

**HIGHWAYS DEPARTMENT
MAJOR WORKS PROJECT MANAGEMENT OFFICE (SPECIAL DUTIES)**

**Agreement No. CE 13/2010 (CE)
Hong Kong – Zhuhai – Macao Bridge
Hong Kong Boundary Crossing Facilities
(Superstructures and Infrastructures) –
Design and Construction**

**Emergency Response Plan for Spillage of Oil and Chemicals in
Hong Kong Boundary Crossing Facilities**

October 2021

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1. BACKGROUND

- 1.1 Hong Kong-Zhuhai-Macao Bridge (HZMB), Hong Kong Boundary Crossing Facilities (HKBCF) [now named as Hong Kong Port (HKP)] (the Project) is a designated project under the Environmental Impact Assessment Ordinance (EIAO). Pursuant to Section 10 of the EIAO, the Director of Environmental Protection granted an Environmental Permit (EP) No. EP-353/2009 to Highways Department (the Permit Holder) to construct and operate the Project.
- 1.2 According to Condition 4.1 of version K of the EP (No. EP-353/2009/K), the Permit Holder shall deposit with the Director of Environmental Protection three sets of a detailed Emergency Response Plan (ERP) on how to prevent oil and chemical spillage caused by traffic incidents on the carriageway from entering into the water body. The ERP shall be verified by the Independent Environmental Checker (IEC) as confirming to the recommendations contained in the EIA Report.
- 1.3 Section 9.9.4 of the EIA Report for HKBCF & Hong Kong Link Road (HKLR) discussed the accidental spillage. A copy of this section is enclosed in **Appendix 1** of this ERP.

2. OBJECTIVES

- 2.1 This document presents the ERP to deal with oil and chemical spillage (hereinafter referred to as “chemical spillage”) due to vehicle accidents that may occur on the viaducts, at-grade roads and vehicle clearance plazas within the HKP during the operation stage of the HKP. The objectives of this ERP are to ensure that:
 - (1) a timely and effective response to any spill incidents occurred on road surface and other adjacent areas contaminated by the spilled chemical on carriageways within the HKP;
 - (2) the coordination of the relevant Government Departments to deal with the spill; and
 - (3) minimal impacts to the aquatic environment and ecological system in the waterbody surrounding the HKP which is within the North Western Water Control Zone of the HKSAR.
- 2.2 The priorities for control of the spill are as follows:
 - (1) The primary aim is to control the spreading of spill on the road surface on viaducts, at-grade roads and vehicle clearance plazas within the HKP and prevent release of spills into adjacent waterbody, either through road drainage systems or by other means; and
 - (2) The secondary aim is to clean up the spill and re-open any affected area of the HKP to traffic as soon as possible.

3. CHEMICALS OF CONCERN

- 3.1 There are wide varieties of chemicals. Oil, fertilizers, corrosive or poisonous chemicals which can pose serious threats to the ecology of the North Western Water Control Zone. This ERP deals with the general chemical spillage instead of restricting itself to only certain categories of chemicals.
- 3.2 Chemicals in liquid state or chemicals soluble in water are of most concern because there is a higher risk of these chemicals released into the sea through the drainage systems of the HKP.

4. MASTER LAYOUT OF HKBCF

- 4.1 The general layout of the HKBCF is shown on **Drawing Nos. 60191048/MLP11/101 and 60191048/MLP11/102**. There are viaducts, at-grade roads and vehicle clearance plazas within the HKBCF with vehicle movements.
- 4.2 The drainage systems on viaducts, carriageway and in the vehicle clearance plazas would discharge into the sea surrounding the HKP within the North Western Water Control Zone. In case of a vehicle accident on the carriageway, it may cause the spillage of chemicals that will have potential impacts to the water quality and ecology in the North Western Water Control Zone if the spillage is not dealt with properly.

5. RESPONSE ORGANIZATIONS AND EMERGENCY RESPONSE PLAN

- 5.1 In a chemical spillage incident, a prompt action to prevent the spillage from releasing into the sea surrounding the HKP is the major task. A quick response time is therefore crucial in dealing with the spillage incident. The main response departments and the relevant emergency response plans being implemented are shown below. A flow chart depicting the procedures in dealing with chemical spillage incident on HKBCF, briefly listing out the respective responsibilities of various parties is shown in **Appendix 2**.

Hong Kong Police Force (HKPF)

- 5.2 The New Territories Regional Command and Control Centre (RCCC/NT) of HKPF operates 24 hours in parallel with Fire Services Communications Centre (FSCC) of Fire Services Department (FSD). Upon receiving the report of vehicle accident with, or with likelihood of, chemical spillage on the HKP, the RCCC/NT will immediately activate this ERP and inform the relevant Government Departments including but not limited to those Departments identified under this ERP to take immediate actions to deal with the (potential) chemical spillage.
- 5.3 HKPF will set up a Mobile Command Post to co-ordinate the road closure and clearing up operations. All parties concerned might then liaise with the Command Post for updated information.
- 5.4 As HKPF and FSD are usually the first emergency services to arrive at the scene, they will carry out a preliminary assessment as to the likelihood of chemical spillage from vehicle, and if spillage has occurred, the likelihood of the spill entering into the drainage systems of the HKP. HKPF should keep RCCC/NT informed of the

seriousness of the incident and provide RCCC/NT with regular updated situation reports.

5.5 In the event of traffic congestion brought about by a chemical spillage incident, HKPF will inform the Mainland/Macao Authorities through the established border liaison channel for any incidents which may cause serious disruption to the operation of the HKP. They may request Mainland/Macao Authorities for assistance from Mainland/Macao as and where necessary.

5.6 HKPF will be the key member of the ad hoc chemical spillage response team comprising representatives of all relevant Departments to deal with (potential) chemical spillage from vehicle. The duties of the response team are as follows:

- (1) To assess the seriousness of the chemical spillage, the likelihood and the means to avoid the chemicals entering into the drainage gullies or the waters surrounding the HKP;
- (2) To coordinate between different Departments involved; and
- (3) To determine whether and what additional support and assistance from other Departments not included in this ERP should be called upon directly or through policy Bureaux.

