Table of Contents

Table of Contents

Foreword

Hong Kong has a busy and compact road network. This makes handling of emergencies with severe traffic impact highly challenging. Rapid response is of paramount importance in reducing the build-up of a gridlock, especially when unforeseen incidents occur on major inter-connected routes within short intervals.

Notwithstanding the best efforts made by the departments concerned, the three incidents that occurred on 9 May 2005 have reflected inadequacies in our emergency transport coordination framework. There is a need to refine and align the crisis management arrangements, enhance coordination both within and between departments, harness advanced technologies for better traffic management, and take all possible steps to disseminate traffic information to the public in a timely manner.

During the review process, various departments involved have been cooperative and have provided strong assistance to us. We note that they have acknowledged that improvements to the existing arrangements are timeous and necessary. This has smoothened the review process and ensured that the Report is both fact finding and forward looking, with recommendations catering for both immediate and future implementation.

We are most grateful to those who have shared their valuable views with us. We have studied such views carefully and have taken them into consideration in mapping out our recommendations. An efficient transport system is of utmost importance to Hong Kong. We hope that the recommendations in this Report could assist the Government to better handle similar situations should they arise in the future.

Ms Teresa Cheng, SC, JP
(Chairman)

Mr Herbert Hui, JP

Prof Lo Hong-kam

June 2005

Executive Summary

Appointment of the Task Force

On 9 May 2005, the inclement weather brought about many emergency events affecting traffic throughout the territory. Three of them that occurred within five minutes along the main arteries in Kowloon resulted in serious traffic congestion and delays for tens of thousands of commuters. The Government was deeply concerned about the incident. The Secretary for the Environment, Transport and Works therefore appointed a Task Force to review and recommend measures to enhance emergency transport coordination.

The Task Force's Work Plan

2. We held our first meeting on 20 May 2005. We visited the three incident sites, the Emergency Transport Coordination Centre (ETCC) of the Transport Department (TD) and the Regional Command and Control Centre of the Police, and interviewed representatives of Government departments directly involved in the incidents. To ensure public participation in the process, we called for public views and wrote to over 170 organisations to invite their suggestions. Taking into account the observations from the review of the incidents that occurred on 9 May 2005 and public views and suggestions, we mapped out our recommendations.

The Incidents on 9 May 2005

3. There were three incidents that brought about the abnormally serious congestion in Kowloon. They included a fallen tree across Waterloo Road, loose scaffolding at Argyle Street and fallen scaffolding at Prince Edward Road East. Details of the incidents are set out in Chapter 2. We have examined the actions taken by the departments concerned.

4. We consider that the incidents have revealed some areas for improvement in the existing mechanism of emergency transport coordination. There are two major observations common to the three incidents. First, the officers involved in the incidents mainly focused on their areas of responsibility without a full appreciation of the traffic impacts of the incident. There is a need for an overview and to ensure efficient intra-departmental and inter-departmental communication, so that the senior management and relevant departments can work together to shorten the response time for remedial works. Second, while efforts were made to disseminate information about the incidents and traffic conditions to the public, the commuters were not able to receive the messages in a timely manner. In addition, the content of the messages was not clear and specific enough.

Crisis Management Mechanism

5. We note that there is a Government-wide Emergency Response System to handle emergency situations that threaten life, property and public security. However, the current review has focused on emergency handling arrangements for incidents with substantial traffic impact. We have reviewed the role of TD, the Police and other departments in emergency transport arrangements and have also examined in detail the role of ETCC.

6. We find that ETCC functions more effectively in cases of planned events and typhoons and that the contingency plans maintained by TD are mainly on public transport disruptions or incidents at major infrastructure. We therefore recommend that TD should develop a set of contingency plans on closure or congestions occurring on traffic sensitive or public transport sensitive routes. The plans should include diversion options, signal control strategies and manpower and logistic requirements. Relevant departments should also conduct regular emergency drills.

7. We also recommend that TD should bring the emergency transport arrangements to the attention of other departments, and re-circulate the guidelines on a regular basis. Departments should review their emergency handling procedures and align them with those of other departments, in particular TD. In doing so, all departments concerned should adopt the concept of dividing incident management into different stages with a view to streamlining actions at each stage.

8. To facilitate better assessment of the emergency situation, we consider it important to provide officers on the ground with sufficient guidance and to establish a mechanism for the officers to escalate the issues and for senior officers to monitor developments and give timely directives. In case a firm assessment of the situation and a clear indication of the lane closure time cannot be made, officers of the supporting departments should inform TD and the Police accordingly so that appropriate traffic diversion plans can be made in a timely manner.

9. To enhance steer and coordination in cases of major emergencies, we recommend that ETCC should operate under the Joint Steering Mode with co-location of TD and Police officers at ETCC. There should be a representative from the Environment, Transport and Works Bureau to facilitate coordination with other bureaux and the senior echelon. Senior officers of other supporting departments may be required to station at ETCC or be available on line to facilitate efficient communication and decision-making.

10. In addition, we recommend that the current facilities of ETCC should be upgraded and TD should harness advanced technologies to strengthen its emergency handling capabilities.

Internal Coordination to Expedite Remedial Works

11. We consider that effective coordination both within a department and among different departments is essential. We have examined the existing communication mechanism, and found that there are many gaps and grey areas. To address these problems, we recommend that the designated roles of different departments in traffic-related incidents should be clearly spelt out. Separately, an effective reporting system should be established within each concerned department for the senior management to have an overview of the incidents.

12. We also recommend that ETCC should take up a more proactive role to handle transport and traffic incidents. With the introduction of the Joint Steering Mode, ETCC's capacity to handle major emergencies should be strengthened.

13. Noting the delay caused by the lack of designated communication links among different departments, we recommend that designated lines should be established to expedite remedial works. In the longer term, inter-departmental dispatch coordination can be enhanced through a computer-aided dispatch system. All the requests as well as conditions of the incident will be logged as the events unfold so that the parties involved could have a real-time comprehensive understanding of events happening at the scene as well as the equipment and personnel dispatch status.

Congestion Relief Measures

14. We consider that timely and accurate traffic information, well-planned diversions, appropriate traffic management measures around the scene, as well as effective coordination and steer are instrumental in facilitating congestion relief.

