# 10 Fisheries

# 10.1 Legislation, Standards and Guidelines

- **10.1.1.1** The relevant legislations, standards and guidelines applicable to the present study for the assessment of fisheries impact assessment:
  - Environmental Impact Assessment Ordinance (EIAO) (Cap. 499); and
  - Technical Memorandum on Environmental Impact Assessment Process (TM-EIAO), Annexes 9 and 17.

# **10.2** Description of the Environment

- 10.2.1.1 The proposed site for development of columbarium, crematorium and related facilities is located at the hillsides at Sandy Ridge to the northwest of Man Kam To Road and is partially occupied by Sandy Ridge Cemetery. MTR Lo Wu Station is located to the west of site boundary. There are active and abandoned fish ponds near the proposed site. The adjacent area of Lin Ma Hang Road is characterized by rural land uses with scattered village houses, agricultural land and natural terrain.
- 10.2.1.2 In addition, an off-site barging point at Siu Lam will be utilised as part of this Project (see **Figure 9.4c**). This barging point is currently in use for the Express Rail Link project. The site occupies developed area and no habitats of ecological significance. Minor construction works for the tipping halls and new ramps are required and would not involve any excavation. There are no significant faunal data records available from this site from previous studies.

## 10.3 Construction Phase

## **10.3.1** Assessment Methodology

- 10.3.1.1 Literature review and internet search have been conducted to assess the baseline status of pond fish culture activity within the assessment area (500m within the project boundary) as well as the territory. Literatures and websites reviewed include:
  - Agriculture, Fisheries and Conservation Department (AFCD) annual reports (1997 2011/12);
    - http://www.afcd.gov.hk/english/publications/publications\_dep/publications\_dep.html;
  - AFCD website;
    - http://www.afcd.gov.hk/english/fisheries/fish\_aqu/fish\_aqu.html

- AFCD Accredited Fish Farm Scheme Website;
  - http://www.hkaffs.org/en/index.html
- Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (AEIAR-143/2009);
- Shenzhen River Regulation Project Stage III Environmental Impact Assessment (AEIAR-035/2000);
- Development of Lok Ma Chau Loop (AEIAR-176/2013);
- North East New Territories New Development Areas (AEIAR-175/2013); and
- EPD website;
  - http://www.epd.gov.hk/epd/misc/ehk08/index.html
- 10.3.1.2 In addition to desktop survey, site visits were undertaken to investigate actual fisheries status within the assessment area between December 2013 and April 2014. Activities related to fisheries observed during other field surveys were also recorded. During site visits, local villagers, fish farmers and pond owners were interviewed.
- **10.3.1.3** Ponds observed were categorized as follows:
  - Active: currently utilized for commercial aquaculture activities, including commercial fish ponds, fish fry ponds and water flea ponds;
  - Inactive: no current commercial aquaculture activities, but no major physical constraints to its resumption in the short-term, including ponds with fish present in non-commercial quantities and ponds for casual sport fishing or water sports;
  - Abandoned: ponds in which there is physical evidence that aquaculture has not taken for many years (typically ponds overgrown with vegetation) and/or where there are obvious physical constraints to the resumption of fisheries activity (for example, ponds which are fenced off and thus inaccessible); concreted ornamental ponds are also included in this category.

#### **10.3.2** Baseline Condition

10.3.2.1 Pond fish culture has been centred in the northwestern New Territories for a long period of time. Traditionally, primarily freshwater fish and several brackish species, such as Bighead Carp *Aristichthys nobilis*, Edible Goldfish *Carassius auratus*, Grass Carp *Ctenopharyngodon idellus*, Mud Carp *Cirrhinus chinensis*, Flathead Mullet *Mugil cephalus* and Nile Tilapia *Oreochromis niloticus*, are farmed. However, in recent years, certain high-value marine species such as Giant Grouper *Epinephelus lanceolatus*, Yellowfin Seabream *Acanthopagrus latus* and Spotted Scat *Scatophagus argus* have also been cultured in diluted seawater by fish farms close to the coast (e.g. at Mai Po). Most ponds in

- Hong Kong practice polyculture of carp, tilapia and/or grey mullet (AFCD 2014).
- 10.3.2.2 Several fish farms have started to culture new species and AFCD has carried out much promotional work. According to the data extracted from AFCD's website and AFCD's annual reports, the production of pond fish in Hong Kong has stabilised in recent years. Annual pond fish production and fish pond area in the territory are listed in the **Table 10.1.**