5.7 Other duties of the HKPF in case of chemical spillage include:

- (1) Protect life and property;
- (2) Initiate a cordon of the area affected by the chemical spillage under the advice of FSD and EPD and implementing traffic management and control measures for people, vehicles or vessels at the scene. HKPF will also transport sawdust stored inside the weight-station in the HKP to the scene to control the spreading of any spilled chemical and to prevent the spillage chemical from entering into drainage systems on the carriageway;
- (3) Assist in evacuation of the affected area, if necessary;
- (4) Implement traffic management and control measures on all roads leading to the scene; and
- (5) Provide escort to emergency / rescue vehicles and / or transports carrying plants and equipment to deal with the chemical spillage in case they are delayed by traffic jams.

Fire Services Department (FSD)

5.8 FSD is mainly responsible for fire-fighting and rescue. It is expected that the response time to any accident / incident at the HKP would be in terms of several minutes as there is a Fire Station at the HKP.

5.9 FSD has established procedures to deal with chemical spillage. FSD Officer-In-Charge (OIC) of the incident will appraise the situation and assess whether the accident / incident is a Major and/or Prolonged Chemical Incident. FSD will be responsible to take the following actions:

- (1) Protect life and property, and remove immediate danger;
- (2) Identify the type of chemicals such as whether it would be poisonous / hazardous to human being in the vicinity through inhalation or contact, or whether it is flammable / explosive and determine whether evacuation of the area is necessary. FSD will advise HKPF the extent of the cordon area. In case the chemicals cannot be identified on the scene, FSD will seek information from the consignee firm and/or call upon Government Laboratory (GL) to identify the chemical;
- (3) Assist other responsible Departments in cleaning up such chemical spillage if required;
- (4) Control or secure the situation such as confining the spillage, the effect of chemical contamination, etc., by appropriate means; and
- (5) Assist other Government Departments which may render upon request.

Transport Department (TD)

- 5.10 In case of vehicle accident with, or with likelihood of, chemical spillage in the HKP, TD's Emergency Transport Co-ordination Centre and HKPF's Regional Command and Coordination Centre will monitor the traffic conditions within the HKP and in its vicinity, with support of the 24-hour Traffic Control and Surveillance System (TCSS) operated by TD.
- 5.11 TD will assist HKPF to ascertain the necessity of traffic diversion and control, and whether partial or total road closure, or even closure of the HKP is required. TD will liaise with the bus companies, Mass Transit Railway Corporation Limited and relevant ferry operators on emergency public transport arrangements as they considered required. TD will assist the temporary traffic management / arrangement including contra-flow traffic arrangement if necessary. TD, in consultation with Police Public Relations Branch (PPRB), will be responsible for disseminating traffic diversion and lane / road closure as well as other related traffic and transportation information for motorists through the media and to other parties if necessary. Regarding cross-boundary coach services on HZMB, TD will arrange publicity on the traffic and transport condition of HKP, inform Transport and Housing Bureau (THB) duty officer, and inform the cross-boundary coach association on the traffic and transport condition of HKP. Transport Incident Management Section (TIMS) duty officer will request them to adjust service level / suspend service as appropriate.

Highways Department (HyD)

- 5.12 HyD is the maintenance department for the highway structures and roads at the HKP. Within the resources of the Department or through the term maintenance contractors, HyD will be responsible for the following duties:
- (1) Assist to recover / handle spilled oil, using sawdust or dry sand under the supervision of Environmental Protection Department (EPD) or other relevant Departments. When necessary, provide vacuum tanker vehicle or equivalent, the usage of which is under the direction of EPD / Government Laboratory (GL).

- (2) When necessary, provide equipment and manpower to assist EPD's licensed chemical waste collector to collect the spilled oil or chemical on the scene immediately after the incident with the advice provided by EPD;
- (3) Reinstate / repair any damaged road surface, essential bridge structure and street furniture under their ambience immediately after the affected area is cleaned up to enable the earliest resuming of traffic for the affected area on the HKP;
- (4) Provide equipment and personnel for the removal of landed oil on ungazetted beaches and foreshores provided that land access is available, in accordance with the Maritime Oil Spill Response Plan (MOSRP) by Marine Department.

Management, Operation and Maintenance (MOM) Contractor

5.13 The MOM contractor is engaged to provide day-to-day facility management services, including site and property management, general security, cleansing and waste disposal, traffic operation and monitoring, and maintenance of landscaping works, in the HKP. The MOM Contract is administered by Government Property Agency.

5.14 According to the MOM Contract and the associated Incident Management Plan, the MOM contractor will be responsible for the following duties:

- (1) Cordon off the area with barrier or traffic cones in order to segregate people and vehicles from the incident site. Also prevent spilled material to be in contact with water to avoid any chemical reactions;
- (2) Manage the oncoming traffic and establish alternate traffic routes if required;
- (3) Provide support as instructed by HKPF/TD, emergency services and the traffic control within the HKP boundary;
- (4) If the spill can be cleaned up safely, and if there are drains in the area, use suitable material to prevent the hazardous material from reaching the drain;
- (5) Notify Airport Authority Hong Kong (AAHK) and Civil Aviation Department (CAD) in accordance with the established protocol if the incident has any potential impact to Hong Kong International Airport;
- (6) Coordinate and maintain close communication with emergency services (i.e. HKPF, FSD), other Departments including Drainage Services Department, telecommunication or utility companies on any maintenance and recovery actions required.

Environmental Protection Department (EPD)

5.15 EPD has plans responding to marine based and land based pollution incidents in the territory, EPD will follow these plans as appropriate in handling such incidents.

