

APPENDIX I

EM&A Implementation Schedule

Appendix I Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Manual Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
<u>Air Quality</u>						
During Detailed Design:						
3.6.2.2	4.10	The interim STP of will be located within a totally enclosed building. Detail design of the interim STP is yet to be carried out, but the exhaust of the totally enclosed interim STP will be equipped with an odour removal system. (with an odour removal efficiency of not less than 99.5%). The exhaust will be directed away from the nearby ASRs. Brine disposal during maintenance will be away from residential area as much as possible and close to the vehicular access connecting the nearby road.	Odour control during operation	Project Proponent/ Project Engineer	During detailed design stage	EIAO-TM
3.6.2.1	4.10	During operation, RCP will be provided for the residential development. A licensed waste collector shall be employed to collect domestic waste on daily basis. Localized impact and minimization of odour nuisance will be considered during detailed design.	Odour control during operation	Project Proponent/ Project Proponent	During detailed design stage	EIAO-TM
During Construction Phase:						
3.9.1	4.9	Good site management practices are important in reducing potential air quality impacts. As a general guidance, the contractor shall maintain high standard of housekeeping to prevent emission of fugitive dust emission. Loading, unloading, handling and storage of fuel, raw materials, products, wastes or by-products should be carried out in a manner so as to minimize the release of visible dust emission.	Air Quality (fugitive dust) Control during Construction Phase	Project Engineer, Contractor	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

3.9.1	4.9	<p>The speed of the trucks travelling on haul roads within the Project Site will be controlled at 10 kph or lower in order to reduce dust impact and for safe movement around the Site. Any stockpiles of materials accumulated at or around the work areas shall be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas shall be carried out at an frequency without generating fugitive dust emissions. The material shall be handled properly to prevent fugitive dust emission before cleaning.</p> <p>If concrete batching is required on-site, the plant should be cleaned and watered regularly as a good practice. Cement and other fine grained materials delivered in bulk should be stored in enclosed silos fitted with high level alarm indicator. Wet mix batching process is preferred over dry mix batching. In addition, concrete batching plant shall comply with the specified process (SP) licence requirements including specified emission limits and dust control measures.</p> <p>All relevant dust control measures stipulated in the Air Pollution Control (Construction Dust) Regulation shall be fully implemented, including</p> <ul style="list-style-type: none"> • The designated haul road on-site should be hard paved to minimize fugitive dust emission; • During the site formation works, the active works areas should be water sprayed with water browser or manually eight times during day-time from 0800 to 1800 hours. The Contractor(s) should ensure that the amount of water spraying is just enough to dampen the exposed surfaces without over-watering which could result in surface water runoff • Dump trucks for material transport should be totally covered by impervious sheeting; • Any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading; • Dusty materials remaining after a stockpile is removed should be wetted with water; • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with e.g. concrete, bituminous materials or hardcore or similar; 	Air Quality (fugitive dust) Control during Construction Phase	Project Engineer, Contractor	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
-------	-----	---	---	------------------------------	---	--

3.9.1	4.9	<ul style="list-style-type: none"> • The Contractor(s) shall only transport adequate amount of fill materials to the Project Site to minimize stockpiling of fill materials on-site, thus reducing fugitive dust emission due to wind erosion; • Should temporary stockpiling of dusty materials be required, it shall be either covered entirely by impervious sheeting, placed in an area sheltered on the top and the 3 sides; or sprayed with water so as to maintain the entire surface wet; • All dusty materials to be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet; • Vehicle speed to be limited to 10 kph except on completed access roads; • The portion of road leading only to a construction site that is within 30 m of a designated vehicle entrance or exit should be kept clear of dusty materials; 	Air Quality (fugitive dust) Control during Construction Phase	Project Engineer, Contractor	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
-------	-----	---	---	------------------------------	---	--

3.9.1	4.9	<ul style="list-style-type: none"> • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites; • The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • The working area of excavation should be sprayed with water immediately before, during and immediately after (as necessary) the operations so as to maintain the entire surface wet; and • Use of effective dust screens, sheeting or netting to be provided to enclose dry scaffolding which may be provided from the ground floor level of the building or if a canopy is provided at the first floor level, from the first floor level, up to the highest level (maximum four floors for this Project) of the scaffolding where scaffolding is erected around the perimeter of a building under construction. • In order to minimize potential fugitive dust impacts, particularly when there are concurrent construction activities at the adjacent planned development projects, the Contractor(s) shall carry out site formation works in phases (a total of 21 sub-zones as shown in Appendix 3-8, and with an average % active works area of 5% for each sub-zone as shown in Appendix 3-9 of the EIA report). Within each of Phases B to D, there will be only one sub-zone under construction in any one time. Once construction for a sub-zone is completed, the works area will be compacted, covered by tarpaulin sheet and hydroseeded before construction of another zone. Watering will also be applied on regular basis (eight times a day during day time from 0800 to 1800 hours for a dust suppression efficiency of 90%). Thus, there will be no cumulative construction dust impact. Works area shall be properly covered at the end of working day to minimize wind erosion. 	Air Quality (fugitive dust) Control during Construction Phase	Project Engineer, Contractor	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
-------	-----	--	---	------------------------------	---	--

3.6.1.2	4.9	<p>In order to minimize potential odour nuisance, the following control measures are recommended:</p> <ul style="list-style-type: none"> • Malodorous excavated materials, if any, should be placed as far as possible from any ASRs; • Excavated malodorous materials should be removed from the Project Area within 24 hours or as soon as possible; • Malodorous materials, if stockpiled on site, should be covered entirely by plastic tarpaulin sheets; • Odour patrol will be carried out during the re-profiling works for the WRA. The required odour patrol has been detailed in the EM&A Manual; and • Should disposal of pond sediment be required, if any, it shall follow the requirements stated in Buildings Department's PNAP ADV-21 for "Management Framework for Disposal of Dredged/ Excavated Sediment". 	Odour control during Construction	Project Engineer, Contractor	Construction of the Wetland Restoration Area (WRA)	EIAO-TM
During Operational Phase:						
3.6.2.2, 3.9.2	4.10	<p>The proposed interim STP within the Project Site will be located within a totally enclosed building of which the MBR and RO system will be located underground. The exhaust will be directed away from nearby ASRs. Detailed design of the interim STP has yet to be carried out.</p> <p>With environmental conscious design of an effective odour removal system at the exhaust of the STP (with an odour removal efficiency of not less than 99.5%), the odour concentration at the exhaust would be significantly reduced and no odour impact is expected to arise from the operation of the interim on-site STP. Brine disposal during maintenance will be away from residential area as much as possible and close to the vehicular access connecting the nearby road.</p>	Odour control during operation	Project Proponent/ property management company	During operation	EIAO-TM
3.6.2.1, 3.9.2	4.10	<p>During operation, RCP will be provided for the residential development. A licensed waste collector shall be employed to collect domestic waste on daily basis. Localized impact and minimization of odour nuisance will be considered during detailed design.</p>	Odour control during operation	property management company	During operational stage	EIAO-TM
<u>Noise</u>						
During Detailed Design						

4.3.2	5.8	<p>According to the approved EIA study for Main Drainage Channels for Ngau Tam Mei, the reverberant sound pressure level (SPL) inside typical plant room is Leq 85 dB(A) by applying a combination of acoustic treatment inside the plant room (e.g mineral wools) and acoustic treatment at source (e.g. acoustic shrouds or enclosure at pump). It is recommended that acoustic louvre and silencer with a minimum noise reduction of 11 dB(A) are also provided at the exhaust in order to alleviate the noise impacts (i.e. the maximum noise level at louvre would be 85 – 11 = 74 dB(A)).</p> <p>During detailed design, the acoustic performance of the interim STP should be reviewed and acoustic treatments such as provision of acoustic louvre, acoustic silencer and noise treatments inside the plant room (e.g. acoustic shrouds or enclosure at pump) shall be proposed so that the noise level at louvre of STP should be 74 dB(A) or below in order to meet the noise criteria. To be conservative, the above noise calculation assumes that the louvre of the STP will be facing the nearest NSR. In fact, by directing louvre away from the NSR as far as possible, it could provide additional noise reduction.</p>	Noise control during operation	Project Proponent, Architect	During Detailed Design	EIA, Contractual requirements, NCO.
During Construction Phase:						
4.7.2	5.7	<p>Noise mitigation measure in terms of Quiet Type PMEs (QPMEs) has been proposed. Besides from QPMEs, additional noise mitigation measures in terms of movable noise barriers are also proposed to shield construction plants. The movable noise barriers should have sufficient surface density of at least 10 kg/m² or material providing equivalent acoustic performance to block the line of sight from the sensitive receivers. There should not be any gaps and openings at the noise barriers and site hoardings to avoid noise leakage. The design of the noise barriers shall be proposed by the work contractor(s), and approved by the Engineers Representative (RE) and the Environmental Team in accordance with the Project EM&A Manual.</p>	Noise control during construction	Project Engineer, Contractor	During Construction of the Wetland Restoration Area	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.

