Summary of Environmental Impacts Associated with the Project

Sensitive Receivers/ Assessment Points	Impacts Associated with the 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)
Air Quality Impact					
Construction Phase					
Existing, planned and committed sensitive developments mostly are residential with a few other types such as government/ institution/ community (GIC) and places of public worship  51 assessment points (refer to Figures 3.2 - 3.2d)	<ul> <li>Scenario 1</li> <li>1-hour Average TSP Conc.: 2390.2 – 13982.1 μg/m³</li> <li>24-hour Average TSP Conc.: 180.0 – 1593.8 μg/m³</li> <li>Annual Average TSP Conc.: 73.2 – 86.9 μg/m³</li> <li>Scenario 2</li> <li>1-hour Average TSP Conc.: 386.9 – 9254.8 μg/m³</li> <li>24-hour Average TSP Conc.: 97.8 – 2211.1 μg/m³</li> <li>Annual Average TSP Conc.: 73.2 – 87.3 μg/m³</li> </ul>	<ul> <li>EIAO-TM and AQO</li> <li>1-hr Average TSP Conc: 500 μg/m³</li> <li>24-hr Average TSP Conc: 260 μg/m³</li> <li>Annual Average TSP Conc: 80 μg/m³</li> </ul>	<ul> <li>Exceed EIAO-TM (1-hr) criterion by up to 13482.1 μg/m³</li> <li>Exceed AQO (24-hr) criterion by up to 1951.1 μg/m³</li> <li>Exceed AQO (Annual) criterion by up to 7.3 μg/m³</li> </ul>	Watering once per hour on exposed worksites and haul road is proposed     Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices would be carried out to further minimise construction dust impact.	Scenario 1  The mitigated impact prediction results for 1-hr, 24-hr and Annual Average TSP Conc. are as follows.  • 1-hour Average TSP Conc.: 130.8 – 489.6 μg/m³  • 24-hour Average TSP Conc.: 76.0 – 168.3 μg/m³  • Annual Average TSP Conc.: 73.1 – 74.4 μg/m³  • No adverse residual 1-hr, 24-hr and annual dust impacts would be anticipated.  Scenario 2  The mitigated impact prediction results for 1-hr, 24-hr and

Sensitive Receivers/ 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)
					Annual Average TSP Conc. are as follows.
					• 1-hour Average TSP Conc.: 81.3 - 444.0 µg/m <sup>3</sup>
					• 24-hour Average TSP Conc.: 73.8 – 149.4 µg/m <sup>3</sup>
					• Annual Average TSP Conc.: 73.1 - 74.6 µg/m <sup>3</sup>
					No adverse residual 1-hr, 24-hr and annual dust impacts would be anticipated.
Operational Phase (Vehic	cular Emission)				
Existing, planned and committed sensitive developments mostly are residential with a few other types such as government/ institution/ community (GIC) and places of public worship  64 assessment points (refer to Figures 3.2 -	<ul> <li>Year 2020</li> <li>1-hour Average NO<sub>2</sub> Conc.: 61-183 μg/m³</li> <li>24-hour Average NO<sub>2</sub> Conc.: 50–68 μg/m³</li> <li>Annual Average NO<sub>2</sub> Conc.: 49 – 57 μg/m³</li> <li>24-hour Average RSP Conc.: 51 – 54 μg/m³</li> <li>Annual Average RSP Conc.:</li> </ul>	Environmental     Impact Assessment     Ordinance (EIAO)     (Cap. 499), Technical     Memorandum on     Environmental     Impact Assessment     Process (TM-EIAO),     Annex 4 and Annex     12      Air Pollution	No exceedance was anticipated.	No mitigation measure would be required.	No adverse residual impact would be anticipated.

Sensitive Receivers/ 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)
3.2d)	<ul> <li>51 – 52 μg/m³</li> <li>Year 2027</li> <li>1-hour Average NO<sub>2</sub> Conc.: 56 - 162 μg/m³</li> <li>24-hour Average NO<sub>2</sub> Conc.: 50 – 64 μg/m³</li> <li>Annual Average NO<sub>2</sub> Conc.: 49 – 53 μg/m³</li> <li>24-hour Average RSP Conc.: 51 – 53 μg/m³</li> <li>Annual Average RSP Conc.: 51 – 52 μg/m³</li> </ul>	Ordinance (APCO) (Cap 311);  1-hr Average NO <sub>2</sub> Conc: 300 μg/m3  24-hr Average NO <sub>2</sub> Conc: 150 μg/m3  Annual Average NO <sub>2</sub> Conc: 80 μg/m3  24-hr Average RSP Conc: 180 μg/m3  Annual Average RSP Conc: 55 μg/m3			
Planned and committed sensitive developments mostly educational institutions within LMC Loop  22 assessment points (refer to Figures 3.2b – 3.2c)	Unmitigated Case  • 5-seconds average: 47.2 ou – 153.5 ou	<ul> <li>Environmental         Impact Assessment         Ordinance (EIAO)         (Cap. 499), Technical         Memorandum on         Environmental         Impact Assessment         Process (TM-EIAO),         Annex 4;</li> <li>Meet 5 odour units         based on an         averaging time of 5         seconds for odour</li> </ul>	• Exceed EIAO-TM (1-hr) criterion by up to 148.5 ou	<ul> <li>Bioremediation along certain extent of Shenzhen River</li> <li>Odour removal system for on-site STP</li> <li>Odour removal system at buildings with central air-conditioning system as interim contingency measure, if require.</li> </ul>	<ul> <li>Short Term</li> <li>5-seconds average: 10.8 ou – 14.5 ou</li> <li>No adverse residual impact anticipated indoor if odour removal system is installed.</li> <li>Residual impact would be anticipated outdoor.</li> <li>Long Term</li> </ul>