Government Laboratory (GL)

- 5.16 When requested by FSD, GL will provide assistance in chemical identification in a chemical spillage incident and advise the characteristics of the chemical so as to help FSD and HKPF plan the operational strategy. If necessary, GL will send an officer to the scene to assist in locating / identifying the chemicals, analyse the levels of toxic substances at scene and/or provide advice to stabilise / handle / dispose of the chemicals.

Marine Department (MD)

- 5.17 MD is the designated authority for the clean up of oil spillage and floating refuse at sea. When the chemical spill from a vehicle accident has been released from the HKP into the waters, MD will endeavor to regulate the marine traffic in and in the vicinity of the affected area, subject to available depth of water and a risk hazard assessment of the working environment confirmed that the prevailing environment is safe. In case of oil spillage into the waters, the response actions from MD will follow the MOSRP, which has been developed to deal with oil spill and their potential hazard to the waters of HKSAR, in order to provide a timely response to oil spillages.

- 5.18 The other responsibilities of MD include:

- (1) Provide absorbents, booms and skimmers for controlling the spill at where and when practical and desirable; and
- (2) Monitor the spill situation and reporting extent of pollution.

In order to provide timely and effective responses to the incidents, MD would solicit assistance from Marine Police as necessary.

- 5.19 In principle, either MD or the Zhuhai/Macao counterpart will not be responsible for any cross border cleaning up of the oil spillage at sea, unless request is made by the governing side of the incident scene to the other side. In such case, coordination will be through HKPF, who is the principal coordinating Department with the Zhuhai/Macao Governments through the established border liaison channel.
- 5.20 However, even if the oil spillage is confined to the waters of HZMB Main Bridge, MD will arrange a duty-officer to take charge of the clean-up operation at sea and render assistance when the situation warrants. Moreover, the MD Patrol launch deployed at the scene/in vicinity Its main duty is to provide traffic regulating.

Agriculture, Fisheries and Conservation Department (AFCD)

- 5.21 AFCD will advise on the protection of ecologically sensitive areas in the waters; provide assistance and comments on the methods for cleaning up the substances/wastes/chemicals washed ashore in the nearby Marine Parks, especially their ecological impacts as recommended by relevant authorities; and monitor the ecological conditions and assess the potential ecological/fisheries impacts at the likely affected ecologically sensitive areas.

Leisure and Cultural Services Department (LCSD)

- 5.22 If necessary, LCSD will arrange the removal of landed oil from gazetted beaches according to the MOSRP.

Food and Environmental Hygiene Department (FEHD)

- 5.23 In case of oil spillage incidents, FEHD will provide manpower to assist but limited to manual removal of non-contaminated refuse not classified as chemical or hazardous waste on non-gazetted beaches and foreshores that are without land access if necessary.

District Office (Islands)

- 5.24 DO(Islands) will inform the relevant District Council member(s) and Village Representative(s) in case of chemical spillage incidents in the waters as necessary.

Owner of the Chemicals

- 5.25 In case of chemical spillage incidents, the responsibilities of the owner of the chemicals include the following:
- (1) Advise the type and characteristics of the chemicals; and
 - (2) Remove the chemicals and those sand bags / absorbents which are soaked with chemicals, including the spilled chemicals on the carriageways of the HKP, in the waters and those washed ashore.
- 5.26 If the owner of the chemicals does not possess suitable plant and machinery for the removal, the owner could hire a contractor to do the job for himself, or alternatively the Government can do the job and then charge the owner accordingly. If the owner is reluctant to take action, relevant Government authorities could prosecute the owner according to the relevant laws of Hong Kong.

6. EMERGENCY RESPONSE ACTIONS

- 6.1 In the event of vehicle accident on the carriageway of the HKP, the relevant Government Departments will implement the existing emergency response plans to deal with the incident.
- 6.2 It is important for the relevant Government Departments to confine the spill to be within the carriageway such that water quality and ecological impacts to the waters surrounding the HKP would be minimized.
- 6.3 At least 24 nos. dry sandbags will be stored at Highways Depot & Administration Building at the HKP to the southeast of the outbound vehicle clearance plaza and sawdust will be stored at the HKPF's weigh-station at the HKP to the southwest of the outbound vehicle clearance plaza. The locations of HyD's depot and HKPF's weigh-station are shown in **Drawing No. 60191048/MLP11/101**. HyD will transport the sand bags and HKPF will transport the sawdust from their own storage locations to the

scene respectively to control the spreading of any spilled chemical and to prevent the spilled chemical from entering into drainage system on the carriageway.

6.4 The operation guidelines to deal with the spill to minimize water quality and ecological impacts include:

- (1) Identify the type of chemicals if it would be poisonous / hazardous to human being in the vicinity through inhalation of / contact with them, or flammable / explosive which require immediate evacuation of the area;
- (2) Evacuate the area as necessary;
- (3) Stop the flow of spill from the source of the pollution;
- (4) Confine the spill to a limited area and prevent the spill from entering the road drainage system of the HKP;
- (5) Avoid spraying water or chemicals unless it is absolutely necessary. For oil spills to the waters, no oil dispersants should be used. For chemical spills, the measures to be taken will need to be decided case by case. Appropriate techniques and methods with careful study and assessment should be adopted. AFCD, EPD and/or GL should be consulted as needed;
- (6) Remove the spilled chemical by using suitable equipment and materials, e.g. absorbent to absorb the oil on the road surface. The absorbent should be able to absorb oil material at a high ratio of oil to absorbent;
- (7) Dispose of the collected spill and the used absorbent as chemical wastes once the spill has been removed from the road surface;
- (8) Any flushing water (or other chemicals) for cleaning spilled chemical on the HKP should be retrieved by vacuum suction or equivalent means to suitable container for proper disposal. Flushing chemicals to the waters, either directly or via the road drainage system is strictly prohibited; and
- (9) Monitor the dispersion of the spilled chemicals in the waters.

6.5 Personnel responsible for the clean up operation should take safety precautions in accordance with the corresponding departmental guidelines and procedures.