4.7.2	5.7	<p>Minimum amount of QPMEs will be used at Phase A's works area in order to minimize potential noise impact. During the Phase A works, movable noise barriers shall also be erected near the site boundary adjacent to the nearby NSRs at Yau Mei San Tsuen (e.g. N5 and N11) so as to shield construction plant from these NSRs. In addition, 3m tall site hoarding will also be erected along the Project site boundary. After the completion of the re-profiling work of the wetland, minor landscape work will be carried out and that the wetland is assumed to function during the construction phase of the residential portion of the Project Site (i.e. Phase B to D). In view of maintaining the function of the wetland (Phase A), there is a possibility to demolish the site hoarding surrounding the Phase A once the Project Ecologist considers that the wetland is ready to function as it is designed.</p>	Noise control during construction	Project Engineer, Contractor	During construction of the residential portion of Project Site	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.
4.7.3	5.7	<p>Fixed temporary noise barrier is proposed near the existing Fairview Park as well as near the existing Yau Mei San Tsuen in order to alleviate elevated construction noise level over there. In addition, when the planned REC Site in adjacent to the Project Site is occupied with sensitive receivers during construction of this Project, fixed temporary noise barrier will also need to be erected near the concerned development site. Locations of proposed fixed temporary noise barriers are shown in Figure 4-6 of the EIA report (Figure 5-2 in this Manual). The exact location is subject to the contractor(s) and the prior approval from the Resident Engineer (RE).</p>	Noise control during construction	Project Engineer, Contractor	During construction of the residential portion of Project Site	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.
4.7.3	5.7	<p>In order to ensure construction noise is controlled throughout the construction period, fixed temporary noise barriers shall be erected prior to site formation works of Phases B to D. It is estimated that 6m high temporary fixed noise barriers (with top level at 8mPD level) shall be sufficient to shield the concerned existing/ planned NSRs at Fairview Park and the planned REC Site, while 4.5m high noise barriers is required to be erected adjacent to the existing Yau Mei San Tsuen (Figures 4-6 of the EIA report (Figure 5-2 in this Manual). The erection of noise barriers and site hoardings will be subject to the presence of nearby sensitive receivers. Erection of temporary fixed noise barriers will be carried out section by section and precast units will be used for the foundation of the noise barrier as much as possible. Standard site hoarding of 3m tall will also be erected along the site boundary.</p>	Noise control during construction	Project Engineer, Contractor	Construction areas near the specified locations during the construction period	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.

4.7.3	5.7	<p>The concerned temporary fixed noise barriers should have sufficient surface density of at least 10 kg/m² or material providing equivalent acoustic performance. There should not be any gaps and openings at the noise barriers and site hoardings to avoid noise leakage. The design of the noise barriers shall be proposed by the work contractor(s), and approved by the Engineers Representative (RE) and the Environmental Team in accordance with the Project EM&A Manual.</p>	Noise control during construction	Project Engineer, Contractor	Construction areas near the specified locations during the construction period	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.
4.7.4	5.7	<p>It is also recommended that good housekeeping activities shall also be carried out to further minimize the potential construction noise impact, and these are summarised below. The following good site practices are also recommended for incorporation into the contractual requirements :</p> <p>Before the commencement of any work, the Contractor shall submit to the Engineer for approval the method of working, equipment and sound-reducing measures intended to be used at the Project Area;</p> <p>Contractor shall comply with and observe the Noise Control Ordinance (NCO) and its current subsidiary regulations. Percussive piling will require a Construction Noise Permit to be issued by EPD in advance.</p> <p>Contractor shall devise and execute working methods that will minimize the noise impact on the surrounding environment; and shall provide experienced personnel with suitable training to ensure that these methods are implemented;</p> <p>Only well-maintained plants should be operated on-site;</p>	Noise control during construction	Project Engineer, Contractor	Construction areas near the specified locations during the construction period	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.

4.7.4	5.7	<p>Plants should be serviced regularly during the construction programme;</p> <p>Machines that may be in intermittent use should be shut down or throttled down to a minimum between work periods;</p> <p>Silencer and mufflers on construction equipment should be utilised and should be properly maintained during the construction programme;</p> <p>Noisy activities can be scheduled to minimize exposure of nearby NSRs to high levels of construction noise. For example, noisy activities can be scheduled for midday or at times coinciding with periods of high background noise (such as during peak traffic hours);</p> <p>Noisy equipment such as emergency generators shall always be sited as far away as possible from noise sensitive receivers;</p> <p>Mobile plants should be sited as far away from NSRs as possible; and</p> <p>Material stockpiles and other structures should be effectively utilised as noise barrier, where practicable.</p>	Noise control during construction	Project Engineer, Contractor	Construction areas near the specified locations during the construction period	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.
4.7.4	5.7	<p>The contractor(s) is also encouraged to arrange construction activities with care so that concurrent construction activities are avoided as much as possible. The contractor(s) should closely liaise with the school so that noisy activities are not undertaken during school's examination period.</p>	Noise control during construction	Project Engineer, Contractor	Construction areas near the specified locations during the construction period	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.
During Operational Phase:						
Nil	Nil	Nil	Nil	Nil	Nil	Nil
<u>Water Quality</u>						
During Detailed Design						

5.6.1	6.3	All domestic sewage generated will be discharged to the public sewerage system via a terminal manhole located at the southern boundary of the Project Site, which will be further connected to the planned public sewer at Yau Pok Road. An interim STP will be proposed with discharge of the treated effluent to the adjacent NTMDC in case the public sewerage is not available when the Project is in operation. The design of the interim STP will follow the requirement of no net increase of pollution loading.	Sewage and point Source Pollution Control	Project Proponent	During operation	EIA, WPCO, Contractual requirements
5.6.1	6.3	During decommissioning, the interim sewerage system within the development area should be designed in such a way to facilitate the future connection to the planned Ngau Tam Mei sewerage system with the flow direction to be controlled by several flow control devices such as valves or stop-log, etc. Switching over from the interim system to the permanent system will be done by regulating the flow direction through the flow control devices and by abandoning the sewer which connects to the interim STP. Details of which are provided in Section 6.5 of the EIA report (Section 7 in this Manual) and should be implemented. Tank away will be provided for any remaining small amount of sewage in the STP for proper disposal at designated sewage treatment works to be assigned by DSD.	Sewage and point Source Pollution Control	Project Proponent	During operation	EIA, WPCO, Contractual requirements
5.6.1	6.3	Precautionary measures in Section 6.10 of the EIA report (Section 7 in this EM&A Manual) should be implemented, so that adverse water quality impact due to sewage overflow, emergencies discharge, and change in flow regime is unlikely to occur. In addition, equalization tank will be provided in the STP for temporary storage of sewage in case of outage of the interim STP, and tank away will be provided for proper disposal at designated sewage treatment works to be assigned by DSD.	Sewage and point Source Pollution Control	Project Proponent	During operation	EIA, WPCO, Contractual requirements
5.6.2	6.3	Best Management Practices (BMP) have been proposed for the operational phase of the development:				
5.6.2	6.3	Exposed surface shall be avoided within the proposed development to minimize soil erosion. Development site shall be either hard paved or covered by landscaping area where appropriate.	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,

5.6.2	6.3	The landscaped open area should be managed and maintained by the property management company (and its contractor) during operation.	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,
5.6.2	6.3	Detailed design of the drainage system will be carried out during detailed design stage. Drainage system of the development shall be designed in such a way that surface runoff from the residential area is directed towards the internal access road, where appropriate drainage system with control facilities have been proposed. Additional paved U-channels with screening facilities are also provided along the edge of residential portion to avoid uncontrolled spillage of runoff. Figure 5-3 of EIA report (Figure 6-3 in this Manual).	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,
5.6.2	6.3	There should be no discharge of surface runoff into the sensitive areas such as the proposed WRA; ecological corridors; and Fairview Park Nullah	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,
5.6.2	6.3	Paved area of development has been minimized by a simpler and more effective internal road layout, at which proposed houses are allocated on both sides of the road. Thus hard paved area of internal access road as well as increase in surface runoff, can be minimised	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,
5.6.2	6.3	The roadside channel along Yau Pok Road will be retained to maintain the original flow path. The drainage system will be designed to avoid any case of flooding based on the 1 in 50 year return period	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,
5.6.2	6.3	Street level tree planting shall be introduced along both sides of the internal access road, which can help to reduce soil erosion and as a buffer zone between the residential area and the drainage system along roadside	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,
5.6.2	6.3	Evergreen trees species, which in general generate relatively smaller amount of fallen leaves, should be selected as far as possible.	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,

5.6.2	6.3	Fertilizer will only be applied on landscape area when needed. If required, the fertilizer should be applied in early Spring and in later summer in order to avoid major rainy season as far as possible. Slow release fertilizer should be selected as far as possible to minimize the amount of nutrient to be washed out by rain. Application of fertilizer should not be arranged before forecasted heavy rainfall, and over dosing should be avoided. The fertilizer application strategy is to be implemented by an experienced contractor through the property management company during operation.	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,
5.6.2	6.3	Screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening off large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system as well as at upstream location of the u-channels	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,
5.6.2	6.3	Road gullies with standard design and silt traps and oil interceptors should be incorporated during the detailed design to remove particles present in stormwater runoff	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,
5.6.2	6.3	Drainage outlet of any covered car park should be connected to foul sewers via petrol interceptors or similar facilities	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,
5.6.2	6.3	Subject to detailed design, standard manholes with desilting opening/ sand trap designed for first flush flow (capable of providing at least 5 minutes' detention time) can be provided at final discharge point before discharge into NTMDC. The feasibility of alternative measure such as Vortex grit separator would also be considered during the detailed design stage	Drainage system during operation	Project architect and Project Proponent	During detailed design stage	EIA, WPCO, Contractual requirements,
During Construction Phase:						
5.5	6.3	The Contractor shall apply for a discharge licence under the WPCO and the discharge shall comply with the terms and conditions of the licence.	Stormwater and Non-point Source Pollution Control	Project Engineer, Contractor	At all construction areas of the site during the entire construction period	ProPECC PN1/94, EIA, WPCO, Contractual requirements,