Sensitive Receivers/ 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)
		prediction assessment.			<ul> <li>5-seconds average: 3.5 ou – 4.7 ou</li> <li>No adverse residual impact would be anticipated.</li> </ul>
Noise					
Existing residential premises and worship in the vicinity  Future residential premises within LMC Loop  19 assessment points (refer to Figures 4.4-4.7)	Predicted construction noise levels would range from 63 to 90 dB(A)	• TM-EIAO Annex 5 for non-restricted hours for domestic premises: 75 dB(A), for educational institution is 70 dB(A) (65 dB(A) during examination period).	• Exceed the TM-EIAO noise criterion by up to 15 dB(A)	• Adoption of good site practices, use of quite plant and working methods, use of site hording as noise barrier at ground level of NSRs, use of temporary noise barrier from relatively static PMEs, scheduling of construction works outside school examination periods and critical area and alternative use of plant items and setting the concrete lorry mixer at around 20m away from the existing NSRs along Ha Wan Tsuen Road and Lok Ma Chau Road and planned NSRs at eco-lodge along Border Road to minimise construction noise impact	<ul> <li>The mitigated predicted construction noise levels for the Project alone would range from 54 to 75 dB(A) within the criterion</li> <li>No adverse residual noise impact would be anticipated.</li> </ul>

Sensitive Receivers/ 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)
Construction Phase (Construction Phase)	onstruction Traffic Noise)				
Existing residential premises and worship in the vicinity  55 assessment points (refer to Figures 4.4-4.7)	Predicted construction traffic noise levels would range from 43 to 75 dB(A) in Year 2016 and 50 to 76 dB(A) in Year 2020  Predicted construction traffic noise levels would range from 43 to 75 dB(A) in Year 2016 and 50 to 76 dB(A) in Year 2020  Predicted construction traffic noise levels would range from 43 to 75 dB(A) in Year 2016 and 50 to 76 dB(A) in Year 2020  Predicted construction traffic noise levels would range from 43 to 75 dB(A) in Year 2016 and 50 to 76 dB(A) in Year 2016 and 50 to 76 dB(A) in Year 2020  Predicted construction traffic noise levels would range from 43 to 75 dB(A) in Year 2016 and 50 to 76 dB(A) in Year 2020  Predicted construction traffic noise levels would range from 43 to 75 dB(A) in Year 2016 and 50 to 76 dB(A) in Year 2020  Predicted construction traffic noise levels would range from 43 to 75 dB(A) in Year 2020  Predicted construction traffic noise levels would range from 45 dB(A) in Year 2020  Predicted construction traffic noise levels would range from 45 dB(A) in Year 2020  Predicted construction traffic noise levels would range from 45 dB(A) in Year 2020  Predicted construction traffic noise levels would range from 45 dB(A) in Year 2020  Predicted construction traffic noise levels would range from 45 dB(A) in Year 2020	<ul> <li>Noise Control Ordinance (NCO) (Cap.400);</li> <li>Environmental Impact Assessment Ordinance (EIAO) (Cap. 499);</li> <li>Noise criterion for domestic premises is 70dB(A) and 65 dB(A) for places of worship</li> </ul>	• Exceed TM-EIAO criterion by up to 5dB(A) for Year 2016 and 6 dB(A) for Year 2020	Provision of temporary reflective noise barrier	<ul> <li>The predicted mitigated construction traffic noise would range from 43 to 75dB(A) in Year 2016 and 50 to 75 dB(A) in Year 2020</li> <li>The contribution due to the construction access road would be less than 1dB(A) for both Year 2016 and 2020 and the noise impact from construction access road is within the noise criteria of 70dB(A). Thus construction traffic noise is insignificant.</li> <li>No adverse residual impacts would be anticipated.</li> </ul>
Operational Phase (Traff	fic Noise)				
Existing residential premises and worship	Predicted noise levels would be in the range of 38to 77 dB(A)	• EIAO-TM Annex 5: ANL	• Exceed TM-EIAO criterion by up to	• Implementation of reflective noise barrier	• The predicted mitigated operational

Sensitive Receivers/ 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)
in the vicinity  Planned residential premises  144 assessment points (refer to <b>Figures 4.4-4.7</b> )			7dB(A)	Provision of central air conditioning for the first layer of NSRs facing Road M1	traffic noise would range from 37 to 76dB(A)  • The contribution due to the project road would be less than 1dB(A) and the noise impact from project road is within the noise criteria of 70dB(A). Thus operational traffic noise is insignificant.  • No adverse residual impacts would be anticipated.
Operational Phase (Fixed Planned residential premises in LMC Loop	Maximum sound power level was predicted to meet the relevant noise criteria	• EIAO-TM Annex 5: ANL-5dB(A)	No exceedance was anticipated.	<ul> <li>Application of silencer installation at exhaust fan of sludge pumping station</li> <li>Application of special acoustic enclosure at inlet pump of the influent pumping station, air blowers of the blower house, RAS pumping station, thickened primary sludge</li> </ul>	No adverse residual impacts would be anticipated.