6.6 According to the Height Restricted Areas and Special Areas for the Hong Kong Link Road and the Hong Kong International Airport Approach Restricted Areas under Fifth Schedule of Cap. 313A and Section 12 & 18B of Cap. 548F respectively, the relevant emergency responsible Departments should deploy their emergency teams and vessels in the vicinity to evaluate their vessel height in compliance with the height restriction under the Law.

7. TRAINING AND DRILL

7.1 In order to provide a prompt response to an emergency event, relevant Government Departments who are responsible for dealing with the spill incident must be familiar with the procedures and the operation of the essential equipment. Training should be provided to all designated personnel of all relevant Government Departments and

other parties to deal with the spill incident on the HKP by individual party referring to its own standing practice that is currently in force in Hong Kong. The areas that should be covered in the training include:

- (1) Procedures to deal with spill incident
- (2) Ordinance and regulations related to chemical waste control
- (3) Awareness of chemical waste hazards and pollution
- (4) Roles and responsibilities
- (5) Precaution and safety measures
- (6) Spill clean up
- (7) Spill disposal

7.2 It is important to regular test-run to establish the effectiveness of this ERP. The aim is to ensure good coordination and prompt action amongst relevant Government Departments. Testing will take the form of an exercise or drill to practice responding to a spill on the HKP. The exercise is aimed to build the sense of teamwork and familiarity from relevant Government Departments. It makes the response more effective and efficient when an actual spill incident occurs. Details of the training and drill by each individual party should refer to its own standing practice that is currently in force in Hong Kong.

8. CONTACT LIST OF CHEMICAL SPILLAGE INCIDENT

Designated Response Party		Telephone Number
Home Affairs Department (HAD)	Senior Liaison Officer (2), Islands District Office Senior Liaison Officer (1), Tuen Mun District Office	2852 4573 / 9380 7484 2451 3032
Hong Kong Port MOM Contractor	-	3195 2419
Transport Department (TD)	Emergency Transport Co-ordination Centre (ETCC)	2410 0066 / 2410 0193
Hong Kong Police Force (HKPF)	Controller, RCCC/NT	3661 7200
	Airport Police Control Room	3661 2089
	Lantau North Division	3661 1694
Fire Services Department (FSD)	Hong Kong-Zhuhai-Macao Bridge Fire Station	2516 0200
	Chek Lap Kok Fire Station	2949 9082
	Tung Chung Fire Station	2988 1898
Marine Department (MD)	Vessel Traffic Centre (VTC)	2233 7801
Environmental Protection Department (EPD)	Mr. Alfred Lo (Environmental Protection Officer)	2516 1782
Government Laboratory (GL)	Duty Chemists	Responder 1: 6377 6591 Responder 2: 6377 6599
Agriculture, Fisheries and Conservation Department (AFCD)	Dr. YM Mak (Marine Conservation Officer)	3468 5742
Leisure and Cultural Services Department (LCSD)	For gazetted beaches in Tuen Mun District:	
	1. Senior Leisure Manager (Aquatic Venues)	2601 8873 / 9195 1385
	2. Chief Leisure Manager (Aquatic Venues)	2601 8083 / 9169 8306
	3. District Leisure Manager (Tuen Mun)	2451 3102 / 9195 9170
Food and Environmental Hygiene Department (FEHD)	Chief Health Inspector (Operations)1	2867 5657
	Chief Health Inspector (Operations)3	2867 5644
	Chief Health Inspector (Cleansing & Pest Control)1	2867 5290

Appendices

Appendix 1

***Section 9.9.4 of EIA Report for HZMB
HKBCF & HKLR***

WSR	Description	Sedimentation (with Project)		Sedimentation (Without Project)	
		g/m ² /day	mm/year	g/m ² /day	mm/year
WSR 41	Artificial Reef at NE Airport	1.42	0.69	1.21	0.59
WSR 47a	River Trade Terminal	2.99	1.46	0.80	0.39
WSR 47b	River Trade Terminal	2.92	1.42	2.62	1.27
WSR 29	Hau Hok Wan (Horseshoe Crab Habitat)	4.59	2.23	4.69	2.28
WSR 30	Sha Lo Wan (Horseshoe Crab Habitat)	4.65	2.26	4.63	2.25
WSR 31	Sham Wat Wan (Mangrove and Horseshoe Crab Habitat)	4.85	2.36	4.82	2.35
WSR 32	Tai (Mangrove Habitat)	4.23	2.06	4.22	2.05
WSR 33	Tai O Bay	2.21	1.07	2.16	1.05
WSR 34	Yi O (Mangrove and Horseshoe Crab Habitat)	4.22	2.05	4.22	2.05
WSR 50	HKBCF Embayment Area / Sky Pier	3.22	1.57	1.64	0.8

9.9.3.16 The annual sedimentation rates at major eco-sensitive receivers with the project is ranging from 1.42g/m²/day (WSR 41) to 4.85g/m²/day (WSR 31), which are far below the assessment criterion of 0.2 kg/m²/day. The annual sedimentation rate inside the airport sea channel (WSR 28) with the project decreases from 1.66mm/yr to 1.56mm/yr. The change is 0.1mm/yr or 1mm/10 year. Hence, the impact of project on the sedimentation inside the airport sea channel is minor.

Summary

9.9.3.17 In summary, only slight increases or decreases of the water quality parameters would occur as a result of the implementation of the project comparing to the base scenario. In addition, all parameters are expected to comply with the relevant criteria. Significant water quality impacts as a result of the implementation of the project are not anticipated.

9.9.4 Accidental Spillage

9.9.4.1 Under normal operating circumstances, significant impacts on water quality are not anticipated. In the event that a major spill occurs on the marine viaduct of HKLR and TMCLKL, a defined response plan is required in order to, not only be able to reopen the road as soon as possible to minimise disruption to traffic, but also to minimise effects on the marine ecological resources and water quality. All methods of spill clearance should be environmentally acceptable and should not lead to pollution of the marine environment. The following sections detail the procedures that would be applicable in this situation.

