Handling of Traffic Installations During Road Works

1. Introduction

During road works involving road opening, roadwork contractors or utilities undertakers (UUs) may encounter traffic installations, such as loops, cables or ductworks installed in public roads and footpaths. Where necessary, such installations will have to be diverted or disconnected on site and the roadwork contractors or UUs may wish to ascertain their ownership or managing agents because the traffic installations are not necessarily managed by the Transport Department (TD) alone. They may be managed by others. The following will provide guidelines for identifying and handling the installations, either managed by TD or not, that are found in public highways, both during normal road works and emergencies situations. Emergency situations are those incidents involving significant consequences that need immediate attention.

At present, some public roads are designated as Tunnel Areas and Control Areas, such as Tsing Ma Control Areas, etc. In the Tunnel Areas and Control Areas, incidents are handled by their Operators, whilst Government Departments will handle incidents outside these Areas. Therefore, Sections 2 and 3 below will describe how to deal with the traffic installations inside and outside Tunnel Areas and Control Areas respectively.

Where appropriate, the descriptions will be illustrated by photos showing the various traffic installations that may be encountered. In general, the roadwork contractors or UUs should first refer to the photos for initial recognition of the particular type of traffic installations found on site. If necessary, further enquiries should be made to the Tunnel Area and Control Area Operators or relevant Government Departments where appropriate. TD's First Contact Point (TDFCP) at 2410 0066 (24 hours) can assist in identification of installations outside Tunnel Areas and Control Areas in case of emergencies. The enquirers should indicate the name of the streets or junctions where the installations are found and briefly describe the installations (like loops, cables, ductworks, road side cabinets) in order for the responsible person to check against the records.

2. Traffic Installations Inside Tunnel Areas and Control Areas

The Operators of the Tunnel Areas and Control Areas keep their own records of all those traffic installations within their areas. The roadwork contractors or UUs should contact the relevant Operators for assistance before they commence any works associated with the traffic installations under any circumstances. A list of Tunnel Areas and Control Areas with details of 24 hours contacts are given in **Appendix I**.

3. Traffic Installations Outside Tunnel Areas and Control Areas

(a) Managed by TD

(i) Inductive Loop Detector System for Traffic Survey

Identification on Site

The system comprises of inductive loops installed on carriageway and a roadside cabinet. The loop is a series of wire buried just below the road surface (50mm for concrete pavement and 90mm for bituminous pavement). The loop is connected to a roadside cabinet in the form of metal housing seated on the footpath. Sometimes a draw-pit with

a cover marked "ATC" may also be found in the vicinity. The system is owned and managed by the Traffic Survey and Support Division (TSSD) of TD and maintained by a contractor. The details including contact telephone number 9831 8709 (24 hours) of TD's contractor can be found on the wall of the cabinet. Photos showing a typical loop cable, a roadside cabinet, and a draw-pit cover are given in **Annex A of Appendix II**.

Procedures

(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in writing or by facsimile to TSSD of TD at 2723 7472 (24 hours).

For normal road works under planning, the contractors or UUs should circulate their road opening proposals to TSSD of TD for identification of installations to be affected. The proposals should also be circulated to other concerned government departments for comments before implementation.

(2) For emergency repairs involving significant consequences

The contractors or UUs can remove the loops during emergency without prior notice to TD. They need to inform TDFCP at 2410 0066 (24 hours) and TD's contractor at 9831 8709 (24 hours) for such removal afterwards for record purpose. The contractors or UUs shall arrange to reinstate the loop detector system at their own cost to the satisfaction of TD and Electrical and Mechanical Services Department (EMSD) as soon as the roadwork is completed.

If it is unavoidable that the roadside cabinet needs to be relocated for the emergency works, the contractors or UUs shall inform the TD's contractor at 9831 8709 (24 hours) immediately for relocation of equipment inside the cabinet, and inform TDFCP at 2410 0066 (24 hours) of the course of action. As some of the equipment are powered by electricity, the contractors or UUs should handle them with care to avoid electric shocks and arrange the power company for such disconnection prior to relocation. The cabinet shall be reinstated by the contractors or UUs afterwards at their own cost to the satisfaction of TD. Also, the contractors or UUs shall at their own cost arrange the power company for re-connection of power supply to the cabinet.

(ii) Rubber Tube Detector System for Traffic Survey

Identification on Site

The system comprises of rubber tubes installed on carriageway and a roadside cabinet. The tube is a thick walled rubber tube stretched across the carriageway and held in position by clamps nailed into the pavement. The tubes are connected to a roadside cabinet in the form of metal housing seated on footpath. The system is not associated with or installed at road junctions. The system is owned and managed by TSSD of TD and maintained by a survey contractor. The details including contact telephone number 9831 8709 (24 hours) can be found on the wall of the cabinet. This system is not powered by electricity. Photo showing a typical roadside cabinet and rubber tube detector is given in **Annex B of Appendix II**.

Procedures

(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in writing or by facsimile to TSSD of TD at 2723 7472 (24 hours).

(2) For emergency repairs involving significant consequences

The contractors or UUs can remove the tubes during emergency without prior notice to TD. They need to inform TDFCP at 2410 0066 (24 hours) and TD's contractor at 9831 8709 (24 hours) for such removal afterwards for record purpose. The tubes shall be reinstated by the TD's contractor at the cost of the contractors or UUs.

If it is unavoidable that the roadside cabinet needs to be relocated for the emergency works, the contractors or UUs shall inform the TD's contractor at 9831 8709 (24 hours) immediately for collection of the cabinet, and inform TDFCP at 2410 0066 of the course of action.

(iii) Traffic Light Control System at Junctions or Crossings not Related to Light Rail Transit

Identification on Site

The system comprises of inductive loops, traffic lights with poles, controller cabinet and underground cables. The loops are of the same construction as for the traffic surveys mentioned in (a) (i) above. They are connected to a roadside cabinet in the form of metal housing seated on footpath and are located at road junctions or pedestrian crossings not related to Light Rail Transit (LRT). The traffic light poles are installed near kerb side of footpaths or at central islands. They are connected to each other and to the roadside cabinet by underground cables inside ducts across the junction. Photos showing typical traffic light posts and roadside cabinets are given in **Annex C of Appendix II**.

