

Appendix 15.2 – Summary of Environmental Impact Associated with the Project

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
<b>Air Quality Impact</b>					
<b>Construction Phase</b>					
Existing and planned ASRs	Adverse construction dust impact is not anticipated with proper implementation of good control measures and environmental monitoring and audit	<ul style="list-style-type: none"> <li>• AQO</li> <li>• EIAO-TM Annex 4                             <ul style="list-style-type: none"> <li>○ 24-hour average RSP concentration: 100 µg/m<sup>3</sup> (Number of exceedance allowed: 9)</li> <li>○ Annual average RSP concentration: 50 µg/m<sup>3</sup></li> <li>○ 24-hour average FSP concentration: 50 µg/m<sup>3</sup> (Number of exceedance allowed: 18)</li> <li>○ Annual average FSP concentration: 25 µg/m<sup>3</sup></li> </ul> </li> </ul>	Not applicable	<ul style="list-style-type: none"> <li>• Close liaison between the contractors of other concurrent projects and the Project would be maintained to minimise dusty activities to be conducted concurrently as far as practicable</li> </ul> <p>Good control measures are recommended:</p> <ul style="list-style-type: none"> <li>• Watering once per hour on the exposed construction areas with dust emission and paved haul roads to reduce dust emission;</li> <li>• Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good sites practices would be carried out to further minimise construction dust impact;</li> <li>• Emission control measures for barging facilities, such as provision of enclosed system with 3-side screen with top cover and provision of water spraying system, regular water and covering spoils by tarpaulin;</li> <li>• Emission control measures for concrete batching plant as stipulated in the Best Practicable Means for Cement Works (Concrete Batching Plant) BPM 3/2 (16); and</li> <li>• The engine of the barge shall be switched-off during berthing as far as practicable. Provision of on-shore power supply shall also be considered wherever possible to minimize air quality impact from the marine vessels, with consideration of actual site constraints or circumstances to be further reviewed during detail design stage.</li> </ul>	No adverse residual impacts anticipated
<b>Operational Phase</b>					
Existing and planned ASRs	<p>NO<sub>2</sub></p> <ul style="list-style-type: none"> <li>• 19<sup>th</sup> highest 1-hr average concentration: 88 – 165µg/m<sup>3</sup></li> <li>• Annual average concentration: 17 – 39.9µg/m<sup>3</sup></li> </ul> <p>RSP</p> <ul style="list-style-type: none"> <li>• 10th highest 24-hour average RSP concentration: 68 – 73µg/m<sup>3</sup></li> <li>• Annual average RSP concentration: 27 – 32µg/m<sup>3</sup></li> </ul> <p>FSP</p> <ul style="list-style-type: none"> <li>• 19th highest 24-hour average FSP concentration: 36 – 40µg/m<sup>3</sup></li> <li>• Annual average FSP concentration: 15 – 17µg/m<sup>3</sup></li> </ul>	<ul style="list-style-type: none"> <li>• AQO</li> <li>• EIAO-TM Annex 4                             <ul style="list-style-type: none"> <li>○ 24-hour average RSP concentration: 100 µg/m<sup>3</sup> (Number of exceedance allowed: 9)</li> <li>○ Annual average RSP concentration: 50 µg/m<sup>3</sup></li> <li>○ 24-hour average FSP concentration: 50 µg/m<sup>3</sup> (Number of exceedance allowed: 18)</li> <li>○ Annual average FSP concentration: 25 µg/m<sup>3</sup></li> <li>○ 1-hour average NO<sub>2</sub> concentration: 200 µg/m<sup>3</sup> (Number of exceedance allowed: 18)</li> <li>○ Annual average NO<sub>2</sub> concentration: 40 µg/m<sup>3</sup></li> </ul> </li> </ul>	No exceedance is anticipated	<ul style="list-style-type: none"> <li>• No mitigation measure is required</li> <li>• In Lam Tei, the proposed operation area is largely outside the exceedance zone. Since the uses, layout and design of the operation area are not yet available at EIA stage, it is feasible that it could be planned and designed to avoid adverse air quality impacts. If there are planned air sensitive uses, the operation area will be properly designed such that any openings, openable windows, and/or FAIs will be located and avoided from the predicted exceedance zone at 1.5mAG. Further review of the layout and design of operation area will be conducted in Detailed Design Stage to re-affirm compliance of the AQOs. For the proposed satellite control building where the entire building falls within the exceedance zone at 1.5mAG, it is recommended that air filtering system with at least 40% NO<sub>2</sub> removal efficiency shall be installed in order to achieve AQO compliance. The air filtering</li> </ul>	No adverse residual impacts anticipated

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
				<p>system and NO<sub>2</sub> removal efficiency will be further reviewed in Detailed Design Stage to re-affirm that the air quality impacts at all sensitive uses at the proposed highway / tunnel operation and maintenance facilities could comply within the AQOs.</p> <ul style="list-style-type: none"> <li>In Pillar Point, the southern portion of the proposed maintenance compound and a tiny portion of the proposed training ground and supporting area would fall within the annual NO<sub>2</sub> exceedance zone at 1.5mAG. The proposed training ground and supporting area is tentatively planned to be non-sensitive, but the uses, layout and design of the training ground and supporting area are subject to review in Detailed Design Stage. Since only a tiny portion of the training ground and supporting area is within the exceedance zone, it is feasible that, in future design, any openings, openable windows, and/or FAIs could be well planned to avoid from the predicted exceedance zone. For the maintenance compound, the uses, layout and design of the maintenance compound are not yet available at EIA stage. Similarly, since the facility is largely outside the exceedance zone, it is recommended that it could be properly designed such that openings and openable windows, and/or FAIs shall be located and avoided from the predicted exceedance zone. In case FAIs are unavoidably to be planned within the exceedance zone at 1.5mAG, air filtering system with at least 30% NO<sub>2</sub> removal efficiency shall be installed for the proposed maintenance compound. Again, the air filtering system if necessary and NO<sub>2</sub> removal efficiency shall be further reviewed in Detailed Design Stage to re-affirm that the air quality impacts at all sensitive uses at the TMB highway / tunnel operation and maintenance facilities could comply within the AQOs.</li> </ul>	
<b>Noise Impact</b>					
<b>Construction Phase</b>					
Existing and planned NSRs	<ul style="list-style-type: none"> <li>Adverse construction noise impact is not anticipated with proper implementation of good control measures and environmental monitoring and audit</li> <li>The future Contractor will also be required to prepare a Construction Noise Management Plan (CNMP)</li> </ul>	<ul style="list-style-type: none"> <li>EIAO-TM Annex 5 and Annex 13 for non-restricted hours for domestic premises: <ul style="list-style-type: none"> <li>L<sub>eq (30mins)</sub> 75 dB(A) for all domestic premises, temporary housing accommodation, hostel, convalescent homes and homes for the aged</li> <li>L<sub>eq (30mins)</sub> 70 dB(A) for places of public worship, courts of law, hospitals, medical clinics and educational institution (including kindergartens and nurseries) (65 dB(A) during examination period)</li> </ul> </li> </ul>	Not applicable	<p>Good control measures are recommended to minimize the construction noise impact as far as practical:</p> <ul style="list-style-type: none"> <li>Good site practices to limit noise emissions at the source;</li> <li>Use of quality powered mechanical equipments (QPMEs) and quieter construction methods;</li> <li>Use of temporary noise barriers and noise enclosures to screen noise from relatively static PME; and</li> <li>Alternative use of plant items within one worksite, wherever practicable.</li> </ul>	No adverse residual impacts anticipated