Year	Pond Fish Production (tonne)	Fish Pond Area (ha)	Overall Pond Fish Production Rate (kg/ha/year)
1997	5000	1125	4444
1998	4900	1110	4414
1999	4500	1094	4113
2000	2817	1060	2657
2001	2550	1059	2407
2002	1989	1030	1931
2003	2114	1029	2054
2004	1977	1026	1927
2005	1897	1026	1849
2006	1943	1024	1897
2007	1927	1160	1661
2008	2266	1160	1953
2009	2105	1160	1814
2010	2190	1109	1975
2011	2315	1130	2049
2012	2306	1150	2005
2013	2187	1150	1902
2014	2001	1140	1755

10.3.2.3 There are no capture fisheries known within the assessment area, and no assessment of impact is carried out. Capture fisheries have not been covered in previous EIA Reports for the area such as those for Development of Lok Ma Chau Loop (AEIAR-176/2013) and North East Territories New Development Areas (AEIAR-175/2013).

## 10.3.3 Site Investigation

### **Project Site**

**10.3.3.1** According to the basemaps, aerial photos and site visits, there are no fish ponds within the Project boundary.

#### Assessment Area

- 10.3.3.2 Nine main areas of ponds are present within the 500m assessment area. Figure 10.1 shows the locations and current status of fish ponds and Table 10.2 summarises the status of fish ponds within the assessment area. The identified fish ponds are listed below:
  - Yuen Leng Chai;

- Man Kam To Boundary Control Point south;
- Ng Tung River east;
- Ng Tung River west;
- Lo Wu Road south;
- Man Kam To Road south;
- Village below Sandy Ridge Cemetery;
- San Uk Ling; and
- Fu Tei Au Road south.

Table 10.2 Status of ponds within assessment area

Pond Location Ref. No.	Location	Status	Water Quality	Remark
1a	Yuen Leng Chai	Abandoned	Good	Fenced; mitigation pond of Shenzhen River Regulation Project.
1b	Yuen Leng Chai	Abandoned	Good	Mitigation pond of Shenzhen River Regulation Project.
1c	Yuen Leng Chai	Abandoned	Fair	Overgrown.
2a	Man Kam To Boundary Control Point South	Active	Good-Fair	Fish are sold in the market according to the pond owner.
2b	Man Kam To Boundary Control Point South	Active	Good-Fair	Fish are sold in the market according to the pond owner.
2c	Man Kam To Boundary Control Point South	Abandoned	N/A	Dried and overgrown.
3a	Ng Tung River West	Abandoned	Good-Fair	Overgrown.
3b	Ng Tung River West	Abandoned	Good-Fair	Overgrown.
3c	Ng Tung River West	Abandoned	Good-Fair	Overgrown.
3d	Ng Tung River West	Inactive	Bad	Floating rubbish presents on the pond.
3e	Ng Tung River West	Inactive	Fair	-
3f	Ng Tung River West	Inactive	Fair	-
4a	Lo Wu Road South	Inactive	Fair	Tilapia present with non-commercial amount.
4b	Lo Wu Road South	Abandoned	Fair	Overgrown.
4c	Lo Wu Road South	Abandoned	Fair	Overgrown.
4d	Lo Wu Road South	Abandoned	Fair	Overgrown.
4e	Lo Wu Road South	Inactive	Fair	Shallow pond with non-commercial amount of Tilapia.
4f	Lo Wu Road South	Inactive	Fair	Shallow pond with non-commercial amount of Tilapia.
4g	Lo Wu Road South	Inactive	Fair	Shallow pond with non-commercial amount of Tilapia.