Sensitive Receivers/ 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)
				pumps of the primary sludge thickeners, effluent pump of the effluent pumping station, thickened primary sludge pumps of the sludge pumping station, condensers and chillers	
Water Quality			l		
Construction Phase					
Shenzhen River (WSR1), LMC Meander (WSR2), San Tin Wetlands (Fish Ponds) (WSR3), Hoo Hok Wai (WSR4), Ma Tso Lung Nullah (WSR5) (refer to Figure 5.2)	Potential deterioration in water quality	TM-EIAO;     Water Pollution Control Ordinance (WPCO) (Cap. 358);     Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS);     Practice Note for Professional Persons (ProPECC) PN 1/94	No exceedance was predicted.	Appropriate mitigation measures has been proposed (see Section 5.7.1) to control the following:     Construction runoff     Groundwater from contaminated area     Sewage from workforce     Construction of bridge crossing     Construction of underpass/depressed road     Bio-remedation of Shenzhen River     Construction of	<ul> <li>No unacceptable water quantity impacts would be anticipated.</li> <li>No adverse residual impact would be anticipated.</li> </ul>

Sensitive Receivers/ 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)
				viaduct across reedbed in LMC Station	
Operational Phase					
Shenzhen River (WSR1), LMC Meander (WSR2), San Tin Wetlands (Fish Ponds) (WSR3), Hoo Hok Wai (WSR4), Ma Tso Lung Nullah (WSR5) (refer to Figure 5.2)	Water quality would be deteriorated by:  - Sewage and sewerage system  - Discharge from District Cooling System  - Runoff from internal and external connections  - Drainage system	Relevant standards/ criteria stipulated under the EIAO-TM, WPCO, TM-DDS and ProPECC 5/93	No exceedance was predicted	Appropriate and practicable mitigation measures have been proposed to control potential adverse water quality impact during operational phase (see Section 5.7.2)	<ul> <li>No unacceptable water quantity impacts would be anticipated.</li> <li>No adverse residual impact would be anticipated.</li> </ul>
Sewerage and Sewage					
Construction Phase					
Water quality, air and noise sensitive receivers at or near the Project Site	Additional sewage flows and loads will be generated which could not be handled by the existing YLSTW or SWHSTW	No net increase in pollution load	No exceedance was predicted.	On-site STW and off-site load compensation at SWHSTW is recommended.      MBR is recommended as the sewage treatment process in the on-site STW.	No adverse residual impacts would be anticipated.
Waste					

Sensitive Receivers/ 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)
Construction Phase  Water quality, air and noise sensitive receivers at or near the Project Site, the waste transportation routes and the waste disposal site.	Construction and demolition (C&D) materials would arise from site clearance waste excavated materials, construction of new buildings and structures, onsite sorting of C&D materials and imported fill materials  Contaminated soil in Area A (around 57,444m3), Area B and added Area B  Sediments from fishponds and meander (around 300m³ for the construction of WCR and 63,700m³ for the construction of ECR)  Chemical wastes  General Refuse (1600m³, include Paper, Metals and Plastics)  Sewage from amenity facilities	<ul> <li>EIAO-TM Annex 7 and Annex 15</li> <li>Waste Disposal Ordinance (Cap. 354);</li> <li>Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C);</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;</li> <li>Waste Disposal (Charges for Disposal of Construction Waste) Regulation</li> </ul>	• Not applicable.	Strict implementation of good site practice     Adoption of on-site sorting, reusing excavated fill materials etc. to minimize the surplus materials to be disposed.     Implementation of waste reduction measures     Implementation of measures to minimize the impact from storage, collection and transportation of waste	,
		<ul><li>(Cap. 354N); and</li><li>Dumping at Sea Ordinance (Cap.</li></ul>			

Sensitive Receivers/ 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)
		466).			
Operational Phase					
Water quality, air and noise sensitive receivers at or near the Project Site, the waste transportation routes and the waste disposal site.	<ul> <li>Area A</li> <li>Municipal Solid Waste (Phase I: 34.2tpd and Phase II: 68.4tpd)</li> <li>Chemical waste from laboratories, machinery maintenance and servicing in academic buildings and STW</li> <li>Food waste (24.6tpd)</li> <li>Sewage sludge (7.1 wet tonnes/day)</li> <li>Area B</li> <li>Insignificant amount of general refuse would be generated in Area B during operational phase</li> </ul>	<ul> <li>Waste Ordinance (Cap. 354); and</li> <li>Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C).</li> </ul>	• Not applicable.	<ul> <li>Implementation of a waste prevention programme as well as materials recovery and recycling programme</li> <li>Employ reputable waste collector to remove general refuse</li> <li>Employ licensed waste collector and trip-ticket system for the collection of chemical waste</li> <li>Follow Code of Practice on the Packaging, Labelling and Storage of Chemical Waste in handling of chemical waste.</li> <li>Food waste should be collected separately with using enclosed containers and treated by on-site composting in an enclosed area</li> <li>Sewage sludge should be treated at the proposed STF at Nim Wan and transported by road in water tight containers or skips.</li> </ul>	No adverse residual impacts would be anticipated.