5.5	6.3	<p>Contractor(s) of this Project should submit a Construction Phase Drainage Management Plan with details of the design of the temporary site drainage system for the approval of the Engineers Representative (RE) and the Environmental Team in order to ensure that the above mitigation measures are in place.</p> <p>Regular inspection (weekly) of the site drainage system and the implementation of the Plan shall be carried out by the Contractor(s), RE, and ET in order to ensure no off-site spillage of runoff and that the mitigation measures are effectively implemented. Any deficiencies identified shall be rectified by the Contractor(s)</p>	Stormwater and Non-point Source Pollution Control	Project Engineer, Contractor	At all construction areas of the site during the entire construction period	ProPECC PN1/94, EIA, WPCO, Contractual requirements,
5.5.1	6.3	<p>Besides, the Best Management Practices (BMPs) given in the ProPECC PN 1/94 shall be implemented in controlling water pollution during the whole construction phase. The main practices provided in the above-mentioned document (i.e. ProPECC PN 1/94) are also summarized in the following paragraphs which should be implemented by the contractor during the construction phase, where practicable.</p> <ul style="list-style-type: none"> • High loading of suspended solids (SS) in construction site runoff shall be prevented through proper site management by the contractor. • The boundary of critical work areas shall be surrounded by ditches or embankment. Accidental release of soil or refuse into the adjoining land should be prevented by the provision of site hoarding or earth bunds, etc. at the site boundary. These facilities should be constructed in advance of site formation works and roadworks; • Consideration should be given to plan construction activities to allow the use of natural topography of the Project Area as a barrier to minimize uncontrolled non-point source discharge of construction site runoff; 	Stormwater and Non-point Source Pollution Control	Project Engineer, Contractor	At all construction areas of the site during the entire construction period	ProPECC PN1/94, EIA, WPCO, Contractual requirements,

5.5.1	6.3	<ul style="list-style-type: none"> • Temporary ditches, earth bunds should be provided to facilitate directed and controlled discharge of runoff into storm drains via sand/silt removal facilities such as sand traps, and sedimentation basins. Oil and grease removal facilities should also be provided where appropriate, for example, in area near plant workshop/ maintenance areas; • Sedimentation basins and sand traps designed in accordance with the requirements of ProPECC Note PN 1/94 should be installed at the construction site for collecting surface runoff; • Sand and silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly by the contractor, and at the onset of and after each rainstorm to ensure that these facilities are functioning properly; • Slope exposure should be minimized where practicable especially during the wet season. Exposed soil surfaces should be protected from rainfall through covering the temporarily exposed slope surfaces or stockpiles with tarpaulin or the like. • Haul roads should be protected by crushed rock, gravel or other granular materials (i.e. hard paved) to minimize discharge of contaminated runoff; • Slow down water run-off flowing across exposed soil surfaces; • Plant workshop/ maintenance areas should be bunded and constructed on a hard standing. Sediment traps and oil interceptors should be provided at appropriate locations; • Manholes (including newly constructed ones) should be adequately covered or temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system; 	Stormwater and Non-point Source Pollution Control	Project Engineer, Contractor	At all construction areas of the site during the entire construction period	ProPECC PN1/94, EIA, WPCO, Contractual requirements,
-------	-----	---	---	------------------------------	---	--

5.7.1	6.3	<ul style="list-style-type: none"> • Construction works should be programmed to minimize soil excavation works where practicable during rainy conditions; • Chemical stores should be contained (bunded) to prevent any spills from contact with water bodies. All fuel tanks and/ or storage areas should be provided with locks and be sited on hard surface; • Chemical waste arising from the Project Area should be properly stored, handled, treated and disposed of in compliance with the requirements stipulated under the Waste Disposal (Chemical Waste) (General) Regulation; • Drainage facilities must be adequate for the controlled release of storm flows. • During re-profiling of the existing bunds within the WRA, materials requiring temporary storage on-site) will be securely stored and covered, if possible. Dried up mud materials can then be used for marshland formation. • Sewage generated from the construction workforce should be contained in chemical toilets before connection to public foul sewer can be provided. Chemical toilets should be provided at a minimum rate of about 1 per 50 workers. The facility should be serviced and cleaned by a specialist contractor at regular intervals; • Vehicle wheel washing facilities should be provided at the site exit such that mud, debris, etc. deposited onto the vehicle wheels or body can be washed off before the vehicles are leaving the site area; 	Stormwater and Non-point Source Pollution Control	Project Engineer, Contractor	At all construction areas of the site during the entire construction period	ProPECC PN1/94, EIA, WPCO, Contractual requirements
-------	-----	--	---	------------------------------	---	---

5.7.1	6.3	<ul style="list-style-type: none"> • Section of the road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains; • Bentonite slurries, if any to be generated, shall be reconditioned and reused as far as practicable. Spent bentonite should be kept in a separate slurry collection system for disposal at a marine spoil grounds subject to obtaining a marine dumping licence from EPD. If used bentonite slurry is to be disposed of through public drainage system, it should be treated to meet the respective applicable effluent standards for discharges into sewers, storm drains or the receiving waters. • Spillage of fuel oils or other polluting fluids should be prevented at source. It is recommended that all stocks should be stored inside proper containers and sited on sealed areas, preferably surrounded by bunds. 	Stormwater and Non-point Source Pollution Control	Project Engineer, Contractor	At all construction areas of the site during the entire construction period	ProPECC PN1/94, EIA, WPCO, Contractual requirements
5.5.2	6.3	Site Specific Measures				
5.5.2	6.3	<p><u>Construction of Residential Portion</u></p> <p>During construction of residential portion, temporary drains, peripheral site drainage comprising precast concrete u-channels, sedimentation basins, sand traps and similar facilities in accordance with the requirements of ProPECC Note PN 1/94 will be provided within the residential portion and along the edge of its boundary as per good practices in order to divert surface runoff away from WRA, temporary wetland enhancement area, ecological links, and nearby sensitive receivers such as Fairview Park Nullah before discharge into NTMDC after passing sand traps. Figure 5-2 of the EIA report (Figure 6-2 in this manual) shows the indicative site drainage conceptual layout during construction phase.</p>	Stormwater and Non-point Source Pollution Control	Project Engineer, Contractor	At all construction areas of the site during the entire construction period	ProPECC PN1/94, EIA, WPCO, Contractual requirements

5.5.2	6.3	<p><u>Construction of WRA</u></p> <p>During the construction of Wetland Restoration Area of the Project Site, in order to minimize disturbance to the rest of the Project Site it is proposed that :</p> <ul style="list-style-type: none"> • Through transferring the pond water within the Project Area, the need of discharging pond water into the surrounding water bodies during the construction of the Project can be minimized. • The major construction works involved in Wetland Restoration Area relate to the re-profiling of the bunds. To minimize disturbance to the rest of the Project Area it is proposed that the works are conducted on one pair of ponds at a time. Pond water will be drained to other neighbouring ponds for temporary storage. • Surface runoff in order to avoid from the residential portion will be diverted away from the WRA by drainage channels overflow of the pond under extreme weather condition (e.g. heavy rainfall). • Temporary peripheral site drainage system comprising precast concrete u-channels along site boundary with sedimentation basins, sand traps and similar facilities will be provided in accordance with the requirements stipulated in ProPECC PN 1/94. • Given the proposed mitigation measures above, an EM&A programme is required to ensure the proper implementation of the recommended measures and provide a proactive system to rectify any problem identified <p>There should be no discharge of surface runoff into Fairview Park Nullah; existing stream to the south of Palm Springs; and existing ponds at off-site locations. Treated surface runoff will be diverted away from these locations and discharged into NTMDC after passing through sand traps and sedimentation basins.</p>	Stormwater and Non-point Source Pollution Control	Project Engineer, Contractor	At all construction areas of the site during the entire construction period	ProPECC PN1/94, EIA, WPCO, Contractual requirements
-------	-----	---	---	------------------------------	---	---

5.5.2	6.3	<p><u>Construction of Temporary Wetland Enhancement Area</u></p> <p>During construction of Temporary Wetland Enhancement Area, appropriate temporary peripheral site drainage should be provided which comprises precast concrete u-channels surrounding the construction area, surface runoff is diverted away from nearby existing drainage channels for discharge into NTMDC after passing through sand traps and sedimentation basins.</p> <p>During operation of the temporary enhancement area, appropriate temporary drainage will also be provided surrounding the concerned enhancement area to divert surface runoff away from the enhancement area to avoid any adverse water quality impact on this area.</p> <p>Figure 5-2 of EIA report refers (Figure 6-2 in this Manual).</p>	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, EIA, WPCO, Contractual requirements
During Operational Phase						
5.6.1	6.3	<p>Permanent Sewage Disposal - All domestic sewage generated will be discharged to the public sewerage system via a terminal manhole located at the southern boundary of the Project Site, which will further connect to the planned public sewer at Yau Pok Road.</p> <p>The discharge from the club house and swimming pool shall apply for a discharge licence under the WPCO, and the discharge shall comply with the terms and conditions of a licence and the standards for effluents specified in the licence, as well as conditions in Environmental Permit.</p> <p>Interim Sewage Disposal - An interim STP will be proposed with discharge of the treated effluent to the adjacent NTMDC in case the public sewerage is not available when the Project is in operation. The design of the interim STP will follow the requirement of no net increase of pollution loading and details of which are shown in Section 6. A discharge licence under the WPCO will be obtained for the interim STP and the discharge shall comply with the terms and conditions of a licence and the discharge standards for effluents specified in the licence as well as the conditions specified in the Environmental Permit of this Project. Samples of treated effluent will be taken regularly and tested according to the discharge licence under the WPCO and the conditions in the Environmental Permit to ensure compliance with discharge standards.</p>	Sewage and point Source Pollution Control	Project Proponent/ Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements