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
<b>Operational Phase (Road Traffic Noise)</b>					
Existing and planned NSRs	<ul style="list-style-type: none"> <li>Predicted overall noise levels: 46 – 71dB(A)</li> <li>Predicted road traffic noise levels of the project roads: ≤40 - 59dB(A)</li> <li>Maximum contribution from Project roads (When the overall level exceeds respective criterion): 0dB(A)</li> </ul>	<ul style="list-style-type: none"> <li>EIAO-TM Annex 5 and Annex 13: <ul style="list-style-type: none"> <li>L<sub>10 (1hour)</sub> 70dB(A) for all domestic premises, temporary housing accommodation, hostel, convalescent homes and homes for the aged</li> <li>L<sub>10 (1hour)</sub> 65dB(A) for places of public worship, courts of law, and educational institution</li> <li>L<sub>10 (1hour)</sub> 55dB(A) for medical and clinics</li> </ul> </li> </ul>	Not applicable	No mitigation measure is required	No adverse residual impacts anticipated
<b>Operational Phase (Fixed Noise)</b>					
Existing and planned NSRs	<ul style="list-style-type: none"> <li>Adverse fixed noise impact is not anticipated with good design and control measures, and environmental monitoring and audit</li> <li>The future Contractor will also be required to prepare a Fixed Noise Management Plan (FNMP)</li> </ul>	<ul style="list-style-type: none"> <li>EIAO-TM Annex 5 and Annex 13, and IND-TM</li> <li>Appropriate ANLs and ANLs-5 as shown in Table 2 of IND-TM or the prevailing background noise level</li> </ul>	Not applicable	<ul style="list-style-type: none"> <li>Proper selection of quieter equipment and installation of silencer, barrier or enclosure;</li> <li>Orientating louvres away from adjacent NSRs, preferably onto main roads which are less noise sensitive; and</li> <li>Selection of façade for ventilation shafts with adequate sound insulation properties.</li> </ul>	No adverse residual impacts anticipated
<b>Water Quality Impact</b>					
<b>Construction Phase</b>					
Water Sensitive Receivers	<p>Water quality in WSRs would be affected by land-based construction with the following pollution sources:</p> <ul style="list-style-type: none"> <li>Construction run-off and general construction activities;</li> <li>Tunnelling and underground works;</li> <li>Construction for ventilation buildings, satellite control building and administration buildings;</li> <li>Sewage due to construction workforce;</li> <li>Construction works in close proximity of inland water;</li> <li>Groundwater from contaminated areas and contaminated site run-off;</li> <li>Operation of barging points;</li> <li>Accidental spillage of chemicals; and</li> <li>Diversion of watercourses.</li> </ul>	<ul style="list-style-type: none"> <li>EIAO-TM Annex 6 and Annex 14</li> <li>WPCO (Cap. 358)</li> <li>TM-DSS</li> <li>ProPECC PN 1/94</li> <li>WSD's Water Quality Criteria for Sea Water Intakes</li> </ul>	Not applicable	<ul style="list-style-type: none"> <li>Good site practices in accordance with ProPECC PN1/94 when handling the site sun-off from general site operation;</li> <li>Suitable water control strategies (e.g. probing ahead and pre-grouting) during tunnel works;</li> <li>Temporary dewatering to minimize impacts on groundwater table during the works;</li> <li>Providing temporary sanitary facilities and posting notices about treating discharge at conspicuous locations for the workforce;</li> <li>Comply with the Conditions for Working within Water Gathering Grounds;</li> <li>Good site practices in accordance with ETWB TC(Works) No. 5/2005 "Protection of natural streams/rivers from adverse impacts arising from construction works" for removal or diversion of watercourses;</li> <li>Proper handling of contaminated groundwater and site run-off;</li> <li>Proper good site practice to prevent water quality impact during transportation of spoil when using the barging point; and</li> <li>Proper storage of the chemicals used during construction.</li> </ul>	No adverse residual impacts anticipated