15. We therefore recommend that various measures be taken to collect real-time traffic data to facilitate planning. They include using incident maps to collate information from different sources for immediate improvement. Long-term measures include improving the coverage of the Closed-Circuit Television System, using advanced technologies like the Global Positioning System to measure the network travel time and speed, and developing a Geographical Information System-based system to display real-time traffic information in the form of a Traffic Speed or Queue Map.

16. As effective response depends on accurate assessment of the incident duration and its resultant impact on traffic, we recommend that an Incident Database should be developed to record important data of previous incidents. Based on actual cases in the Incident Database as well as contingency scenarios, traffic models can be developed and applied for identifying critical sites and for issuing early alerts should incidents occur.

17. To facilitate traffic diversion, we consider that more information and guidance should be given to motorists on the alternative routes. Prior arrangements with bus companies should be made to ensure that diversion routes are feasible and acceptable to passengers. The information disseminated to passengers should be improved and the role of the bus regulators engaged by the bus companies to liaise with passengers should be strengthened.

18. We also point out that follow-up actions after the clearance of the incident should not be overlooked. Traffic management measures should continue to ensure that traffic returns to normal in a smooth and swift manner. TD should continue to monitor the traffic conditions in the affected region and adjust the traffic signals for effective queue management and dissipation.

Dissemination of Information to the Public

19. Access to traffic information is a significant factor in reducing the build-up of a gridlock. It is thus important for traffic information to be disseminated in a timely and accurate manner, and through as many channels as possible.

20. We note that various Government departments had tried very hard to disseminate traffic information to the public on 9 May 2005. However, the existing arrangements can be enhanced by using appropriate means to contact the media and relevant organisations and following up to ensure that the message is receiving attention.

21. In addition, other innovative and effective means can be considered. Those that can be initiated within the Government include setting up a designated channel for traffic news, using Geographical Information System technology to display real-time traffic information in a Traffic Speed or Queue Map through the Internet, and strengthening the role of the Integrated Call Centre in disseminating emergency transport information.

22. Measures that require cooperation from outside parties include working with radio stations to increase the frequency of traffic information broadcasts, live television broadcast on traffic information, dissemination of information by management companies of intelligent buildings or by e-mail, and use of mobile phone cell broadcast.

23. To inform motorists and passengers who have already started their journey of the latest traffic conditions, we suggest using means such as radio channels of public transport associations, Variable Message Signs, and radio on buses and railways.

24. As regards the content of the messages, we consider it necessary to indicate clearly the degree of congestion, provide information on the alternative routes available and the estimated reopening time of a closed road to facilitate pre-trip planning and diversion of vehicles that are already on the road. There should also be better coordination between TD and the Police in disseminating emergency transport information to the public to avoid confusion.

Framework for the Four Stages of Incident Management

25. Chapter 7 provides a framework that consolidates the various operations involved in an incident with serious traffic impact and illustrates how the recommendations in the earlier chapters can fit in to enhance overall operational efficiency.

26. Under the framework, incident management is divided into four stages - identification and verification of the incident, response, clearance and recovery. We point out that the key to alleviating adverse impact on traffic is to reduce the response time at each of the four stages.

27. The rationale and details of the recommendations that we put forth are outlined in various chapters, while an overview is set out in the Summary of Recommendations in Chapter 8.

28. To bring about immediate as well as long-term enhancements, the recommendations vary from those that can be easily implemented to those requiring longer-term planning and additional resources.

Chapter 1
Introduction

Appointment of the Task Force

1.1 On 9 May 2005, the inclement weather led to a considerable number of emergency events affecting traffic throughout the territory. Three of these involved fallen tree and scaffolding occurring within five minutes along three trunk roads in Kowloon, viz. Waterloo Road, Argyle Street and Prince Edward Road East. Owing to the blockage of these major corridors, traffic in Kowloon started building up from around 14:00 and developed into an abnormally serious congestion around 18:00. Traffic gradually returned to normal after 21:00. Tens of thousands of travellers were caught in traffic jams, suffering long delays.

1.2 The Government was deeply concerned about the incident. On 18 May 2005, the Secretary for the Environment, Transport and Works appointed a Task Force to review and recommend measures to enhance emergency transport coordination.

Membership

1.3 The Task Force is chaired by Ms Teresa CHENG Yeuk-wah, SC, JP, who is also the Chairman of the Transport Advisory Committee. The other two members are Mr. Herbert HUI Ho-ming, JP, a senior corporate executive with extensive experience in public service and the Chairman of the Hong Kong Institute of

Directors; and Professor LO Hong-kam, Associate Professor in the Department of Civil Engineering of the Hong Kong University of Science and Technology. Please see Appendix I for biographical notes on Members.

Terms of Reference

1.4 The Task Force was tasked to review and make recommendations on -

(a) the crisis management mechanism;

(b) internal coordination to expedite immediate remedial works;

(c) congestion relief measures; and

(d) dissemination of information to the public,

with a view to facilitating better handling of similar unforeseen emergency situations with substantial traffic impact in the future.

Work Programme

1.5 The Task Force was constituted on 18 May 2005. We held our first meeting on 20 May 2005 and visited the Emergency Transport Coordination Centre of the Transport Department,

the Kowloon Regional Command and Control Centre of the Police and the three incident sites on 23 May 2005. The representatives of various departments directly involved in the incidents on 9 May 2005 were interviewed on 25 and 27 May 2005 and 2 and 13 June 2005.

1.6 To ensure public participation in the process and as stated in the press release dated 18 May 2005, we set up an email account <taskforce@etwb.gov.hk> and a faxline 2104 7274 to receive views and suggestions from members of the public. We also wrote to over 170 organisations, including academic institutions, professional bodies, public transport operators, transport trade associations, media, telecommunication companies, and District Councils etc. to invite their views and suggestions. The list of organisations is set out at Appendix II. A summary of the views and comments received is set out at Appendix III.

1.7 We first reviewed the events that occurred on 9 May 2005 based on documentary and oral information, substantiation and/or clarification from the various Government departments. Then the views and comments from the public and the various organisations were considered together with those of the Members and/or various Government departments so as to formulate recommendations in relation to the four areas in the terms of reference.