5.6.1	6.3	Precautionary measures in Sections 6.10 and 6.6 of the EIA report should be implemented, so that adverse water quality impact due to sewage overflow, emergencies discharge, and change in flow regime is unlikely to occur. In addition, equalization tank will be provided in the STP for temporary storage of sewage in case of outage of the interim STP, and tank away will be provided for proper disposal at designated sewage treatment works to be assigned by DSD.	Sewage and point Source Pollution Control	Project Proponent/ Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements
5.6.1	6.3	The discharge from the club house and swimming pool shall apply for a discharge licence under the WPCO, and the discharge shall comply with the terms and conditions of a licence and the standards for effluents specified in the licence, as well as the conditions in the Environmental Permit.	Sewage and point Source Pollution Control	Project Proponent/ Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements
5.6.1	6.3	During decommissioning, the interim sewerage system within the development area should be designed in such a way to facilitate the future connection to the planned Ngau Tam Mei sewerage system with the flow direction to be controlled by several flow control devices such as valves or stop-log, etc. Switching over from the interim system to the permanent system will be done by regulating the flow direction through the flow control devices and by abandoning the sewer which connects to the interim STP. Details of which are provided in Section 6.6 of the EIA report and should be implemented. Tank away will be provided for any remaining small amount of sewage in the STP for proper disposal at designated sewage treatment works to be assigned by DSD.	Sewage and point Source Pollution Control	Project Proponent/ Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements
5.6.2	6.3	Fertilizer will only be applied on landscape area when needed. If required, the fertilizer should be applied in early Spring and in later summer in order to avoid major rainy season as far as possible. Slow release fertilizer should be selected as far as possible to minimize the amount of nutrient washed out by rain. Application should not be arranged before forecasted heavy rainfall, and over dosing should be avoided. The fertilizer application strategy is to be implemented by an experienced contractor through the property management company during operation.	Stormwater and Non-point Source Pollution Control	Project Proponent/ Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements

5.6.2	6.3	<p><u>Specific measures during operation of the WRA</u></p> <p>WRA is not designed for pollution abatement but as ecological mitigation measures of the development. All pond water of WRA will be obtained by direct rainfall and will be retained and re-circulated during drain-down periods as necessary. No surface or groundwater supplies will be used for WRA operations.</p> <p>Ponds in the Wetland Restoration Area will be designed in such a way that they are self-contained and there is no outlet connecting to nearby channel/inland water, thus there will be no discharge from the ponds within the WRA. Surface runoff from the residential portion will be diverted away from the WRA by drainage channels in order to avoid overflow of the pond under extreme weather condition (e.g. heavy rainfall).</p> <p>No fertilizers and pesticides will be routinely used for vegetation management in the WRA, hence avoiding the potential source of contamination into the adjacent watercourses which connect to the Deep Bay.</p> <p>The WRA will be designed in such a way that overflow will be diverted into proper drainage system of the development site before discharge into NTMDC through the proposed drainage system. During operation, under the management of Wetland Ecologist, who will advise on the management of wetland, pond water will be transferred between ponds within the WRA, in order to self-contain water within the WRA</p>	Stormwater and Non-point Source Pollution Control	Project Proponent/ Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements
5.6.2	6.3	<p>In the event of emergency (e.g. car accident) where there is a major spillage of oil, chemical or fuel, dispersants or firefighting foam, etc., a system of contaminant bunding will be implemented as appropriate</p>	Non-point Source Pollution Control	Project Proponent / Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements

5.6.2	6.3	Good management measures such as regular cleaning and sweeping of road surface/ open areas is suggested. The road surface/ open area cleaning should also be carried out prior to occurrence of rainstorm	Stormwater and Non-point Source Pollution Control	Project Proponent/ Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements
5.6.2	6.3	Manholes, as well as stormwater gullies, ditches provided among the residential development will be regularly inspected and cleaned (e.g. monthly) by the property management company. Additional inspection and cleansing should be carried out before forecast heavy rainfall.	Stormwater and Non-point Source Pollution Control	Project Proponent / Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements
Sewerage and Sewage treatment						
During Detailed Design:						

<p>6.5 & 6.6</p>	<p>7.2</p>	<p>The sewage generated from the Project Area will be conveyed to a terminal manhole located at the southern boundary of the Project Area which will further connect to the 525 mm diameter proposed public sewer at Yau Pok Road. The tentative location of terminal manhole is shown in Figure 6-2 of the EIA report (Figure 7-1 in this Manual).</p> <p>In this connection, the timing which the sewerage system of the development could only be connected to the public sewerage system is uncertain. Therefore, it is necessary to consider the provision of the on-site sewage treatment facility, as mentioned in Section 3.9.4 of the EIA - Study Brief as an interim measure to handle the sewage generated from the development until connection to public sewerage by DSD is available.</p> <p>The interim STP will be provided by the project proponent while the operation and maintenance will be responsible by the management office of the development and its contractors. The project proponent will also be responsible for connecting the sewerage system of the development to the public system when available and decommission the interim STP.</p>	<p>Sewage Treatment and control.</p>	<p>Project architect and Project Proponent</p>	<p>During detailed design stage</p>	<p>EIA, WPCO</p>
<p>6.6</p>	<p>7.2</p>	<p>It should also be pointed out that the on-site sewage treatment plant is for temporary use during the interim period only in case the public sewerage cannot be commenced on time. The sewerage system within the development area will be designed to facilitate the future connection to the planned Ngau Tam Mei sewerage system with the flow direction to be controlled by several flow control devices such as valves or stop-log, etc. Switching over from the interim system to the permanent system will be done by regulating the flow direction through operations of the flow control devices and abandoning the sewer leading to the interim STP. Residual sewage left in the interim STP would be tanked away and the abandoned STP and downstream sewers will be filled up with soil and concrete. Therefore, there should be no discharge of sewage discharge into the nearby water body during decommissioning of the interim STP. To minimize disturbance to the residents, all sewers for connection to the public system within the development will also be constructed at the initial stage.</p>	<p>Sewage Treatment and control.</p>	<p>Project architect and Project Proponent</p>	<p>During detailed design stage</p>	<p>EIA, WPCO</p>

6.7	7.2	<p>In this regard, membrane bioreactor (MBR) plus reverse osmosis (RO) supplement with denitrification process and coagulation by metal salt to precipitate soluble phosphorus is proposed for the on-site treatment facility.</p> <p>At the downstream of MBR system, Reverse Osmosis (RO) system is proposed to further polish the MBR effluent and eliminate the residual pollution loads of the interim STP. RO system is a proven membrane technology used for the removal of dissolved constituents. RO membrane module with pore sizes from 0.1 to 1nm can act as a barrier to all dissolved salts, inorganic molecules as well as organic molecules with a molecular weight greater than approximately 300 under the high operating pressures up to 100 bars. This treatment technology is well-established for drinking water treatment, wastewater reuse, seawater desalination, and other industrial applications.</p>	Sewage Treatment and control.	Project architect and Project Proponent	During detailed design stage	EIA, WPCO
During Operational Phase						
6.6	7.2	<p>It should also be pointed out that the on-site sewage treatment plant is for temporary use during the interim period only in case the public sewerage cannot be commenced on time. The sewerage system within the development area will be designed to facilitate the future connection to the planned Ngau Tam Mei sewerage system with the flow direction to be controlled by several flow control devices such as valves or stop-log, etc. Switching over from the interim system to the permanent system will be done by regulating the flow direction through operations of the flow control devices and abandoning the sewer leading to the interim STP. Residual sewage left in the interim STP would be tanked away and the abandoned STP and downstream sewers will be filled up with soil and concrete. Therefore, there should be no discharge of sewage discharge into the nearby water body during decommissioning of the interim STP. To minimize disturbance to the residents, all sewers for connection to the public system within the development will also be constructed at the initial stage.</p>	Sewage Treatment and control.	Project Proponent/ Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements
6.8	7.2	<p>Once the government public sewerage system becomes available, the on-site STP will be decommissioned. .</p>	Sewage Treatment and control.	Project Proponent	During operation	EIA, WPCO, Contractual requirements

6.10	7.2	<p>Proper operation and maintenance of interim sewage treatment plant is essential to safeguard the quality of discharge effluent, subject to the following aspects:</p> <ul style="list-style-type: none"> (i) Only competent technicians to be employed by the property management office to operate the STP. They are to be fully conversant with the operating procedures as stipulated in the operation and maintenance manuals. (ii) The proposed STP only serves the proposed development and thus the operation and maintenance (O&M) cost would be borne by the future management office of the development. The Project Proponent will ensure the design of STP is cost-effective such that the O&M cost imposed is reasonable. (iii) The STP is to be kept in a tidy state. This includes regular hosing down, scraping of the walkways, whitewashing the walls, cleaning and painting the metalwork, and maintaining adequate lighting and ventilation. (iv) Where parts of the STP are sited beneath ground, forced ventilation will be provided. (v) An easily accessible sampling point will be provided for taking samples of the treated effluent. (vi) Samples of treated effluent will be taken regularly and tested according to the discharge licence under the Water Pollution Control Ordinance as well as the conditions specified in the Environmental Permit of this Project under the EIAO, to ensure compliance with discharge standards, which should be same the proposed RO Permeate concentration as stated in Table 6-7 in EIA report (also in Table 7-2 of EM&A Manual) (vii) The production of sludge is estimated to be 6m³/d and RO concentrate generated is estimated to be 20% of the RO which is 32m³/d. 	Sewage Treatment and control.	Project Proponent/ Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements
------	-----	---	-------------------------------	---	------------------	-------------------------------------