Assessment Points	Impact Prediction Results (Without Mitigation)	Key Relevant Standards/ Criteria	Extents of Exceedance (Without Mitigation)	Impact Avoidance Measures/ Mitigation Measures	(After Implementation of Mitigation Measures)
Land Contamination					
Construction Phase					
contamination sites within the Project Area	LMC Loop  • 5 zones were identified as contaminated by metal Arsenic with volume of 57,444m³ contaminated soil  Contamination Assessment Area for the Associated Infrastructure outside LMC Loop  • No potentially contaminated site was identified in the contamination assessment area for the associated infrastructure outside the LMC Loop and SI work was not required	<ul> <li>Section 3 (Potential Contaminated Land Issues) of Annex 19 "Guidelines for Assessment of Impact on Sites of Cultural Heritage and Other Impacts" of the EIAO-TM.</li> <li>Guidance Note for Contaminated Land Assessment and Remediation"</li> <li>Practice Guide for Investigation and Remediation of Contaminated Land</li> <li>Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management</li> </ul>	Not Applicable	Remediation by solidification/stabilization is recommended.      Mitigation measures are proposed during excavation and remediation of the contaminated soil.	No adverse residual impacts would be anticipated.

Sensitive Receivers/ 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)
<u>Hazard</u>					
Hazard assessment is n	ot required as explosive would not	be required during the con	struction and the developmen	nt is outside the consultation zone	of the nearest PHI
Cultural Heritage					
Construction Phase					
Sites of archaeological interest	None recorded presence of sites of archaeological interest to be confirmed during archaeological site survey and no impact is anticipated.	Guidelines for Cultural Heritage Impact Assessment     EIAO-TM Annex 10 and Annex 19	Not Applicable	No mitigation measure would be required.	No adverse residual impacts would be anticipated.
Built Heritages (refer to <b>Figures 10.3</b> to <b>10.9</b> )	No impacts are anticipated from the construction on built heritage	Guidelines for Cultural Heritage Impact Assessment     EIAO-TM Annex 10 and Annex 19	Not Applicable	No mitigation measure would be required.	No adverse residual impacts would be anticipated.
Operational Phase					
Sites of Archaeological Interest	None recorded presence of sites of archaeological interest to be confirmed during archaeological site survey and no impact is anticipated.	Guidelines for Cultural Heritage Impact Assessment     EIAO-TM Annex 10 and Annex 19	Not Applicable	No mitigation measure would be required.	No adverse residual impacts would be anticipated.

Sensitive Receivers/ 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)
Built Heritages (refer to <b>Figures 10.3</b> to <b>10.9</b> )	Indirect visual impact on the built heritages near LMC Loop and Western Connection Road from its surrounding development.	• Guidelines for Cultural Heritage Impact Assessment • EIAO-TM Annex 10 and Annex 19	Not Applicable	Provide plant screening	No adverse residual impacts would be anticipated.
<b>Landscape and Visual</b>					
Construction Phase					
Existing Landscape Resources (LRs) and Landscape Character Area (LCAs) within the Study Area Visually Sensitive Receivers (VSRs) within the Study Area (refer to Figures 11.4a to 11.4s for Impacts LRs; Figures 11.5a to 11.5e Impacts for LCAs and Figures 11.6.1 to 11.7a to 11.7g for Visual Impacts)	<ul> <li>The LMC Loop Development under EIAO Schedule 3:</li> <li>Significant adverse unmitigated impact on the LR - Marsh on the Loop.</li> <li>Slight to moderate adverse unmitigated impacts on 33 out of 57 LRs identified within the Study Area.</li> <li>Significant adverse unmitigated impact on the character of LMC Loop Riverside Landscape.</li> <li>Moderate adverse unmitigated impacts on 6 out of 9 LCAs identified within the Study Area</li> <li>Significant adverse unmitigated impacts on 6 out of 9 LCAs identified within the Study Area</li> <li>Significant adverse unmitigated impacts on 7</li> </ul>	• EIAO – TM, EIAO GN No.8/2010 and ETWB TC(W) No. 3/2006	Not Applicable	<ul> <li>CP1- Preservation and Protection of Existing Trees</li> <li>CP2 - Works Area and Temporary Works Areas, and Restoration of Temporary Works Area.</li> <li>CP3 - Advance Implementation of Mitigation Planting</li> <li>CP4- Transplantation of existing trees</li> <li>CP5- Coordination with concurrent projects</li> <li>CP6- Creation of Wetland and Landscape Buffer</li> <li>CP7-Design of Retaining Wall and Slopes</li> </ul>	The LMC Loop  Development under  EIAO Schedule 3:  Slight to moderate adverse mitigated impact (Day1) on 19 out of 57 LRs identified within the Study Area.  Negligible mitigated impact (Day1) on 38 LRs identified within the Study Area.  Moderate adverse mitigated impact (Day1) on the character of LMC Loop Riverside Landscape.