Chemical Spillages

9.9.4.2 For chemical spillages that do not pose fire, explosion or life risks, the spills should be contained, recovered and soaked-up for disposal as chemical waste. Under no circumstances should chemical spillages be washed into the natural streams, or any other natural or man-made water bodies or carrying systems.

Oil Spillages

9.9.4.3 In case of oil spillage, the use of chemical dispersants to break up the oil is not recommended as their use could impact on the surrounding environment and

compound the pollution situation. In addition, the oil spill should be contained in the location of the spill wherever possible.

9.9.4.4 For all spillages, the acceptable method of control is by “absorption” and then removal of the absorbed waste for disposal by special contractors. Absorption of the oil should be achieved by the use of sawdust or other suitable material. Advice on how to clean-up a chemical spillage if required can be sought from EPD. Contact should be made with EPD’s Chemical Waste Treatment Centre for assistance in disposing of the contaminated sawdust. Source of sawdust for use in case of emergencies can be obtained from Transport Department.

9.9.4.5 The management and maintenance authority for the venue/roads/parts would be responsible for clearing up a spillage in their responsible area.

9.9.4.6 The emergency call-out procedure in case oil/chemical spillage on roads in this area:

(a) Police

- to assess the impact of incident and then immediately inform:
 - FSD in case of fire hazard; and
 - TD in case of road closure:
- to set up a Mobile Command Post to co-ordinate the road closure and clearing up operations. All parties concerned might then liaise with the Command Post for updated information; and
- to inform EPD, FEHD and other departments to render assistance if necessary after the immediate traffic and rescue operations completed.

(b) Transport Department

- to inform HyD’s Emergency Co-ordination Centre;
- to liaise with the bus companies, MTRCL, relevant ferry operators on emergency public transport arrangements;
- to disseminate information of emergency public transport arrangements through GIS.

9.9.4.7 Not Used.

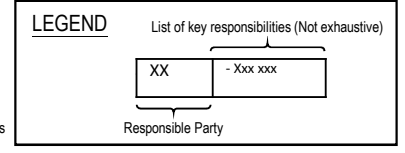
9.9.4.8 The above measures will reduce the magnitude of any impacts. Notwithstanding it is possible for some of the spilled material to be discharged into the marine environment via the viaduct drainage system. While oil interceptors are not feasible on the marine viaduct, the spill will decay through a variety of means including evaporation, adsorption onto suspended materials and emulsification. Adsorption of oils can be effective means for breaking up the spill. However, the natural process of the spill spreading reduces its thickness and allows the process of wind and wave action in breaking up the spill to increase as well as evaporation and dissolution. Dispersion of any spill will occur more rapidly in higher water flows which occur along the majority of the viaduct length but in lower water flows inside the bays, dispersion could take longer. Notwithstanding, it is likely that a spill would disperse in region of 3-4 days without any long term effects on water quality (ERM 1995).

9.9.4.9 Based upon this, the emergency response plan would be considered to be sufficient to reduce any impacts to acceptable levels.

