

Agreement No. CE 13/2001
IMPROVMENT TO TING CHUNG ROAD BETWEEN
LUNG TSENG TAU AND CHEUNG SHA
- INVESTIGATION AND PRELIMINARY DESIGN ASSIGNMENT

ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

General

| EIA Reference | EM&A Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|---------------|----------------|--|---|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 2.3.10.3 | | Off-line haul roads will not be required in the northern section | Lung Tseng Tau to crest/ throughout construction period | Contractor | TMEIA | | Y | | n/a |
| 2.3.13.1 | | No blasting works will be allowed | All areas/ throughout construction period | Contractor | TMEIA | | Y | | n/a |
| | | | | | | | | | |
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| | | | | | | | | | |

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Air Quality

| EIA Reference | EM&A Manual Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|---------------|-----------------------|---|--|----------------------|--|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 4.3.3.3 | 3.8.1 | No debris or other materials shall be burnt on the works areas. | All areas / throughout construction period | Contractor | TMEIA Avoid smoke impacts and disturbance | | Y | | n/a |
| 4.3.3.1 | 3.8.1 | All unpaved roads shall be watered twice daily. | All unpaved haul roads / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | n/a |
| 4.3.3.1 | 3.8.1 | Watering shall be undertaken every 1.5 hours of the construction area | Vicinity of SRs 4, 13 and 15/ throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | n/a |
| 4.3.3.3 | 3.8.1 | All exposed road surfaces and dust sources shall be maintained as wet. | All exposed surfaces / throughout construction period in hot, dry or windy weather | Contractor | TMEIA Avoid dust generation | | Y | | n/a |
| 4.3.3.3 | 3.8.1 | Watering shall be undertaken during rock/concrete breaking. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | n/a |
| 4.3.3.3 | 3.8.1 | Open dropping heights for excavated materials shall be controlled to a maximum height of 2m | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | n/a |

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| | | | | | | D | C | O | |
| 4.3.3.3 | 3.8.1 | Stockpiles of imported material kept on site shall be contained within hoardings, dampened and/or covered during dry and windy weather. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | n/a |
| 4.3.3.3 | 3.8.1 | Effective water sprays shall be used during the delivery and handling of all materials when dust is likely to be created. | All areas / throughout construction period | Contractor | TMEIA Avoid dust | | Y | | n/a |
| 4.3.3.3 | 3.8.1 | Any vehicle used for moving materials which have the potential to create dust shall have properly fitting side and tail boards. Materials having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards. | All areas / throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | n/a |
| 4.3.3.3 | 3.8.1 | No earth, mud, debris, dust and the like shall be deposited on public roads. Wheel washing facility shall be usable prior to any earthworks excavation activity on the Site. | Site entrance and exits/ throughout construction period | Contractor | TMEIA Avoid dust generation | | Y | | n/a |
| 4.6 | Section 3 | EM&A in the form of 1 hour and 24 hour dust monitoring and site audit | All representative ASRs / throughout construction period | Contractor | EM&A Manual | | Y | | n/a |

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Noise

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|---------------------|-----------------------|---|---|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 5.4.3 Table 5.12 | 4.9.2 | Silencers shall be installed at the exhaust pipes for the engines of the lorries, cranes, excavators and concrete lorry mixer | Tung Chung Valley, SR 2,4 / during permanent noise barrier construction | Contractor | TMEIA | | Y | | n/a |
| 5.4.3 Table 5.12 | 4.9.2 | Manufacturers enclosure panels should be kept closed for lorries, cranes, excavators dump trucks, concrete lorry mixer and vibratory compactors | Tung Chung Valley, SR 2,4 / during permanent noise barrier construction | Contractor | TMEIA | | Y | | n/a |
| 5.4.3 Table 5.12 | 4.9.2 | The poker should have an acoustic cover on the engine to reduce the noise by 5 dB(A) | Tung Chung Valley, SR 2,4 / during permanent noise barrier construction | Contractor | TMEIA | | Y | | n/a |
| 5.4.3 Table 5.11 | 4.9.2 | Silencers shall be installed at the exhaust pipes for the engines of the lorries, bull dozers, excavators, dump trucks, concrete lorry mixer, chipper and poker | SR2, 4, 5, 9,13-16 during road works construction and SR9 during bridge works | Contractor | TMEIA | | Y | | n/a |
| 5.4.3 Table 5.11 | 4.9.2 | Manufacturers enclosure panels should be kept closed for lorries, bull dozers, excavators, dump trucks, concrete lorry mixer, chipper and poker | SR2, 4, 5, 9,13-16 during road works construction and SR9 during bridge works | Contractor | TMEIA | | Y | | n/a |

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| | | | | | | D | C | O | |
| 5.4.3 Table 5.11 | 4.9.2 | Excavator Mounted Breaker should be fitted with a muffler and a dampened bit used to achieve a 5 dB(A) reduction. | SR2, 4, 5, 9,13-16 during road works construction and SR9 during bridge works | Contractor | TMEIA | | Y | | n/a |
| 5.4.3 | 4.9.2 | Temporary noise barriers shall be used for all activities | ASR4, 13, 15 during road construction, SR 2, 4 during permanent noise barrier construction in Tung Chung | Contractor | TMEIA | | Y | | n/a |
| 5.4.3 | 4.9.2 | Number of excavator mounted breakers shall be limited to one operating at any one time. | Within 200m of SR4, 13, 15 during road construction (Scenarios E1 and R1). | Contractor | TMEIA | | Y | | n/a |
| 5.4.3 | 4.9.2 | Operating time of the breaker, dump truck, bulldozer and grader shall be restricted to 50% in any 30 minute period. | SR13 during road construction (Scenarios E1, E3, R1and P2). | Contractor | TMEIA | | Y | | n/a |

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| | | | | | | D | C | O | |
| 12.3.1 | 4.9.2 | Construction works for the permanent noise barrier in Tung Chung shall be scheduled to avoid times when the mobile crane and road planer for the road works and mobile crane for the site development works associated with the Tung Chung Valley development are on-going. | Lung Tseng Tau /permanent noise barrier construction | Contractor | TMEIA | | Y | | n/a |
| 5.5.4 Table 5.21 Figure 5.5 | 4.9.3 | Reflective 4.5m noise barrier – 30m long | Tung Chung Valley, Lung Tseng Tau | Contractor | TMEIA sound transmission loss greater than 30 | | Y | | HyD |
| 5.5.4 Table 5.21 Figure 5.5 | 4.9.3 | Reflective 1.5m to 4.5m noise barrier (graded height) – 59m long | Tung Chung Valley, Lung Tseng Tau | Contractor | TMEIA Sound transmission loss greater than 30 | | Y | | HyD |