Sensitive Receivers/ 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)
	out of 28 VSRs identified within the visual envelope of proposed works who located in proximity to or have an overview to the proposed works.  • Slight to Moderate adverse unmitigated impacts on 17 out of 28 VSRs identified within the visual envelope of proposed works.  DPs under EIAO Schedule 2  DP1, DP4 and DP5 within the LMC Loop				mitigated impacts (Day 1) on 6 out of 9 LCAs identified within the Study Area  • Moderate adverse mitigated impacts (Day 1) on 7 out of 28 VSRs identified within the visual envelope of proposed works who located in proximity to or have an overview to the proposed works.  • Slight adverse to
	<ul> <li>Slight to Significant adverse unmitigated impacts on LRs within the Study Area including grassland, trees and marsh on the LMC Loop and the river to the south of the Loop.</li> <li>Significant adverse unmitigated impact on the character of LMC Loop Riverside Landscape.</li> <li>Moderate to Significant adverse unmitigated impacts on 10 out of 28 VSRs</li> </ul>				Negligible mitigated impacts (Day 1) on 17 out of 28 VSRs identified within the visual envelope of proposed works.  DPs under EIAO Schedule 2  DP1, DP4 and DP5 within the LMC Loop  • Slight to Significant adverse unmitigated impacts on LRs

Sensitive Receivers/ 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)
	identified within the visual envelope of proposed works.  Western Connection Road (including LMC Road/San Tin Highway Connection) (DP2)  Slight to Moderate adverse unmitigated impacts on existing road, roadside trees and woodlands and village settlements, fishponds, open yard and developed areas, 18 out of 57 LRs identified within the Study Area.  Moderate adverse unmitigated impacts on 3 out of 9 LCAs identified within the Study Area  Slight to Significant adverse unmitigated impacts on 11 out of 28 VSRs identified within the visual envelope of proposed works.  Direct Link To MTR LMC Station (DP3)  Slight to Moderate adverse				within the Study Area including grassland, trees and marsh on the LMC Loop and the river to the south of the Loop.  • Significant adverse unmitigated impact on the character of LMC Loop Riverside Landscape.  • Moderate to Significant adverse unmitigated impacts on 10 out of 28 VSRs identified within the visual envelope of proposed works.  Western Connection Road (including LMC Road/San Tin Highway Connection) (DP2)  • Slight adverse to Negligible adverse mitigated impacts (Day1) on 18 out of 57 LRs identified within the Study

Sensitive Receivers/ 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)
	unmitigated impacts on existing road, cross-boundary facilities, roadside trees, mitigated wetland and natural stream, open yard and developed areas, 10 out of 57 LRs identified within the Study Area.  • Moderate adverse unmitigated impact on the character of LMC Cross-boundary Infrastructure and Facilities Landscape.  • Slight to Significant adverse 7 out of 28 VSRs identified within the visual envelope of proposed works.  Eastern Connection Road (DP6)  • Slight to Moderate adverse unmitigated impacts on existing road, grassland, shrubland, woodlands, fishponds, agricultural fields and natural stream, 10 out of 57 LRs identified within the				Area.  Slight adverse mitigated impacts (Day 1) on 3 out of 9 LCAs identified within the Study Area  Moderate adverse to Negligible mitigated impacts (Day 1) on 11 out of 28 VSRs identified within the visual envelope of proposed works.  Direct Link To MTR LMC Station (DP3)  Slight adverse to negligible mitigated impacts (Day 1) on 10 out of 57 LRs identified within the Study Area.  Slight adverse mitigated impacts (Day 1) on 10 out of 57 LRs identified within the Study Area.
	Study Area.				Facilities Landscape.

Sensitive Receivers/ 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> <li>Moderate unmitigated impacts on 4 out of 9 LCAs identified within the Study Area.</li> <li>Moderate adverse unmitigated impacts on 9 out of 28 VSRs identified within the visual envelope of proposed works.</li> <li>Flushing Water Service Reservoir (DP7)</li> <li>Slight adverse unmitigated impacts on grassland of Horn Hill, LR identified within the Study Area.</li> <li>Moderate adverse unmitigated impact on the character of LMC Hillside Landscape.</li> <li>Moderate adverse unmitigated within the visual envelope of proposed works.</li> </ul>				Moderate adverse to negligible mitigated impacts (Day1) on 7 out of 28 VSRs identified within the visual envelope of proposed works.      Eastern Connection Road (DP6)      Slight adverse to negligible mitigated impacts (Day1) on 10 out of 57 LRs identified within the Study Area.      Slight adverse mitigated impacts (Day1) on 4 out of 9 LCAs identified within the Study Area.      Slight adverse mitigated impacts (Day1) on 4 out of 9 LCAs identified within the Study Area.      Slight adverse mitigated impacts (Day1) on 9 out of 28 VSRs identified within the visual envelope of proposed works.