Procedures

(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in writing to the Traffic Control Division (TCD) of TD. Telephone enquiries should be made to TCD at 3842 6109 (office hours) or EMSD at 2333 3762 (24 hours).

For normal road opening works under planning, the contractors or UUs should circulate their road opening proposals to TCD of TD for identification of installations to be affected. The proposals should also be circulated to other concerned government departments for comments before implementation.

(2) For emergency repairs involving significant consequences

For loop detectors, the contractors or UUs can remove these during emergency without prior notice to TD. However, they should inform EMSD at 2333 3762 (24 hours) and TDFCP at 2410 0066 (24 hours) as soon as practicable as TD will need to adjust traffic plans if appropriate. The contractors or UUs shall arrange to reinstate the loop system at their own cost to TD's and EMSD's satisfaction as soon as the roadwork is completed.

If it is unavoidable that the roadside cabinet or traffic light posts need to be relocated for the emergency works, the contractors or UUs shall inform TDFCP at 2410 0066 (24 hours) immediately and contact EMSD at 2333 3762 (24 hours) for relocation of traffic signals or equipment inside the cabinet. As some of the equipment are powered by electricity, the contractors or UUs should handle them with care to prevent electric shocks and arrange the power company for such disconnection prior to relocation works by EMSD. The cabinet and signal posts should be reinstated by the contractors or UUs afterwards at their own cost to the satisfaction of TD and EMSD. Also, the contractors or UUs shall at their own cost arrange the power company for re-connection of power supply to the system.

For underground cables, they normally carry electricity. The contractors or UUs should take precautions to prevent electric shocks when handling any cables discovered underground. The cables, whether armoured or not, can be supported temporarily to allow emergency works to be carried out. The contractors or UUs should plan their emergency repairs to avoid disconnection of the cables as far as possible. In case that disconnection of cables is inevitable, the contractors or UUs should first notify the concerned power company for arranging disconnection. It is however not necessary to give prior notice to TD before carrying the works. However, they need to report to TDFCP at 2410 0066 (24 hours) immediately upon disconnection. Also, the contractors or UUs shall at their own cost arrange the power company for re-connection of power supply to the system, and such works can only be made under the supervision of TD and EMSD.

In case the contractors or UUs expect that their works will disrupt the operation of the traffic lights, they should first inform the Traffic Police. Before the Traffic Police arrive on site to control the road junction manually, the contractors or UUs should not commence any the works that may affect the traffic light operations.

(iv) Traffic Light Control System at Junctions with Light Rail Transit

Identification on Site

This system is similar to that described in (a) (iii) above, except that it is located at a road junction with Light Rail Transit. For normal and emergency repairs in the 'vicinity' of the Light Rail[1], the contractors or UUs should obtain consent from the Mass Transit Railway Corporation (MTRC) before carrying out repair works.

[1] *The 'vicinity' of the Light Rail is defined as (1) below, inside or within the airspace above the Light Rail Reserve; (2) within 6 m of any MTRC Light Rail track or equipment; (3) within 50 m of any MTRC Light Rail/Road junction; (4) within 2 m of any overhead electrical equipment, including support poles; and (5) any deep excavation, piling, dewatering and/or major works within 50 m of any MTRC Light Rail track.*

Procedures

(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in writing to TCD of TD. Telephone enquiries should be made to TCD at 3842 6109 (office hours) or EMSD at 2333 3762 (24 hours) or MTRC at 2468 7700 (24 hours).

For normal road opening works under planning, the contractors or UUs should circulate their road opening proposals to TCD of TD and MTRC for identification of installations to be affected. The proposals should also be circulated to other concerned government departments for comments before being implemented.

(2) For emergency repairs involving significant consequences

The procedures to deal with this system during emergency are similar to those mentioned in (iii) above, except that both MTRC at 2468 7700 (24 hours) and EMSD at 2333 3762 (24 hours) are to be contacted first before any action to be taken to remove the system or disconnect the cables. TDFCP at 2410 0066 (24 hours) should also be informed of the course of action. The system should be reinstated by the contractors or UUs at their own cost to the satisfaction of TD, EMSD and MTRC afterwards. The contractors or UUs shall arrange to reinstate the loop system at their own cost to TD's and EMSD's satisfaction as soon as the road work is completed.

For underground cables, they normally carry electricity. The contractors or UUs should take precautions to prevent electric shocks when handling any cables discovered underground. The cables, whether armoured or not, can be supported temporarily to allow emergency works to be carried out. The contractors or UUs should plan their emergency repairs to avoid disconnection of the cables as far as possible. In case that disconnection of cables is inevitable, the contractors or UUs should first report to the MTRC at 2468 7700 (24 hours) and, EMSD at 2333 3762 (24 hours), and notify the concerned power company for arranging disconnection. The contractors or UUs can then carry out the works without further notice to TD, after having taken the necessary precautions. However, they need to report to TDFCP at 2410 0066 (24 hours), EMSD at 2333 3762 (24 hours) and MTRC at 2468 7700 (24 hours) immediately upon disconnection. When the cables are to be re-connected, the connections can only be made under the supervision of TD and EMSD afterwards. Also, the contractors or UUs shall at their own cost arrange the power company for re-connection of power supply to the system.

In case the contractors or UUs expect that their works will disrupt the operation of the traffic lights, they should first inform the Traffic Police and MTRC. Before the Traffic Police arrive on site to control the road junction manually, the contractors or UUs should not commence any the works that may affect the traffic light operations.