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|-----------------------------------|-----------------------|---|--|----------------------|--|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 5.5.4 Table 5.21 Figure 5.5 | 4.9.3 | Reflective 1.5m noise barrier – 38m long | Tung Chung Valley, Lung Tseng Tau | Contractor | TMEIA Sound transmission loss greater than 30 | | Y | | HyD |
| 5.5.4 Figure 5.4f | 4.9.3 | 2m by 6m landscaped bund shall be provided at the top of the slope abutting the sales sites, together with a 4m non building area | Cheung Sha Sale Sites | Contractor | TMEIA Sound transmission loss greater than 30 | | Y | | HyD |
| 12.3.2 Figure 12.4 | 4.9.3 | A 4m landscaped bund between the school site and the road. | Area 40 Tung Chung Valley | Contractor | TMEIA | | Y | | n/a |
| 5.6 | Section 4 | Noise monitoring | All representative sensitive receivers / throughout the construction period and first year of operation. | Contractor | EM&A Manual | | Y | Y | n/a |

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|---------------------------------|-----------------------|--|---|----------------------|--|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 6.3.10 | 6.8.1 | Discharges to natural water courses shall only take place when the effluent can be shown to comply with the standards specified in the Technical Memorandum, Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters. Discharges in the water gathering grounds should meet Group A standards for inland waters | All areas / Throughout construction period | Contractor | TMEIA Technical Memorandum, Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters | | Y | | n/a |
| 6.3.10 | 6.8.1 | The drainage system capacity for the construction stage shall be designed for a 1:10 year storm event | All areas / Design Phase | HyD | TMEIA | Y | | | n/a |
| 6.3.10 Figures 6.2a- 6.2j | 6.8.1 | A drainage system shall be constructed ahead of the main roadworks such that it may be used to discharge the construction site runoff, thus avoid discharging construction site runoff into the streams | Northern section of road (to crest) / Design phase + Throughout construction period | HyD/Contractor | TMEIA | Y | Y | | n/a |

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|---------------------------------|-----------------------|--|---|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 6.3.10 Figures 6.2a- 6.2j | 6.8.1 | A temporary drainage system will be provided for the control of the construction site runoff in the southern area and shall be in place prior to the main road works | Southern section of road (from crest) / Design phase + throughout construction period | HyD/Contractor | TMEIA & ProPECC PN 1/94 | Y | Y | | n/a |
| 6.3.10 | 6.8.1 | The southern alignment will be divided into small catchments for the provision of the temporary drainage system in order to enhance the control of runoff | Southern section of road (from crest) / Design phase + Throughout construction period | HyD/Contractor | TMEIA & ProPECC PN 1/94 | Y | Y | | n/a |

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| | | | | | | D | C | O | |
| 6.3.10 | 6.8.1 | Construction of the northern off-line section of the road shall only commence when either the pipeline trench or carrier pipe has been put in place up to Tai Tung Shan Reservoir | Northern section of road (to crest) / Throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |
| 6.3.10 | 6.8.1 | During excavation work for the drainage system itself, each stretch of dug channel will be concrete lined before the end of each day to minimise run-off. | All areas/ During excavation work for the drainage system | Contractor | TMEIA & ProPECC PN 1/94 Prevent erosion and runoff | | Y | | n/a |
| 6.3.10 | 6.8.1 | During excavation work for the drainage system, control and proper disposal of excavated material in accordance with the Waste Management Plan shall be | All areas/ During excavation work | | TMEIA & ProPECC PN 1/94 Prevent erosion and runoff | | Y | | n/a |

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|---------------|-----------------------|---|--|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| | | undertaken. | for the drainage system | | | | | | |
| 6.3.10 | 6.8.1 | All temporary drainage channels shall be lined with concrete to prevent erosion. | All areas / Throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |
| 6.3.10 | 6.8.1 | All off-line sections of the haul road and associated slopes will be paved within 3 days of the individual sections having been completed. | Off-line haul roads/ 3 days after completion | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |
| 6.3.10 | 6.8.1 | Progress of the construction phase drainage system shall be made in advance of the off-line haul road formation. | All areas / In advance of haul road | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |
| 6.3.10 | 6.8.1 | For all haulage roads, temporary bridges shall be used to cross all streams with spans of at least twice the stream width and no contact is | Where off-line haul road crosses | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |

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| | | | | | | D | C | O | |
| | | to be made with the stream or its riparian vegetation unless authorised by the Engineer | stream / Throughout construction period | | | | | | |
| 6.3.10 | 6.8.1 | A temporary barrier will be provided on the downhill side of the haul road to prevent errant vehicles from crashing off the haul road. | Haul roads / Throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |
| 6.3.10 Table 6.1 | 6.8.1 | The new bridge piers/abutments will be constructed at least 5m away from the streams and excavation works for the columns will be protected by the drainage works. | All new bridge works / During pier /abutment construction | HyD/Contractor | TMEIA & ProPECC PN 1/94 Minimise indirect impacts on stream | Y | Y | | n/a |
| 6.3.10 Table 6.1 | 6.8.1 | All culverts will be constructed separately prior to their connection with the stream to avoid direct impacts on the streams during this period | All stream culverts (new and extended) During | Contractor | TMEIA & ProPECC PN 1/94 Minimise steam pollution | | Y | | n/a |

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| | | | | | | D | C | O | |
| | | | culvert construction | | | | | | |
| 6.3.10 Figures 2.1 to 2.11 | 6.8.1 | During bridge extension works, a dam shall be built across the stream, upstream from the works and a temporary pipeline shall be used to divert the stream water around the works area into the unaffected downstream area in order to prevent contamination of the stream flow | Bridge extension works, (STR01 to STR05)/ Construction of concrete base slab for new bridge | Contractor | TMEIA & ProPECC PN 1/94 Minimise steam pollution | | Y | | n/a |
| 6.3.10 Appendix I | 6.8.1 | Areas in which works have been completed shall be restored within 3 weeks of completion in accordance with the Landscape Proposal. | All areas / Throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |
| 6.3.10 | 6.8.1 | Temporary cut slopes shall be covered with | Exposed cut | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |

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| | | | | | | D | C | O | |
| | | tarpaulin during rainfall when not being worked. | slopes/ Throughout construction period | | To prevent erosion and avoid runoff. | | | | |
| 6.3.10 | 6.8.1 | Major stockpiles shall be sited outside the Country Park and shall avoid being located near stream courses. | Within Country Park or country park extension / Throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Avoid pollution to Country Park users and stream courses | | Y | | n/a |
| 6.3.10 | 6.8.1 | Spoil heaps shall be covered at all times. | All areas / Throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Minimise losses in the wet season and reduce the dust emissions during the dry season to minimise impacts on air quality | | Y | | n/a |