Pond Location Ref. No.	Location	Status	Water Quality	Remark
4h	Lo Wu Road South	Inactive	Fair	Shallow pond with non-commercial amount of Tilapia.
4i	Lo Wu Road South	Abandoned	N/A	Dried and overgrown.
5a	Ng Tung River East	Inactive	Fair	Fish produced for self-consumption according to a villager.
5b	Ng Tung River East	Inactive	Fair	Fish produced for self-consumption according to a villager.
5c	Ng Tung River East	Inactive	Fair	Fish produced for self-consumption according to a villager.
5d	Ng Tung River East	Inactive	Fair	Fish produced for self-consumption according to a villager.
5e	Ng Tung River East	Inactive	Fair	New pond created by local villager during study period.
5f	Ng Tung River East	Abandoned	N/A	Dried and overgrown.
ба	Village below Sandy Ridge Cemetery	Inactive	Bad	-
6b	Village below Sandy Ridge Cemetery	Abandoned	N/A	Dried and overgrown.
6c	Village below Sandy Ridge Cemetery	Abandoned	Bad	Small concrete pond.
7a	Man Kam To Road South	Abandoned	Fair	Concrete ornamental pond; Tilapia present with non-commercial amount.
7b	Man Kam To Road South	Inactive	Fair	Fish produced for self-consumption according to a villager.
7c	Man Kam To Road South	Inactive	Good-Fair	-
7d	Man Kam To Road South	Inactive	Fair	Tilapia present with non-commercial amount.
8a	San Uk Ling	Abandoned	Fair	Overgrown pond at uphill area
8b	San Uk Ling	Abandoned	Fair	Overgrown pond at uphill area
9	Fu Tei Au South	Inactive	Fair	-

- 10.3.3.3 Two ponds (1a & 1b) near Yuen Leng Chai are mitigation ponds of the Shenzhen River Regulation Project Stage III Environmental Impact Assessment (AEIAR-035/2000). These ponds are considered abandoned; as no commercial aquaculture would be carried out. A small abandoned pond (1c) was situated at south of these two ponds. It is fed by water from a nearby watercourse and is overgrown with grasses.
- 10.3.3.4 Only two ponds (2a and 2b) were commercially active within the assessment area, although they are operated in small scale comparing to the core fish pond area in northwestern New Territories. The two active ponds were located at Man Kam To Boundary Control Point south, immediately outside the eastern boundary of the Project. The pond owner was interviewed and the ponds have been recently producing fish which being sold in the market. An abandoned pond (2c) was located at northwest side of these active fish pond. It was dry and overgrown by grass.
- 10.3.3.5 Six ponds were present at Ng Tung River west, including three abandoned ponds (3a to 3c) and three inactive ponds (3d to 3f). The three abandoned ponds are relatively large in size among the ponds assessment area and they were overgrown into different degree by aquatic herbs and weedy species. The three inactive ponds were regarded as active fish ponds in the approved EIA report for the North East Territories New Development Areas (AEIAR-175/2013). However no signs of commercial aquaculture were observed in the current fishery survey.
- 10.3.3.6 Nine Ponds (4a to 4i) were situated at Lo Wu Road south, including five inactive ponds and four abandoned ponds. The five inactive ponds (4a, 4e, 4f, 4g and 4h) had shallow water (approx. 0.5m 1.0m) and were surrounded by dense grass and weedy species. Lotus was present in these ponds and non-commercial amount of Tilapia were observed. The four abandoned ponds (4b, 4c, 4d and 4i) were overgrown and one of them (4i) was completely dry.
- 10.3.3.7 Five inactive ponds (5a to 5e) and one abandoned pond (5f) were located at Ng Tung River east, at the southern boundary of assessment area. According to a local villager, these ponds were producing fish for self-consumption. Among the five inactive ponds, 5e was a newly formed fish pond which was created by local villager during the study period. The abandoned pond (5f) was dried and overgrown by dense grass and weedy species.
- 10.3.3.8 Three ponds were situated in the village below Sandy Ridge Cemetery. One pond (6a) was inactive with poor water quality. The other two ponds (6b and 6c) were abandoned. 6b was a dried pond which was overgrown by grass and 6c was a very small concrete pond.
- 10.3.3.9 Four ponds were present at Man Kam To Road south, including a concrete ornamental pond with Tilapia of non-commercial amount. This pond was considered as abandoned pond for this assessment. Another three ponds (7b to 7d) were inactive, one (7b) of which was a pond producing fish for self-consumption according to local villager.

- 10.3.3.10 Two ponds (8a and 8b) were found within the assessment area of Lin Ma Hang Road which is located at uphill area of San Uk Ling. These ponds were overgrown by grass and weedy species.
- **10.3.3.11** One pond (9) was located at Fu Tei Au Road south. The pond was next to a village house and was inactive.

### Summary of Site Investigation

**10.3.3.12 Table 10.3** summaries the status and area of the ponds within the assessment area. The total area of the fish ponds is very small when compared to the 1150 ha of fish ponds in Hong Kong.