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
<b>Operational Phase</b>					
Water Sensitive Receivers	Water quality in WSRs would be affected by the following operational activities: <ul style="list-style-type: none"> <li>• Surface run-off from paved areas of the Project;</li> <li>• Sewage effluent from the proposed buildings;</li> <li>• Drainage of road surface and tunnel runoff; and</li> <li>• Wastewater generated from washing and maintenance operations</li> </ul>	<ul style="list-style-type: none"> <li>• EIAO-TM Annex 6 and Annex 14</li> <li>• WPCO (Cap. 358)</li> <li>• TM-DSS</li> <li>• ProPECC PN 5/93</li> </ul>	Not applicable	<ul style="list-style-type: none"> <li>• Provision of mitigation measures including 1) standard oil interceptors before discharge to stormwater drainage system and 2) silt trap for the surface runoff at the stormwater drainage system as necessary;</li> <li>• Connection to existing sewerage networks for sewage effluent from proposed buildings;</li> <li>• Treating wastewater generated by washing and maintenance activities of ventilation systems via an active carbon filter before discharge to storm water drainage system;</li> <li>• Treating wastewater generated by washing and maintenance activities associate with work vehicles via petrol interceptors before discharge; and</li> <li>• Proper collection and disposal of spent lubrication oil by Licensed Chemical Contractor.</li> </ul>	No adverse residual impacts anticipated
<b>Waste Management Implications</b>					
<b>Construction Phase</b>					
C&D materials, sediment, general refuse, and chemical waste	<ul style="list-style-type: none"> <li>• Total Generation of inert C&amp;D material: 3,163,718m<sup>3</sup></li> <li>• Inert C&amp;D material delivered off-site: ~3,133,218 m<sup>3</sup></li> <li>• Inert C&amp;D material reuse on-site: ~30,500 m<sup>3</sup></li> <li>• Generation of non-inert C&amp;D material: ~23,986m<sup>3</sup></li> <li>• Generation of chemical waste: approx. few hundred litres per month</li> <li>• Generation of general refuse: ~ 1,625kg/day</li> </ul>	<ul style="list-style-type: none"> <li>• EIAO-TM</li> <li>• EIA Study Brief (ESB-348/2021)</li> <li>• Waste Disposal Ordinance (WDO) (Cap. 354) and subsidiary Regulations;</li> <li>• Land (Miscellaneous Provisions) Ordinance (Cap. 28);</li> <li>• Public Health and Municipal Services Ordinance (Cap. 132) – Public Cleansing and Prevention of Nuisances Regulation; and</li> <li>• Works Bureau Technical Circular (WBTC) No. 12/2000 Fill Management.</li> <li>• Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C); and</li> <li>• Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N).</li> </ul>	N/A	<ul style="list-style-type: none"> <li>• Carry out on-site sorting, re-use and recycled C&amp;D materials.</li> <li>• Implement a trip-ticket system for each works contract in accordance with Development Bureau TC(W) No. 6/2010 to ensure that the disposal / handling of C&amp;D materials is properly documented and verified.</li> <li>• All dump trucks and vessels engaged on site should be equipped with Global Positioning System (GPS) or equivalent automatic system for real time tracking and monitoring of their travel routings and parking locations to prohibit illegal dumping and landfilling of C&amp;D materials.</li> <li>• Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the CWTC, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</li> <li>• Implement an education programme for workforce relating to avoiding, reducing, reusing and recycling general waste. Participation in a local collection scheme should be considered by the Contractor to facilitate waste reduction.</li> <li>• Measures and good site practices to be implemented at the works area during construction.</li> </ul>	No adverse residual impact.
<b>Operational Phase</b>					
General refuse, and chemical waste	<ul style="list-style-type: none"> <li>• Generation of chemical waste: approx. few hundred litres per month</li> </ul>	<ul style="list-style-type: none"> <li>• EIAO-TM</li> <li>• EIA Study Brief (ESB-348/2021)</li> </ul>	N/A	<ul style="list-style-type: none"> <li>• Chemical waste should be stored in appropriate containers and collected by a licensed chemical waste collector. Chemical wastes (e.g. spent lubricant oil)</li> </ul>	No adverse residual impact.

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
	<ul style="list-style-type: none"> <li>• Generation of general refuse: ~ 130kg/day</li> </ul>	<ul style="list-style-type: none"> <li>• Waste Disposal Ordinance</li> <li>• Waste Disposal (Charges for Disposal of Construction Waste) Regulation</li> <li>• Waste Disposal (Chemical Waste) (General) Regulation</li> <li>• Land (Miscellaneous Provisions) Ordinance</li> <li>• Public Health and Municipal Services Ordinance</li> <li>• Dumping at Sea Ordinance</li> </ul>		<p>should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the CWTC, or another licensed facility.</p> <ul style="list-style-type: none"> <li>• A reputable waste collector should be employed to remove general refuse generated from administration buildings and ventilation buildings on a daily basis to minimise odour, pest and litter impacts. Arrangements should be made with the recycling companies to collect the recycle waste as required.</li> </ul>	
<b>Land Contamination</b>					
Onsite construction workforce and future occupants	<ul style="list-style-type: none"> <li>• Potential health risk to the onsite workers and future occupants would arise from direct contact of the potentially contaminated materials</li> </ul>	<ul style="list-style-type: none"> <li>• EIAO-TM</li> <li>• EIA Study Brief (ESB-348/2021)</li> <li>• Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management</li> <li>• Guidance Notes for Contaminated Land Assessment and Remediation</li> <li>• Practice Guide for Investigation and Remediation of Contaminated Land</li> </ul>	N/A	<ul style="list-style-type: none"> <li>• Site re-appraisal and submission of supplementary Contamination Assessment Plan(s) (CAPs) should be carried out for the whole Project Area at a later stage of the Project in order to address any new contamination issues caused by the (i) changes in operation of the identified potentially contaminated site and (ii) changes of land use within the Project Area. The associated site investigation (SI) works and any necessary remediation action are recommended to be carried out after the operation of concerned area(s) has ceased but prior to the commencement of construction works at the concerned area(s). The appropriate remediation methods should be selected in the Remediation Action Plan (RAP) based on the SI findings.</li> </ul>	No adverse residual impact.
<b>Hazard to Life</b>					
<b>Construction Phase</b>					
Population in the vicinity of the Project	<ul style="list-style-type: none"> <li>• The societal risk for the overnight storage and transport of explosives as well as the use of explosives lie within the “ALARP” region;</li> <li>• The individual risk complies with the criterion of Annex 4 of the EIAO-TM</li> <li>• The overall societal risk lies within the “ALARP” region.</li> </ul>	<ul style="list-style-type: none"> <li>• Annex 4 of the EIAO-TM</li> <li>• Practice Note for Authorized Persons and Registered Structural Engineers – Control of Blasting (APP-72)</li> <li>• Guidance Note No. GN 8 How to Apply for a Mode A Store Licence for Storage of SIDG (Blasting Explosives)</li> <li>• Guidance Note No. GN 2 Approval of an Explosives Delivery Vehicle</li> <li>• Guidance Note No. GN 3 Application and Handling of a Conveyance Permit</li> </ul>	N/A	<ul style="list-style-type: none"> <li>• The truck should be designed and improved to reduce the amount of combustibles in the cabin. The fuel carried in the fuel tank should also be minimized to reduce the duration of any fire;</li> <li>• The accident frequency of the explosive truck should be minimized through the implementation of a defensive driving attitude and a dedicated training programme for both driver and his attendants which includes regular briefing sessions. Moreover, drivers should be selected based on good safety record and provided with regular medical checks;</li> <li>• The required quantity of explosives should only be transported for a particular blast to avoid any unused explosives send back to the magazine;</li> <li>• The contractor should combine the explosive deliveries for a given work area as far as practicable;</li> <li>• A minimum headway between two consecutive truck convoys of 10 minutes should be maintained whenever practicable;</li> </ul>	No adverse residual impact anticipated