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| 6.3.10 | 6.8.1 | Stock piled materials shall be contained in a designated area down gradient from any stream course or up gradient with a suitably constructed barrier. | All areas | Contractor | TMEIA & ProPECC PN 1/94 Reduce loss of materials to the stream. | | Y | | n/a |
| 6.3.10 Figures 6.2a to 6.2j | 6.8.1 | Hinterland drainage shall be collected by the use of perimeter channels and diverted to the nearest stream course. | All areas | Contractor | TMEIA & ProPECC PN 1/94 Prevent external run off from crossing the site | | Y | | Contractor |
| 6.3.10 Figures 6.2f to 6.2i | 6.8.1 | Sedimentation tanks and oil interceptors shall be provided during the construction stage on the southern section of the road above the catchwater for the treatment of all site runoff prior to discharge into the streams. | Southern section above catchwater/ throughout construction period | Contractor | TMEIA | | Y | | Contractor |
| 6.3.10 Figures 6.2i to 6.2j | 6.8.1 | Sedimentation tanks shall be provided during the construction stage on the southern section of the road below the catchwater for the treatment of all site runoff prior to discharge into the streams or via the Pui O Wan outfall. | Southern section below catchwater/ throughout construction | Contractor | TMEIA | | Y | | Contractor |

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| | | | period | | | | | | |
| 6.3.10 Figure 6.2i | 6.8.1 | Where settling tanks are close to the catchwater, the discharge from the tanks will be diverted across the catchwater and discharged into adjacent streams. | Chainage 6200 to 6400 at catchwater / throughout construction period | Contractor | TMEIA Reduce the amount of treated discharge flowing into the catchwater | | Y | | Contractor |
| 6.3.10 Figure 6.2i | 6.8.1 | Where the works area abuts the catchwater, the catchwater will be protected from debris falling into the catchwater by temporary decking. | Chainage 6200 to 6400 at catchwater / throughout construction period | Contractor | TMEIA Prevent debris entering catchwater. | | Y | | Contractor |
| 6.3.10 Figure 6.2a | 6.8.1 | A sedimentation tank shall be provided during the construction stage for the treatment of all site runoff from the northern section of the road prior to discharge into the Wong Lung Hang nullah. | Northern section / throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Ensure effectiveness of construction runoff controls | | Y | | n/a |
| 6.3.10 | 6.8.1 | Sedimentation tank, oil interceptors and | All areas/ | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | Contractor |

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| | | | | | | D | C | O | |
| | | channels used during the construction phase should be inspected every day rainfall is recorded and weekly thereafter. The sedimentation tanks and channels should be cleaned out when the volume of settled sediments amounts to 10% of the total volume of the tank and the oil interceptors should be cleaned when the volume of oil amounts to 50% of the total volume of the oil interceptor | throughout construction period | | Ensure effectiveness of construction runoff controls | | | | |
| 6.3.10 | 6.8.1 | All plant shall be in proper working order and maintained such that there is no leakage of fuel or oil. Any waste oils shall be collected in designated tanks prior to disposal off site. | All areas / throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |
| 6.3.10 | 6.8.1 | The wheels of all vehicles leaving and entering the construction site shall be washed to minimise the carry over of mud onto public roads and into the water gathering grounds. | Site entrance & exits/ throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |
| 6.3.10 | 6.8.1 | Wheel wash water shall be recycled and only discharged following removal of silt by sand/silt removal traps. | Site Exits/ throughout construction | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |

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Water Quality

| EIA Reference | EM&A Manual Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|---------------|-----------------------|--|---|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| | | | period | | | | | | |
| 6.3.10 | 6.8.1 | Run off from the roofs of site buildings shall be conveyed in closed drains to the nearest surface water body. | Site offices / throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Prevent the generation of excessive quantities of surface water run off carrying suspended solids. | | Y | | n/a |

| | | | | | | | | | |
|----------------------|-------|---|---|------------|---|--|---|--|-----|
| 6.3.10 Figure 6.1 | 6.8.1 | No oil or fuel shall be stored within the Country Park or the water gathering grounds | All areas/ throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Prevent contamination of water course in country park and water gathering grounds. | | Y | | n/a |
| 6.3.10 | 6.8.1 | Oils and fuels shall be stored within lined and bunded containment areas which shall have a capacity not less than 110% of the largest tank capacity and shall be regularly drained of rain water | Outside country park and water gathering grounds/ Throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Prevent contamination of water course in country park and water gathering grounds. | | Y | | n/a |

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|---------------|-----------------------|--|--|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 6.3.10 | 6.8.1 | No maintenance activities which may generate chemical wastes shall be undertaken in the water gathering grounds. Vehicle maintenance shall be confined to designated paved areas only. | Water gathering ground/ throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Prevent contamination of water course in country park and water gathering grounds. | | Y | | n/a |
| 6.3.10 | 6.8.1 | All spillages shall be cleaned up immediately. | All areas / throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Prevent downward migration of pollutants into the soil and groundwater. | | Y | | n/a |
| 6.3.10 | 6.8.1 | Waste oils shall be collected in designated tanks outside the water gathering grounds prior to disposal off site. | All areas / throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Prevent contamination of water course in country park and water gathering grounds. | | Y | | n/a |
| 6.3.10 | 6.8.1 | All storm water run-off from these areas shall be discharged via oil/petrol separators and sand/silt removal traps | All areas / throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Prevent contamination of water course in country park and water gathering grounds. | | Y | | n/a |

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|---------------|-----------------------|---|--|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 6.3.10 | 6.8.1 | No chemical wastes shall be stored in the water gathering grounds | All areas / throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Prevent contamination of water course in country park and water gathering grounds. | | Y | | n/a |

| | | | | | | | | | |
|--------|-------|--|--|------------|---|--|---|--|-----|
| 6.3.10 | 6.8.1 | The Contractor will be required to prepare a response plan to the satisfaction of FSD, HyD, Police, TD and WSD to define procedures for the control, containment and clean-up of any spillage that could occur on the construction site. | Prior to construction phase | Contractor | TMEIA & ProPECC PN 1/94 Prevent contamination of water course in country park and water gathering grounds. | | Y | | n/a |
| 6.3.10 | 6.8.1 | No canteen facilities shall be located within the water gathering grounds | Water gathering grounds / throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Prevent contamination of water course in country park and water gathering grounds. | | Y | | n/a |