(v) Cables for Closed-circuit Television (CCTV) System

Identification on Site

Power cables and fibre optic telecommunication cables are installed in 100mm diameter PVC cable ducts buried underground along or across roads in the vicinity of CCTV camera kiosks and masts, and are connected to draw-pits with 'ATC' or 'TCS' marked on the covers. The ducts along roads are normally along the edge of the carriageway including hard shoulder. In addition, some ducts which serve CCTV cameras but are not located under roads can be identified by the existence of the camera and kiosk close to each other. A photo showing a typical CCTV is given in **Annex D of Appendix II.**

Procedures

(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in writing to TCD of TD. Telephone enquiries should be made to TCD at 3842 6109 (office hours) or EMSD at 2333 3762 (24 hours).

For normal road opening works under planning, the contractors or UUs should circulate their road opening proposals to TCD of TD for identification of installations to be affected. The proposals should also be circulated to other concerned government departments for comments before being implemented.

(2) For emergency repairs involving significant consequences

The contractors or UUs should contact TDFCP at 2410 0066 (24 hours) to get agreement for disconnections. They should also inform EMSD at 2333 3762 (24 hours) accordingly. The contractors or UUs should reinstate the cables and draw-pits (if damaged) after the emergency repairs at their own cost to the satisfaction of TD and EMSD.

For underground cables, they normally carry electricity. The contractors or UUs should take precautions to prevent electric shocks when handling any cables discovered underground. The cables, whether armoured or not, can be supported temporarily to allow emergency works to be carried out. The contractors or UUs should plan their emergency repairs to avoid disconnection of the cables as far as possible. In case that disconnection of cables is inevitable, the contractors or UUs should first notify the concerned power company for arranging disconnection. It is however not necessary to give prior notice to TD before carrying out the works However they need to report to TDFCP at 2410 0066 (24 hours) immediately upon disconnection. Also, connections can only be made under the supervision of TD and EMSD afterwards. The contractors or UUs shall at their own cost arrange the power company for re-connection of power supply to the system.

(vi) Cables for Emergency Telephone (ET) Systems

Identification on Site
Each of the systems comprises a telephone housed inside a small roadside cabinet mounted on a pole. The systems are no more functional and power supplies to the field equipment had all been terminated. The cables and ducts are reserved for possible installation of the future optical fibre ring network to the Strategic Road Network. Trunk ET cables are normally laid in 100 mm diameter reserved cable duct in dual-duct configuration inside parapets of elevated roads, under verges or footpaths if present, or under carriageways in case of cross road cables. However, there are exceptional cases. For instance, there are some ET ducts in triple-duct configuration and/or of size other than 100 mm diameter. Besides, some draw-pit covers of the ET ducting carry the inscription of "TCS" and some are simply left blank. Photos showing a typical ET system are given in **Annex E of Appendix II**.

Procedures
(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in writing or by facsimile to the MP1 Section of Major Projects Division (MPD) of TD at 2827 9237 (24 hours).

For normal road opening works under planning, the contractors or UUs should circulate their road opening proposals to MPD of TD for identification of installations to be affected. The proposals should also be circulated to other concerned government departments for comments before being implemented.

(2) For emergency repairs involving significant consequences

The contractors or UUs can temporarily support the cables or to disconnect the cables during emergency. It is however not necessary to give prior notice to TD before carrying out the works. The contractors or UUs should reinstate or divert the facilities after the emergency works at their own cost to the satisfaction of TD, and inform TDFCP at 2410 0066 (24 hours) accordingly.

(vii) Traffic Control and Surveillance System (TCSS)

TCSS is a kind of Intelligent Transport System (ITS) with the objectives to increase the efficiency of traffic management, improve the overall capacity of the road system and enhance road safety. The TCSS field facilities outside Control Areas include Variable Message Sign (VMS), Full Variable Message Sign (FVMS), Lane Control Switch (LCS) and Variable Speed Limit Sign (VSLS) on the open highways. Photos showing the typical VMS, FVMS, LCS and VSLS are given in **Annex F of Appendix II.**

Procedures
(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in writing or by facsimile to the MP1 Section of Major Projects Division (MPD) of TD at

2827 9237 (24 hours).

(2) For emergency repairs involving significant consequences

The contractors or UUs should contact TDFCP at 2410 0066 (24 hours) to get agreement for disconnections. They should also inform EMSD at 2333 3762 (24 hours) accordingly. The contractors or UUs should reinstate the cables, cabinets and draw-pits (if damaged) after the emergency repairs at their own cost to the satisfaction of TD and EMSD.

(viii) Traffic bollards

Identification on Site
The bollards are located at central islands of road junctions. Power cables are connected to the bollards with cable ducts buried underground. A photo showing a typical bollard is given in **Annex G of Appendix II**.

Procedures
(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in writing to Highways Department (HyD), EMSD or the relevant Regional Office of TD. Telephone enquiries should be made to HyD at 2926 4111 (24 hours), EMSD at 2333 3762 (24 hours) or the relevant Regional Office of TD.

For normal road opening works under planning, the contractors or UUs should circulate their road opening proposals to the relevant Regional Office of TD, EMSD and HyD for identification of installations to be affected. The proposals should also be circulated to other concerned government departments for comments before being implemented.

(2) For emergency repairs involving significant consequences

When it is necessary to disconnect any cables, the contractors or UUs should first notify the concerned power company for arranging disconnection. After having provided the necessary temporary lighting and signing on site, the contractors or UUs can disconnect and remove cables or bollards without prior notice to TD. They should inform EMSD at 2333 3762 (24 hours), TDFCP at 2410 0066 (24 hours) and HyD at 2926 4111 (24 hours) afterwards. The contractors or UUs should reinstate the cables or bollards after the emergency repairs at their own cost to the satisfaction of HyD, TD and EMSD.

For underground cables, they normally carry electricity. The contractors or UUs should take precautions to prevent electric shocks when handling any cables discovered underground. The cables, whether armoured or not, can be supported temporarily to allow emergency works to be carried out. The contractors or UUs should plan their emergency repairs to avoid disconnection of the cables as far as possible. In case that disconnection of cables is inevitable, the contractors or UUs should first notify the concerned power company for arranging disconnection. It is however not necessary to give prior notice to TD before carrying out the works. The contractor or UUs shall at their own cost arrange the power company for re-connection of power supply to the traffic bollards.