Overview of the Report

1.8 Following a brief introduction in this chapter, Chapter 2 gives a detailed account of the key events that occurred on 9 May 2005 together with our

observations. Chapters 3 to 6 outline pertinent facts and considerations on the four areas of the review, and set out immediate and longer-term recommendations. In Chapter 7, we present the recommendations under the framework of the four stages of incident management to illustrate how they could streamline emergency transport coordination. Chapter 8 contains a summary of the recommendations put forth by us.

Chapter 2
The Incidents on 9 May 2005

Introduction

2.1 According to the Hong Kong Observatory, a rainband with intense thunderstorms passed through Hong Kong shortly after noon on 9 May 2005. During the passage of the rainband, severe squalls associated with the thunderstorms gave rise to stormy weather between 12:15 and 12:45, particularly over the western part of Hong Kong.

2.2 Sustained wind speed at Kwai Chung was up to about 50km/h, with peak gust reaching 135 km/h, which is equivalent to the wind speed of typhoon signal number 3, albeit only transient in nature. This is the highest gust recorded in Kwai Chung in a non-tropical cyclone situation since wind data became available in 1985. The maximum one-minute gust at 12:38 and 12:40 in Kowloon Tsai and Kai Tak automatic weather station were 106 and 88 km/h respectively.

2.3 Amber Rainstorm Warning was issued at 12:10 and remained in effect until 14:20. Up to 20:00, rainfall amount recorded over the territory exceeded 60 mm.

2.4 On 9 May 2005, between 12:00 and 24:00, there were about 262 emergency incidents relating to traffic in different parts of Hong Kong. In Kowloon alone, there were 140 incidents during the aforesaid period, with 47 incidents occurring between 12:00 and 14:00.

2.5 Within the five minutes between 12:37 and 12:42, three major incidents occurred on three main roads in western, central and eastern Kowloon -

(a) loose scaffolding at Argyle Street;

(b) a large tree fallen across Waterloo Road; and

(c) fallen scaffolding, loose scaffolding and loose cooling towers at Prince Edward Road East.

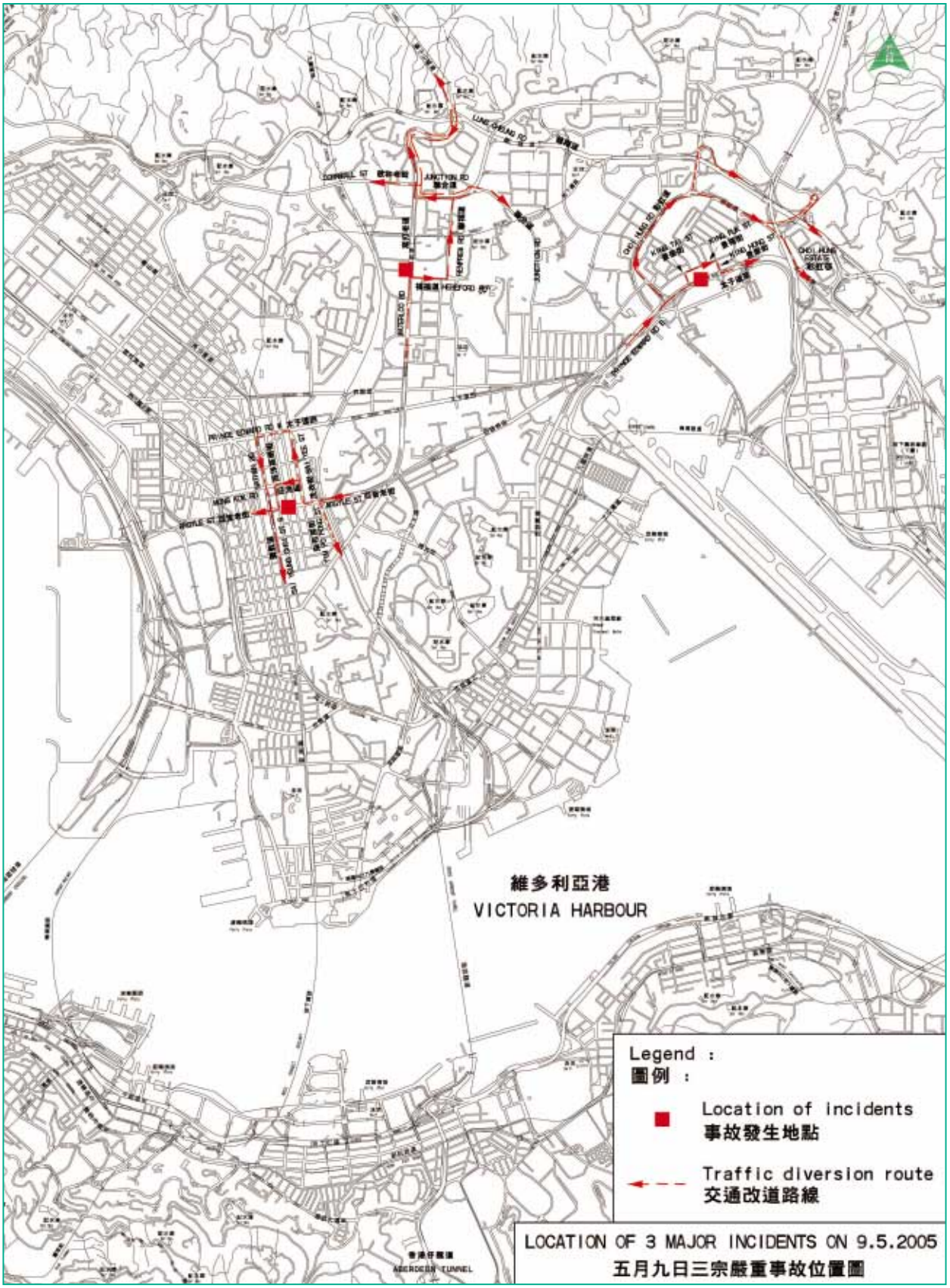
2.6 As the three roads are the main corridors for eastbound and westbound traffic in Central Kowloon, and between Sha Tin and Hong Kong Island, the three incidents resulted in abnormally serious congestion in Kowloon. The knock-on effect was felt in the approaches to Cross-Harbour Tunnel and Lion Rock Tunnel and even the Wanchai district. A map showing the locations of the three major incidents is at Figure 2.1.