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|---------------|-----------------------|--|--|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 6.3.10 | 6.8.1 | The Contractor shall comply with WSD's General Conditions for Working within Water Gathering Grounds | Water gathering grounds / throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 Prevent contamination of water course in country park and water gathering grounds. | | Y | | n/a |
| 6.3.10 | 6.8.1 | Wastewater from the site offices and toilet facilities, if not connected to a sewerage system, shall be discharged into an on-site chemical treatment and storage facility with regular collection of the wastewater carried out by tanker. Where non-flush toilets are provided these shall be chemical toilets and the holding tanks emptied by a licensed contractor on a frequent basis. | All areas/ throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |
| 6.3.10 | 6.8.1 | Details of the chemical toilets shall be submitted to WSD prior to the construction commencement; | All areas/ throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |
| 6.3.6 | - | All of the investigation machines (drilling rigs, compressors, pumps etc.) will be subject to maintenance inspections before being | All areas/ detailed ground | Contractor | TMEIA | Y | | | n/a |

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|---------------|-----------------------|--|---|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| | | mobilised to site. All machinery will be required to be in good working order with no serious oil, fuel or coolant leaks. Regular inspections will be required throughout the period of the works. | investigation | | | | | | |
| 6.3.6 | - | The size of all of the working platforms will be kept to a minimum. It will be a requirement that all waste associated with the works should be properly stored and removed at the end of the investigation. All used stages, scaffolding, hoarding etc. will similarly be stored and removed at the end of the works. | All areas/ detailed ground investigation | Contractor | TMEIA | Y | | | n/a |
| 6.3.6 | - | A lined sump will be provided at each site to catch all waste fuel and lubricant. The contents of the sump will be collected at the end of the investigation and disposed of off-site. The lining will be stripped off and similarly disposed of and the sump re-instated. All drilling fluid additives will be bio-degradable and such an agent is used in order to reduce the water requirements and thus wastewater generation. | All areas/ detailed ground investigation | Contractor | TMEIA | Y | | | n/a |

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|-------------------------|-----------------------|--|---|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 6.3.6 | - | Details of all bio-degradable drilling fluid additives shall be submitted to WSD prior to the works to confirm they will not contaminate the water gathering grounds | All areas/ detailed ground investigation | Contractor | TMEIA | Y | | | n/a |
| 6.3.6 | - | Run-off from each of the investigation locations will be controlled and soak-aways provided where appropriate. The amount of exposed soil at each of the locations will be minimised. Water used for drilling the boreholes sited in/near the Tung Chung and Cheung Sha Streams will be de-silted in sedimentation tanks before discharge. | All areas/ detailed ground investigation | Contractor | TMEIA | | Y | | n/a |
| 6.3.6 | - | The pre-existing profile will be re-instated at all investigation locations. Turfing or hydro-seeding will be specified in order to re-establish the vegetative cover at each sites | All areas/ detailed ground investigation | Contractor | TMEIA | | Y | | n/a |
| 6.4.3 Figure 6.2a | 6.8.1 | An operational drainage system shall be provided for the northern which transfers all road run off for discharge into the Wong Lung Hang nullah in Tung Chung; | Northern section/ Design phase | HyD | TMEIA | Y | | | HyD |
| 6.4.3 | 6.8.1 | For the southern section of the road, a carrier | Southern | HyD | TMEIA | Y | | | HyD |

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|----------------------|-----------------------|---|--------------------------------|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| Figure 6.2j | | pipe will be designed to convey all the road runoff south of the crest to the sea, avoiding discharge into the streams crossed by the alignment. The outfall shall be located on the foreshore of Pui O Wan and shall be over 1.0 km away from the gazette boundary of Cheung Sha Beach to the west and over 1.2 km away from the gazette boundary of Pui O Beach to the east | section of road/ Design phase | | | | | | |
| 6.4.3 | 6.8.1 | Operational drainage system capacity shall be designed for a 1:50 year storm event | All areas/ Design phase | HyD | TMEIA | Y | | Y | n/a |
| 6.4.3 | 6.8.1 | All new bridges shall be provided with a special utilities trough to accommodate the carrier pipe for operational road runoff | New bridges. Deign phase | HyD | TMEIA | Y | | Y | HyD |
| 6.4.3 Figure 6.2a | 6.8.1 | An oil interceptor shall be provided during the operational stage for the treatment of all road runoff from the northern section of the road prior to discharge into the Wong Lung Hang nullah. The largest standard Highways | Northern section/ Design phase | HyD | TMEIA | Y | | Y | HyD |

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|----------------------|-----------------------|--|---|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| | | Department oil interceptor should be used. | | | | | | | |
| 6.4.3 Figure 6.2a | 6.8.1 | The operational oil interceptor shall be cleaned at 3 monthly intervals | Tung Chung/ operational phase | HyD | TMEIA | | | Y | HyD |
| 6.4.2 | - | Spill response plan to be implemented in the event of an accidental spillage | Operation | Various | TMEIA | | | Y | n/a |
| 6.6.1, Section 13 | Section 6 | Water quality monitoring shall be undertaken for suspended solids, turbidity, dissolved oxygen and pH, together with site audit. | Designated water courses / throughout construction period | Contractor | EM&A Manual | | Y | | n/a |

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|---------------|-----------------------|---|-----------------------|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 7.5.2 | 8.3.1 | The Contractor shall identify a coordinator for the management of waste. | Contract mobilisation | Contractor | TMEIA | | Y | | n/a |
| 7.5.2 | 8.3.1 | The waste coordinator shall prepare and implement a Waste Management Plan which specifies procedures such as a ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of wastes does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposed. | Contract mobilisation | Contractor | TMEIA, Works Branch Technical Circular No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material | | Y | | n/a |
| 7.5.2 | 8.3.1 | The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges. | Contract mobilisation | Contractor | TMEIA Land (Miscellaneous Provisions) Ordinance (Cap 28); Waste Disposal Ordinance (Cap 354); Dumping at Sea Ordinance (Cap 466); Water Pollution Control Ordinance. | | Y | | n/a |

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|---------------|-----------------------|---|--|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 7.5.2 | 8.3.1 | Training shall be provided to workers about the concepts of site cleanliness and appropriate waste management procedures including waste reduction, reuse and recycling | Contract Mobilisation or within first 6 months of construction | Contractor | TMEIA | | Y | | n/a |
| 7.5.2 | 8.3.1 | All material shall be reused on site as far as practicable, including formwork plywood, topsoil and excavated material. | All areas / throughout construction period | Contractor | TMEIA | | Y | | n/a |
| 7.5.2 | 8.3.1 | Suitable provisions shall be included in the construction contract to ensure that the Contractor sorts and recycles waste. | Contract preparation stage | HyD | TMEIA | Y | | | n/a |
| 7.5.2 | 8.3.1 | Any surplus material generated shall be sorted on site into construction and demolition (C&D) waste and the public fill fraction. A sorting facility shall be set up on the site. | All areas / throughout construction period | Contractor | TMEIA | | Y | | n/a |