(ix) Illuminated Traffic Signs

Identification on Site
The traffic signs are illuminated by lights installed on the same post of the sign. Power cables are connected to the signs with cable ducts buried underground. A photo showing a typical illuminated traffic sign is given in **Annex H of Appendix II**.

Procedures
(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in writing to HyD or TD's relevant Regional Office. Telephone enquiries should be made to HyD at 2926 4111 (24 hours) or TD's relevant regional office.

For normal road opening works under planning, the contractors or UUs should circulate their road opening proposals the relevant Regional Office of TD and HyD for identification of installations to be affected. The proposals should also be circulated to other concerned government departments for comments before being implemented.

(2) For emergency repairs involving significant consequences

When it is necessary to disconnect any cables, the contractors or UUs should first notify the concerned power company for arranging disconnection. It is not necessary to give prior notice to TD before disconnecting and removing cables or signs. However the contractors or UUs should afterwards inform HyD at 2926 4111 (24 hours) and TDFCP at 2410 0066 (24 hours). The contractors or UUs should reinstate the cables or signs after the emergency repairs at their own cost to the satisfaction of HyD and TD.

For underground cables, they normally carry electricity. The contractors or UUs should take precautions to prevent electric shocks when handling any cables discovered underground. The cables, whether flexible or armoured, can be supported temporarily to allow emergency works to be carried out. The contractors or UUs should plan their emergency repairs to avoid disconnection of the cables as far as possible. In case that disconnection of cables is inevitable, the contractors or UUs should first notify the concerned power company for arranging disconnection. It is however not necessary to give prior notice to TD before carrying out the works. Also, the contractors or UUs shall at their own cost arrange the power company for re-connection of power supply to the traffic signs.

(x) Journey Time Indication System (JTIS)

Identification on Site
The system comprises of journey time indicators and detectors installed at sign gantries and connected to roadside cabinets with power cables and fibre optic telecommunication cables. The cables are installed in 100mm diameter PVC cable ducts buried along or across roads and are sometimes connected to draw-pits with "JTIS" marked on the covers. A photo showing a typical JTIS is given in **Annex I of Appendix II**.

Procedures

(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in writing to TSSD of TD. Telephone enquiries should be made to TSSD at 3842 6276 (office hours) or EMSD at 2333 3762 (24 hours).

For normal road opening works under planning, the contractors or UUs should circulate their road opening proposals to TSSD of TD for identification of installations to be affected. The proposals should also be circulated to other concerned government departments for comments before implementation.

(2) For emergency repairs involving significant consequences

The contractors or UUs can disconnect the equipment without prior notice to TD. They need to inform EMSD at 2333 3762 (24 hours) for such removal afterwards for record purpose. The contractors or UUs should reinstate the cables and draw-pits (if damaged) after the emergency repairs at their own cost to the satisfaction of TD and EMSD.

The underground cables, whether armoured or not, can be supported temporarily to allow emergency works to be carried out. The contractors or UUs should plan their emergency repairs to avoid disconnection of the underground cables and relocation of the cabinets as far as possible. If it is unavoidable that the roadside cabinet needs to be relocated or the underground cables needs to be disconnected for the emergency works, the contractors or UUs shall inform EMSD at 2333 3762 (24 hours) of the course of action. Since some of the equipment inside the cabinets and underground cables normally carry electricity, the contractors or UUs should handle them with care to avoid electric shocks when handling the equipment and arrange the power company for such disconnection prior to relocation. The cabinet and underground cables shall be reinstated by the contractors or UUs afterwards at their own cost to the satisfaction of TD. Also, the contractors or UUs shall at their own cost arrange the power company for re-connection of power supply to the cabinet.

(xi) Speed Map Panel (SMP) System

Identification on Site

The system comprises of speed map panels and detectors installed at sign gantries or masts, and connected to roadside cabinets with power cables and fibre optic telecommunication cables. The cables are installed in 100mm diameter PVC cable ducts buried along or across roads and are sometimes connected to draw-pits with "SMP" marked on the covers. A photo showing a typical SMP is given in **Annex J of Appendix II**.

Procedures

(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in

writing to TSSD of TD. Telephone enquiries should be made to TSSD at 3842 6276 (office hours) or EMSD at 2333 3762 (24 hours).

For normal road opening works under planning, the contractors or UUs should circulate their road opening proposals to TSSD of TD for identification of installations to be affected. The proposals should also be circulated to other concerned government departments for comments before implementation.

(2) For emergency repairs involving significant consequences

The contractors or UUs can disconnect the equipment without prior notice to TD. They need to inform EMSD at 2333 3762 (24 hours) for such removal afterwards for record purpose. The contractors or UUs should reinstate the cables and draw-pits (if damaged) after the emergency repairs at their own cost to the satisfaction of TD and EMSD.

The underground cables, whether armoured or not, can be supported temporarily to allow emergency works to be carried out. The contractors or UUs should plan their emergency repairs to avoid disconnection of the underground cables and relocation of the cabinets as far as possible. If it is unavoidable that the roadside cabinet needs to be relocated or the underground cables needs to be disconnected for the emergency works, the contractors or UUs shall inform EMSD at 2333 3762 (24 hours) of the course of action. Since some of the equipment inside the cabinets and underground cables normally carry electricity, the contractors or UUs should handle them with care to avoid electric shocks when handling the equipment and arrange the power company for such disconnection prior to relocation. The cabinet and underground cables shall be reinstated by the contractors or UUs afterwards at their own cost to the satisfaction of TD. Also, the contractors or UUs shall at their own cost arrange the power company for re-connection of power supply to the cabinet.

(xii) Traffic Detector System

Identification on Site

The system comprises of traffic detectors, communication module and power module mounted at sign gantries and lampposts, the power of the detectors are supplied from the public lighting generally. Photos showing a typical installation are given in **Annex K of Appendix II**.

