as depicted in the Landscape and Visual Mitigation Plan are fully implemented.

16.10.3 All mitigation measures proposed and implemented by the contractor should be audited by Registered Landscape Architect, as a member of the Environmental Team, on a regular basis to ensure compliance with the intended aims of the measures. The mitigation measures proposed should be included in the detailed

engineering design and landscape design drawings and contract document. Site inspection should be undertaken monthly throughout the construction period. In particular, the extent of the agreed works areas should be regularly checked during the construction phase. The landscape auditor should audit the proposed mitigation measures to ensure that they are fully implemented during construction and the 12-month establishment period during operational phase.

16.11 Impact on Cultural Heritage

Construction Phase

Built Heritage and Other Identified items

16.11.1 Cartographic and photographic record, and other documentation means (including 3D scanning), should be carried out for the seven other identified items (i.e. DD104 Lot 4186 S.E (Residence) (YTMT01); DD104 Lot 4187 S.B (Watchtower) (YTMT02); Remnants of Nam Shan Monastery (YTMT03); Subsidiary Station of San Yau Vegetable Marketing Co-operative Society, Ltd. (YTMT04); Lee's Boundary Stone (YTMT07); Mailbox No. 299 (NB04) and Grave of Mr. Man Chiu Pak and His Wife (NB09)) located within the Project Site prior to the commencement of any construction works by the contractor(s) at the respective locations for record purposes and future use. For NB09, implementation details would be subject to discussion between project proponent(s) and stakeholders. If YTMT06 is confirmed to be demolished in subsequent stages, preserved by record should also be conducted for the school.

16.11.2 Standard control measures on ground-borne vibration, tilting and settlement by drawing necessary references from relevant government guidelines, including but not limited to the *Code of Practice for Foundations and Practice Note for Authorised Person, Registered Structural Engineers* and *Registered Geotechnical Engineers APP-137 (PNAP APP-137)* should be conducted by the future contractor(s) for eight (8) other identified items (i.e. Wai Cheung Ancestral Hall (HB1219), San Yau Vegetable Marketing Co-operative Society, Ltd (YTMT05); DD104 Lot 2729 (Residence) (WTT01); Nos. 16-17, San Wai Tsuen (SW03); No. 25A, San Wai Tsuen (SW04); Mailbox No. 35 (NB02); Mailbox No. 169 (NB03) and Chun Chi Education Park (NB08)) and YTMT06 (if preserved in situ).

16.11.3 Given HB1219 and YTMT06 (if preserved in situ) are located within the Project Site, standard measures of pre-construction condition survey, as suggested in PNAP APP-137, should be conducted on HB1219 and YTMT06 (if preserved in situ) for better understanding on its structural condition. The results of the pre-construction condition survey should form a baseline and taken into consideration when formulating the abovementioned monitoring proposal (**Section 16.11.2** refers) and buffer zone (**Section 16.11.4** refers). A post-construction condition survey should also be carried out to confirm their structural stability.

16.11.4 Furthermore, a buffer zone, where no piling works are allowed during the construction phase, should be reserved for HB1219 and YTMT06 (if preserved in situ) in the design layout of the Project by the project proponent or its contractor(s). The contractor(s) should also enforce protocol to forbid any direct contact of construction machineries with HB1219 and YTMT06 (if preserved in situ), and provide physical barriers to these two items in order to protect the buildings' fabrics.

16.11.5 As HB1219, YTMT05 and YTMT06 (if preserved in situ) are located within or in proximity of the Project Site, dust suppression measures and good site practice

should be adopted by the contractor(s) during the construction phase in order to avoid dust nuisance on these buildings. A safe access route to these buildings should also be maintained by the contractor(s) for conducting any mitigation measures.

16.11.6 In addition, project proponent(s), subsequent developer(s) and contractor(s) should be aware of eight other identified items (i.e. YTMT05, WTT01, SW03, SW04, NB02, NB03, Man's Boundary Stone (NB05) and NB08) that are located in proximity to the Project Site when construction works are carrying out nearby and the contractor(s) should deploy management measures to ensure no direct disturbance would be caused to the physical fabrics of these other identified items.

Archaeology

16.11.7 Based on the desktop review and the findings of previous archaeological surveys, there are high archaeological potential areas located within the Project Site, namely Ngau Tam Mei Site of Archaeological Interest (SAI), Ngau Tam Mei Archaeologically Sensitive Area (ASA) and Ngau Tam Mei (North) ASA. Direct impact on archaeological heritage is anticipated during the construction phase.

16.11.8 Archaeological excavation is recommended to be conducted at the Project Site within Ngau Tam Mei SAI in order to obtain adequate archaeological information of the area, and retrieve the archaeological data, if any. Considering the potential direct impact to both Ngau Tam Mei ASA and Ngau Tam Mei (North) ASA where have high archaeological potential, archaeological survey-cum-excavation is recommended to be conducted at these areas for verifying their archaeological potential, and retrieve the archaeological data, if any. For the low-lying agricultural fields and hilly landscape within the Project Site where possess moderate-low archaeological potential, archaeological survey should be conducted for verifying their archaeological potential, and retrieve the archaeological data, if any. The recommended archaeological surveys and excavations should be conducted before commencement of works involving soil disturbance at the respective areas, and should be subject to future land resumption status and discussion with Antiquities and Monuments Office (AMO) in later stages.

16.11.9 For those remaining areas identified with low and no archaeological potential, precautionary measures are required. Pursuant to the *Antiquities and Monuments Ordinance (Cap. 53)*, the project proponent is required to inform the AMO immediately in case of discovery of antiquities or supposed antiquities in the course of works, so that appropriate mitigation measures, if needed, can be timely formulated and implemented in agreement with and to the satisfaction of AMO.

Operational Phase

Built Heritage and Other Identified Items

16.11.10 HB1219 is proposed to be preserved in situ within the land use of Open Space (O.3). Any revitalisation proposed for the building in subsequent stages should be further reviewed by the future project proponent(s) or subsequent developer(s). If the preservation of YTMT06 in situ within the land use of Government (UniTown) (G.11) is confirmed in subsequent stages, opportunity for potential revitalisation of the school should be explored by future project proponent(s) or subsequent developer(s).

Archaeology

16.11.11 As no impact is anticipated during operational phase, no mitigation measure is required for archaeology heritage.

16.12 Hazard to Life

16.12.1 No hazard to life impact is anticipated as there are no consultation zones of any existing hazardous facilities encroaching upon the Project Site and no planned hazardous facilities proposed under the Project. Hence, no EM&A programme is required.

16.13 Landfill Gas Hazard

16.13.1 Qualitative landfill gas hazard assessment has categorised the risk as “Very Low” during both construction and operational phases, and thus no EM&A programme is considered necessary. Nevertheless, appropriate precautionary and protective measures as recommended in **Section 14.6** should be considered to further minimise the landfill gas hazard.

16.14 Impact from Electric and Magnetic Field

16.14.1 Based on measurement results of previous EIA studies, it is anticipated that the electric field and electro-magnetic field generated by the existing 400 kV overhead cables situated near / at the southern and eastern portions of the Development Area would not pose adverse impact on the proposed developments of the Project. Hence, no specific EM&A programme is required.