2.7 A summary of the main events of the three incidents in chronological order is in Appendix IV.

The Argyle Street Incident

2.8 At 12:37, Police "999" hotline received report about loose scaffolding at 28 - 30 Argyle Street which was in danger of falling down onto the carriageway.

Figure 2.1 Locations of the three major incidents



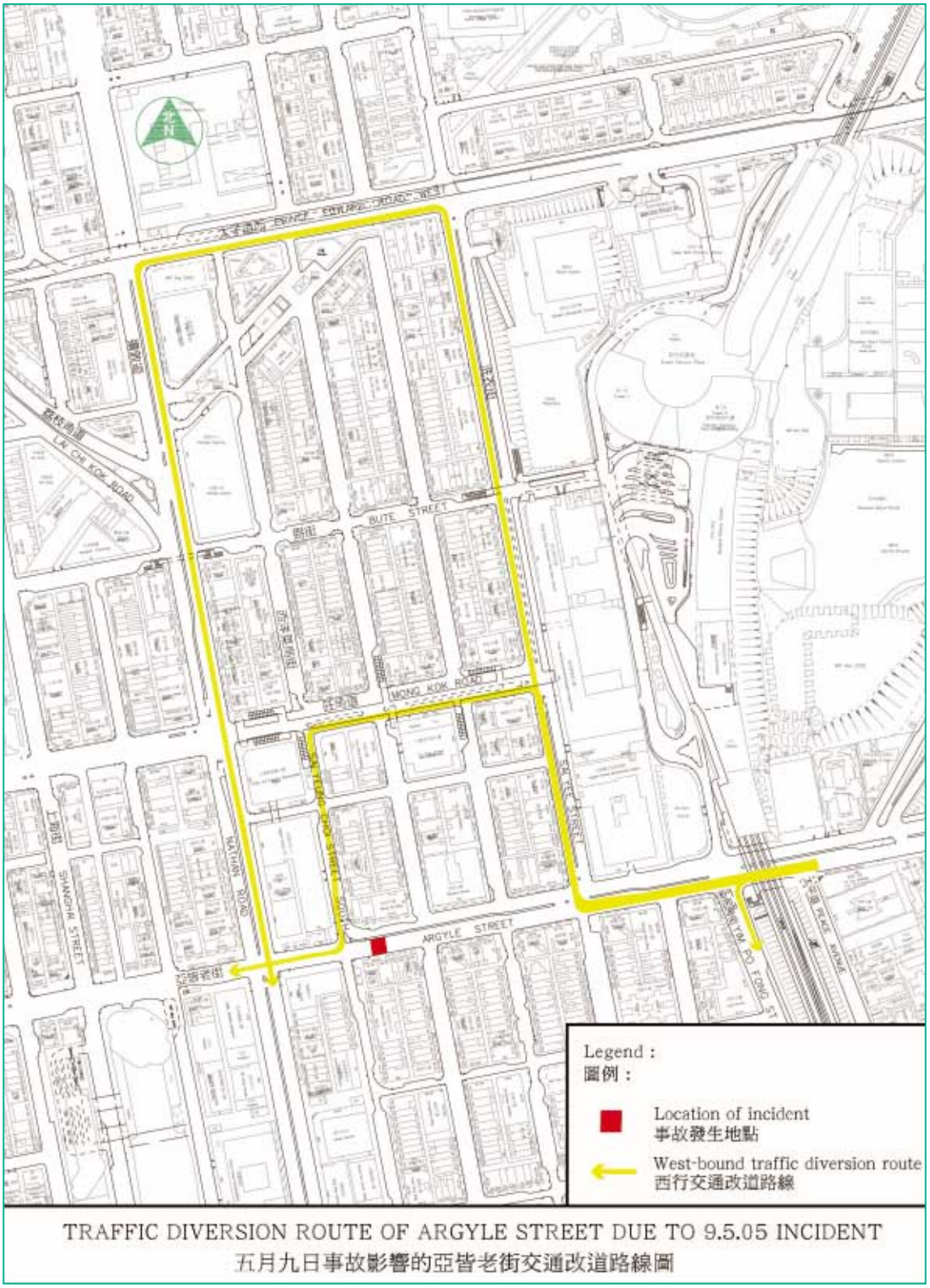
2.9 The bamboo scaffolding, with a size of 7m x 11m, was erected at the external wall of the premises. Upon receipt of a complaint on 19 April 2005, the Buildings Department (BD) inspected the scaffolding and found that a signboard would likely be erected illegally at the location, but the approval for works had not yet been obtained. BD therefore posted a cease work advisory letter on site. A subsequent interview by BD with the owner of the premises indicated that the scaffolding had been erected by an unknown person to remove an old signboard and that he would like to keep the scaffolding on site for re-erecting the sign later. To facilitate the owner to re-erect the sign, BD allowed the scaffolding to remain but continued to closely monitor the situation. BD said that in the event of any prolonged delay in the re-erection, action would be taken to require the scaffolding to be removed. However, no work had begun before the incident.

2.10 Police officers promptly arrived at 12:43 and closed three lanes of Argyle Street (westbound) at 13:11. Subsequently, all four lanes (westbound) were closed at 13:31. The Police implemented road diversion plans by re-routeing the westbound traffic on Argyle Street towards Nathan Road through northbound Sai Yee Street, westbound Prince Edward Road West and then southbound Nathan Road. Traffic towards Fa Yuen Street and Tung Choi Street was re-routed through southbound Yim Po Fong Street. The Emergency Transport Coordination Centre (ETCC) of the Transport Department (TD) was activated to the Fixed Mode[1] at 12:45 as a result of the Waterloo Road Incident mentioned below, and TD adjusted traffic

1 Currently, ETCC operates under three different modes, namely, Standby, Mobile and Fixed Modes with different manning level. Fixed Mode ETCC is activated in cases of, inter alia, serious traffic or transport incidents and during typhoon or natural disaster. More details are set out in Chapter 3.

signals through the Area Traffic Control (ATC) System to provide more green time for the diversion routes. Bus diversions were also implemented. A map showing the incident site and the diversion plan implemented is at Figure 2.2 below.