Sensitive Receivers/ 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)
					Flushing Water Service Reservoir (DP7)  Negligible mitigated impacts (Day 1) on grassland of Horn Hill, LR identified within the Study Area.  Slight adverse mitigated impact (Day1) on the character of LMC Hillside Landscape.  Slight adverse mitigated impacts (Day1) on 4 out of 28 VSRs identified within the visual envelope of proposed works.
Operational Phase					
Existing Landscape Resources (LRs) and Landscape Character Area (LCAs) within the Study Area Visually Sensitive	<ul> <li>The LMC Loop Development under EIAO Schedule 3:</li> <li>Significant adverse unmitigated impact on the LR - Marsh on the Loop.</li> </ul>	• EIAO – TM, EIAO GN No.8/2010 and ETWB TC(W) No. 3/2006	• Not Applicable	<ul> <li>OP1- Roadside and Amenity planting</li> <li>OP2-Compensatory planting proposals</li> <li>OP3- Responsive design of</li> </ul>	Residual Impacts (Yr10) during operation period upon full establishment of LMMs.  The LMC Loop

Sensitive Receivers/ 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)
Receivers (VSRs) within the Study Area (refer to Figures 11.4a to 11.4s for Impacts LRs; Figures 11.5a to 11.5e Impacts for LCAs and Figures 11.6.1 to 11.7a to 11.7g for Visual Impacts)	<ul> <li>Slight to moderate adverse unmitigated impacts on 33 out of 57 LRs identified within the Study Area.</li> <li>Significant adverse unmitigated impact on the character of LMC Loop Riverside Landscape.</li> <li>Moderate adverse unmitigated impacts on 6 out of 9 LCAs identified within the Study Area</li> <li>Significant adverse unmitigated impacts on 7 out of 28 VSRs identified within the visual envelope of proposed works who located in proximity to or have an overview to the proposed works.</li> <li>Slight to Moderate adverse unmitigated impacts on 17 out of 28 VSRs identified within the visual envelope of proposed works.</li> <li>Slight to Moderate adverse unmitigated impacts on 17 out of 28 VSRs identified within the visual envelope of proposed works.</li> <li>DPs under EIAO Schedule 2</li> <li>DP1, DP4 and DP5 within the</li> </ul>			<ul> <li>buildings and structures</li> <li>OP4- Design of noise mitigation structures</li> <li>OP5- Design of engineering structures</li> <li>OP6- Creation of Woodland</li> <li>OP7-Reinstatement of Affected Fishponds</li> <li>OP8-Appication of Terraced Podium Landscape, Vertical Greening and Green Roof</li> </ul>	<ul> <li>Development under EIAO Schedule 3:</li> <li>Slight Beneficial mitigated Impact (Yesr10) on LR Trees on the LMC Loop.</li> <li>Negligible mitigated impact (Year 10) on all remaining 56 LRs identified within the Study Area.</li> <li>Slight adverse mitigated impact (Year 10) on the character of LMC Loop Riverside Landscape.</li> <li>Negligible mitigated impacts (Year 10) on all remaining LCAs.</li> <li>Slight adverse mitigated impacts (Year 10) on all remaining LCAs.</li> <li>Slight adverse mitigated impacts (Year 10) on 7 out of 28 VSRs identified within the visual envelope of proposed works.</li> <li>Negligible mitigated</li> </ul>

Sensitive Receivers/ 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)
	LMC Loop  Slight to Significant adverse unmitigated impacts on LRs within the Study Area including grassland, trees and marsh on the LMC Loop and the river to the south of the Loop.  Significant adverse unmitigated impact on the character of LMC Loop Riverside Landscape.  Moderate to Significant adverse unmitigated impacts on 10 out of 28 VSRs identified within the visual envelope of proposed works.  Western Connection Road (including LMC Road/San Tin Highway Connection) (DP2)  Slight to Moderate adverse unmitigated impacts on existing road, roadside trees				impacts (Year 10) on the remaining VSRs identified within the visual envelope of proposed works.  DPs under EIAO Schedule 2  DP1, DP4 and DP5 within the LMC Loop  Slight Beneficial mitigated Impact (Year 10) on LR Trees on the LMC Loop.  Negligible mitigated impact (Year 10) on all remaining LRs.  Slight adverse mitigated impact (Year 10) on the character of LMC Loop Riverside Landscape.  Negligible mitigated impact (Year 10) on the character of LMC Loop Riverside Landscape.
	and woodlands and village settlements, fishponds, open yard and developed areas, 18				all remaining LCAs.  • Slight adverse