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
				<ul style="list-style-type: none"> <li>• To reduce the explosive truck fire involvement frequency, a better emergency response and training should be implemented to ensure adequate fire extinguishers are used and attempt is made to evacuate the area of the incident or securing the explosive load if possible. All explosive vehicles should also be equipped with bigger capacity aqueous film forming formula (AFFF)-type extinguishers;</li> <li>• Each blasting activities including storage and transport of explosives should be supervised and audited by competent site staff to ensure strict compliance with the blasting permit condition;</li> <li>• Security plan should address different alert security level to reduce opportunity for arson or deliberate initiation of explosives;</li> <li>• Monitoring and mitigations measures would be proposed to control the ground vibration or ground settlement induced by TMB tunnelling;</li> <li>• Follow good practices listed in Practice Note for Authorized Persons and Registered Structural Engineers – Control of Blasting (APP-72), “Guidance Note No. GN 8 How to Apply for a Mode A Licence for Storage of Schedule 1 Dangerous Goods (Blasting Explosives)”, “Guidance Note No. GN 2 Approval of an Explosives Delivery Vehicle” and “Guidance Note No. GN 3 Application and Handling of a Conveyance Permit”; and</li> <li>• Formulate a Hazard Management Plan with a view to aligning the understanding of the risk of the three projects (i.e. Route 11 (R11), Tuen Mun Bypass (TMB) and Lam Tei Underground Quarrying (LTUQ)) so that all the working populations at Lam Tei Quarry area, which includes the workforce induced under the construction and operational stage of three projects, could be considered as on-site populations in the QRA for all the three projects. The measures stipulated in the Hazard Management Plan may include, but not limited to, the adjustment of the blasting schedules of the three projects to minimize the potential cumulative impact, provision of common trainings and drills to the workforce of all the three projects, etc. The Hazard Management Plan, which would be agreed among the three projects, would be submitted to EPD for agreement prior to the tender invitation of construction phases of R11, TMB and LTUQ, whichever is earlier.</li> </ul>	
<b>Operational Phase</b>					
Population in the vicinity of the Project	<ul style="list-style-type: none"> <li>• The Project falls into consultation zone of two Potentially Hazardous Installations (PHIs), including ExxonMobil LPG storage installation located at Tuen</li> </ul>	<ul style="list-style-type: none"> <li>• Annex 4 of the EIAO-TM</li> </ul>	N/A	No mitigation measure is required	Not applicable

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
	Mun Area 44 and the LPG storage installation at Sam Shing Estate. However, section of the Project in proximity of these PHIs is in form of tunnel, the population induced from the tunnel is all located in a confined space underground and hence, would not be affected by the hazardous events from these PHIs. Hence, potential risk during operational phase is not envisaged.				
<b>Landfill Gas Hazard</b>					
<b>Construction Phase</b>					
Onsite construction workforce	<ul style="list-style-type: none"> <li>By the source-pathway target analysis, the overall risk level of the construction workforce is medium</li> </ul>	<ul style="list-style-type: none"> <li>EIAO-TM</li> <li>EIA Study Brief (ESB-348/2021)</li> <li>Guidance Note on Qualitative Landfill Gas Hazard Assessment (EPD/TR8/97)</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Implementation of safety measures according to the Landfill Gas Hazard Assessment Guidance Note.</li> <li>Periodically monitoring will be undertaken when construction works are carried out in confined space within the Consultation Zone.</li> </ul>	No adverse residual impact.
<b>Operational Phase</b>					
Future occupants within the Administration Building, Maintenance Compound and re-provision of EMSD Servicing Centre.	<ul style="list-style-type: none"> <li>By the source-pathway target analysis, the overall risk level of the future occupants is low to high</li> </ul>	<ul style="list-style-type: none"> <li>EIAO-TM</li> <li>EIA Study Brief (ESB-348/2021)</li> <li>Guidance Note on Qualitative Landfill Gas Hazard Assessment (EPD/TR8/97)</li> </ul>	N/A	<ul style="list-style-type: none"> <li>A combination of passive and active systems. Examples of these measures as recommended in the Guidance Note.</li> <li>All operation and maintenance staff should be informed of the potential landfill gas hazards. The operation team will be responsible to train and to ensure that their staff take appropriate safety precautions at all times when entering enclosed rooms or any service voids, manholes, chambers or culvert within the proposed site.</li> <li>All access to confined spaces should be restricted only to authorized personnel and should be informed of the landfill gas hazard.</li> <li>Regular monitoring of landfill gas should be conducted at buildings and enclosures within the Consultation Zone to verify the effectiveness and to ensure the continued performance of the implemented protection measures.</li> </ul>	No adverse residual impact.
<b>Ecological Impact (Terrestrial)</b>					
<b>Construction Phase</b>					
The works area within the Project site and 500m study area	<ul style="list-style-type: none"> <li>Permanent habitat loss at the aboveground Project Area: ~ <b>2.2 ha of mixed woodland</b>, ~ <b>3.1 ha of plantation</b>, ~ <b>0.9 ha of shrubland/grassland</b> and ~ <b>0.3 km of watercourse</b>. Five individuals of Freshwater Crab, <i>Somanniathelphusa zanklon</i>, were found in a small pool (~3m x 2m) connected at the mid-stream of S2 within the Wah Fat Playground works area and may be affected by the construction works.</li> <li>Two flora species of conservation importance, including one individual of <i>Diospyros vaccinioides</i></li> </ul>	<ul style="list-style-type: none"> <li>EIAO-TM</li> <li>EIA Study Brief (ESB-348/2021)</li> <li>Forests and Countryside Ordinance and its subsidiary legislation, the Forestry Regulations</li> <li>Wild Animals Protection Ordinance</li> <li>Country Parks Ordinance and its subsidiary legislation</li> <li>Protection of Endangered Species of Animals and Plants Ordinance and its subsidiary legislation</li> </ul>	N/A	<ul style="list-style-type: none"> <li>No aboveground works at the recognized sites of conservation importance (including Lam Tei and Yick Yuen Conservation Area and Tai Lam Country Park). All aboveground works including site formation works at the northern portal will be located away from the Tai Lam Country Park as far as further reduce disturbance impacts. Provision of screening (e.g. hoarding) during construction phase is recommended to confine the proposed works within Project footprint and hence outside Tai Lam Country Park to avoid disturbance to adjacent habitats from the construction phase activities.</li> </ul>	The identified residual impacts would be the permanent loss of approximately <b>3.1 ha plantation</b> , <b>0.9 ha shrubland/grassland</b> and <b>0.3km watercourse</b> .