Procedures

(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in writing to TSSD of TD. Telephone enquiries should be made to TSSD at 3842 6276 (office hours) or EMSD at 2333 3762 (24 hours).

For normal road opening works under planning, the contractors or UUs should circulate their road opening proposals to the TSSD of TD for identification of installations to be affected. The proposals should also be circulated to other concerned government departments for comments before implementation.

(2) For emergency repairs involving significant consequences

The contractors or UUs can disconnect the equipment without prior notice to TD. They need to inform EMSD at 2333 3762 (24 hours) for such removal afterwards for record purpose. The contractors or UUs should reinstate the system (if damaged) after the emergency repairs at their own cost to the satisfaction of TD and EMSD.

(xiii) Bus-Bus-Interchange (BBI) Display System

Identification on Site
The system comprises 2 or 3 display panels installed under the covered walkway of the Bus-Bus-Interchange (BBI) near Tai Lam section on Tuen Mun Highway and connected to roadside cabinets with power cables and fibre optic telecommunication cables. The system is being maintained by EMSD. Photos showing typical BBI panels are given in **Annex L of Appendix II.**

Procedures
(1) For normal road works

Requests for information and temporary suspension of service should be submitted in writing to Smart Mobility Division (SMD) of TD. Telephone enquiries should be made to EMSD at 2333 3762 (24 hours) or SMD at 3842 6412 (office hours).

For normal road opening works, under planning, the contractors or UUs should circulate their road opening proposals to the SMD of TD for identifications or installations to be affected. The proposals should also be circulated to other concerned government departments for comments before being implemented.

(2) For emergency repairs involving significant consequences

The contractors or UUs should notify EMSD at 2333 3762 (24 hours) to get agreement for disconnections. They should also inform TD at 3842 6412 (office hours) accordingly. The contractors or UUs should reinstate the cables and draw-pits (if damaged) after the emergency repairs at their own cost to the satisfaction of TD.

(xiv) Traveller Information Kiosk

Identification on Site
There are 17 kiosks installed at 15 locations. The system comprises a metal casing and electricity pillar box connected (usually) via underground conduit. The locations of the kiosks are as follows:

Hong Kong International Airport Terminal 1 Arrival Hall (2 numbers)	Tuen Mun Road Bus-Bus Interchange (both bound)
Yau Lai Arcade	Tsim Sha Tsui Ferry Pier

Sha Tin MTR Station	Ocean Park Entrance
Hong Kong Convention and Exhibition Centre	Municipal Building, Stanley Market
Central Ferry Pier	Sai Kung Town Centre
Peak Galleria	Arrival Hall, Hung Hom MTR station
Tung Chung near Ngong Ping 360	Opposite to Wong Tai Sin Temple
Footbridge near Exchange Square, Central	

A photo showing a typical kiosk system is given in **Annex M of Appendix II**.

Procedures

(1) For normal road works

Requests for information and temporary suspension/relocation should be submitted in writing to SMD of TD. Telephone enquiries should be made to SMD at 3842 6412 (office hours) or Autotoll Ltd at 2111 3604 (24 hours).

For normal road opening works, under planning, the contractors or UUs should circulate their road opening proposals to the SMD of TD for identifications or installations to be affected. The proposals should also be circulated to other concerned government departments for comments before being implemented.

(2) For emergency repairs involving significant consequences

The contractors or UUs should notify Autotoll Ltd at 2111 3604 (24 hours) to get agreement for disconnections. They should also inform SMD of TD at 3842 6412 (office hours) accordingly. The contractors or UUs should reinstate the cables and draw-pits (if damaged) after the emergency repairs at their own cost to the satisfaction of TD.

(b) Managed by Others

(i) ***Red light Camera System***

Identification on Site

The system, i.e. Red Light Camera generations 1 to 4 (RLC1 to RLC4), comprises of inductive loop/radar detectors, a post with a red light camera housing on top, and associated cables buried underground. For RLC1 to RLC3, only inductive loop detectors are used. For RLC4, radars instead of loop detectors may be used on some sites. The configuration of the loops on the road surface is similar to that mentioned in (a) (iii) above. They are located at road junctions and are connected to a post on the footpath mounted with a red light camera (for RLC1 and RLC2) or connected to a road side cabinet (for RLC3 and RLC4). Radars are installed on top of a traffic light pole on the opposite side of the junction, having its signal peak pointing towards the junction. The cables are installed in 100 mm diameter cable ducts buried underground along footpath in the vicinity of the camera post. They are connected to draw-pits with "HKPF" marked on the covers. The camera is powered by electricity. The system is managed

by the Police. Photos showing typical RLC1 to RLC4 are given in **Annex A of Appendix III**.

Procedures

(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted in writing to the Traffic Police. Telephone enquiries should be made to the Traffic Police at 3661 5565 (office hours).

For normal road opening works under planning, the contractors or UUs should circulate their road opening proposals to the Traffic Police for identification of installations to be affected. The proposals should also be circulated to other concerned government departments for comments before being implemented.

(2) For emergency repairs involving significant consequences

The loop/radar detectors, camera posts and cables can be removed first and inform the Police traffic headquarters afterwards at 3661 5565 (office hours). The contractors or UUs should arrange the relevant power company for power disconnection if necessary. The responsible party, contractors or UUs should ensure that the systems are re-installed and power supply re-connected at their own cost after the emergency repairs to normal operation status and to the satisfaction of the Police.

For the reinstatement of loops, the contractors or UUs shall arrange to reinstate the loop system at their own cost to the Police's and EMSD's satisfaction as soon as the roadwork is completed.

For underground cables, they normally carry electricity. The contractors or UUs should take precautions to prevent electric shocks when handling any cables discovered underground. The cables, whether armoured or not, can be supported temporarily to allow emergency works to be carried out. The contractors or UUs should plan their emergency repairs to avoid disconnection of the cables as far as possible. In case that disconnection of cables is inevitable, the contractors or UUs should first notify the concerned power company for arranging disconnection. It is not necessary to give prior notice to the Traffic Police before carrying out the works.