Figure 2.2 Traffic diversion plan of the Argyle Street Incident



TRAFFIC DIVERSION ROUTE OF ARGYLE STREET DUE TO 9.5.05 INCIDENT
五月九日事故影響的亞皆老街交通改道路線圖

2.11 Officers of BD were informed of the incident by the Police at 14:00 and arrived at the incident site at 14:39. After assessing the site situation, BD opined that the loose scaffolding posed a danger to vehicles using the westbound lanes of Argyle Street and recommended that all four lanes should remain closed.

2.12 BD contacted the owner of the building, who agreed to take immediate action to remove the loose scaffolding and secure the remaining parts to the building. The owner's contractor arrived at the site at 15:15. It mobilised 10 - 12 workers to clear the scaffolding. Upon removal of the most dangerous parts of the loose scaffolding, the third and fourth lanes of the westbound carriageway were reopened around 17:00. The remaining two lanes were reopened around 18:15 upon confirmation by BD that the site was safe.

2.13 In respect of information dissemination, TD and the Police Public Relations Branch (PPRB) issued ten press releases/advice on the traffic situation in the course of the incident. Radio announcements were made to alert audiences of the congestion and alternative routes. Tunnel operators were requested to make break-in announcements. The Kowloon Motor Bus (KMB) was requested by TD to disseminate traffic information to passengers through its Light-emitting diode (LED) display panels at 11 bus terminals. TD also requested the Education and Manpower Bureau (EMB) to disseminate information to schools and ask them to take care of students in case school coaches were affected by the congestion and arrived late.

The Waterloo Road Incident

2.14 At 12:39, Police "999" hotline received report of a fallen tree of 1.2m in diameter and 15m in length at Waterloo Road near Hereford Road, blocking all three northbound lanes and two southbound lanes. The fallen tree crushed a car but caused no injuries.

2.15 Based on the experience of TD, it was foreseeable that Lion Rock Tunnel and Cross Harbour Tunnel would be blocked if Waterloo Road was not cleared within an hour. The Fixed Mode ETCC was activated as soon as TD was notified of the incident.

2.16 Police officers arrived at the scene at 12:41 and formulated traffic diversion plans for the closure of Waterloo Road. Northbound traffic was diverted to Hereford Road, Renfrew Road and Junction Road. Southbound traffic from the Lion Rock Tunnel was diverted to Lung Cheung Road, Junction Road or Cornwall Street. Motorists were advised to use Tate's Cairn Tunnel through radio broadcasts. TD adjusted traffic signals through the ATC System to provide more green time for the diversion routes, and liaised with KMB on the bus diversion plan at 13:24. Operators of Lion Rock Tunnel

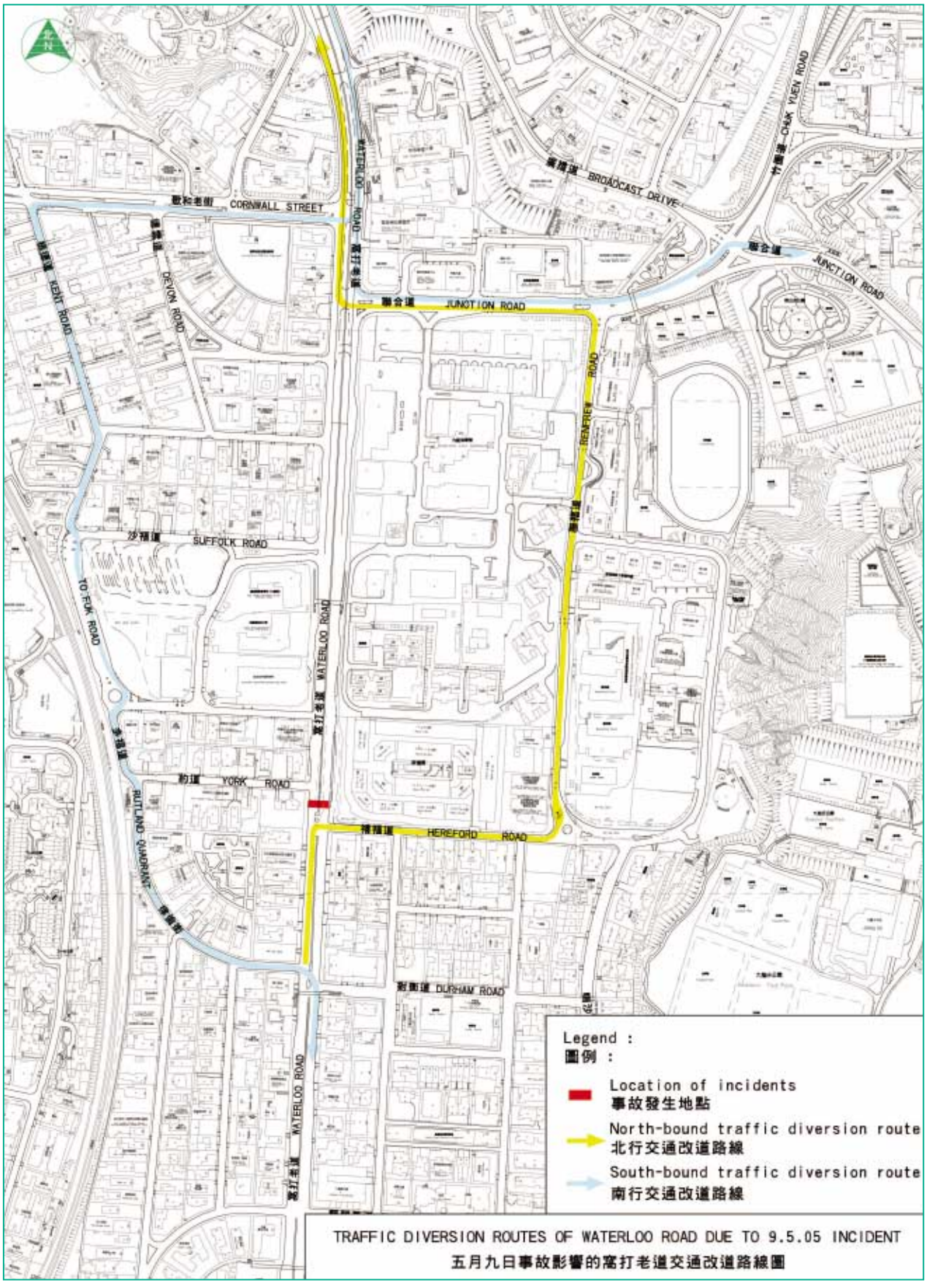
and Cross-Harbour Tunnel were also requested to make break-in announcements inside tunnel tubes. Such announcements were timeously made. A map showing the incident site and the diversion plan is at Figure 2.3 below.