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
	<p>and a small patch of <i>Gnetum luofuense</i> were recorded in mixed woodland near Pillar Point and near Wah Fat Playground, respectively.</p> <ul style="list-style-type: none"> <li>• Groundwater infiltration leads to groundwater drawdown within Tai Lam Country Park.</li> <li>• Majority of the identified impacts are considered to be low in the absence of mitigation measures. However, the potential impact on direct loss of mixed woodland and watercourses and direct ecological impact on flora and fauna species of conservation importance as low to moderate.</li> </ul>	<ul style="list-style-type: none"> <li>• EIAO Guidance Note No. 6/2010</li> <li>• EIAO Guidance Note No. 7/2010</li> <li>• EIAO Guidance Note No. 10/2010</li> <li>• Hong Kong Planning Standards and Guidelines</li> <li>• Planning, Environment &amp; Lands Branch Technical Circular (PELBTC) No. 1/97/Works Branch Technical Circular (WBTC) No. 4/97</li> <li>• Drainage Services Department Practice Note No.1/2005</li> <li>• Environment, Transport and Works Bureau Technical Circular (Works) No. 5/2005</li> <li>• New Nature Conservation Policy</li> <li>• Hong Kong Biodiversity Strategy and Action Plan (2016-2021).</li> <li>• List of Wild Animals under State Protection</li> <li>• List of Wild Plants under State Protection</li> <li>• Convention on International Trade in Endangered Species of Wild Fauna and Flora</li> <li>• United Nations Convention on Biological Diversity</li> <li>• The International Union for Conservation of Nature (IUCN) Red List of Threatened Species</li> </ul>		<ul style="list-style-type: none"> <li>• Shifting the portal and the mainline eastward away from the Lam Tei Irrigation Reservoir so as to allow integrated site formation for tunnel portals of TMB and which can also reduce environmental impact associated with site formation.</li> <li>• Shifting the works area at Wah Fat Playground away from the perennial stream where two freshwater crab species of conservation importance were recorded.</li> <li>• Upon the completion of construction works, the proposed works area and magazine sites would be decommissioned and reinstated to its original condition in principle.</li> <li>• Detailed vegetation survey should be conducted within mixed woodland and shrubland/grassland at Pillar Point and near Wah Fat Playground prior to the commencement of construction activities to confirm the presence of flora species of conservation interest. Transplantation and/or mitigation measures would be recommended as far as possible (Details to refer to <b>Section 10</b>).</li> <li>• Prior to commencement the stream diversion and construction works near Wah Fat playground, an update Freshwater Crab survey should be conducted and cover the stretch of the watercourse S2 and S2A. Should species of conservation importance be found within the affected watercourse sections, a Freshwater Crab Translocation Plan should be prepared. Freshwater crab translocation should be conducted to move the affected individuals from the Project area to suitable recipient site(s) (Details to refer to <b>Section 10</b>).</li> <li>• Measure and good site practices to be implemented at the works area during construction (Details to refer to <b>Section 10</b>).</li> <li>• Stream diversion works with green channel design elements incorporated will be carried out to divert any water flow from the upper sections of the watercourses within Project Area (i.e. S1, S2 and S3) to the lower sections of the watercourses with similar ecological features and/or hydrology setting outside the Project Area so as to maintain the flow between unaffected sections of the stream and to avoid excessive water flow entering the construction area. Detailed design of any stream diversion should follow the guidelines in <i>ETWB Technical Circular (Works) No. 5/2005 (Protection of natural streams/rivers from adverse impacts arising from construction works)</i> and appropriate construction methods should be used.</li> <li>• Adopt suitable water control strategies, which are applicable to both TBM tunnelling and drill-and-blast /</li> </ul>	<p>With the implementation of proposed mitigation measures, adverse residual impacts from the Project on the ecological resources within and in the vicinity of the Project Area during construction and operation phases would not be anticipated. The residual impact of the loss is therefore considered to be minor and acceptable.</p>



Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
				drill-and-break tunnelling, as far as practicable (Refer to <b>Section 5</b> for details). <ul style="list-style-type: none"> <li>• Compensatory woodland planting is suggested to mitigate the loss of approximately ~2.2ha of mixed woodland (Details to refer to <b>Section 10</b>).</li> </ul>	
<b>Operational Phase</b>					
The works area within the Project site and 500m study area	<ul style="list-style-type: none"> <li>• No significant impact on ecological resources is expected during operation phase of the Project.</li> </ul>	<ul style="list-style-type: none"> <li>• EIAO-TM</li> <li>• EIA Study Brief (ESB-348/2021)</li> <li>• Forests and Countryside Ordinance and its subsidiary legislation, the Forestry Regulations</li> <li>• Wild Animals Protection Ordinance</li> <li>• Country Parks Ordinance and its subsidiary legislation</li> <li>• Protection of Endangered Species of Animals and Plants Ordinance and its subsidiary legislation</li> <li>• EIAO Guidance Note No. 6/2010</li> <li>• EIAO Guidance Note No. 7/2010</li> <li>• EIAO Guidance Note No. 10/2010</li> <li>• Hong Kong Planning Standards and Guidelines</li> <li>• Planning, Environment &amp; Lands Branch Technical Circular No. 1/97/Works Branch Technical Circular No. 4/97</li> <li>• Drainage Services Department Practice Note No.1/2005</li> <li>• Environment, Transport and Works Bureau Technical Circular (Works) (ETWB TCW) No. 5/2005</li> <li>• New Nature Conservation Policy</li> <li>• Hong Kong Biodiversity Strategy and Action Plan (2016-2021).</li> <li>• List of Wild Animals under State Protection</li> <li>• List of Wild Plants under State Protection</li> <li>• Convention on International Trade in Endangered Species of Wild Fauna and Flora</li> <li>• United Nations Convention on Biological Diversity</li> <li>• The International Union for Conservation of Nature (IUCN) Red List of Threatened Species</li> </ul>	N/A	<ul style="list-style-type: none"> <li>• No significant impact on ecological resources is expected during operation phase of the Project, and thus, no mitigation measures are considered necessary to be implemented during operation phase.</li> </ul>	No adverse residual impact.