(ii) ***Speed Enforcement Camera System***

Identification on Site

The system, i.e. Speed Enforcement Camera generations 2 and 3 (SEC2 and SEC3), comprises of a post with a speed enforcement camera housing and a radar detector on top, and associated cables buried underground in 100 mm diameter cable ducts. The cables are connected to draw-pits with "HKPF" marked on the covers. The camera and the radar are powered by electricity. The system is managed by Police. Photos showing typical SEC2 and SEC3 are given in **Annex B of Appendix III**.

Procedures

(1) For normal road works

Requests for information and temporary diversion/relocation should be submitted to the Traffic Police or telephone enquiries should be made to the Traffic Police at 3661 5565 (office hours) if the contractors or UUs consider that their works on site have affected or may affect the speed enforcement camera systems.

For normal road opening works under planning, the contractors or UUs should circulate their road opening proposals to the Traffic Police for identification of installations to be affected. The proposals should also be circulated to other concerned government departments for comments before being implemented.

(2) For emergency repairs involving significant consequences

The camera posts, radar detectors and cables can be removed/relocated first and inform the Police traffic headquarters afterwards at 3661 5565 (office hours). The contractors or UUs should arrange the relevant power company for power disconnection if necessary. The responsible party, contractors or UUs should ensure that the systems are re-installed and power supply re-connected at their own cost after the emergency repairs to normal operation status and to the satisfaction to the Traffic Police.

For underground cables, they normally carry electricity. The contractors or UUs should take precautions to prevent electric shocks when handling any cables discovered underground. The cables, whether armoured or not, can be supported temporarily to allow emergency works to be carried out. The contractors or UUs should plan their emergency repairs to avoid disconnection of the cables as far as possible. In case that disconnection of cables is inevitable, the contractors or UUs should first notify the concerned power company for arranging disconnection. It is however not necessary to give prior notice to the Traffic Police before carrying out the works.

4. Summary of Emergency Procedures for Handling Installations outside Tunnel Areas and Control Areas

For easy reference by the roadwork contractors or UUs, a summary of the procedures for handling traffic installations outside Tunnel Areas and Control Areas during emergency situations is shown in **Appendix IV**.

Appendix I

Tunnel Areas and Control Areas

Control Room Telephone Numbers (24 hours)

Tunnel Areas / Control Areas	Control Room Telephone Numbers
Aberdeen Tunnel	2555 3559
Central-Wan Chai Bypass Tunnel	2406 7688
Cross Harbour Tunnel	2333 4141
Discovery Bay Tunnel	2980 6812 / 2980 6813
Eastern Harbour Crossing	2379 2317 / 2775 5910
Kai Tak Tunnel	2755 8126
Lion Rock Tunnel	2336 0078
Lung Shan Tunnel and Cheung Shan Tunnel	2945 3138
Scenic Hill Tunnel and Airport Tunnel	3756 7120 / 3756 7122
Shing Mun Tunnels	2494 3666 / 2494 3622
Tai Lam Tunnel	2483 8733 / 2483 8722
Tate's Cairn Tunnel	2635 5218 / 2635 5219
TMCA – Cheung Tsing Control Room	2436 5475
TMCA – Lantau Control Room	2436 5326
TMCA – Tsing Yi Control Room	2436 5461
TSCA – Nam Wan Administration Building	3148 2318 / 3148 2319
TSCA – Sha Tin Administration Building	3140 1218 / 3140 1219
Tseung Kwan O Tunnel	2772 8666
Tuen Mun-Chek Lap Kok Tunnel	3192 3402
Western Harbour Crossing	2302 5760 / 2302 5759

Inductive Loop Detector System for Traffic Survey

ATC Loop and Roadside Cabinet

Close-up of Roadside Cabinet

Close-up of Loop

Rubber Tube Detector for Traffic Survey

Traffic Light Control System at Junctions or Crossings

Traffic Light Post and Roadside Cabinet at Junction

Loop

Notice on Roadside Cabinet

Drawpit Cover

Closed-circuit Television (CCTV) System

Emergency Telephone System

Telephone mounted on a post

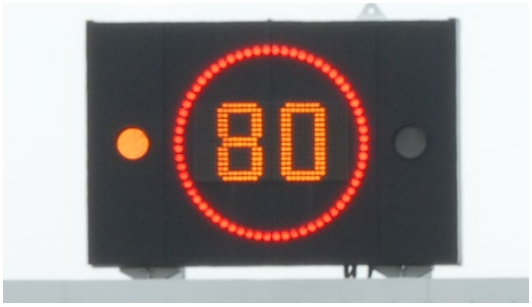
Close-up of Emergency Telephone

Traffic Control and Surveillance System (TCSS)

VMS

FVMS

LCS



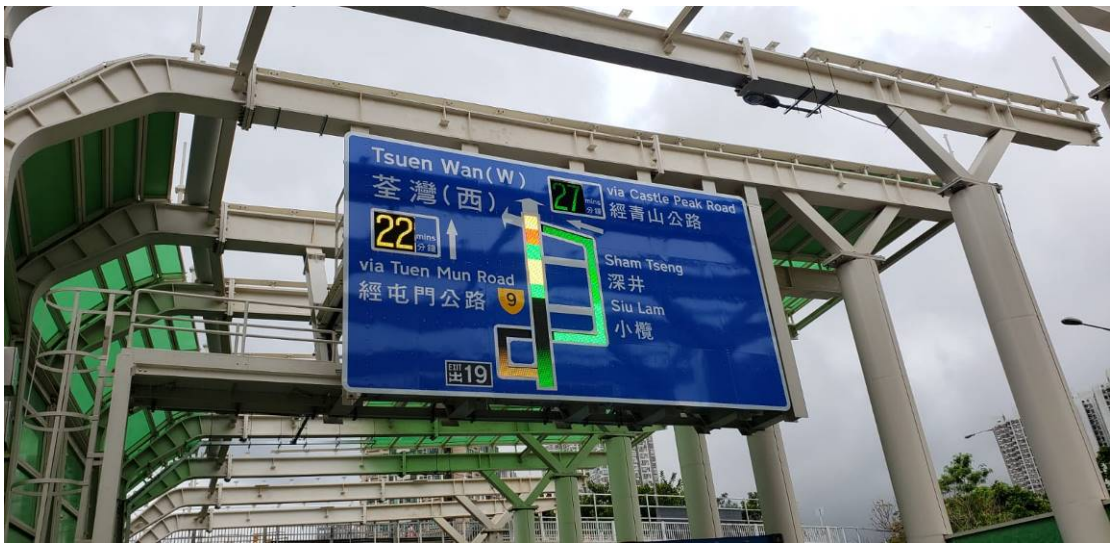
VSLS

Traffic Bollard

Illuminated Traffic Sign

Journey Time Indication System (JTIS)