2.17 Consideration had been given to diverting traffic along other routes but this was not implemented for a variety of reasons, including inappropriate turning circles for large vehicles, opposing traffic flow and the constraints of the local area (e.g. parents and school buses need to meet pupils from schools in the Kowloon Tong area).

2.18 To expedite the removal of the blockage, police officers started cutting some of the branches of the collapsed tree on the southbound carriageway. The Police also requested assistance from the Highways Department (HyD) and the Emergency Tree Cutting Team of the Leisure and Cultural Services Department (LCSD) via the Integrated Call Centre (ICC) at 13:10 and 13:25. ICC contacted HyD at 13:19 and LCSD at 13:38 for immediate follow-up action.

2.19 HyD mobilised its term contractor to carry out emergency clearance works at 13:20. Given its size, the tree had to be cut into smaller pieces. At 13:50, eight workers of the contractor arrived with two lorries and a chain saw to cut and clear the branches. HyD also

Figure 2.3 Traffic diversion plan of the Waterloo Road Incident



instructed its contractor to provide two grab lorries and one heavy-duty crane lorry to expedite the clearance. The two grab lorries arrived at 14:30 and a lorry with a 17-tonne lifting crane arrived at 14:50.

2.20 At 14:10, the Emergency Tree Cutting Team of LCSD arrived at the scene and joined the clearance operation. A total of 22 workers and nine chain saws of various sizes were deployed for the operation.

2.21 The Police requested the assistance of the Food and Environmental Hygiene Department (FEHD) to clean up the area at 13:40. An officer from FEHD requested the cleaning contractor to send a tipper lorry. He then arrived at the scene at 14:28. At 14:35, upon request of the Police, he asked the contractor to send a street washing vehicle. As the street washing vehicle had to refill its water tank and could only arrive at 15:20, the Fire Services Department (FSD) was requested by the Police to help wash the carriageway at 14:53. Subsequently, FEHD's tipper lorry and street washing vehicle arrived at 15:00 and 15:20 respectively. Upon completion of the cutting of the fallen tree, the staff of FEHD's cleansing contractor started washing the road at 16:00.

2.22 The two southbound lanes of Waterloo Road were reopened around 15:10 and the three northbound lanes were reopened between 16:00 and 16:30.

2.23 In respect of information dissemination, TD and PPRB issued 11 press releases/advice on the traffic situation. Radio announcements were made to alert audiences of the congestion and alternative routes. TD also requested KMB to disseminate the relevant traffic information to passengers through its LED display panels, and requested EMB to disseminate information to schools and asked them to take care of students in case of late arrival of school coaches.

The Prince Edward Road East Incident

2.24 At 12:42, Police "999" hotline received report about bamboo scaffolding that had fallen off Stelux House at 698 Prince Edward Road East. The fallen scaffolding blocked three lanes of the eastbound carriageway and hit a double-decker of New World First Bus. Fortunately no one on the bus was injured. The Police arrived at the scene at 12:47.

2.25 The fallen scaffolding, with a size of 90m x 9m, was erected at Stelux House for the proposed alteration and addition works at that building. It was erected to facilitate the inspection and necessary repair works and the installation of new aluminum cladding at the external wall of the building. Approval had been given by BD for the installation of the new cladding. The scaffolding was scheduled to be dismantled by October this year when all the alteration and addition works to the external wall were expected to be completed.

2.26 Under normal circumstances, when a typhoon approaches, the wind speed in the territory would increase gradually and the Hong Kong Observatory would give adequate advance warning, so that the contractors would remove the nylon nettings attached to the bamboo scaffoldings to minimise the wind load. Extra ties to strengthen the stability of the bamboo scaffolding would also be provided to reduce the chances of collapse. However, in the present case, there was a sudden increase of wind speed at 12:39, and the contractor had no time to carry out any precautionary works to avoid collapse.

2.27 The Wong Tai Sin Police Station and FSD were notified of the incident. FSD arrived at 13:02 with a major pump, a light rescue unit and an ambulance.

2.28 Safety being the first priority, FSD was tasked to locate whether there was any person trapped beneath the fallen scaffolding. The area was then cordoned off to facilitate FSD's search and rescue work. FSD confirmed that there was no casualty at 13:43.

2.29 During the time when FSD was carrying out the rescue operations, all four lanes of the eastbound carriageway had to be closed. FSD also noted the potentially dangerous scaffolding hanging from the roof to 27/F of Stelux House which might be susceptible to further collapse.

2.30 TD was informed of the incident by KMB at 13:24. ETCC notified HyD at 14:17, and staff from HyD arrived at the scene at 14:50. Knowing that the building contractor for the scaffolding had already been approached for the clearance work, the staff from HyD therefore stood by in the event that any other actions would be required.

2.31 At 14:21, the damage by the fallen scaffolding onto the air-conditioner and cooling towers of the adjacent building was reported by the public to the Police.

2.32 The Police reported attempts to contact BD and the Electrical and Mechanical Services Department at 14:40. BD however did not seem to have record of the same. In any event, at 14:42, the Kowloon Regional Command and Control Centre (RCCC) called ICC. In that call, three incidents were reported. They were at Hong Keung Street, Choi Hung Road and Prince Edward Road East respectively. The call ended at 14:50.