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
<b>Landscape and Visual Impacts</b>					
<b>Construction Phase</b>					
The works area within the Project site and 100m study area	<ul style="list-style-type: none"> <li>• <b>Substantial</b> landscape impact on LR-TM2 Plantations in Tuen Mun, LR-TM13 Playground in Wah Fat Street, , LCA-TM2 Tuen Mun Upland Fringe Landscape, LCA-LT4 Lam Tei Upland Landscape.</li> <li>• <b>Moderate</b> landscape impact on LR-PP2 Plantations in Pillar Point, LR-PP4 Shrublands in Pillar Point, LR-PP11 Developed Area in Pillar Point, LCA-PP12 Pillar Point Upland Fringe Landscape , LCA-PP10 Lung Mun Road Highway Corridor Landscape, LCA-PP12 Pillar Point Mixed Modern Institutional Urban Landscape, LCA-PP13 Pillar Point Mixed Modern Industrial Urban Landscape, LR-TM11 Developed Area in Tuen Mun, LCA-TM11 Tuen Mun Residential Urban Landscape, LR-LT2 Plantations in Lam Tei, LCA-LT3 Lam Tei Rural Landscape, LR-NL2 Plantations in Northern Landfall, LR-NL10 Seawater Body at Northern Landfall, LR-NL11 Developed Area in Northern Landfall, LCA-NL8 Northern Landfall Maritime landscape, LCA-NL10 Northern Landfall Highway Corridor Landscape, and LCA-NL13 Northern Landfall Mixed Modern Industrial Urban Landscape.</li> <li>• <b>Slight</b> landscape impact on LR-LT11 Developed Area in Lam Tei, LCA-LT2 Lam Tei Upland Fringe Landscape.</li> <li>• The remaining LR / LCA will be subject to an <b>Insubstantial</b> residual impact.</li> <li>• <b>Substantial</b> visual impact on VSR-TM1 Residents of Alpine Garden, Rainbow Garden, Kam Fai Garden, Harvest Garden and Hoi Tak Garden,, and VSR-TM9 Recreational Users of Wah Fat Garden.</li> <li>• <b>Moderate</b> visual impact on TM8 Recreational Users of Tsing Sin Playground, VSR-TM10 Travelers of Wah Fat Street, VSR-TM11 Hikers of MacLehose Trail Section 10, VSR-TM12 Visitors of Sam Shing Temple in Castle Peak Road – Castle Peak Bay, VSR-PP1 Vehicle Travelers at Lung Mun Road, VSR-PP6 Recreational Users of Butterfly Beach Park, VSR-LT1 Residents of Lo Fu Hang, VSR-LT4 Visitor of Nam On Fat Tong in Fu Fuk Road, and VSR-LT5 Recreational Users of Fuk Hang Tsuen Basketball Court.</li> <li>• <b>Slight</b> visual impact on VSR-TM2 Residents of Seaview Garden, VSR-TM3 Residents of Pearl Island Garden, VSR-TM4 Visitors at Tuen Mun Promenade, VSR-TM5 Visitors at Hong Kong Gold Coast Dolphin</li> </ul>	<ul style="list-style-type: none"> <li>• Annexes 10 and 18 of the EIAOTM</li> <li>• DEVB TC(W) No. 4/2020 - Tree Preservation;</li> <li>• DEVB TC(W) No. 5/2020 - Registration and Preservation of Old and Valuable Trees;</li> <li>•</li> </ul>	N/A	<ul style="list-style-type: none"> <li>• Construction area control, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimized.</li> <li>• Advance Implementation of Mitigation Planting</li> <li>• Decorative screen hoarding will be erected along areas of the construction works site boundary</li> <li>• Control of night-time lighting and Construction traffic</li> </ul>	<ul style="list-style-type: none"> <li>• During the construction phase, there will be <b>Moderate</b> adverse residual impacts after mitigation for LR-PP2 (Plantations in Pillar Point), LR- PP4 (Shrublands in Pillar Point), LR-TM2 (Plantations in Tuen Mun), LR-TM13 (Playground in Wah Fat Street), LR-LT2 (Plantations in Lam Tei), LCA-PP2 (Pillar Point Upland Fringe Landscape), LCA-PP10 (Lung Mun Road Highway Corridor Landscape), LCA-PP12 (Pillar Point Mixed Modern Institutional Urban Landscape), LCA-TM2 (Tuen Mun Upland Fringe Landscape), LCA-LT4 (Lam Tei Upland Landscape), LR-NL2 (Plantations in Northern Landfall), LR-NL11(Developed Area in Northern Landfall), LCA-NL10 (Northern Landfall Highway Corridor Landscape) and LCA-NL13 (Northern Landfall Mixed Modern Industrial Urban Landscape).</li> <li>• During the construction phase, there will be <b>Slight</b> adverse residual impacts after mitigation for LR-PP11 (Developed Area in Pillar Point), LR-TM11 (Developed Area in Tuen Mun), LR-LT11 (Developed Area in Lam Tei), LR-NL10 (Seawater Body at Northern Landfall), LCA-PP13 (Pillar Point Mixed Modern Industrial Urban Landscape), LCA-TM11 (Tuen Mun Residential Urban Landscape), LCA-LT2 (Lam Tei Upland Fringe Landscape) and LCA-LT3 (Lam Tei Rural Landscape).</li> <li>• The remaining LR and LCA will be subject to an <b>Insubstantial</b> residual impact, namely, LR-PP10 (Seawater Body in Pillar</li> </ul>