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|---------------|-----------------------|---|--|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 7.5.2 | 8.3.1 | The C&D waste shall be disposed of at a licenced landfill or deposited at an authorised waste transfer facility and the material suitable for public fill delivered to a public filling area, public filling barging point or public fill stockpile area after obtaining the appropriate licence. | CED public fill stockpile in Mui Wo, North Lantau or Mui Wo refuse transfer stations / Throughout construction | Contractor | TMEIA | | Y | | n/a |
| 7.5.2 | 8.3.1 | Trees and vegetation shall be stripped prior to site clearance, chopped and compacted using a mobile compactor to reduce the volume of material to be transported and disposed of. | Along alignment of haulage road and road link / Site Clearance activities | Contractor | TMEIA | | Y | | n/a |

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|---------------|-----------------------|---|--|----------------------|--|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 7.5.2 | 8.3.1 | Surplus material from the northern sections of the alignment shall be exported via the Tung Chung end of the works area and all other material shall be exported from site to the stockpile in Mui Wo subject to consultation with the Public Fill Committee prior to construction. | Consultation during contract mobilisation, disposal throughout construction period | Contractor | TMEIA Public Health and Municipal Services Ordinances (Cap 132) and the Public Cleansing and Prevention of Nuisances (Regional Council) By-laws | | Y | | n/a |
| 7.5.2 | 8.3.1 | Excavated material shall be reused as close to the point of excavation and as soon after excavation as possible and directly transferred to the area deposition, if practicable. | All areas / throughout construction period | Contractor | TMEIA Minimisation of spoil transfer distances and stockpiling quantities and times | | Y | | n/a |
| 7.5.2 | 8.3.1 | Stockpiled material shall avoid vegetated areas. | All areas / throughout construction period | Contractor | TMEIA | | Y | | n/a |

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|---------------|-----------------------|--|---|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 7.5.2 | 8.3.1 | Stockpiles shall be covered by tarpaulins and/or watered as required. | All areas / throughout construction period, particularly dry season | Contractor | TMEIA Public Health and Municipal Services Ordinances (Cap 132) and the Public Cleansing and Prevention of Nuisances (Regional Council) By-laws | | Y | | n/a |
| 7.5.2 | 8.3.1 | Storage of material on site should be kept to a minimum. | All areas / throughout construction period | Contractor | TMEIA Public Cleansing and Prevention of Nuisances (Regional Council) By-laws | | Y | | n/a |
| 7.5.2 | 8.3.1 | Major stockpiled areas shall be sited outside the country park and away from stream courses. | All areas / throughout construction period | Contractor | TMEIA Avoid pollution on streams and disturbance to users of the Country Park. | | Y | | n/a |

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| | | | | | | D | C | O | |
| 7.5.2 | 8.3.1 | Excavated material in trucks shall be covered by tarpaulins. | All areas, particularly at site exits/ throughout construction period | Contractor | TMEIA Reduce the potential for spillage and dust. Public Health and Municipal Services Ordinances (Cap 132) and the Public Cleansing and Prevention of Nuisances (Regional Council) By-laws | | Y | | n/a |
| 7.5.2 | 8.3.1 | Wheel washing facilities shall be used by all trucks entering and leaving the site to prevent the transfer of mud onto public roads. | Site entrances and exits / throughout construction period | Contractor | TMEIA Public Cleansing and Prevention of Nuisances (Regional Council) By-laws | | Y | | n/a |
| 7.5.2 | 8.3.1 | No chemical wastes shall be stored in the water gathering grounds. | Water gathering grounds / throughout construction | Contractor | TMEIA Avoid pollution to water gathering grounds and streams courses in country park. | | Y | | n/a |

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| | | | | | | D | C | O | |
| | | | period | | | | | | |
| 7.5.2 | 8.3.1 | No maintenance activities which may generate chemical wastes shall be undertaken in the water gathering grounds. | Water gathering grounds / throughout construction period | Contractor | TMEIA Avoid pollution to water gathering grounds and streams courses in country park. | | Y | | n/a |
| 7.5.2 | 8.3.1 | No canteen facilities shall be located within the water gathering grounds. | Water gathering grounds / throughout construction period | Contractor | TMEIA Avoid pollution to water gathering grounds and streams courses in country park. | | Y | | n/a |
| 7.5.2 | 8.3.1 | No fuel or oil shall be stored within the Country Park or water gathering grounds | Country park and water gathering grounds / throughout construction period | Contractor | TMEIA Avoid pollution to water gathering grounds and streams courses in country park. | | Y | | n/a |

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|---------------|-----------------------|---|--|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 7.5.2 | 8.3.1 | The Contractor shall comply with WSD's General Conditions for Working within Water Gathering Grounds | Throughout construction period | Contractor | TMEIA | | Y | | n/a |
| 7.5.2 | 8.3.1 | Suitable chemical waste storage areas should be formed at the works site for temporary storage pending collection | Works site / throughout construction period | Contractor | TMEIA Code of Practice on the Package, Labelling and Storage of Chemical Wastes, A Guide to the Chemical Waste Control Scheme | | Y | | n/a |
| 7.5.2 | 8.3.1 | A licensed contractor shall be employed to collect chemical waste for delivery to a licensed treatment facility. | Chemical waste treatment facility at Tsing Yi / Throughout construction period | Contractor | TMEIA Code of Practice on the Package, Labelling and Storage of Chemical Wastes and A Guide to the Chemical Waste Control Scheme | | Y | | n/a |

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|---------------|-----------------------|--|---|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 7.5.2 | 8.3.1 | Temporary storage areas for general refuse should be enclosed to avoid environmental impacts. | All areas / throughout construction period | Contractor | TMEIA Public Health and Municipal Services Ordinance | | Y | | n/a |
| 7.5.2 | 8.3.1 | Sufficient dustbins should be provided for storage of waste. | All areas / throughout construction period | Contractor | TMEIA Public Cleansing and Prevention of Nuisances Ordinance (Regional Council) By-laws, Public Health and Municipal Services Ordinance | | Y | | n/a |
| 7.5.2 | 8.3.1 | General refuse should be cleared daily and should be disposed of to the nearest licensed facility. | All areas, North Lantau or Mui Wo refuse transfer stations / throughout | Contractor | TMEIA | | Y | | n/a |