2.33 ICC immediately made several attempts to contact BD and eventually got through and relayed the three incidents including the one at Prince Edward Road East to BD for action. This telephone conversation took place at 15:03 and the call ended at 15:08.

2.34 The officer responsible for the San Po Kong area received an emergency report earlier and was on site dealing with that case. Therefore, when BD received the three reports from ICC around 15:00, three other teams, each with two officers, were mobilised to take up those cases.

2.35 The Police requested the contractor of the alteration works (Hanison), the office of which is located at Stelux House, to clear the fallen scaffolding. Workers of the contractor arrived at the scene at 15:27. Hanison deployed about ten workers for the clearance of the scaffolding that had fallen onto Prince Edward Road East. A crane/lorry was located next to the central divider to facilitate the clearance works. The contractor informed the Police who then informed TD that the fallen scaffolding could be cleared by 16:30.

2.36 At this point in time, there was no work to secure the potentially dangerous scaffolding at the top part of Stelux House or to stabilise or remove the damaged cooling towers at the adjacent building. We were told that these two remedial works required the use of two mobile cranes and a large crane, which were not available on site. Arrangement had to be made to mobilise these cranes to the site, which did not arrive until much later.

2.37 The officers of BD arrived at the scene at 16:20. Upon arrival, the officers of BD noted three areas that required attention :

(a) the eastbound carriageway of Prince Edward Road East was blocked by fallen scaffolding which was being cleared by the contractor of the alteration works at Stelux House ;

(b) the fallen scaffolding had damaged a number of cooling towers at 3/F, 5/F and 7/F of the adjacent building. The cooling towers and their supporting frames were in a dangerous condition; and

(c) there was loose scaffolding hanging from the external walls at the top part of Stelux House.

2.38 The officer of BD made a call to his senior, who was attending another emergency case, to report the situation shortly after his arrival. He then checked with the Authorised Signatory of the contractor who was at the scene, and requested him to take immediate actions to deal with the above problems. He also informed another officer who was responsible for new works of the position. This officer arrived at 19:10.

2.39 In the meantime, the officers of BD ascertained the progress of the remedial works. In relation to the scaffolding that had collapsed onto the road, the contractor, Hanison, was already deploying about ten workers to clear the bamboos. The removal of the damaged cooling towers and the removal or securing of the loose scaffolding at high level required the use of two mobile cranes and a large crane respectively. The officer of BD requested Hanison to arrange the cranes to site as a matter of urgency. BD officer informed the Police

that the estimated time to complete the remedial works once the necessary plant and equipment resources were available was one to two hours in relation to the cooling towers and three to four hours in relation to the loose scaffolding at the roof. In the meantime, all four lanes had to be closed for public safety reasons.

2.40 Given that the timing for the reopening of Prince Edward Road East was uncertain, TD started to plan for contra-flow arrangement, in consultation with HyD and the Police. TD had asked the MTR Corporation (MTRC) and the Kowloon-Canton Railway Corporation to monitor the passenger demand at 13:54, and requested MTRC to strengthen its services at 16:35, and asked the public to use the rail through radio broadcasts. TD had asked KMB to divert its buses to the East Kowloon Corridor and Sung Wong Toi Road as far as possible to alleviate the congestion. However, only a few buses were diverted as most passengers refused to alight or have the bus re-routed due to the inclement weather.

2.41 Shortly after 17:00, the officers of BD instructed the contractor to :

(a) remove the damaged cooling towers;

(b) remove or secure the loose scaffolding at the top part of the building; and

(c) provide lighting for the night works.

At that point in time it became clear that the works would not be completed before the arrival of the peak hours and might have to be carried out all through the evening.

2.42 Subsequently, the staff from BD was informed by the contractor that the large crane required to secure the loose scaffolding could not arrive within a short time. As a result, the intention to utilise the crane to remove or secure the loose scaffolding could not be pursued for the time being. We were informed that the large crane was needed to expedite and complete the process in removing or securing the loose scaffolding at the top part of the building.

2.43 We were also informed that an alternative method of using the gondola hanging from the roof of Stelux House might be used to assist in accessing the loose scaffolding. The gondola contractor was contacted by Hanison and arrived around 17:15. Physical attempts were made using the gondola but it became clear around 19:00 that this was not feasible either. As it turned out, at 19:20 when the BD staff left the scene to be replaced by another staff of BD, no firm solution on how to handle the loose scaffolding at the roof had yet been formulated.

2.44 Subsequently, BD and the contractor agreed that the loose scaffolding should be secured temporarily from within the building and from the roof with a view to removing the danger of collapse such that part of the closed eastbound carriageway could be reopened to traffic as soon as possible. The contractor started mobilising workers to commence the securing works around 19:30.