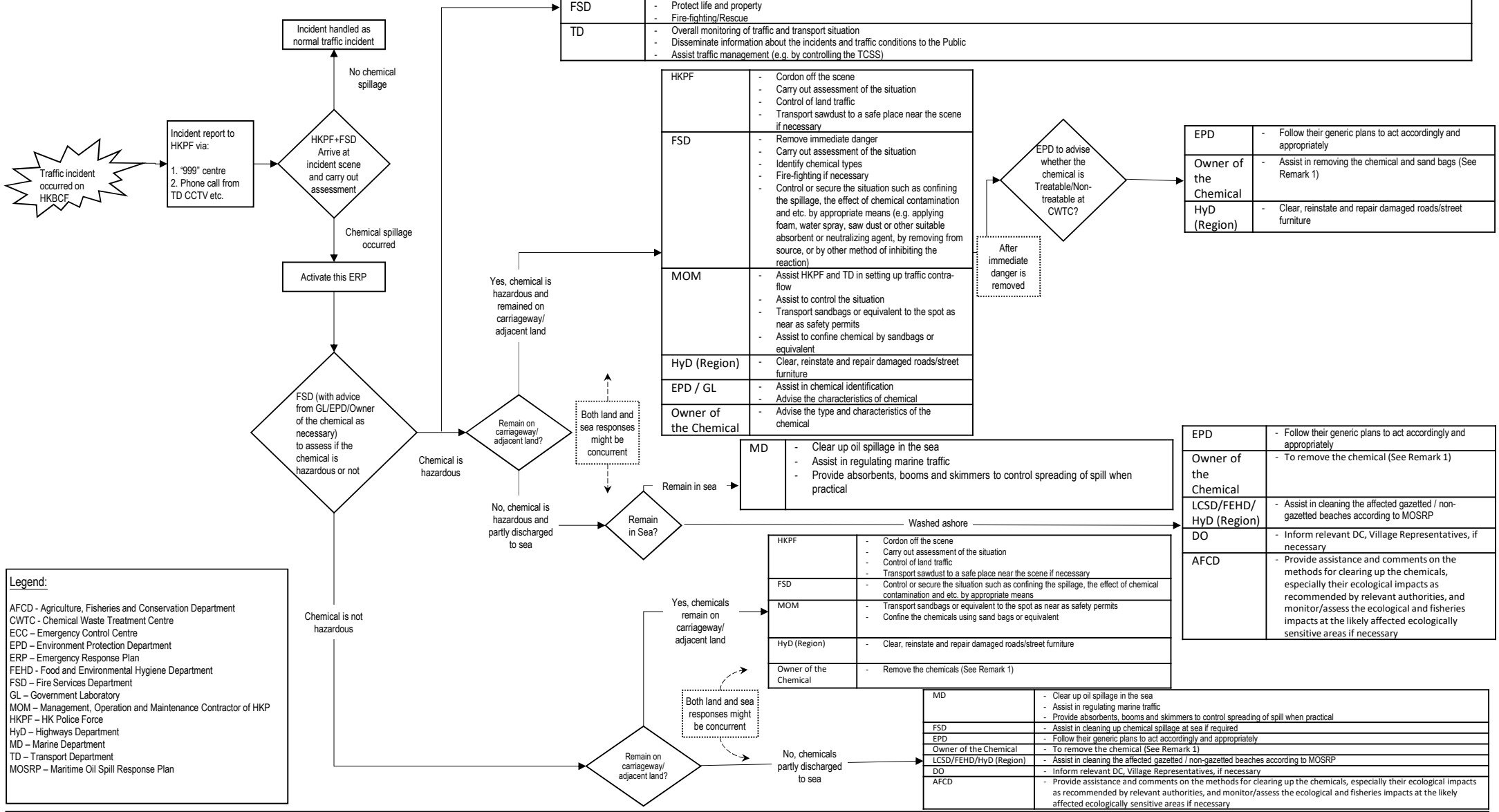
Appendix 2

Flow Chart for responsibilities of various parties in case of chemical spillage incident occurred on HZMB HKBCF

Appendix 2 – Flow Chart for Responsibilities of Various Parties in Case of Chemical Spillage Incident occurred on Hong Kong-Zhuhai-Macao Bridge, Hong Kong Boundary Crossing Facilities



Overriding responsibilities for all emergency situations (Specific responsibilities are listed below)	
HKPF	<ul style="list-style-type: none"> - Protect life and property - Keep traffic flowing quickly, smoothly and safety - To determine whether and what additional support and assistance from other departments / coordinate between different departments involved (e.g. Drainage Services Department, Airport Authority Hong Kong)
FSD	<ul style="list-style-type: none"> - Protect life and property - Fire-fighting/Rescue
TD	<ul style="list-style-type: none"> - Overall monitoring of traffic and transport situation - Disseminate information about the incidents and traffic conditions to the Public - Assist traffic management (e.g. by controlling the TCSS)

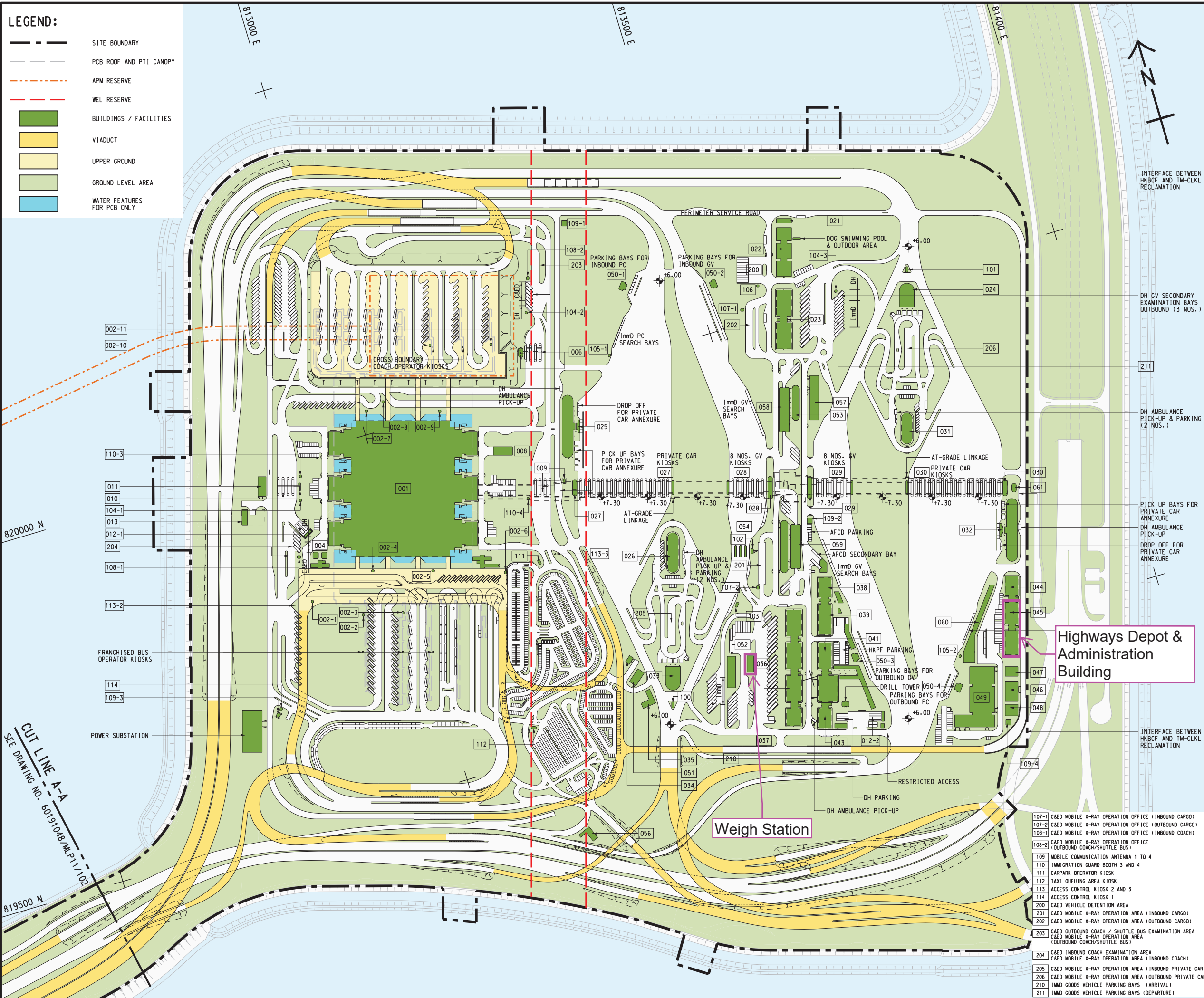


Legend:

- AFCD - Agriculture, Fisheries and Conservation Department
- CWTC - Chemical Waste Treatment Centre
- ECC - Emergency Control Centre
- EPD - Environment Protection Department
- ERP - Emergency Response Plan
- FEHD - Food and Environmental Hygiene Department
- FSD - Fire Services Department
- GL - Government Laboratory
- MOM - Management, Operation and Maintenance Contractor of HKP
- HKPF - HK Police Force
- HyD - Highways Department
- MD - Marine Department
- TD - Transport Department
- MOSRP - Maritime Oil Spill Response Plan

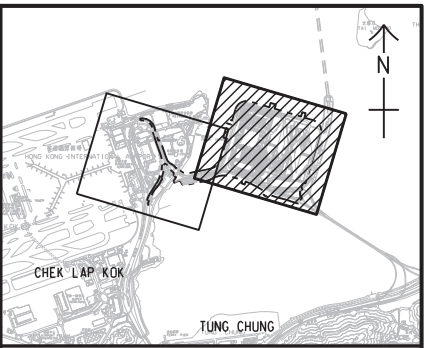
Remark:
 1. If the owner of the chemical does not possess suitable plant and machinery for the removal, the owner could hire contractor to do the job, or alternatively Government can do the job and then charge the owner accordingly. If the owner is reluctant to take action, relevant government authorities could prosecute the owner according to the relevant laws of Hong Kong.

Figures



LEGEND:

- SITE BOUNDARY
- PCB ROOF AND PTI CANOPY
- APM RESERVE
- WEL RESERVE
- BUILDINGS / FACILITIES
- VIADUCT
- UPPER GROUND
- GROUND LEVEL AREA
- WATER FEATURES FOR PCB ONLY



KEY PLAN
SCALE 1 : 50000

- LEGEND:**
- 001 PASSENGER CLEARANCE BUILDING
 - 002 CAED GUARD BOOTH 1 TO 11
 - 004 SHUN FAI ROAD PUBLIC TRANSPORT INTERCHANGE PUBLIC TOILET
 - 006 SHUTTLE BUS KIOSKS
 - 008 REFUSE STORAGE AND MATERIAL RECOVERY CHAMBER
 - 009 DEPARTURE COACH KIOSKS
 - 010 ARRIVAL COACH KIOSKS
 - 011 EMERGENCY GENERATOR ROOM
 - 012 DH DISINSECTION STATION 1 AND 2
 - 013 SEAWATER PUMP HOUSE
 - 021 CAED DANGEROUS GOODS STORE
 - 022 CAED CUSTOMS DETECTOR DOG DIVISION HZMD DOG BASE
 - 023 CAED OUTBOUND CARGO EXAMINATION BUILDING
 - 024 CAED OUTBOUND PRIVATE CAR EXAMINATION BUILDING
 - 025 ARRIVAL PRIVATE CAR PASSENGER CLEARANCE ANNEX
 - 026 IMMIGRATION BUILDING (ARRIVAL)
 - 027 ARRIVAL PRIVATE CAR KIOSKS
 - 028 ARRIVAL GOODS VEHICLE KIOSKS
 - 029 DEPARTURE GOODS VEHICLE KIOSKS
 - 030 DEPARTURE PRIVATE CAR KIOSKS
 - 031 IMMIGRATION BUILDING (DEPARTURE)
 - 032 DEPARTURE PRIVATE CAR PASSENGER CLEARANCE ANNEX
 - 033 CAED INBOUND PRIVATE CAR EXAMINATION BUILDING
 - 034 SATELLITE REFUSE COLLECTION POINT
 - 035 SEWAGE PUMPING STATION
 - 036 POLICE WEIGH STATION
 - 037 CAED INBOUND CARGO EXAMINATION BUILDING
 - 038 AFCD BUILDING
 - 039 POLICE BASE
 - 041 FIRE STATION CUM AMBULANCE DEPOT
 - 043 DH QUARANTINE BUILDING
 - 044 EAM MAINTENANCE BUILDING
 - 045 HIGHWAYS DEPOT AND ADMINISTRATION BUILDING
 - 046 VEHICLE CLEARANCE PLAZA REFUSE COLLECTION POINT
 - 047 FRESH WATER PUMPING STATION
 - 048 RECLAIMED WATER PUMPING STATION
 - 049 SEWAGE TREATMENT PLANT
 - 050-1 ARRIVAL PRIVATE CAR CLEARANCE PLAZA PUBLIC TOILET
 - 050-2 ARRIVAL GOODS VEHICLE CLEARANCE PLAZA PUBLIC TOILET
 - 050-3 DEPARTURE GOODS VEHICLE CLEARANCE PLAZA PUBLIC TOILET
 - 050-4 DEPARTURE PRIVATE CAR VEHICLE CLEARANCE PLAZA PUBLIC TOILET
 - 051 ZONE 5 TRANSFORMERS BUILDING
 - 052 ZONE 4 TRANSFORMERS BUILDING
 - 053 CAED OUTBOUND VEHICLE X-RAY EXAMINATION BUILDING
 - 054 CAED INBOUND VEHICLE X-RAY EXAMINATION BUILDING
 - 056 DEPRESSED ROAD DRAINAGE PUMP HOUSE CUM SWITCH ROOM
 - 057 ZONE 2 TRANSFORMERS BUILDING
 - 058 CAED OUTBOUND VEHICLE X-RAY SCANNING SYSTEM BUILDING
 - 059 CAED INBOUND VEHICLE X-RAY SCANNING SYSTEM BUILDING
 - 060 EAM AND HIGHWAYS MAINTENANCE SUPPORT BUILDING
 - 061 TELECOM BUILDING
 - 100 CAED INBOUND TRAFFIC CONTROL KIOSK
 - 101 CAED OUTBOUND TRAFFIC CONTROL KIOSK
 - 102 POLICE ENHANCED UNDER VEHICLE SURVEILLANCE SYSTEM MONITORING ROOM
 - 103 POLICE INSPECTION POST
 - 104 DH SECONDARY SCREENING STATION 1 TO 3
 - 105 IMMIGRATION GUARD BOOTH 1 AND 2
 - 106 CAED VEHICLE DETENTION AREA GUARD BOOTH