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
	<p>Square, VSR-TM6 Maritime Travelers to / from Tuen Mun Ferry Terminal, VSR-TM7 Vehicle Travelers at Tuen Mun Road, VSR-PP2 Workers at EMSD Tuen Mun Vehicle Servicing Station and DSD Pillar Point STW, VSR-PP3 Workers at River Trade Terminal, VSR-PP4 Workers at Tuen Mun Area 40, VSR-NL1 Workers and Travelers at Hong Kong International Airport, VSR- NL2 Travelers at Hong Kong Boundary Crossing Facilities, VSR- NL3 Workers and Future Residents at MTR Siu Ho Wan Depot, and VSR-LT6 Travelers of Fuk Hang Tsuen Road.</p> <ul style="list-style-type: none"> <li>• <b>Insubstantial</b> visual impact on the remaining VSRs.</li> </ul>				<p>Point), LR-TM1 (Secondary Woodland in Tuen Mun), LCA-TM4 (Tuen Mun Upland Landscape), LR-LT1 (Secondary Woodlands in Lam Tei), LR-LT7 (Watercourses in Lam Tei) and LCA-NL8 (Northern Landfall Maritime landscape).</p> <ul style="list-style-type: none"> <li>• During construction stage, there will be <b>Moderate</b> adverse residual visual impacts after mitigation for VSR-TM1 (Residents of Alpine Garden, Rainbow Garden, Kam Fai Garden, Harvest Garden and Hoi Tak Garden), VSR-PP1 (Vehicle Travelers at Lung Mun Road), VSR-TM9 (Recreational Users of Wah Fat Garden), VSR-TM11 (Hikers of MacLehose Trail Section 10), VSR-PP6 (Recreational Users of Butterfly Beach Park), VSR-LT1 (Residents of Lo Fu Hang), VSR-LT4 (Visitor of Nam On Fat Tong in Fu Fuk Road), and VSR-LT5 (Recreational users of Fuk Hang Tsuen Basketball Court).</li> <li>• During construction stage, there will be <b>Slight</b> adverse residual visual impacts after mitigation for VSR-TM3 (Residents of Pearl Island Garden), VSR-TM4 (Visitors at Tuen Mun Promenade), VSR-TM5 (Visitors at Hong Kong Gold Coast Dolphin Square), VSR-TM6 (Maritime Travelers to / from Tuen Mun Ferry Terminal), VSR-TM7 (Vehicle Travelers at Tuen Mun Road), VSR-TM8 (Recreational Users of Tsing Sin Playground), VSR-TM10 (Travelers of Wah Fat Street), VSR-TM12 (Visitors of Sam Shing Temple in Castle Peak Road – Castle Peak Bay), VSR-PP2 (Workers at EMSD Tuen Mun Vehicle Servicing Station and DSD Pillar Point STW),</li> </ul>

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
					<p>VSR-PP3 (Workers at River Trade Terminal), VSR-PP4 (Workers at Tuen Mun Area 40), VSR-NL1 (Workers and Travelers at Hong Kong International Airport), VSR-NL2 (Travelers at Hong Kong Boundary Crossing Facilities), VSR-NL3 (Workers and Future Residents at MTR Siu Ho Wan Depot), and VSR-LT6 (Travelers of Fuk Hang Tsuen Road).</p> <ul style="list-style-type: none"> <li>The remaining VSR will be subject to an <b>Insubstantial</b> residual impact, namely, VSR-TM2 (Residents of Seaview Garden), VSR-LT2 (Vehicle Travellers on Yuen Long Highway (Eastbound)), and VSR-LT3 (Trail Walkers on Fu Tei Country Trail and Lam Tei Irrigation Reservoir).</li> </ul>
<b>Operational Phase</b>					
<p>The works area within the Project site and 100m study area</p>	<ul style="list-style-type: none"> <li><b>Substantial</b> landscape impact on LR-TM2 Plantations in Tuen Mun, LCA-TM2 Tuen Mun Upland Fringe Landscape, LCA-LT4 Lam Tei Upland Landscape.</li> <li><b>Moderate</b> landscape impact on LR-PP2 Plantations in Pillar Point, LR-PP4 Shrublands in Pillar Point, LR-PP11 Developed Area in Pillar Point, LCA-PP12 Pillar Point Upland Fringe Landscape, LCA-PP10 Lung Mun Road Highway Corridor Landscape, LCA-PP12 Pillar Point Mixed Modern Institutional Urban Landscape, LCA-PP13 Pillar Point Mixed Modern Industrial Urban Landscape, LR-TM11 Developed Area in Tuen Mun, LCA-TM11 Tuen Mun Residential Urban Landscape, LR-LT2 Plantations in Lam Tei, LCA-LT3 Lam Tei Rural Landscape, and LR-TM13 Playground in Wah Fat Street.</li> <li><b>Slight</b> landscape impact on LR-LT11 Developed Area in Lam Tei, LCA-LT2 Lam Tei Upland Fringe Landscape, LR-NL2 Plantations in Northern Landfall, LR-NL10 Seawater Body at Northern Landfall, LR-NL11 Developed Area in Northern Landfall, LCA-NL8 Northern Landfall Maritime landscape, LCA-NL10 Northern Landfall Highway Corridor Landscape, and LCA-NL13 Northern Landfall Mixed Modern Industrial Urban Landscape.</li> </ul>	<ul style="list-style-type: none"> <li>Annexes 10 and 18 of the EIAOTM</li> <li>DEVB TC(W) No. 4/2020 - Tree Preservation.</li> <li>DEVB TC(W) No. 5/2020 - Registration and Preservation of Old and Valuable Trees;</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Aesthetic treatment and design of the building and tunnel ventilation shaft</li> <li>Greening Provision in the early project planning stage and shall be in accordance with DEVB TCW No. 2/2012-allocation of space for quality greening on Roads.</li> <li>Tree compensation and post-planting monitoring of the compensatory trees shall be undertaken</li> <li>The design and implementation of the aesthetic appearance of the retaining wall and slopes</li> </ul>	<ul style="list-style-type: none"> <li>there will be Slight adverse residual impacts after mitigation for LR-PP2 (Plantations in Pillar Point), LR-PP4 (Shrublands in Pillar Point), LR-TM2 (Plantations in Tuen Mun), LR-LT2 (Plantations in Lam Tei), LCA-TM2 (Tuen Mun Upland Fringe Landscape) and LCA-LT4 (Lam Tei Upland Landscape).</li> <li><b>Insubstantial</b> residual landscape impact on the remaining LR / LCA.</li> <li>There would be <b>Slight</b> adverse residual visual impacts in Year 10 of the operational phase after mitigation for VSR-TM1 (Residents of Alpine Garden, Rainbow Garden, Kam Fai Garden, Harvest Garden and Hoi Tak Garden), VSR-TM9 (Recreational Users of Wah Fat Garden), VSR-TM10 (Travelers of Wah Fat Street), and VSR-PP1</li> </ul>