6.10	7.2	<p>(viii) Based on reference to other similar projects, the dewatered sludge will be collected by a licensed collector at regular intervals and disposed at the landfill. As an alternative to on-site dewatering of sludge, sludge could be transferred by tankers to Government's STW for off-site treatment due to its small quantity. Provided that the handling, storage and disposal of the wastes are properly managed and accidental release to the surrounding environment does not occur, adverse environmental impacts are not expected. In any case our sludge handling arrangement will be in compliance with requirements of the Water Pollution Control Ordinance (WPCO). Such approach for sludge disposal has also been adopted for some other projects, such as "Liantang / Heung Yuen Wai Boundary Control Point and Associated Works", "Redeveloped Lo Wu Correctional Institution" and "CLP Black Point Power Station".</p> <p>(ix) The Project Proponent will be responsible for the future sewer connection to the public sewer upon its available in the future and STP decommissioning with connection details subject to agreement of DSD. Appropriate conditions could be imposed in the Environmental Permit (EP) to ensure the EP holder to take up the responsibility to ensure connection to public sewer when trunk sewer is ready.</p>	Sewage Treatment and control.	Project Proponent/ Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements
6.10	7.2	<p>(x) The obsolete STP and the connecting sewer will be filled up by soil and concrete once decommissioned.</p> <p>Monitoring requirement - The discharge of treated effluent from the interim STP should follow the licence requirements under the WPCO and the conditions specified in the Environmental Permit of this Project under the EIAO. Samples of treated effluent will be taken regularly and tested by a HOKLAS or other internationally accredited laboratory according to the above-mentioned requirements to ensure compliance with discharge standards.</p>	Sewage Treatment and control.	Project Proponent/ Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements

6.11	7.2	<p>The following measures will be adopted in order to eliminate adverse impact due to potential sewage overflow, emergencies discharge and change in flow regime beyond the expectation of this assessment:</p> <ul style="list-style-type: none"> (i) Adequate spare parts for the plant will have to be made readily available by storage. (ii) Qualified personnel will be hired to inspect the condition and maintain the plant on a regular basis. (iii) Regular test, maintenance and replacement of membranes, plants and equipment will be carried out in accordance to the recommendations from manufacturers or as recommended by the qualified personnel after inspection. (iv) Equalization tank with capacity of 443 m³ (i.e. 3 x ADWF) will be provided to withhold the sewage temporarily in case of outage or overflow of the interim STP. (v) Tank away will be provided for prolonged outage of the interim STP, for disposal of sewage at designated sewage treatment works to be assigned by DSD. 	Sewage Treatment and control.	Project Proponent/ Property management company/ Incorporated Owners	During operation	EIA, WPCO, Contractual requirements
<u>Waste Management</u>						
During Detailed Design:						
7.4.5	8.2	<p>The demolition and construction work shall be considered in the planning and design stages to reduce the generation of C&D waste where possible. Landfill disposal shall only be considered as the last resort.</p> <p>Construction methods with minimum waste generation quantity and other environmental impacts shall be considered in the detailed design.</p> <p>Refuse collection points (RCP) will be provided for the residential development. In order to comply with Building Regulation, mechanical ventilation will be provided. The odour nuisance to the public can be minimized by incorporating the odour absorption system.</p>	Waste management during construction	Project architect/ engineer, Project Proponent	During detailed design stage	EIA, Contractual requirements

During Construction Phase:						
7.4.2	8.3	<ul style="list-style-type: none"> Demolition material would be generated from clearance of a small number of huts on-site. A “selective demolition” approach should be adopted so that reusable material such as wood, metal, and steel can be segregated for reuse or recycling as far as practicable. Inert building debris such as concrete and brick can also be reused on-site as lining or fill material. Nevertheless, the generation of wastes from these materials should be minimized as far as practicable through recovery, reuse and/ or recycling. Whenever practicable, the production of construction waste due to over-ordering or as “side-products” of construction activities should be minimized by the contractor through careful design, planning, good site management, and control of ordering procedures, segregation and reuse of materials. Wooden boards can be reused on-site or off-site, though the reusability and quantity of final waste will depend on the quality, size and shape of the boards. Those timbers which cannot be reused again shall be sorted and stored separately from all inert waste before disposed of at landfills. Should construction site hoarding be erected, metal fencing or building panels, which are more durable than wooden panels, are recommended to be used as far as practicable. Opportunity shall also be sought to re-use any wooden boards used in site fencing on-site or off-site. Concrete and masonry can be crushed and used as fill material if practicable. On-site incineration of wooden waste is prohibited. <p>In order to avoid dust, odour and erosion impacts, all stockpile areas at the Project Area should be covered with tarpaulin or impermeable sheets. Any vehicle carrying C&D waste should have their load covered when leaving the works area. Vehicles should be routed as far as possible to avoid sensitive receivers in the area.</p>	Waste management during construction	Project Engineer, Contractor	Throughout the entire construction period	EIA, Contractual requirements

7.4.2.3	8.3	<ul style="list-style-type: none"> • Chemical waste may include fuel, oil, lubricants, cleaning fluids, and solvents arising from leakage or maintenance of on-site equipment and vehicles. Chemical generated from daily operation of the construction works shall be recycled/ reused on-site as far as practicable. • If off-site disposal of chemical waste is required, they should be collected and delivered by licensed contractors to Tsing Yi Chemical Waste Treatment Facility and be disposed of in strict accordance with the Waste Disposal (Chemical Waste) (General) Regulation. Contractors shall register with EPD as chemical waste producers when disposal of chemical waste is anticipated to be required. Chemical waste materials have to be stored on-site with suitable containers and away from water bodies so that leakage or spillage is prevented during the handling, storage, and subsequent transportation. • Handling, storage and disposal of chemical wastes are in accordance with the Waste Disposal (Chemical Waste) (General) Regulation and the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • The Contractor shall prevent fuel and lubricating oil leakage from plant and storage sites from contaminating the construction site. All compounds in work areas shall be positioned on areas with hard paving and served by drainage facility. Sand/ silt traps and oil interceptors shall be provided at appropriate locations prior to the discharge points. • General refuse generated at the construction site should be stored separate from construction and chemical wastes to avoid cross contamination. A reliable waste collector shall be employed by the Contractor to remove general refuse from the construction site on a daily basis where appropriate to minimize the potential odour, pest and litter impacts. 	Waste management during construction	Project Engineer, Contractor	Throughout the entire construction period	Waste Disposal (Chemical Waste) (General) Regulation
---------	-----	--	--------------------------------------	------------------------------	---	--

7.4.2.4 & 7.4.5	8.3	<p>Open burning for the disposal of construction waste or the clearance of the Project Area in preparation for construction work is prohibited under the Air Pollution Control (Open Burning) Regulation.</p> <p>To ensure the appropriate handling of the C&D materials, it is recommended that a Waste Management Plan (WMP) shall be developed by the contractor and incorporated in the Environmental Management Plan (EMP) in accordance with ETWB TCW No. 19/2005 – Environmental Management on Construction Sites at the commencement of the construction works. The EMP should be developed taking into account the recommended control measures given in this section where appropriate. The EMP shall be submitted to the Engineer at the commencement of the project for approval and to be implemented throughout the Project. The potential for recycling or reuse should be explored and opportunities taken if waste generation is unavoidable</p> <p>The EMP should provide recommendations for appropriate disposal routes if waste cannot be recycled. The EMP should include the method statement for demolition and transportation of the excavated materials and other construction wastes. The EMP should be approved before the commencement of construction. All mitigation measures arising from the approved EMP should be fully implemented. The project proponent will ensure that the day-to-day operations comply with the approved EMP. According to the EMP, the project proponent shall control the disposal of public fill, C&D materials and C&D waste to public fill reception facilities, sorting facilities and landfills respectively through a trip-ticket system. The project proponent shall require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. In addition, the project proponent shall record the disposal, reuse and recycling of C&D materials for monitoring purposes.</p>	Waste management during construction	Project Engineer, Contractor	Throughout the entire construction period	EIA, Contractual requirements
7.4.5	8.3	<p>In formulating the EMP in respect to waste management, the following hierarchy should be considered:</p> <ul style="list-style-type: none"> • Avoidance and minimization to reduce the potential quantity of C&D materials generated; • Reuse of materials as practical as possible; • Recovery and Recycling as practical as possible; • Proper treatment and disposal in respect to relevant laws, guidelines and good practice; and • Landfill disposal shall only be considered as the last resort. 	Waste management during construction	Project Engineer, Contractor	Throughout the entire construction period	DEVB TC(W) No. 6/2010 “Trip Ticket System for Disposal of Construction and Demolition Material

7.4.5	8.3	A good management and control plan would be formulated. Good management and control can prevent the generation of significant amount of waste. On-site sorting of construction wastes will be recommended. Secondary on-site sorting can be achieved by avoiding the generation of "mixed waste" through good site control. Construction wastes shall be sorted to remove contaminants, with the inert materials broken up into small pieces before being transported to landfill sites.	Waste management during construction	Project Engineer, Contractor	Throughout the entire construction period	EIA, Contractual requirements
7.4.5	8.3	In addition, the contractor(s) shall be required to reuse inert C&D materials (e.g. excavated soil) or in other suitable construction sites as far as possible, in order to minimize the disposal of C&D materials to public fill reception facilities. The project proponent shall encourage the contractor to maximize the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimize the generation of construction waste.	Waste management during construction	Project Engineer, Contractor	Throughout the entire construction period	EIA, Contractual requirements