Speed Map Panel (SMP) System



Traffic Detector System

Annex L of Appendix II

Bus-Bus-Interchange (BBI) Display System

Traveller Information Kiosk

Red Light Camera System

Camera (RLC1 / RLC2)

Camera (RLC3)

Camera (RLC4 - Type A)

Standalone Camera Post

Camera (RLC4 - Type B)

Camera Post with Integrated Roadside Cabinet

Loop at Junction

Radar

Roadside Cabinet

Speed Enforcement Camera (SEC2)

Camera with Radar, Flash Pole and Roadside Cabinet

Roadside Cabinet

Drawpit

Speed Enforcement Camera (SEC3)

Camera and Radar

Summary of Procedures to Handle TD's Installations Outside Tunnel Areas and Control Areas During Emergency

	Installations	Description	Procedures
(a)	Managed by TD		
(i)	Inductive Loop Detector System for Traffic Survey	Loops – series of wire buried just below road surface, and connected to a roadside cabinet.	Can be removed without prior notice. Inform TDFCP and TSSD's contractor later for record. Arrange/carry out reinstatement of loops afterwards.
		Cabinet – metal housing seated on footpath connected to loops, and powered by electricity. Details including contact telephone number of TSSD's contractor on the wall of cabinet.	Handle with care to avoid electric shocks. Contact TSSD's contractor immediately for relocation of equipment inside the cabinet. Arrange disconnection of power supply to the cabinet. Inform TDFCP for record. Reinstatement of the cabinet afterwards.
(ii)	Rubber Tube Detector System for Traffic Survey	Rubber Tube – thick wall rubber tube installed on carriageway by clamps nailed into pavement. Connected to a roadside cabinet. Located away from road junction.	Can be removed without prior notice. Inform TDFCP and TSSD's contractor later for record. Reinstatement of rubber tubes by TSSD's contractor at the UUs cost.
		Cabinet – small metal housing seated on footpath connected to rubber tubes. Not powered by electricity. Details including contact telephone number of TSSD's contractor on the wall of the cabinet.	Contact TSSD's contractor immediately for collection of the cabinet. Inform TDFCP for record. Reinstatement of the cabinet afterwards by TSSD's contractor.

	Installations	Description	Procedures
(iii)	Traffic Light Control System at Junctions or Crossings not Related to LRT	Loops – series of wire buried just below road surface, connected to a roadside cabinet. Located at junctions or pedestrian crossings, and associated with traffic lights.	Can be removed in emergency without prior notice to TD. Inform TDFCP as soon as practicable for TD to adjust traffic plan. Arrange/carry out reinstatement of loops to TD's and EMSD's satisfaction as soon as the roadwork is completed.
		Cabinet – metal housing seated on footpath, connected to loops and cables. Powered by electricity.	Handle with care to avoid electric shocks. Contact TDFCP for EMSD to relocate equipment inside the cabinet. Arrange disconnection of power supply to the cabinet. Reinstatement of the cabinet afterwards to TD's and EMSD's satisfaction as soon as the roadwork is completed. Police's assistance to control traffic when necessary.
		Signal Post – circular post with signal installed near kerbside of footpath or at central islands	Ask the traffic police to control the junction manually. Contact TDFCP for EMSD to relocate the posts. Reinstatement of the posts to TD's and EMSD's satisfaction as soon as the roadwork is completed.
		Cables – across road junctions or pedestrian crossing in connecting roadside cabinet and signal posts, in cable ducts. Carry electricity.	Handle with care to avoid electric shocks. Can be supported temporarily. If disconnection is inevitable, they can be disconnected without prior notice. Inform TDFCP immediately upon disconnection. Connection to be carried out under supervision of TD and EMSD afterwards.
(iv)	Traffic Light Control System at Junctions with LRT	System similar to that in (a) (iii) above, except that this is located at road junction with LRT.	Consult MTRC about works within Light Rail protection area. Similar to that in (a) (iii) above, except that both MTRC and EMSD are contacted first before any action to be taken to remove the system or disconnect cables. TDFCP be informed of the course of action. System to be reinstated to the satisfaction of TD, EMSD and MTRC afterwards. Police's assistance to control traffic when necessary.