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
	<ul style="list-style-type: none"> <li>The remaining LR / LCA will be subject to an <b>Insubstantial</b> residual impact.</li> <li><b>Moderate</b> visual impact on VSR-TM1 Residents of Alpine Garden, Rainbow Garden, Kam Fai Garden, Harvest Garden and Hoi Tak Garden, TM8 Recreational Users of Tsing Sin Playground, VSR-TM9 Recreational Users of Wah Fat Garden, VSR-, VSR-TM11 Hikers of MacLehose Trail Section 10, VSR-TM12 Visitors of Sam Shing Temple in Castle Peak Road – Castle Peak Bay, VSR-PP1 Vehicle Travelers at Lung Mun Road, VSR-PP6 Recreational Users of Butterfly Beach Park, VSR-LT1 Residents of Lo Fu Hang, VSR-LT4 Visitor of Nam On Fat Tong in Fu Fuk Road, and VSR-LT5 Recreational Users of Fuk Hang Tsuen Basketball Court.</li> <li><b>Slight</b> visual impact on VSR-TM2 Residents of Seaview Garden, VSR-TM3 Residents of Pearl Island Garden, VSR-TM4 Visitors at Tuen Mun Promenade, VSR-TM5 Visitors at Hong Kong Gold Coast Dolphin Square, VSR-TM6 Maritime Travelers to / from Tuen Mun Ferry Terminal, VSR-TM7 Vehicle Travelers at Tuen Mun Road, VSR-TM10 Travelers of Wah Fat Street, VSR-PP2 Workers at EMSD Tuen Mun Vehicle Servicing Station and DSD Pillar Point STW, VSR-PP3 Workers at River Trade Terminal, VSR-PP4 Workers at Tuen Mun Area 40, VSR-NL1 Workers and Travelers at Hong Kong International Airport, VSR- NL2 Travelers at Hong Kong Boundary Crossing Facilities, VSR- NL3 Workers and Future Residents at MTR Siu Ho Wan Depot, and VSR-LT6 Travelers of Fuk Hang Tsuen Road.</li> <li><b>Insubstantial</b> visual impact on the remaining VSRs.</li> </ul>				<p>(Vehicle Travelers at Lung Mun Road).</p> <ul style="list-style-type: none"> <li><b>Insubstantial</b> residual visual impact on the remaining VSRs.</li> </ul>
<b>Cultural Heritage</b>					
<b>Construction Phase</b>					
Cultural heritage resources within 300m study area	<ul style="list-style-type: none"> <li>Built heritage item BH-02 is located nearby but outside the works area for the proposed northern tunnel portal and associated facilities. potential vibration impact may be a concern due to vibration generation activities.</li> <li>Built heritage item BH-03 is located nearby but outside the works area for middle ventilation building and associated site formation works. Direct impact is not anticipated as the existing building structures will not be demolished or removed but only require some necessary restoration/refurbishment/repair. However,</li> </ul>	<ul style="list-style-type: none"> <li>EIAO-TM</li> <li>EIA Study Brief (ESB-348/2021)</li> <li>Antiquities and Monuments Ordinance</li> <li>Hong Kong Planning Standards and Guidelines</li> <li>Guidelines for Cultural Heritage Impact Assessment</li> </ul>	N/A	<ul style="list-style-type: none"> <li>Three Sites of Archaeological Interest, namely Shek Kok Tsui, Fu Tei Au and So Kwu Wat will not be impacted.</li> <li>Avoid direct impact on the Built Heritage BH-03 at the GGA campsite, no excavation works will be carried out and existing building structures will not be demolished or removed but only require some necessary restoration/refurbishment/ repair. Appropriate protective and mitigation measures are to be recommended during detail design stage of the Project when the structural condition and assessment of the Site and the historical buildings/ structures/ features are verified during detailed design</li> </ul>	No adverse residual impact

Sensitive Receiver / Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards / Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures / Mitigation Measures	Residual Impacts (After Implementation of Mitigation Measures)
	potential vibration impact may be a concern due to vibration generation activities.			<p>stage of the Project. The protective and mitigation measures should be agreed by AMO, and to be implemented to the satisfaction of AMO to safeguard against any potential adverse impact.</p> <ul style="list-style-type: none"> <li>Any vibration and building movement induced from the proposed works should be strictly monitored to ensure no disturbance and physical damages made to the heritage sites during works.</li> <li>Special attention should be paid to avoid adverse physical impact arising from the construction works to the heritage site. Design proposal, method of works and choice of machinery should be targeted to minimize adverse impacts to the heritage site. Any vibration and building movement induced from the construction works should be strictly monitored to ensure no disturbance and physical damages made to the heritage site during the course of works.</li> <li>Excavation works in close vicinity to the heritage site should not jeopardize stability of the historic structures. It should not undermine or cause damage to foundation of the historic structures. Foundation information of the historic structures shall be verified on site if needed, sufficient lateral support should be provided and de-watering (if required) should be carried out with great cautions to control ground movement and change of ground water regime at the heritage site.</li> <li>Installation of monitoring checkpoints shall be carried out in great care and adequate protection shall be provided so as to avoid unnecessary disturbance / damage to the historic fabrics. Photo records of monitoring checkpoints shall be submitted upon installation for AMO's records. Monitoring records should be submitted to AMO on regular basis and please alert AMO should the monitoring reach Alert/ Alarm/ Action levels.</li> <li>As a precautionary measure, the project proponent and his/her contractor are required to inform AMO immediately when any antiquities or supposed antiquities under the Antiquities and Monuments Ordinance (Cap. 53) are discovered during the course of works.</li> </ul>	
<b>Operational Phase</b>					
Cultural heritage resources within 300m study area	<ul style="list-style-type: none"> <li>No direct or indirect built heritage impacts are anticipated</li> </ul>	<ul style="list-style-type: none"> <li>EIAO-TM</li> <li>EIA Study Brief (ESB-348/2021)</li> <li>Antiquities and Monuments Ordinance</li> <li>Hong Kong Planning Standards and Guidelines</li> <li>Guidelines for Cultural Heritage Impact Assessment</li> </ul>	N/A	<ul style="list-style-type: none"> <li>None</li> </ul>	No adverse residual impact