Highways Depot & Administration Building

Weigh Station

- 107-1 CAED MOBILE X-RAY OPERATION OFFICE (INBOUND CARGO)
- 107-2 CAED MOBILE X-RAY OPERATION OFFICE (OUTBOUND CARGO)
- 108-1 CAED MOBILE X-RAY OPERATION OFFICE (INBOUND COACH)
- 108-2 CAED MOBILE X-RAY OPERATION OFFICE (OUTBOUND COACH/SHUTTLE BUS)
- 109 MOBILE COMMUNICATION ANTENNA 1 TO 4
- 110 IMMIGRATION GUARD BOOTH 3 AND 4
- 111 CARPARK OPERATOR KIOSK
- 112 TAXI QUEUING AREA KIOSK
- 113 ACCESS CONTROL KIOSK 2 AND 3
- 114 ACCESS CONTROL KIOSK 1
- 200 CAED VEHICLE DETENTION AREA
- 201 CAED MOBILE X-RAY OPERATION AREA (INBOUND CARGO)
- 202 CAED MOBILE X-RAY OPERATION AREA (OUTBOUND CARGO)
- 203 CAED OUTBOUND COACH / SHUTTLE BUS EXAMINATION AREA (OUTBOUND COACH/SHUTTLE BUS)
- 204 CAED INBOUND COACH EXAMINATION AREA (INBOUND COACH)
- 205 CAED MOBILE X-RAY OPERATION AREA (INBOUND PRIVATE CAR)
- 206 CAED MOBILE X-RAY OPERATION AREA (OUTBOUND PRIVATE CAR)
- 210 IMM GOODS VEHICLE PARKING BAYS (ARRIVAL)
- 211 IMM GOODS VEHICLE PARKING BAYS (DEPARTURE)

REV.	DESCRIPTION	DATE	BY	CHECKED	DATE
01	路政署 HIGHWAYS DEPARTMENT				
02	香港機場管理局 HONG KONG AIRPORT AUTHORITY				
03	港珠澳大橋香港工程管理有限公司 Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office				

AGREEMENT NO. 13/2010 (CE)
HONG KONG - ZHUHAI - MACAO BRIDGE
HONG KONG BOUNDARY CROSSING FACILITIES
(SUPERSTRUCTURES AND INFRASTRUCTURES)
- DESIGN AND CONSTRUCTION

MASTER LAYOUT PLAN (DAY-1 SCENARIO)

SHEET 1 OF 2

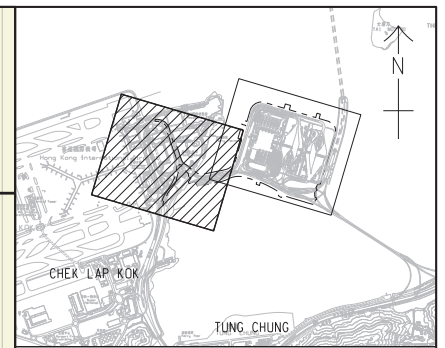
AECOM **Aedas**

Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI

DRG.NO. 圖紙編號	60191048/MLP11/101
DESIGNED BY 設計	CONTRACT NO. 合約編號
DRAWN BY 繪圖	STATUS 狀態
SCALE 比例	SCALE 比例
DIMENSIONS ARE IN 尺寸單位	METRES

Plot File by : 18/10/17 T:\- CADD\General Arrangement Plan\CSWP-75\color\ FOR GAP.plt
T:\- CADD\Contract 1\Request for job\170922_Master Layout Plan\60191048_MLP11_101.dgn

CUT LINE A-A
SEE DRAWING NO. 60191048/MLP11/102



KEY PLAN
SCALE 1 : 50000

NOTES:

1. FOR LEGEND REFER TO DRAWING NO. 60191048/MLP11/101.
2. THE FLYOVER SCHEME FROM HKIA PASSENGER TERMINAL TO HKBCTF WOULD NEED TO BE REVIEWED TO ENSURE COMPATIBILITY WITH THE HKIA MASTER PLAN 2030 AND WOULD NOT BE CONSTRUCTED UNDER THIS PROJECT. THE AIRPORT AUTHORITY IS NOW CARRYING OUT EIA STUDY FOR THE 3RD RUNWAY PROJECT. FUTURE ROAD NETWORK AND THE ASSOCIATED UTILITY WORKS WITHIN THE AIRPORT ISLAND WILL BE SUBJECT TO THE OUTCOME OF SCHEME DESIGN OF THE 3RD RUNWAY PROJECT.

CUT LINE A-A
SEE DRAWING NO. 60191048/MLP11/101

REV.	DESCRIPTION	D.C.	P.C.	DATE
修訂	內容摘要	檢核	繪製	日期

路政署 HIGHWAYS DEPARTMENT
港珠澳大橋香港工程管理有限公司
Hong Kong - Zhuhai - Macao Bridge Hong Kong Project Management Office

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- DESIGN AND CONSTRUCTION
MASTER LAYOUT PLAN
(DAY-1 SCENARIO)
SHEET 2 OF 2

AECOM +
Rogers Stirk Harbour + Partners
BURO HAPPOLD ATKINS ADI +
Aedas

DRG.NO. 60191048/MLP11/102
圖紙編號

DESIGNED BY 設計	CONTRACT NO. 合約編號	P. DIR. APPROVED 負責人
DRAWN BY 繪圖	STATUS 狀態	
SCALE 比例	A1 1 : 2500	
DIMENSIONS ARE IN 尺寸單位		METRES

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