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Waste Management

| EIA Reference | EM&A Manual Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|-------------------|-----------------------|--|--|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| | | | construction period | | | | | | |
| 7.5.2 | 8.3.1 | Nightsoil arising from chemical toilets and chemical treatment facilities should be transported by a licensed contractor to government Sewage Treatment Works for disposal | Site offices, along alignment / throughout construction period | Contractor | TMEIA Sanitation and Conservancy (Regional Council) By-laws | | Y | | n/a |
| 7.8.1, Section 14 | Section 8 | EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken. | All areas / throughout construction period | Contractor | EM&A Manual | | Y | | n/a |

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ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

Ecology

| EIA Reference | EM&A Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|----------------------------------|----------------|---|--|--|--|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 8.9 Table 8.32 Appendix I | 5.5.3 | The loss of habitat shall be mitigated by the planting of native trees in accordance with the landscape mitigation schedule. | All areas / As soon as accessible, offline within the first year of construction, online towards the end of the construction period | Contractor | TMEIA Replace and increase the woodland cover | | Y | | AFCD/LCSD |
| 8.9 Table 8.32 Figure 8.19 | 5.5.3 | Transplantation of tree <i>Artocarpus hypargyreus</i> , the shrub <i>Pavetta hongkongensis</i> and the orchids <i>Acampe rigida</i> and <i>Liparis viridiflora</i> directly impacted by loss of plantation woodland / secondary woodland. | / Design phase to commencement of construction | Highway=s Design Consultants & Contractor | TMEIA Ensure effective capture and safe transplantation of as many of individuals as possible | Y | Y | | n/a |
| 8.9 Table 8.32 Figure 8.20 | 5.5.3 | Special design of new culverts and culvert inlet and outlets for streams 19 and 21. | Streams 19 and 21/ Design phase and construction | Highway=s Design Consultants & Contractor | TMEIA Minimise barrier effects of culverts | Y | Y | | n/a |

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|----------------------------------|----------------|---|---|--|--|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 8.9 Table 8.32 Figure 8.20 | 5.5.3 | Special design of culvert inlet and outlets for stream 18. | Stream 18 / Design phase and construction | Highway=s Design Consultants & Contractor | TMEIA Minimise barrier effects of culverts | Y | Y | | n/a |
| 8.9 Table 8.32 Figure 8.16 | 5.5.3 | Translocation of Hong Kong Newt, Lesser Spiny Frog and Romer's Tree Frog from streams 15, 18, 19 and 21 | Streams 15, 18, 19, 21/ Design phase and prior to construction | Highway=s Design Consultants & Contractor | TMEIA Ensure effective capture and safe transplantation of as many of individuals as possible | Y | Y | | n/a |
| 8.9 Table 8.32 Figure 8.5 | 5.5.3 | Works in streams 15, 18, 19 and 21 shall be scheduled to avoid the period April to June. | Streams 15, 18, 19, 21 / between April and June throughout construction period | Contractor | TMEIA Avoid key breeding period of amphibians and fish | | Y | | n/a |

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Ecology

| EIA Reference | EM&A Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|----------------------------------|----------------|---|--|--|--|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 8.9 Table 8.32 Figure 8.16 | 5.5.3 | Translocation of Romer's Tree Frog between Lung Tseng Tau and Shek Mun Kap | Lung Tseng Tau to Shek Mun Kap/ Design phase and prior to construction | Highway=s Design Consultants & Contractor | TMEIA Ensure effective capture and safe transplantation of as many of individuals as possible | Y | Y | | n/a |
| 8.9 | 5.5.3 | Provision of water filled pots as habitats for the Romer's Tree Frog between Lung Tseng Tau and Shek Mun Kap | Lung Tseng Tau to Shek Mun Kap/ Design phase and prior to construction | Highway=s Design Consultants & Contractor | TMEIA | Y | Y | | n/a |
| 8.9 Table 8.32 Figure 8.14 | 5.5.3 | Translocation of isolated population of Beijiang Thick-lipped Barb in Stream 15 to tributary of Tung Chung Stream | Stream 15 / Design phase and prior to construction | Highway=s Design Consultants & Contractor | TMEIA Ensure effective capture and safe transplantation of as many of individuals as possible | Y | Y | | n/a |

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Ecology

| EIA Reference | EM&A Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|----------------------------------|----------------|---|--|---|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 8.9 Table 8.32 Figure 8.20 | 5.5.3 | Provision of slope surfaces at step channels for aquatic fauna to move up and down stream at the existing bridge at stream 15. | Stream 15 / Design phase and construction | Highway=s Design Consultants & Contractor | TMEIA Minimise barrier effects of culverts | Y | Y | | n/a |
| 8.7.7.4 | | Bridge piers/abutments will be constructed at least 5m away from the streams and excavation works for the columns will be protected by the drainage works | Bridges / Throughout construction period | Contractor | TMEIA | | Y | | Contractor |
| 8.7.7.5 | 5.5.3 | For all off-line haulage roads, temporary brides shall be used to cross all streams which will span at least twice the width of the stream. | Off-line haul road where crosses a stream / Throughout construction period | Contractor | TMEIA | | Y | | Contractor |

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Ecology

| EIA Reference | EM&A Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|--|----------------|---|---|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 8.7.7.14 8.7.11.5 8.7.11.7 | | All culverts will be constructed separately prior to their connection with the stream to avoid direct impacts on the streams during this period | All stream culverts (new and extended) During culvert construction | Contractor | TMEIA Minimise stream pollution and affects on aquatic fauna | | Y | | n/a |
| 8.7.7.15 8.7.11.6 Figure 2.1 to 2.11 | | During bridge extension works, a dam shall be built across the stream, upstream from the works and a temporary pipeline shall be used to divert the stream water around the works area into the unaffected downstream area in order to prevent contamination of the stream flow | Bridge extension works, (STR01 to STR05)//Construction of concrete base slab for new bridge | Contractor | TMEIA & ProPECC PN 1/94 Minimise steam pollution | | Y | | n/a |
| 8.7.7.19 | | Construction of the off-line section of the road may only commence when either the pipeline trench or carrier pipe has been put in place up to Tai Tung Shan Reservoir. | Northern section of road (to crest) / Throughout construction period | Contractor | TMEIA | | Y | | Contractor |

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Ecology

| EIA Reference | EM&A Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|---------------|----------------|---|---|----------------------|-------------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 8.7.7.19 | | During excavation work for the drainage system itself, each stretch of dug channel will be concrete lined before the end of each day to minimise run-off. | All areas/ During excavation work for the drainage system | Contractor | TMEIA Prevent erosion and runoff | | Y | | n/a |
| 8.7.7.19 | | During excavation work for the drainage system, control and proper disposal of excavated material in accordance with the Waste Management Plan shall be undertaken. | All areas/ During excavation work for the drainage system | | TMEIA Prevent erosion and runoff | | Y | | n/a |
| 8.7.7.19 | | All temporary drainage channels shall be lined with concrete to prevent erosion. | All areas / Throughout construction period | Contractor | TMEIA & ProPECC PN 1/94 | | Y | | n/a |