	Installations	Description	Procedures
(v)	Cables for CCTV System	Power cables and fibre optic telecommunication cables installed in 100mm diameter cable ducts buried underground along roads in the vicinity of CCTV camera kiosks and masts. Either along roads (edge of carriageway including hard shoulder) or across road. Connected to draw-pits with 'ATC' or 'TCS' marked on the covers. Some ducts not located under roads can be identified by existence of camera and kiosk close to each other.	Handle with care to avoid electric shocks. Contact TDFCP to get agreement for disconnections. Also inform EMSD accordingly. Reinstate the cables and draw-pits (if damaged) after the emergency repairs.
(vi)	Cables for Emergency Telephone Systems	Power supplies terminated. Trunk ET cables normally laid in 100 mm diameter reserved cable duct in dual-duct configuration inside parapets of elevated roads, under verges or footpaths if present, or under carriageways in case of cross road cables, or in triple-duct configuration and/or of size other than 100 mm diameter. Besides, some draw-pit covers of the ET ducting carry the inscription of "TCS" and some are simply left blank.	Can temporarily support the cables or to disconnect the cables during emergency. Reinstate or divert the facilities after the emergency works and inform TDFCP accordingly.
(vii)	Cables for TCSS Field Facilities on the Open Highway	The TCSS field facilities outside Control Areas include Variable Message Sign (VMS), Full Variable Message Sign (FVMS), Lane Control Switch (LCS) and Variable Speed Limit Sign (VSLS) on the open highway. They are connected to roadside cabinets and draw-pit with power cables and fibre optic telecommunication cables in cable ducts. Some cabinets and draw-pit covers of the TCSS carry the inscription of "TCS" and some are simply left blank.	Handle with care to avoid electric shocks. Contact TDFCP to get agreement for disconnections. Also inform EMSD accordingly. Reinstate the cables, cabinets and draw-pits (if damaged) after the emergency repairs.
(viii)	Traffic Bollard	Located at central islands of road junctions. Power cables are connected to the bollards with cable ducts buried underground.	Handle with care to avoid electric shocks. Can disconnect and remove cables or bollards first and inform TD, EMSD and HyD. Reinstate the cables or bollards after the emergency repairs. To provide necessary signing and lighting prior to removal of bollards.

	Installations	Description	Procedures
(ix)	Illuminated Traffic Sign	Traffic signs illuminated by lights installed on the same post of the sign. Power cables are connected to the signs with cable ducts buried underground.	Handle with care to avoid electric shocks. Can disconnect and remove cables or signs first and inform TD and HyD afterwards. Reinstate the cables or signs after the emergency repairs.
(x)	Journey Time Indication System	Journey time indicators and detectors installed at sign gantries are connected to roadside cabinets with power cables and fibre optic telecommunication cables. The cables are installed in 100mm diameter PVC cable ducts buried along or across roads and are sometimes connected to draw-pits with "JTIS" marked on the covers.	Handle with care to avoid electric shocks. Can be removed without prior notice. Inform EMSD later for record. Reinstate the cables and cabinets after the emergency repairs to the satisfaction of TD and EMSD.
(xi)	Speed Map Panel System	Speed map panels and detectors installed at sign gantries or masts are connected to roadside cabinets with power cables and fibre optic telecommunication cables. The cables are installed in 100mm diameter PVC cable ducts buried along or across roads and are sometimes connected to draw-pits with "SMP" marked on the covers.	Handle with care to avoid electric shocks. Can be removed without prior notice. Inform EMSD later for record. Reinstate the cables and cabinets after the emergency repairs to the satisfaction of TD and EMSD.
(xii)	Traffic Detector System	Traffic detector System is mounted at sign gantries or lampposts, the power of the detectors are supplied from the public lighting generally.	Handle with care to avoid electric shocks. Can be removed without prior notice. Inform EMSD later for record. Arrange/carry out reinstatement of system afterwards.
(xiii)	Bus-Bus-Interchange Display System	Display panels are connected to roadside cabinets with power cables and fibre optic telecommunication cables. The cables are installed in 50mm diameter PVC cable ducts buried along the Bus-bus-interchange area (both Tuen Mun bound and Kowloon bound)	Handle with care to avoid electric shocks. Arrange with power company for power disconnection. Reinstate the cables after the emergency repairs to the satisfaction of TD & EMSD
(xiv)	Traveller Information Kiosk	Kiosk casing connected to power by conduit and the connection is site specific. There is no fibre optic cable connected to the system.	Handle with care to avoid electric shocks. Contact Autotoll Ltd. to get agreement for disconnections and inform TD accordingly. Reinstate the cables and cabinets after the emergency repairs to the satisfaction of TD .

	Installations	Description	Procedures
(b)	Managed by Others		
(i)	Red Light Camera System – Managed by Police	Comprises of inductive loop / radar detector, a post with a red light camera housing on top, and associated cables buried underground. For RLC1 / RLC2 and RLC3, only inductive loop detectors are used. For RLC4, around 47% of the sites make use of radar detectors. The configuration of the loops on the road surface is similar to that mentioned in (a) (i) above. They are located at road junctions and are connected to a post on the footpath mounted with a red light camera (for RLC1 / RLC2) or a road side cabinet (for RLC3 and RLC4). Radars are installed on top of a traffic light pole at the opposite side of the junction having its signal peak pointing towards the junction. The cables are installed in 100 mm diameter cable ducts buried underground along footpath in the vicinity of the camera post. They are connected to draw-pits with "HKPF" marked on the covers. The camera is powered by electricity.	Handle with care to avoid electric shocks. Systems can be removed first and inform Police traffic headquarters afterwards. Arrange with power company for power disconnection. Reinstate after the emergency repairs. Arrange/carry out reinstatement of systems to the satisfaction of Police and EMSD.
(ii)	Speed Enforcement Camera System – Managed by Police	Comprises of a post with a speed enforcement camera and a radar detector housing on top, and associated cables buried underground in 100 mm diameter cable ducts. The cables are connected to draw-pits with "HKPF" marked on the covers. The camera and the radar are powered by electricity.	Handle with care to avoid electric shocks. The systems can be removed first and inform Police traffic headquarters afterwards. Arrange with power company for power disconnection. Arrange/carry out reinstatement of systems to the satisfaction of the Traffic Police and EMSD.

Note : Contact Telephone Number

1.	TSSD's contractor	9831 8709 (24 hours)	7.	HyD	2926 4111 (24 hours)
2.	TSSD of TD	3842 6276 (office hours)	8.	Traffic Police	3661 5565 (office hours)
		3842 6278 (office hours)	9.	Autotoll	2111 3604 (24 hours)
3.	TCD of TD	3842 6109 (office hours)	10.	MTRC	2468 7700 (24 hours)
4.	SMD of TD	3842 6412 (office hours)			
5.	TDFCP of TD	2410 0066 (24 hours)			
6.	EMSD	2333 3762 (24 hours)			