Sensitive Receivers/ 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)
	out of 57 LRs identified within the Study Area.  • Moderate adverse unmitigated impacts on 3 out of 9 LCAs identified within the Study Area  • Slight to Significant adverse unmitigated impacts on 11 out of 28 VSRs identified within the visual envelope of proposed works.  Direct Link To MTR LMC Station (DP3)  • Slight to Moderate adverse unmitigated impacts on existing road, cross-boundary facilities, roadside trees, mitigated wetland and natural stream, open yard and developed areas, 10 out of 57 LRs identified within the Study Area.  • Moderate adverse unmitigated impact on the character of LMC Cross-boundary Infrastructure and Facilities Landscape.				mitigated impacts (Year 10) on 3 out of 28 VSRs identified within the visual envelope of proposed works.  • Negligible mitigated impacts (Year 10) on all remaining VSRs.  Western Connection Road (including LMC Road/San Tin Highway Connection) (DP2)  • Negligible mitigated impact (Year 10) on all remaining LRs.  • Negligible mitigated impacts (Year 10) on all remaining LCAs.  • Negligible mitigated impacts (Year 10) on 3 out of 28 VSRs identified within the visual envelope of proposed works.  • Negligible mitigated impacts (Year 10) on 3 out of 28 VSRs identified within the visual envelope of proposed works.

Sensitive Receivers/ 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)
	• Slight to Significant adverse 7 out of 28 VSRs identified within the visual envelope of proposed				all remaining VSRs.  Direct Link To MTR  LMC Station (DP3)
	works.  Eastern Connection Road (DP6)				Negligible mitigated impact (Year 10) on all remaining LRs.
	Slight to Moderate adverse unmitigated impacts on existing road, grassland,				Negligible mitigated impacts (Year 10) on all remaining LCAs.
	shrubland, woodlands, fishponds, agricultural fields and natural stream, 10 out of 57 LRs identified within the Study Area.				Slight mitigated impacts ( Year 10) ) on 1 out of 28 VSRs identified within the visual envelope of proposed works.
	Moderate adverse unmitigated impacts on 4 out of 9 LCAs identified within the Study Area.				Negligible mitigated impacts (Year 10) on all remaining VSRs.
	Moderate adverse unmitigated impacts on 9 out of 28 VSRs identified within the visual envelope of proposed works.				Eastern Connection Road (DP6)  • Negligible mitigated impact (Year 10) on all remaining LRs.
	Flushing Water Service Reservoir (DP7)  • Slight adverse unmitigated				Negligible mitigated impacts (Year 10) on all remaining LCAs.
	impacts on grassland of Horn				Negligible mitigated

Sensitive Receivers/ 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)
	Hill, LR identified within the Study Area.				impacts (Year 10) on all VSRs.
	Moderate adverse unmitigated impact on the character of LMC Hillside Landscape.				Flushing Water Service Reservoir (DP7)
	Moderate adverse unmitigated impacts on 4 out				Negligible mitigated impact (Year 10) on all remaining LRs.
	of 28 VSRs identified within the visual envelope of proposed works.				Negligible mitigated impacts (Year 10) on all remaining LCAs.
					Negligible mitigated impacts (Year 10) on all VSRs.
Ecology				,	,
Construction Phase					
Habitats, species, fragmentation (refer to <b>Figure 12.1</b> for habitat map)	<ul> <li>Habitats</li> <li>Loss of 10.96ha of reed marsh</li> <li>Loss of 0.5ha of marsh</li> <li>Disturbance to fish ponds</li> <li>Construction run-off increasing suspended solids and pollutants in LMC Meander</li> </ul>	<ul> <li>Forests and Countryside Ordinance</li> <li>Wild Animals Protection Ordinance</li> <li>Environmental Impact Assessment Ordinance</li> <li>Protection of Endangered Species</li> </ul>	• Not Applicable	Specific mitigation measures are proposed during construction (see section 12.8)	Disturbance effects on both the flight line corridor and LMC Meander and also on Eurasian Otter

Sensitive Receivers/ 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)
	Pollutant run-off to downstream areas	of Animals and Plants Ordinance			
	Accidental spillage events				
	• Disturbance to LMC Meander				
	• Loss of pond habitat along Ha Wan Tsuen Rd.				
	Disturbance to pond habitat				
	Woodland loss along Ha     Wan Tsuen Road				
	• Run-off to LMC Meander and stream south of Lung Hau Road				
	Habitat loss and disturbance to marsh and reed marsh				
	Loss of secondary woodland				
	• Direct impacts on LMC Meander				
	Direct impacts on Ping Hang Stream				
	Loss of riparian habitat of Ma Tso Lung Stream				
	Construction run-off				
	<u>Species</u>				

Sensitive Receivers/ 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> <li>Mortality impacts on birds</li> <li>Impacts on Eurasian otter</li> <li>Impacts on other mammals</li> <li>Impacts on Herpeto fauna, Odonata and Paradise Fish</li> <li>Impacts on Rose Bitterling</li> <li>Impacts on small snakehead and Somanniathelphus zanklon         Fragmentation     </li> <li>Impacts on flight line corridor from LMC Loop development</li> <li>Impacts on flight line corridor from WCR and ECR</li> <li>Temporary disturbance impacts arising from strengthening of banks of Ecological Area</li> </ul>				
Operational Phase					
Habitats, species, fragmentation (refer to <b>Figure 12.1</b> for habitat map)	Habitats  Loss of 10.92ha of reed marsh	<ul><li>Forests and Countryside Ordinance</li><li>Wild Animals</li></ul>	Not Applicable	Specific mitigation measures are proposed during construction (see section 12.8)	Disturbance effects on both the flight line corridor and LMC Meander and also on