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|---------------|----------------|---|--|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 8.7.7.19 | 5.5.3 | Hinterland drainage shall be collected by the use of perimeter channels and diverted to the nearest stream course to prevent external run off from crossing the site in order to prevent it becoming contaminated and to minimise the amount of polluted runoff to be controlled. | All Streams along route / Throughout construction period | Contractor | TMEIA Ensure that water quality impacts are not increased unduly | | Y | | Contractor |
| 8.7.7.20 | | Temporary cut slopes shall be covered with tarpaulin during rainfall when not being worked. | Exposed cut slopes/ Throughout construction period | Contractor | TMEIA To prevent erosion and avoid runoff. | | Y | | n/a |
| 8.7.7.20 | | Major stockpiles shall be sited outside the Country Park and away from stream courses | Within Country Park or country park extension / Throughout construction period | Contractor | TMEIA Avoid pollution to Country Park users and stream courses | | Y | | n/a |
| 8.7.7.20 | 6.8.1 | Spoil heaps shall be covered at all times. | All areas / Throughout construction period | Contractor | TMEIA | | Y | | n/a |
| 8.7.7.20 | 5.5.3 | Stock piled materials shall be contained | All areas | Contractor | TMEIA & | | Y | | n/a |

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|---------------|----------------|--|--|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| | | in a designated area down gradient from any stream course or up gradient with a suitably constructed barrier. | | | ProPECC PN 1/94 Reduce loss of materials to the stream. | | | | |
| 8.7.7.20 | | No oil or fuel shall be stored within the Country Park or the water gathering grounds | All areas/ throughout construction period | Contractor | TMEIA Prevent contamination of water course in country park and water gathering grounds. | | Y | | n/a |
| 8.7.7.21 | | All off-line sections of the haul road and associated slopes will be paved within 3 days of the individual sections having been completed. | Off-line haul roads/ within 3 days of sections being completed | Contractor | TMEIA Reduce potential for run-off | | Y | | n/a |
| 8.7.7.21 | | Progress of the construction phase drainage system shall be made in | All areas / In advance of haul road | Contractor | TMEIA Reduce the potential for run- | | Y | | n/a |

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|----------------------------------|----------------|---|---|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| | | advance of the off-line haul road formation. | | | off | | | | |
| 8.7.7.23 Figure 6.2a | | A sedimentation tank shall be provided during the construction stage for the treatment of all site runoff from the northern section of the road prior to discharge into the Wong Lung Hang nullah. | Northern section/ throughout construction period | Contractor | | | Y | | n/a |
| 8.7.7.24 | | The southern alignment will be divided into small catchments for the provision of the temporary drainage system in order to enhance the control of runoff | Southern section of road (from crest) / Design phase + Throughout construction period | HyD/Contractor | TMEIA | Y | Y | | n/a |
| 8.7.7.24 Figures 6.2f to 6.2i | | Sedimentation tanks and oil interceptors shall be provided during the construction stage on the southern section of the road above the catchwater for the treatment of all site runoff prior to discharge into the streams. | Southern section above catchwater/ throughout construction period | Contractor | TMEIA | | Y | | Contractor |

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| EIA Reference | EM&A Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|----------------------------------|----------------|--|--|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 8.7.7.25 Figures 6.2i to 6.2j | | Sedimentation tanks shall be provided during the construction stage on the southern section of the road below the catchwater for the treatment of all site runoff prior to discharge into the streams or via the Pui O Wan outfall. | Southern section below catchwater/ throughout construction period | Contractor | TMEIA | | Y | | Contractor |
| 8.10.6 | | Sedimentation tank, oil interceptors and channels used during the construction phase should be inspected every day rainfall is recorded and weekly thereafter. The sedimentation tanks and channels should be cleaned out when the volume of settled sediments amounts to 10% of the total volume of the tank and the oil interceptors should be cleaned when the volume of oil amounts to 50% | All areas/ throughout construction period | Contractor | TMEIA | | Y | | Contractor |

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| EIA Reference | EM&A Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|------------------------------------|----------------|--|--|---|--|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| | | of the total volume of the oil interceptor | | | | | | | |
| 8.10.6 Appendix I | 5.5.3 | Completed works area shall be restored within 3 weeks in accordance with the Landscape Proposal. | All areas | Contractor | TMEIA Reduce runoff | | Y | | n/a |
| 8.9.2 Table 8.33 Figure 8.16 | 5.5.3 | Wildlife tunnels shall be designed and provided to allow amphibians and mammals to move between the two sides of the road. | Southern section/ Design phase and during construction | HyD=s Design Consultants & Contractor | TMEIA Increase the dispersion of amphibians | Y | Y | | HyD |
| 8.9.2 Table 8.33 Figure 8.22 | 5.5.3 | Provision of escape routes from drainage channels for amphibians. | All areas / Design phase to commencement of construction | Highway=s Design Consultants & Contractor | TMEIA Ensure safety of as many of individuals as possible | Y | Y | | n/a |
| 8.8.5.2 | n/a | No operational road drainage shall be discharged into any streams. | All areas / Operational Phase | Contractor | TMEIA Protect the streams along the | | | Y | n/a |

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|---------------|----------------|--|---|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| | | | | | alignment | | | | |
| 8.11 | Section 5 | EM&A during the design, construction and operation phase shall be undertaken to audit design specification and ensure mitigation measures are effective. | Design Phase, throughout construction contract and maintenance period | Contractor | EM&A Manual Guard against failure of any mitigation or other unforeseen impact. | Y | Y | Y | n/a |

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Landscape and Visual

| EIA Reference | EM&A Manual Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|---------------|-----------------------|--|--|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 9.6.4 | 7.2 | Works areas to be confined to the Limit of the Road Works Areas to minimise impacts on existing features | All areas / throughout construction period | Contractor | TMEIA / Reduce impact to existing features | Y | Y | | n/a |
| 9.6.4 | 7.2 | Retention and protection of topography and rock outcrops | All areas / throughout construction period | Contractor | TMEIA / Reduce impact to existing features | Y | Y | | n/a |
| 9.6.4 | 7.2 | Retention and protection of existing stream courses | All areas / throughout construction period | Contractor | TMEIA / Reduce impact to existing features | Y | Y | | n/a |
| 9.6.4 | 7.2 | Retention and protection of existing secondary woodland | All areas / throughout construction period | Contractor | TMEIA / A Guide to Tree Planting and Maintenance in Urban Hong Kong | Y | Y | | n/a |
| 9.6.4 | 7.2 | Retention and protection of existing plantation woodland | All areas / throughout construction period | Contractor | TMEIA / A Guide to Tree Planting and Maintenance in Urban Hong Kong | | Y | | n/a |