Table 10.3 Status and area (ha) of ponds within the assessment area

Area	<b>Pond Category</b>	Fishery Status	Total Area (ha)	
Project Site	None	-	0.0	
	Active	Commercial fish ponds	1.7	
		Production of fish for self-		
Assessment	Inactive	consumption or not in a	4.0	
Area		commercial manner		
	Abandoned	Abandoned/ overgrown/	11.2	
		ornamental/ mitigation ponds		

# 10.3.4 Identification and Evaluation of Impacts

#### Construction Phase - Direct Impact

10.3.4.1 There will be no direct fishery impact during construction phase as no ponds identified within the project site.

#### Construction Phase - Indirect Impact

Bund Stability and Water Seepage

- 10.3.4.2 Fish pond bund stability can be affected due to the vibration, passage of heavy vehicles and piling works during the construction phase, if the ponds are in vicinity of the development and its associated infrastructure works. In that case, water seepage could become an issue.
- 10.3.4.3 The active fish ponds (2a and 2b) at the eastern part of Sandy Ridge are located approximately 30m from the nearest works areas of viaduct and slopework constructions. Hence, the potential impacts of bund stability and water seepage on the ponds may be a potential.

### **Blockage of Existing Access**

- 10.3.4.4 There is the potential for access to fish ponds to be blocked due to construction works, which may have an impact on management activities and fisheries production. According to the current design, the construction work for Sandy Ridge would not adversely affect the access of Man Kam To Road. Hence, there is no significant impact to active fish ponds (2a and 2b).
- 10.3.4.5 Although Sha Ling Road will need widening but it is not the only access road to the ponds (6a to 6c) below Sandy Ridge Cemetery. In addition, the ponds (6a to 6c) below Sandy Ridge Cemetery are not active currently. Hence, there is no significant impact to active fish ponds (6a to 6c).

Hydrological disruption

**10.3.4.6** Ground works and foundations may cause hydrological disruptions to nearby ponds and cause draw-down of the water table.

Temporary occupation of fish ponds

10.3.4.7 There will be no temporary occupation of fish ponds, hence this impact is not anticipated.

Deterioration of water quality

- 10.3.4.8 Fish ponds close to the construction site may be affected by runoff, dust, silt and chemical wastes arising from construction activities. Untreated runoff and sediment would raise the level of suspended solids and increase turbidity. An elevated suspended solids level may have acute or chronic effects on fish. In addition, as the nearby streams may be sources of water for active fish ponds, pollutants discharging into these water bodies may eventually impact fisheries. Blockage of these water bodies due to poor construction activities (e.g. disorderly dumping of excavated material) may also affect the water supply to fish ponds and thus affect culture activities.
- 10.3.4.9 Dust deposition from nearby construction works could also impact on the water quality of the fish ponds. However given the distance between construction sites and the low number of ponds present, this is not considered to be a significant impact, especially when good site practices will be employed on the construction site.

Impacts to Capture Fisheries

**10.3.4.10** No capture fisheries are present within the Survey Area. Hence, no impact is predicted to the capture fisheries during the construction phase.

Impacts to Water Systems of Fisheries Importance

**10.3.4.11** Given the distance from the Study Area, over 10km, it is considered that construction and/or operational impacts to water systems of fisheries importance (e.g. Deep Bay) are insignificant.

# 10.3.5 Prediction and Evaluation of Environmental Impacts

10.3.5.1 The identified impacts on fisheries are expected to be very low and are summarised in **Table 10.4**. However, the good site practices during the construction phase to prevent water pollution is also recommended and discussed in the following section.

**Table 10.4** Summary of construction phase impacts to fisheries

Criteria	Description (Construction Phase)		
	No direct impact.		
	Potential indirect impacts include construction		
Nature of impact	(bund stability and water seepage, blockage of		
	access roads, hydrological disruption, and		
	deterioration of water quality, which are		
	considered to be a Very Low fisheries impact.		
Size of affected area	Nil.		
Loss of fishery resources/production	Nil.		
Destruction and disturbance of nursery and	Nil.		
spawning grounds			
Loss of fishery resources/production	Nil.		
Impact on fishery activity	Nil.		
Impact on aquaculture activity	Nil.		

# **10.3.6** Cumulative Impacts

10.3.6.1 Proposed development project in nearby area includes the development of Lok Ma Chau Loop (AEIAR-176/2013) and the development of North East New Territories New Development Areas (AEIAR-175/2013). Both projects are not anticipated to have significant fishery impacts except in respect of fish fry ponds near Ho Sheung Heung. However, there are no fish fry ponds in the current project. Given the limited fishery impacts of these projects and the limited hydrological connection between the ponds, the cumulative fishery impact is predicted to be insignificant.