Sensitive Receivers/ 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> <li>Loss of 0.5ha of marsh</li> <li>Disturbance to fish ponds</li> <li>Accidental spillage events</li> <li>Loss of pond habitat along Ha Wan Tsuen Rd.</li> <li>Disturbance to pond habitat</li> <li>Woodland loss along Ha Wan Tsuen Road</li> <li>Habitat loss and disturbance to marsh and reed marsh</li> <li>Loss of secondary woodland</li> <li>Direct impacts on LMC Meander</li> <li>Direct impacts on Ping Hang Stream</li> <li>Loss of riparian habitat of Ma Tso Lung Stream</li> <li>Operational runoff</li> <li>Species</li> </ul>	Protection Ordinance  • Environmental Impact Assessment Ordinance  • Protection of Endangered Species of Animals and Plants Ordinance			Measures)  Eurasian Otter
	<ul> <li>Mortality impacts on birds</li> <li>Impacts on Eurasian otter</li> <li>Impacts on other mammals</li> <li>Impacts on Herpeto fauna,</li> </ul>				

Sensitive Receivers/ 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)
	Odonata and Paradise Fish  Impacts on Rose Bitterling  Impacts on small snakehead and Somanniathelphus zanklon  Fragmentation  Impacts on flight line corridor from LMC Loop development  Impacts on flight line corridor from ECR				
Fishery  Construction Phase					
Fisheries	Temporary loss: 2.51ha of active pond and 1.10ha of inactive pond. Permanent loss: 2.01ha of active pond and 0.31ha of inactive pond and 0.82 of abandoned pond due to construction of WCR and Direct Link to LMC Station  3.32ha inactive pond would be temporarily lost and 2.10ha permanently lost due to the construction of ECR.	• EIAO – TM • Food Adulteration (Metallic Contamination) Regulations (CAP 132V)	• Not Applicable	Illegal dumping of waste and excavated material will be properly managed (see Waste Section)     A layer of permanent sheet pile wall will be erected along the site boundary adjacent to fish ponds after commencement of site works.      Temporary traffic arrangements will be instigated to maintain or	No adverse residual impact would be anticipated.

Sensitive Receivers/ 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> <li>For Area 2 there will be permanent loss of 7.16ha of active ponds and 1.29ha of inactive ponds. Permanent loss of 3.08ha of abandoned ponds (Area 7) and 1.34ha of active ponds and 5.48ha of abandoned pond (Area 9). Permanent loss of 3.32ha of active pond (Area 4) will occur should it be chosen.</li> <li>Potential indirect impacts from discharge of sewage/wastewater, runoff</li> <li>The loss of fisheries resources/production would not be significant</li> <li>Very low to low impact on fishing activity</li> <li>Minor permanent impact on aquaculture activity</li> <li>EIAO – TM</li> </ul>			provide alternative access to fish ponds  Standard mitigation measures to control site runoff and other pollutants caused by construction activities and good site practices will be implemented (details see Water Quality Section). Excavated material and other inert construction wastes produced will be transferred to proper recipients (i.e. landfill) (details see Waste Section).  The contractor should prepare the emergency contingency plan for actions to be taken if significant impacts on fish ponds occur.	
Operational Phase					
Fisheries	<ul> <li>Some ponds will be lost permanently.</li> <li>Sewage and runoff from the proposed development could</li> </ul>	<ul> <li>EIAO – TM</li> <li>Food Adulteration (Metallic Contamination)</li> </ul>	Not Applicable	Affected ponds will be reinstated as far as practicable after completion of construction works.	No adverse residual impact would be anticipated.

Sensitive Receivers/ 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)
	cause a deterioration of water quality and affect fish.  • The development area and proposed alignments may generate surface runoff that would affect the water quality of the streams and ponds nearby.  • There is a concern that existing paths to active fish ponds may be blocked (i.e. blocked by proposed connection roads)  • Some ponds will be adjacent to future connection and thus bund stability and water seepage issues may also be concerns	Regulations (CAP 132V)		Sewage from the proposed development will be dealt with via a sewerage system.      The contractor should prepare the emergency contingency plan for actions to be taken if significant impacts on fish ponds occur.	
Food Safety Implications Human	Potential food safety implications is not anticipated	• Food Safety Standards under Hong Kong Regulations	• Not Applicable	<ul> <li>Good site practice should be adopted to minimize the release of TSP and the associated implications (details see Section 13.6.7).</li> <li>The contractor should have effective communication with Food and Environmental Hygiene</li> </ul>	No potential safety implications are anticipated.

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				Department (FEHD) / Centre of Food Safety (CFS), on food surveillance and food incidents.	

## **Landfill Gas**

LFG hazard assessment is not required as the development is outside the 250m Consultation Zone of MTLL. There is no impact on the restoration and aftercare facilities of MTLL.