7.4.5	8.3	<p>The following additional control/ mitigation measures are recommended to be followed by the Contractor:</p> <ul style="list-style-type: none"> Storage of different waste types – different types of waste should be segregated and stored in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. An on-site temporary storage area equipped with required control measures (e.g. dust control) should be provided; Trip-ticket system – in order to monitor the proper disposal of non-inert C&D waste to landfills and to control fly-tipping, a trip-ticket system should be included as one of the contractual requirements and audited by the Environmental Team; Records of Wastes – a recording system should be proposed to record the amount of wastes generated, recycled and disposed of (including the location of disposal sites); Training – The contractor should provide his workers with proper training of appropriate waste management procedure to achieve waste reduction as far as practicable and cost-effective through recovery, reuse and recycling and avoid contamination of reusable C&D materials; Incorporate good practice in “Recommended Pollution Control Clauses for Construction Contracts” published by EPD in respect to removal of waste material from the construction site into the contract of the contractor. <p>No excavation of pond sediment is expected due to the Project works, however, in case such pond sediment is encountered during construction, testing and disposal of excavated sediment shall follow the requirements in PNAP ADV-21¹, where appropriate. The stockpiled malodorous materials should be covered entirely by plastic tarpaulin sheets and removed from Project Area as soon as possible within 24 hours. Disposal of excavated sediment shall follow the requirements stated in Buildings Department’s PNAP ADV-21 for “Management Framework for Disposal of Dredged/ Excavated Sediment”</p>	Waste management during construction	Project Engineer, Contractor	Throughout the entire construction period	DEVB TC(W) No. 6/2010 “Trip Ticket System for Disposal of Construction and Demolition Material
-------	-----	--	--------------------------------------	------------------------------	---	--

1 PNAP ADV-21, Management framework for disposal of dredged/ excavated sediment, April 2007 version, published by Buildings Departments.

7.4.5.1	8.3	<ul style="list-style-type: none"> The Contractor shall submit to the Engineer for approval a waste management plan with appropriate mitigation measures including the allocation of an area for waste segregation and shall ensure that the day-to-day site operations comply with the approved waste management plan. The Contractor shall minimize the generation of waste from his work. Avoidance and minimisation of waste generation can be achieved through changing or improving design and practices, careful planning and good site management. The Contractor shall ensure that different types of wastes are segregated on-site and stored in different containers, skips or stockpiles to facilitate reuse/recycling of waste and, as the last resort, disposal at different outlets as appropriate. Excavated top soil materials due to retaining wall construction shall be reused on-site for the site formation of developable area, formation of landscape area within the developable area or the construction of the wetland area. Therefore, it is expected that there will not be any disposal of the excavated material. In case there is any surplus excavated material or the concerned material is found not suitable for re-use on-site, this will be disposed of at public fill facility. Landfilling will only be the last resort in any case. The reuse and recycling of waste shall be practised as far as possible. The recycled materials shall include paper/cardboard, timber and metal etc. The Contractor shall ensure that Construction and Demolition (C&D) materials are sorted into public fill (inert portion) and C&D waste (non-inert portion). The public fill which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt shall be reused in earth filling, reclamation or site formation works. The C&D waste which comprises metal, timber, paper, glass, junk and general garbage shall be reused or recycled and, as the last resort, disposal of at landfills. The Contractor shall record the amount of wastes generated, recycled and disposed of (including the disposal sites). 	Waste management during construction	Project Engineer, Contractor	Throughout the entire construction period	DEVB TC(W) No. 6/2010 "Trip Ticket System for Disposal of Construction and Demolition Material"
---------	-----	--	--------------------------------------	------------------------------	---	---

7.4.5.1	8.3	<ul style="list-style-type: none"> The Contractor shall use a trip ticket system for the disposal of C&D materials to any designated public filling facility and/or landfill. Training shall be provided for workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling. Spent bentonite slurries, if any, will be handled and disposed of properly in accordance with the requirements set out in the Practice Note for Professional Persons (PN1/94) Construction Site Drainage. 	Waste management during construction	Project Engineer, Contractor	Throughout the entire construction period	DEVB TC(W) No. 6/2010 "Trip Ticket System for Disposal of Construction and Demolition Material"
7.4.5.2	8.3	The Contractor shall not permit any sewage, waste water or effluent containing sand, cement, silt or any other suspended or dissolved material to flow from the Project Area onto any adjoining land or allow any waste matter [or refuse] which is not part of the final product from waste processing plants to be deposited anywhere within the Project Area [or onto any adjoining land]. He shall arrange removal of such matter from the Project Area [or any building erected or to be erected thereon] in a proper manner to the satisfaction of the Engineer in consultation with the Director of Environmental Protection.	Waste management during construction	Project Engineer, Contractor	Throughout the entire construction period	DEVB TC(W) No. 6/2010 "Trip Ticket System for Disposal of Construction and Demolition Material"
7.4.5.3	8.3	The Contractor shall apply for registration as chemical waste producer under the Waste Disposal (Chemical Waste) (General) Regulation when chemical waste is produced. All chemical waste shall be properly stored, labelled, packaged and collected in accordance with the Regulation.	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal (Chemical Waste) (General) Regulation
During Operation Phase:						
7.5	8.4	Refuse collection points (RCP) will be provided for the residential development. In order to comply with Building Regulation, mechanical ventilation will be provided. The odour nuisance to the public can be minimized by incorporating the odour absorption system. With proper management and maintenance of the waste facilities, possible leachate impact from the RCP is not anticipated.	Waste management during operation	Project Proponent/ Property Management Company, Incorporated Owners	During operation	EIA, Waste Disposal Ordinance

7.5	8.4	It is also recommended that collection bins for used aluminium cans, waste paper and glass bottles should be provided at strategic locations of the residential development area to promote and encourage recycling by residents during the operational phase.	Waste management during operation	Project Proponent/ Property Management Company, Incorporated Owners	During operation	EIA, Waste Disposal Ordinance
Ecology						
During Detailed Design:						
8.10.3.3	10.4	Design of the temporary noise barriers should include elements which would reduce potential bird collision impact, such as the use of opaque, non-reflective materials and colour that blend in with the environment.	Minimize the ecological impact	Project architect and Project Proponent	During detailed design stage	EIA
8.11.1.2	10.2	The habitats in the north of the Project Area (including ponds, marsh, seasonally wet grassland and agricultural land) will be retained and enhanced under the Recommended Option. Wetland compensation will be provided for the residual loss of wetland habitats within the Project Area	Minimize the ecological impact	Project architect and Project Proponent	During detailed design stage	EIA
8.11.1.2, & 2.9	10.2	A total of 3.8 ha of wetland habitat will be enhanced / restored within the Wetland Restoration Area (WRA) including 0.2 ha of Area 40. The design of wetland within the WRA is such that the overall wetland function of the Project Area will be increased in comparison to existing conditions. Details of the design rationale and management and monitoring methodologies for these wetland habitats within the WRA are given in the Wetland Restoration Plan in Appendix 8-10 of the EIA. Table 8-42 to Table 8-44 of the EIA describe the functions of each proposed wetland habitat within the WRA. In addition, herpetofauna corridors will be provided along the eastern side of the Project Area (about 9m to 19m wide) to provide an ecological corridor between Area 40 and the restored wetland at, permitting the dispersal of amphibians between these sites (see Section 2 and Figure 2-9 of the EIA).	Minimize the ecological impact	Project architect and Project Proponent	During detailed design stage	EIA

8.11.1.2	10.2	<p>The main WRA is situated on the northern side of the Project Area, comprising three deep water ponds separated by grassy bunds and bordered by areas of shallow water (except the pond located in Pond 18). Several gravel islands are situated in the shallow water zones, with two bamboo clumps planted in the middle of the south-westernmost gravel island. Several clumps of bamboo will also be planted in the northern and south western boundaries of the Area. Marsh cells are proposed in the southeast of the WRA and separated by grassy bunds. To minimize disturbance, the main WRA will be buffered from the proposed development by wooded bund and/ or reed, and from the existing development in the north by grassy bund/reed bed.</p> <p>A total of 3.8 ha of wetland habitat will be enhanced / restored within the Wetland Restoration Area (WRA), including 0.2 ha of Area 40. The design of wetland within the WRA is such that the overall wetland function of the Project Area will be increased in comparison to existing conditions. Details of the design rationale and management and monitoring methodologies for these wetland habitats within the WRA are given in the Wetland Restoration Plan in Appendix 8-10 of the EIA. Table 8-42 – Table 8-44 of the EIA describe the functions of each proposed wetland habitat within the WRA.</p>	Minimize the ecological impact	Project architect and Project Proponent	During detailed design stage	EIA
8.11.2.1	10.2	<p>Clear demarcation of the Project Area limits is required in order to minimize and contain any disturbance during the construction period. Special attention will be paid to the northern and north-western limits of the Project Area, which are adjacent to the inactive/abandoned ponds connected with the Deep Bay wetland system. These pond areas and the associated wildlife are regarded as ecologically sensitive receivers from the proposed development.</p>	Minimize the ecological impact	Project architect and Project Proponent	During detailed design stage	EIA