# **10.3.7 Mitigation Measures**

10.3.7.1 All fisheries impacts are predicted to be of low significance, hence no mitigation measures are proposed. However, good site practices during the construction to prevent the deterioration of water quality are also recommended.

#### Illegal Dumping of Construction Waste

10.3.7.2 Illegal dumping of waste and excavated material will be properly managed (see **Section 7** for details), and thus such impact is not predicted to occur.

### Blockage of Access Roads to Fish Ponds

10.3.7.3 There is the potential for access to fish ponds to be blocked due to construction works, which may have an impact on management activities and fisheries production. Temporary traffic arrangements should be instigated to maintain or provide alternative access to fish ponds during construction phase if required.

#### **Other Indirect Impacts**

10.3.7.4 Standard mitigation measures to control site runoff and other pollutants (e.g. dust) caused by construction activities and good site practices should be implemented during the construction phase of the Project. Untreated runoff and sediment would raise the level of suspended solids and increase turbidity. An elevated suspended solids level may have acute or chronic effects on fish. Excavated material and other inert surplus construction wastes produced will be transferred to proper recipients (i.e. landfill or other concurrent projects) (see Section 7 for details). Sewage from the proposed development will be dealt with via a sewerage system and will not be discharged directly to surrounding water bodies. With these measures, indirect impacts on fisheries due to construction activities will be insignificant (See Section 6 for details).

### **Dust Minimisation**

- 10.3.7.5 Dust deposition in ponds could cause the deterioration of water quality through an increase in the level of suspended solids and turbidity. For excavation works, good site practice should be adopted to minimise impacts on fisheries. The below site practices should be adopted during this time.
  - Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;
  - Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;
  - Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies;
  - Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety;
  - In case the soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means;
  - Supply of suitable clean backfill material after excavation, if required;

- Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent any discharge during transport or during wet season;
- Speed control for the trucks carrying contaminated materials should be enforced; and
- Vehicle wheel washing facilities at the site's exit points should be established and used.

#### **Contingency Plan**

- 10.3.7.6 Accidental spillage of chemicals, water seepage from fish ponds, damaged / destabilized pond bunds, pond water contamination by site runoff, on fish ponds occur during construction phase, an emergency contingency plan should be established as part of the environmental management plan prior to the commencement of any construction. This should then be in place at all times during the construction and operational phases. The plan should include, but not limited to, the following:
  - Potential emergency situations;
  - Chemicals or hazardous materials used on-site (and their location);
  - Emergency response team;
  - Emergency response procedures;
  - List of emergency telephone hotlines;
  - Locations and types of emergency response equipment; and
  - Training plan and testing for effectiveness.
- 10.3.7.7 Detailed plans should be prepared at later stages during construction phase.

# **10.3.8** Residual Environmental Impacts

- 10.3.8.1 There will be no direct loss of fish ponds due to the development and the indirect impacts are of low significance. With the above measures and measures for mitigating water quality impacts and managing waste, no residual impact is anticipated.
- **10.3.8.2** With the monitoring and audit for water quality, specific programme for fisheries is not deemed necessary.

# 10.4 Operational Phase

# **10.4.1** Assessment Methodology

10.4.1.1 The assessment of fisheries impacts during operational phase of the project has been conducted through literature review, internet search and site visits to investigate the fisheries status within the assessment area. The details of the assessment methodology could be referred to **Section 10.3**.

# **10.4.2 Identification of Environmental Impacts**

#### Operational Phase - Direct Impact

10.4.2.1 No direct impacts to fisheries are anticipated during operational phase.

## <u>Operational Phase - Indirect Impact</u>

**Blockage of Existing Access** 

10.4.2.2 Blockage of access to fish ponds may have an impact on management activities and fisheries production. During operational phase, there will be no blockage of existing access to fish ponds.

Deterioration of water quality

10.4.2.3 Sewage and runoff from the proposed developments and alignments could potentially cause impacts on nearby fish ponds, through an increase in the level of suspended solids and turbidity. This, in turn, could cause a deterioration of water quality and affect fish.

Impacts to Capture Fisheries

- 10.4.2.4 No capture fisheries are present within the Survey Area. Hence, no impact is predicted to the capture fisheries during the construction phase.