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Landscape and Visual

| EIA Reference | EM&A Manual Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|-----------------------------|-----------------------|--|--|----------------------|---|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 9.6.4 | 7.2 | Retention and protection of existing shrubland | All areas / throughout construction period | Contractor | TMEIA / A Guide to Tree Planting and Maintenance in Urban Hong Kong | | Y | | n/a |
| 9.6.4 | 7.2 | Decorative hoarding along publicly accessible boundaries of the site. | Public areas / throughout construction period | Contractor | TMEIA / Minimise visual impact | | Y | | n/a |
| 9.6.4 Tree Survey Report | 7.2 | Where trees are affected by the works, those specimens that are both of high conservation/amenity value and also stand a high chance of successful reestablishment should be transplanted to other locations within the works limit. | All areas / prior to site clearance activities | Contractor | TMEIA / Reduce tree felling to a minimum | Y | Y | | n/a |
| 9.6.4 | 7.2 | Topsoil stripped and stored for re-use in the construction of the soft landscape works | All areas/throughout the construction period | Contractor | TMEIA / Reduce waste generation | Y | Y | | n/a |

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Landscape and Visual

| EIA Reference | EM&A Manual Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|---------------------|-----------------------|---|---|----------------------|---|-----------------------|---|---|---------------------------------|
| | | | | | | D | C | O | |
| 9.6.4 | 7.2 | Grass hydroseeding of slopes within 3 weeks of completion | Newly formed cut and embankment slopes / As soon as they are formed | Contractor | TMEIA / Reduce impact to existing features Reduce visual impacts of structures/ enhance landscape | | Y | | n/a |
| 9.7.4 Appendix I | 7.2 | Planting of native shrub species on newly formed and upgraded roadside slopes and areas disturbed by the Works to compensate for shrub vegetation lost during construction. | Roadside areas as shown on the Landscape Proposal / as soon as possible | Contractor | TMEIA / A Guide to Tree Planting and Maintenance in Urban Hong Kong / GEO Publication 1/2000 | Y | Y | | See Table 9.9 of the EIA Report |
| 9.7.4 Appendix I | 7.2 | Planting of native woodland species on newly formed and upgraded roadside slopes and areas disturbed by the Works to compensate for woodland vegetation lost during construction. | Roadside areas as shown on the Landscape Proposal / as soon as possible | Contractor | TMEIA / A Guide to Tree Planting and Maintenance in Urban Hong Kong / GEO Publication 1/2000 | Y | Y | | See Table 9.9 of the EIA Report |

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Landscape and Visual

| EIA Reference | EM&A Manual Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|---------------------|-----------------------|---|---|----------------------|--|-----------------------|---|---|---------------------------------|
| | | | | | | D | C | O | |
| 9.7.4 Appendix I | 7.2 | Infill planting of native trees in areas of existing low shrub adjacent to the road, to mitigate for loss of landscape resource and character, for visual screening and to enhance ecological diversity | Roadside areas as shown on the Landscape Proposal / as soon as possible | Contractor | TMEIA / A Guide to Tree Planting and Maintenance in Urban Hong Kong / GEO Publication 1/2000 | Y | Y | | See Table 9.9 of the EIA Report |
| 9.7.4 Appendix I | 7.2 | Tree and shrub planting to screen the road, to provide visual interest and to provide shade and shelter. | Areas at either end of the route as shown on the Landscape Proposal / as soon as possible | Contractor | TMEIA / A Guide to Tree Planting and Maintenance in Urban Hong Kong | Y | Y | | See Table 9.9 of the EIA Report |
| 9.7.4 | 7.2 | Sensitive architectural and chromatic treatment of new road structures, bridge structures, abutments, retaining walls | All areas / As soon as construction elements become accessible | Contractor | TMEIA / Approved ACABAS submission | Y | Y | | n/a |
| 9.7.4 | 7.2 | Sensitive architectural and chromatic treatment of noise barriers | Tung Chung / during barrier construction | Contractor | TMEIA / Approved ACABAS submission | Y | Y | | n/a |

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| EIA Reference | EM&A Manual Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|---------------|-----------------------|---|---|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 9.8 | Section 7 | EM&A during design, construction and operational phase to audit the detailed landscape design, compensatory planting implementation and establishment and implementation of mitigation measures to protect any existing vegetation. | All areas / design, throughout construction period, first year of operation | Contractor | EM&A Manual | Y | Y | Y | n/a |

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Heritage

| EIA Reference | EM&A Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|---------------|----------------|--|---|----------------------|--|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 11.6.5 | 9.2 | The shrine at Lung Tseng Tau should be left in situ. During the construction phase, if the shrine falls within the works area of the project a protective barrier such as a metal fence should be erected around it. | Lung Tseng Tau / construction period | Contractor | TMEIA | | Y | | LCSD |
| 11.6.5 | 9.2 | The 50 metre wooded buffer zone between the road and the nunnery should be retained to maintain the existing screening of the compound from the road during the construction and operational phases of the project | Fong Yuen Nunnery / construction period | Contractor | TMEIA | | Y | | n/a |
| 11.6.5 | 9.2 | Planting of foliage along the cycle path in the vicinity of the monastery. | Fong Yuen Nunnery / construction period | Contractor | TMEIA Maintain the existing environment | | Y | | AFCD |

Legend: D=Design, C=Construction, O=Operation

Note: Funding Agent for all mitigation measures will be the Highways Department of the Hong Kong SAR Government

Agreement No. CE 13/2001
IMPROVMENT TO TING CHUNG ROAD BETWEEN
LUNG TSENG TAU AND CHEUNG SHA
- INVESTIGATION AND PRELIMINARY DESIGN ASSIGNMENT

ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE

Heritage

| EIA Reference | EM&A Reference | Environmental Protection Measures | Location/ Timing | Implementation Agent | Relevant Standard or Requirement | Implementation Stages | | | Maintenance Agency |
|---------------|----------------|--|--|----------------------|----------------------------------|-----------------------|---|---|--------------------|
| | | | | | | D | C | O | |
| 11.6.5 | 9.2 | The main nunnery building should be fenced off and kept separate from the works area | Alignment of Cycle Path /Construction period | Contractor | TMEIA | | Y | | n/a |
| 11.9 | Section 9 | EM&A in the form of audit of the mitigation measures | All areas / throughout construction period | Contractor | EM&A Manual | | Y | | n/a |

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