8.11.2.1	10.2	<p>Reed bed and wooded bund habitats, fenced by a perimeter wall of 1.8 m high on the landward side, will be formed along the interface between the WRA and the proposed residential area. Together with landscape planting and (any) retention of existing trees along the interface, mature reed bed and moderate-sized shrubs and trees will minimize disturbance to waterbirds in the open water zones and marshy habitats. No unsupervised public access into the WRA and the adjacent ponds will be allowed, to ensure that direct human disturbance to waterbirds in the adjacent wetlands will be avoided as far as possible.</p> <p>On the boundary between the WRA and the adjacent ponds outside the Project Area a 1.8m high fence will be formed to prevent unsupervised public access from surrounding footpaths without reducing ecological continuity and connectivity with the adjacent wetland habitats</p>	Minimize the ecological impact	Project architect and Project Proponent	During detailed design stage	EIA
8.11.2.4	10.2	<p>To ensure the continuity of habitats for wetland-dependent taxa, in particular herpetofauna, and to fulfil the 'No-Net-Loss' of wetland habitats criterion, the following measures safeguarding the continuity of wetland habitats will be implemented:</p> <p>Provision of wetland habitats in a unit contiguous and continuous with the existing ponds in the east including measures to restore linkages between (currently isolated) Area 40 and the wider wetland system;</p> <p>Avoidance of anthropogenic structures in the boundaries adjacent to the existing wetland habitats, and employment of natural barriers such as grassy bund, reed bed and (wet) wooded planting, which will serve as potential roosting and foraging sites for many species; and</p> <p>Concentration of the proposed development in the south and west of the Project Area, adjacent to existing anthropogenic habitats (Yau Pok Road and Fairview Park) to reduce additional anthropogenic impacts to a minimum.</p>	Minimize the ecological impact	Project architect and Project Proponent	During detailed design stage	EIA
8.13.1	10.2	<p>The detailed rationale of formulating the target species for the WRA is given in Section 4.2 of Appendix 8-10 and a summary of the target species is shown in Table 8-52 of the EIA.</p>	Minimize the ecological impact	Project architect and Project Proponent	During detailed design stage	EIA
App 8.10, S 3.1.2	App. III	<p>Detailed design of the WRA should be conducted upon approval of the planning application and the relevant details to be submitted to relevant government authorities for approval prior to commencement of construction of the WRA.</p>	Minimize the ecological impact	Contractor and Project Proponent	Prior to the Construction Phase	EIA

App 8.10, S 4.3.13	App. III	Target levels of the WRA are to be derived from the baseline ecological monitoring.	Minimize the ecological impact	Contractor and Project Proponent	After the baseline ecological monitoring	EIA
During Construction Phase:						
8.11.1.4	10.3.2, 10.4.8	<p>Loss of habitats for bird species of conservation importance including the four species mentioned above (Little Egret, Chinese Pond Heron, Red-throated Pipit and Greater Painted-snipe) will be compensated by the provision of suitable habitats in the WRA, including marsh, grassy bund, bamboo clumps and shallow water zone. Temporary impacts and disturbance to these bird species through loss of foraging habitat during wetland construction are minimized by providing a temporary enhancement area (Figure 8-6 of the EIA report) (Figure 10-1 in this Manual), in the form of shallow water pond and marsh, on existing agricultural land at the south western part of the Project Area. The temporary wetland enhancement area will be operated by maintaining traditional wetland agricultural farming practices.</p> <p>The direct impact and disturbance to wetland birds will be limited to the start of the construction period, as the WRA will be reconstructed during the wet season of the first year of construction and prior to main construction of the proposed residential development to minimize impacts during the period of greatest abundance of waterbirds. Accordingly, operation of the temporary wetland enhancement area will be stopped after the completion of the construction and planting/ replacement planting works of the WRA.</p>	Minimize the ecological impact	Contractor and Project Proponent	During Construction Phase	EIA

8.11.2.1	10.4.8 10.4.5	<p>Construction of the WRA will be undertaken at the start of the proposed project (prior to the main residential construction), with earthworks restricted to minimal pond re-profiling work for excavating the existing ponds to a depth of 1 – 2.5m, re-contouring the pond bund and excavating some existing pond bunds to provide larger ponds. The proposed earthworks are similar to usual fish pond maintenance practice, and earthwork machinery will be restricted to a small dredger as is commonly utilised in fish pond maintenance.</p> <p>Furthermore, a temporary hoarding around the WRA and a movable noise barrier around the machinery will be maintained during the construction of WRA. Once the temporary barrier is formed, the site formation for the WRA will be completed in the wet season of the first construction year, so as to minimize disturbance impacts during the period of greatest abundance of disturbance-sensitive waterbirds. In addition to the above measures, impacts on waterbirds during the construction of the WRA will be minimized by the utilization of an area of existing agricultural land in the west of the Project Area for the temporary provision of shallow water pond (0.75ha) and marsh (0.35ha) during WRA construction..</p>	Minimize the ecological impact	Contractor and Project Proponent	During Construction Phase	EIA
8.11.2.1	10.3.4	<p>During the construction period, no dogs will be allowed on the construction site to ensure that these do not provide a source of disturbance to waterbirds. Good site practice and selection of quiet equipment are expected to minimize noise impacts to waterbirds. Night-time light disturbance will be minimized by limiting the amount of lighting on the Project Area and by locating light sources far away from the adjacent ponds. Planting and initial vegetation maintenance will commence in the subsequent wet season.</p>	Minimize the ecological impact	Contractor and Project Proponent	During Construction Phase	EIA
8.11.2.1	10.4.4	<p>During the following 1.5 years of establishment and stabilization, the temporary barrier around the northern, eastern and north western boundary of the WRA will be replaced with a 1.8m high dog-proof chain-link fence so that the wetlands in WRA will be able to integrate with the adjacent ponds and will provide a buffer from ongoing construction work in the residential development and to prevent disturbance to the WRA resulting from access by human and dogs.</p>	Minimize the ecological impact	Contractor and Project Proponent	During Construction Phase	EIA

8.11.2.1	10.4.6	During the main construction phase for the residential development, a temporary 3m high visual barrier will be erected along the interface between the WRA and the residential area. The only major sensitive receivers to the disturbance impacts arising during the Construction Phase are large waterbirds, a considerable number of which utilize the wetland system to the northwest of the Project Area (approximately 400 – 500m away from the proposed residential area). In addition to the presence of the 100m wide WRA which will perform as a buffer zone between these areas of high wildlife utilization and the proposed residential area, the construction of temporary 3-m visual barrier will further reduce anthropogenic disturbance and impact from the proposed residential area, to the adjacent ponds. Good site practices will be followed to minimize noise, visual and light disturbance to the waterbirds.	Minimize the ecological impact	Contractor and Project Proponent	During Construction Phase	EIA
8.11.2.3	10.4.7	Good site practice during the construction phase, appropriate design of the surface water collection system and efficient sewerage management is required in order to eliminate on-site run-off to the Channel and Deep Bay system	Minimize the ecological impact	Contractor and Project Proponent	During Construction Phase	EIA
8.11.2.5	10.4.5	A temporary hoarding and a movable noise barrier around the WRA will be maintained during the construction of WRA to minimize the noise impact. The site formation of the WRA will be carried out during the wet season to avoid the period of greatest abundance of disturbance-sensitive waterbirds. The proposed temporary wetland enhancement area will mitigate the temporary loss of wetland habitat within the Project Area and during the construction of WRA	Minimize the ecological impact	Contractor and Project Proponent	During Construction Phase	EIA
App 8.10, S 4.3.13	App. III	The performance of the WRA and its management and monitoring requirements will be reviewed and agreed with relevant government authorities after the establishment period.	Minimize the ecological impact	Contractor and Project Proponent	After establishment period of WRA	EIA
During Operational Phase:						

8.11.2.3	10.5.8	<p>During the operational phase, no sewage or water from the residential areas will be discharged into the WRA, which will be fully self-contained, with rainwater as its major water source. Pond water will only be transferred between ponds, thus no pond water discharge is expected (layout of WRA is shown in Figure 8-5 of EIA report) (Figure 10-1 in this Manual). All sewage from the site would be treated by the interim sewerage treatment plant (or the public sewer system upon completion) prior to discharge. Surface water runoff from the residential area will be collected and discharge into NTMDC after passing through sand traps and/or oil interceptors, especially for car parks and similar facilities. In addition, a system of containment bunding will be implemented (where appropriate) in the event of emergency (such as car accident which involved major spillage of oil, chemical or fuel, dispersants or fire fighting foam etc.).</p>	Minimize the ecological impact	Project Proponent	During Operation	EIA
8.11	10.5.8	<p>No fertilizers and herbicides will be routinely used for vegetation management in the WRA, hence reducing any potential source of contamination into the adjacent watercourses that feed into Deep Bay.</p>	Minimize the ecological impact	Project Proponent	During Operation	EIA
8.11.2.1	10.2.8, 10.2.9	<ul style="list-style-type: none"> • Reed bed and wooded bund habitats, fenced by a permanent perimeter wall of 1.8 m high on the landward side, will be formed along the interface between the WRA and the proposed residential area. Together with landscape planting and retention of existing trees along the interface, mature reed bed and moderate-sized shrubs and trees will minimize disturbance to waterbirds in the open water zones and marshy habitats. No unsupervised public access into the WRA and the adjacent ponds will be allowed to ensure that direct human disturbance to waterbirds in the adjacent wetlands will be avoided as far as possible. • On the boundary between the WRA and the adjacent ponds outside the Project Area a 1.8m high fence will be formed to prevent unsupervised public access from surrounding footpaths without reducing ecological continuity and connectivity with the adjacent wetland habitats 	Minimize the ecological impact	Project Proponent	During Operation	EIA