  Impacts to Water Systems of Fisheries Importance
- 10.4.2.5 Given the distance from the Study Area, over 10km, it is considered that construction and/or operational impacts to water systems of fisheries importance (e.g. Deep Bay) are insignificant.

# **10.4.3** Prediction and Evaluation of Environmental Impacts

10.4.3.1 The identified impacts on fisheries are expected to be low and summarised in **Table 10.5**. However, the good site practices during the operational phase to prevent water pollution is also recommended and discussed in the following section.

**Table 10.5** Summary of operational phase impacts to fisheries

Criteria	Description (Operational Phase)		
	No direct impact.		
Nature of impact	Potential indirect impacts include deterioration of water quality, which are considered to be a		

Criteria	Description (Operational Phase)
	Low fisheries impact.
Size of affected area	Nil.
Loss of fishery resources/production	Nil.
Destruction and disturbance of nursery and spawning grounds	Nil.
Impact on fishery activity	Nil.
Impact on aquaculture activity	Nil.

# **10.4.4** Cumulative Impacts

10.4.4.1 Proposed development project in nearby area includes the development of Lok Ma Chau Loop (AEIAR-176/2013) and the development of North East New Territories New Development Areas (AEIAR-175/2013). Both projects are not anticipated to have significant fishery impacts except in respect of fish fry ponds near Ho Sheung Heung. However, there are no fish fry ponds in the current project. Given the limited fishery impacts of these projects and the limited hydrological connection between the ponds, the cumulative fishery impact is predicted to be insignificant.

# **10.4.5** Mitigation Measures

### Surface runoff and erosion

10.4.5.1 Installation of proper silt traps in the drainage system to avoid debris entering the downstream ponds (1a to 1c). The additional surface runoff from the proposed platform may increase the surface runoff to the existing system to the ponds (1a to 1c). A by-pass drainage will be provided from the platform, associated road network and the extra runoff will be diverted away from these ponds (See Section 6 for details).

### **Contingency Plan**

- 10.4.5.2 Similar to Section 10.3.7 during construction phase, accidental spillage of chemicals, water seepage from fish ponds, damaged / destabilized pond bunds, pond water contamination by site runoff, on fish ponds occur during construction phase, an emergency contingency plan should be established as part of the environmental management plan prior to the commencement of any construction. This should then be in place at all times during the construction and operational phases. The plan should include, but not limited to, the following:
  - Potential emergency situations;
  - Chemicals or hazardous materials used on-site (and their location);
  - Emergency response team;
  - Emergency response procedures;
  - List of emergency telephone hotlines;

- Locations and types of emergency response equipment; and
- Training plan and testing for effectiveness.
- **10.4.5.3** Detailed plans should be prepared at later stages during operational phase.
- 10.4.5.4 Surface runoff during the operational phase from developed areas within Sandy Ridge could also affect nearby and downstream habitats. Modern drainage systems along with silt traps, oil traps and gullies should be installed at required sites, and collection to proper receivers should take place. Drainage system should be maintained routinely to prevent blockages. With such systems in place, surface runoff is unlikely to affect nearby or downstream habitats significantly (see **Section 6** for details.

# **10.4.6** Residual Environmental Impacts

- **10.4.6.1** There will be no direct loss of fish ponds due to the development and the indirect impacts are of low significance. With the above measures and measures for mitigating water quality impacts and managing waste, no residual impact is anticipated.
- **10.4.6.2** With the monitoring and audit for water quality, specific programme for fisheries is not deemed necessary.

## 10.5 Conclusion

10.5.1.1 As there are no ponds in the Project Area, no direct impact on fisheries will be resulted. The indirect impact on fishery is predicted to be minor. Therefore no unacceptable fisheries impact is predicted from this project.

## 10.6 References

- [10-1] Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link, AEIAR-143/2009.
- [10-2] AFCD (2015), Marine fish culture, pond fish culture and oyster culture. <a href="https://www.afcd.gov.hk/english/fisheries/fish\_aqu/fish\_aqu\_mpo/fish\_aqu\_mpo.html">www.afcd.gov.hk/english/fisheries/fish\_aqu/fish\_aqu\_mpo/fish\_aqu\_mpo.html</a>
- [10-3] Shenzhen River Regulation Project Stage III Environmental Impact Assessment, AEIAR-035/2000
- [10-4] Development of Lok Ma Chau Loop, AEIAR-176/2013
- [10-5] North East New Territories New Development Areas, AEIAR-175/2013