8.13.2.3	10.6.3	<p>Ecological monitoring during the operational phase is essential to assess the effectiveness of the restored/enhanced wetland in attracting wildlife and implementing proper wetland management approach in any unexpected events. Abundance and diversity of fauna groups (birds, dragonflies, butterflies and herpetofauna) and their prey (aquatic invertebrates, benthic invertebrates and freshwater fish) are required for the monitoring. The frequency of the monitoring is summarized in Table 8-53 of the EIA and the methodology is detailed in Section 7 of Appendix 8-10.</p> <p>The management strategy and requirements of the WRA during the operational phase, are provided in the Wetland Restoration Plan in Appendix 8-10 of the EIA.</p>	Minimize the ecological impact	Project Proponent	During Operation	EIA
<u>Fisheries</u>						
During Construction Phase:						
9.5.2	10.8	<p>Good site practices will be implemented during the construction phase of the Project. Excavated material and other inert construction wastes produced will be transferred to proper recipients (i.e. landfill). An emergency response plan for any water pollution in the fish ponds surrounding the Project Area will be implemented.</p>	To prevent runoff and other water quality impacts affecting surrounding watercourses and ponds downstream.	The Contractor	During the construction phase.	EIA
During Operation Phase:						
Nil	Nil	Nil	Nil	Nil	Nil	Nil
<u>Cultural Heritage</u>						
During Construction Phase:						
Nil	Nil	Nil	Nil	Nil	Nil	Nil
During Operation Phase:						
Nil	Nil	Nil	Nil	Nil	Nil	Nil
<u>Landscape and Visual</u>						
During Detailed Design						

11.10.2 to 11.10.4	9.2	The landscape and visual mitigation measures detailed in Tables 11-5A; 11-5B; 11-8A and 11-8B of the EIA report (Tables 9-1 to 9-4 in EM&A Manual) shall be adopted during the detailed design, and be built as part of the construction works so that they are in place at the date of commissioning of the Project.	Avoid impacts on adjacent landscape.	Project architect and Project Proponent	During detailed design stage	EIA
11.10.4	9.2	A list of species appropriate for mitigation planting is provided in Table 11-6 in the EIA report (Table 9-5 in EM&A Manual). The planting list is subject to specialist design and investigation at the detailed design stage to maintain a suitable ecological enhancement plant community. The planting will comprise principally of native trees and shrubs selected for their ecological value to the area.	Avoid impacts on adjacent landscape	Project architect and Project Proponent	During detailed design stage	EIA
During Construction Phase:						
11.10.2	9.2	Other mitigation measures including strategies for reducing, offsetting and compensating for impacts have been designed into the Project and to be implemented during construction. These are identified in Table 11-5A, 11-8A of EIA report (also in Section 9.2 of this Manual) as following:	Minimum impacts on adjacent landscape.	Project Proponent (via Contractor)	During Construction Phase	EIA
11.10.2	9.2	CM1 - Proper protection of existing trees designated to be retained in-situ Existing trees designated to be retained in-situ will be properly protected. This may include the clear demarcation and fencing-off of tree protection zones, tight site supervision and monitoring to prevent tree damage by construction activities, and periodic arboricultural inspection and maintenance to uphold tree health. A total of 6 nos. of trees will be retained in-situ. Other trees mostly are growing in raised ridges or slopes between ponds and vegetable fields, which result in difficulties for tree to be retained or transplanted.	Minimum impacts on adjacent landscape.	Project Proponent (via Contractor)	During Construction Phase	EIA
11.10.2	9.2	CM2 - Enhancement of Wetland/Pond Area Expansion Existing abandoned wetland/ pond area will be expanded and enhanced into a larger and comprehensive wetland restoration area. The enhancement works of wetland/pond will be commenced in early stage to establish the migration of some ecological habitats. Along the interfaces between the proposed residential areas and the WRA, it is proposed to erect a 3m high perimeter temporary fence/ hoarding to define the site and prevent unauthorized access. This perimeter temporary fence/hoarding will be buffered by planting of moderate to tall sized trees and shrub. Enhancement of the wetland/pond will result in the increase of the wetland/pond area from its current 3.0 ha to around 3.8 ha.	Minimum impacts on adjacent landscape.	Project Proponent (via Contractor)	During Construction Phase	EIA

11.11.3	9.2	CM3 - Height of temporary noise barrier along the development boundary is kept to minimum required. Temporary Noise Barrier finishes and materials will be re-used from the approved existing temporary noise barrier from Wo Shang Wai project which have an opaque and non-reflective material with colour blending in with the environment to minimize visual impact and to avoid bird strike.	Minimum impacts on adjacent landscape.	Project Proponent (via Contractor)	During Construction Phase	EIA
11.11.3	9.2	CM4 - Advance screen planting of fast growing large shrub and ground cover species to noise barriers and hoardings.	Minimum visual impacts	Project Proponent (via Contractor)	During Construction Phase	EIA
11.11.3	9.2	CM5 – Control of night-time lighting by hooding all lights	Minimum visual impacts.	Project Proponent (via Contractor)	During Construction Phase	EIA
11.11.3	9.2	CM6 - Reduction of construction period to practical minimum.	Minimum visual impacts.	Project Proponent (via Contractor)	During Construction Phase	EIA
During Operational Phase:						
11.10.2	9.2	Mitigation measures including strategies for reducing, offsetting and compensating for impacts have been designed into the Project and to be implemented during operation phases. These are identified in Table 11- 5B, 11-8B of EIA report (also in Section 9.2 of this Manual) as followings	Minimum impacts on adjacent landscape and visual	Project Proponent	During Operational Phase	EIA
11.10.2	9.2	OM1 - Maximizing Tree Preservation Effort Healthy existing trees that are not affected by the proposed development will be retained in-situ. Affected existing trees that are of high to medium amenity value and high to medium survival rate after transplanting will be transplanted	Minimum impacts on adjacent landscape and visual	Project Proponent	During Operational Phase	EIA
11.10.2	9.2	OM2 – Provision of New Trees Compensatory tree planting shall be provided for soft landscape in the proposed development. The tree compensation to tree loss ratio shall be at least 1:1 in term of quantity and quality within the Project Site. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Felling Application process under ETWBTC 3/2006.	Minimum impacts on adjacent landscape and visual	Competent Conservation Agent identified by Project Proponent	During Operational Phase	EIA

11.10.2	9.2	<p>OM3 - Suitable Design for WRA and Residential Development</p> <p>The landscape design for the wetland restoration area in the north and western portion of the Project Site will be maximised for wetland habitat restoration consistent with achieving other parameters and the design on the residential development on the center to south western portion of the Project Site will adopt a rural, naturalistic approach with open space to compliment the original landscape character. Emphasis will be placed on a balanced approach between trees and grass/herbs. Use native species will be proposed for the planting design theme. No access is allowed for unauthorised person. Along the interfaces between the proposed residential area and the WRA, it is proposed to erect a 1.8m high fence wall. Natural materials, such as timbers, will be mostly used for landscape hardworks. Management and maintenance of the WRA shall be carried out by a separate unit from the residential estate and follow the specifications in Section 5.5 of Appendix 8-10.</p>	Minimum impacts on adjacent landscape and visual	Incorporated Owners/ Management Company	During Operational Phase	EIA
11.10.2	9.2	<p>OM4 - Provision of Buffer Planting along WRA</p> <p>Tree and shrub planting will be provided at strategic locations along the WRA to ensure connectivity with the adjacent habitats while minimising potential disturbance impact to the wetland.</p>	Minimum impacts on adjacent landscape and visual	Incorporated Owners/ Management Company	During Operational Phase	EIA
11.11.3	9.2	<p>OM5 - Continuous belt of screen planting within the Project Site</p> <p>Continuous buffer planting along the south-western and southern boundary of the Project Site and along the edge of residential area adjacent to WRA will be provided and planted outside the fence/ boundary wall by featuring trees capable of reaching a height >10m within 10 years.</p>	Minimum impacts on adjacent landscape and visual	Competent Conservation Agent identified by Project Proponent	During Operational Phase	EIA
11.11.3	9.2	<p>OM6 - Use appropriate (visually unobtrusive and non-reflective) building materials and colours in built structures.</p>	Minimum impacts on adjacent landscape and visual	Private Owners	During Operational Phase	EIA
11.11.3	9.2	<p>OM7 - Streetscape elements (e.g. paving, signage, street furniture, lighting etc.) sensitively designed in a manner that responds to the local context, and minimizes potential negative landscape and visual impacts. Lighting units to be directional and minimising unnecessary light spill.</p>	Minimum impacts on adjacent landscape and visual	Incorporated Owners/ Management Company	During Operational Phase	EIA

11.10.2	9.2	A list of species appropriate for mitigation planting is provided in Table 11-6 in the EIA report (Table 9-5 in EM&A Manual). The planting list is subject to specialist design and investigation at the detailed design stage to achieve two fundamental aims: to maintain a suitable ecological enhancement plant community and to prevent colonisation of terrestrial plants and / or unwanted exotics. The planting will comprise principally of native trees and shrubs selected for their ecological value to the area.	Avoid impacts on adjacent landscape	Incorporated Owners/ Management Company	During detailed design stage	EIA
---------	-----	--	-------------------------------------	---	------------------------------	-----