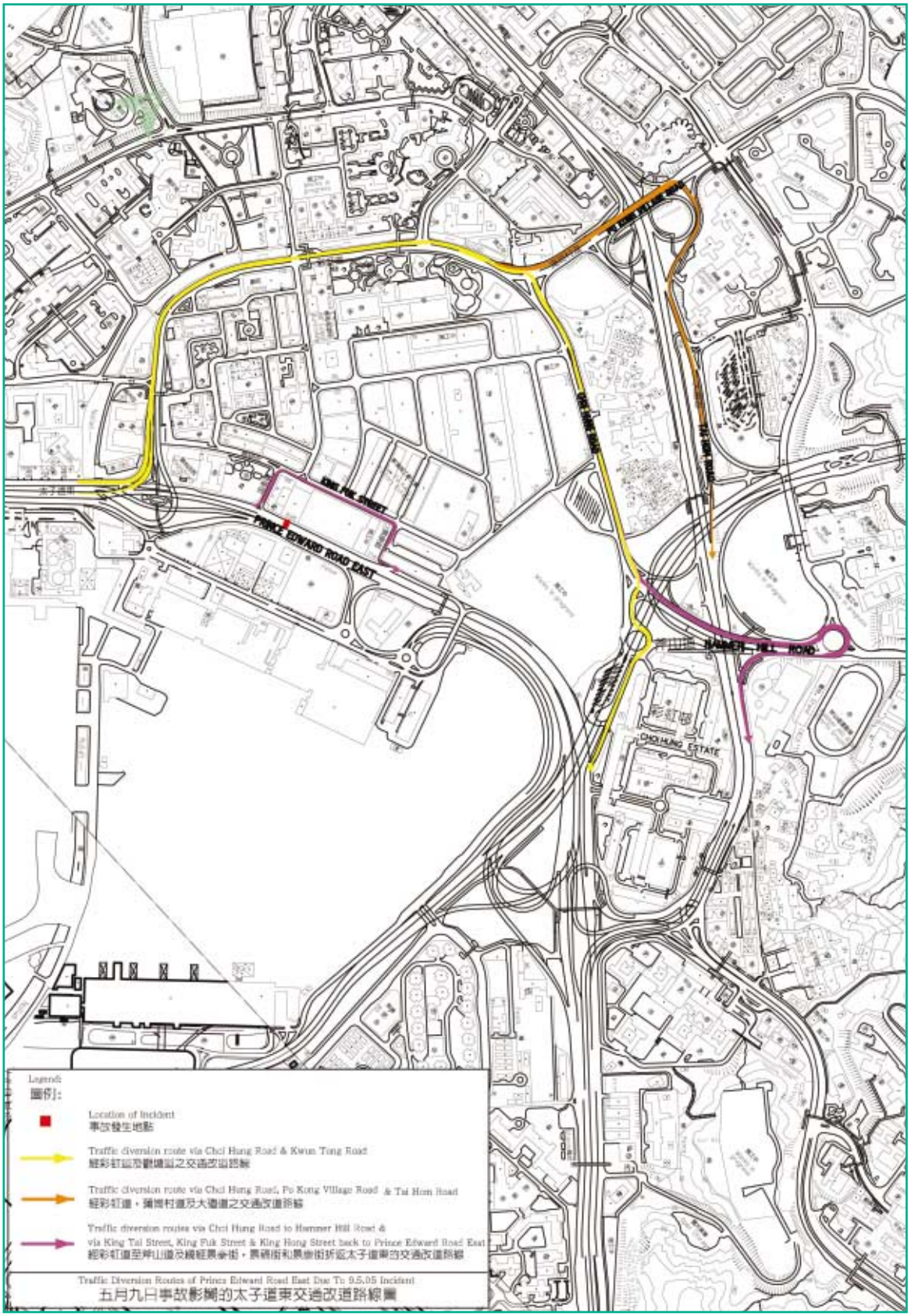
2.45 At 17:39, the Police made an assessment that the 3rd and 4th lanes of the Prince Edward Road East could be reopened around 18:30 as a result of the completion of the removal of the fallen scaffolding on Prince Edward Road East by 17:45.

2.46 However, upon making further enquiry with the staff from BD, the Police were informed that all lanes should remain closed since the loose cooling towers and loose scaffolding at the top part of the building were posing a danger to the public. As a result, for the purpose of ensuring safety, the third and fourth lanes of Prince Edward Road East could not be opened even though the scaffolding had been cleared from the carriageway.

2.47 During this time, from around 13:30 to 18:00, various diversion arrangements were made by the Police in association with TD - .

(a) All traffic merging into the eastbound Prince Edward Road East from Kowloon West region at the Kowloon City roundabout (i.e. from Boundary Street, Prince Edward Road West, Argyle Street and Ma Tau Chung Road) had to be diverted to Choi Hung Road northbound into San Po Kong. The eastbound Ma Tau Chung Road flyover was closed. All traffic along this flyover was diverted to Choi Hung Road. A map showing the incident site and the diversion plan is at Figure 2.4.

Figure 2.4 Traffic diversion plan of the Prince Edward Road East Incident



(b) Due to geographical constraints, Choi Hung Road was the only alternative route for traffic diversion. TD and the Police had encountered the following problems when formulating the diversion plan -

(i) The demand flow along the Prince Edward Road East eastbound carriageway was about 4 000 vehicles per hour. The Choi Hung Road diversion route could only take up to 1 600 vehicles per hour. The excess demand resulted in traffic queuing back at a rate of 2 400 vehicles per hour. With this queue-back rate, the queue would extend to Cross-Harbour Tunnel in about two hours if all vehicles chose to stay in the queue.

(ii) Consideration had been given to divert vehicles from the Kowloon City side to Concorde Road inside the old Kai Tak Airport to ease the congestion as a contingency. However, the road was closed and fenced off with demolition works in progress. Otherwise, Concorde Road should have been an additional route to take away considerable loads from Choi Hung Road during the road diversion.

(iii) It was not possible at the time to divert traffic to the Airport Tunnel as the Kowloon City Roundabout was already congested. Vehicles had to go back to Hung Hom to get on to the Chatham Road North Flyover before they could enter the Airport Tunnel.

(iv) King Tai Street, a side street west of the affected buildings, was re-routed one-way northbound to divert vehicles into King Fuk Street then King Hong Street either via Concorde Road flyover

back to eastbound Prince Edward Road East, or into San Po Kong area. However, a section of King Hong Street linking the Concorde Road Flyover could only permit vehicles not exceeding three tonnes to go through because of insufficient turning cycle for large vehicles. Therefore extra police officers had to be deployed for screening the vehicle classes when this road diversion was implemented.

2.48 At the scene, at 17:49 when BD reiterated that the lanes could not be opened for safety reasons, both TD and the Police continued with the traffic diversion work, and continued to liaise with the public transport operators seeking their assistance to alleviate the congestion problem.

2.49 At 18:32, the Police informed TD that for safety reasons, BD had advised that the road must remain closed.

2.50 Around the same time, TD called the Director of Buildings direct asking for assistance regarding the incident.

2.51 Sometime after 20:00, senior staff of BD arrived at the scene to ascertain the situation on site. The senior officers reaffirmed that the proposal to secure the loose scaffolding from inside the building was the most appropriate approach and requested the contractor to expedite completion of the securing works. They also agreed that upon completion of the securing works and removal of

the damaged cooling towers, two outer lanes of the carriageway could be reopened to traffic. At 21:20, a discussion took place between BD and TD with a view to seeking completion of the removal or securing works so as to allow two lanes to be reopened the next morning. BD advised the contractor to expedite completion of the removal or securing works accordingly.

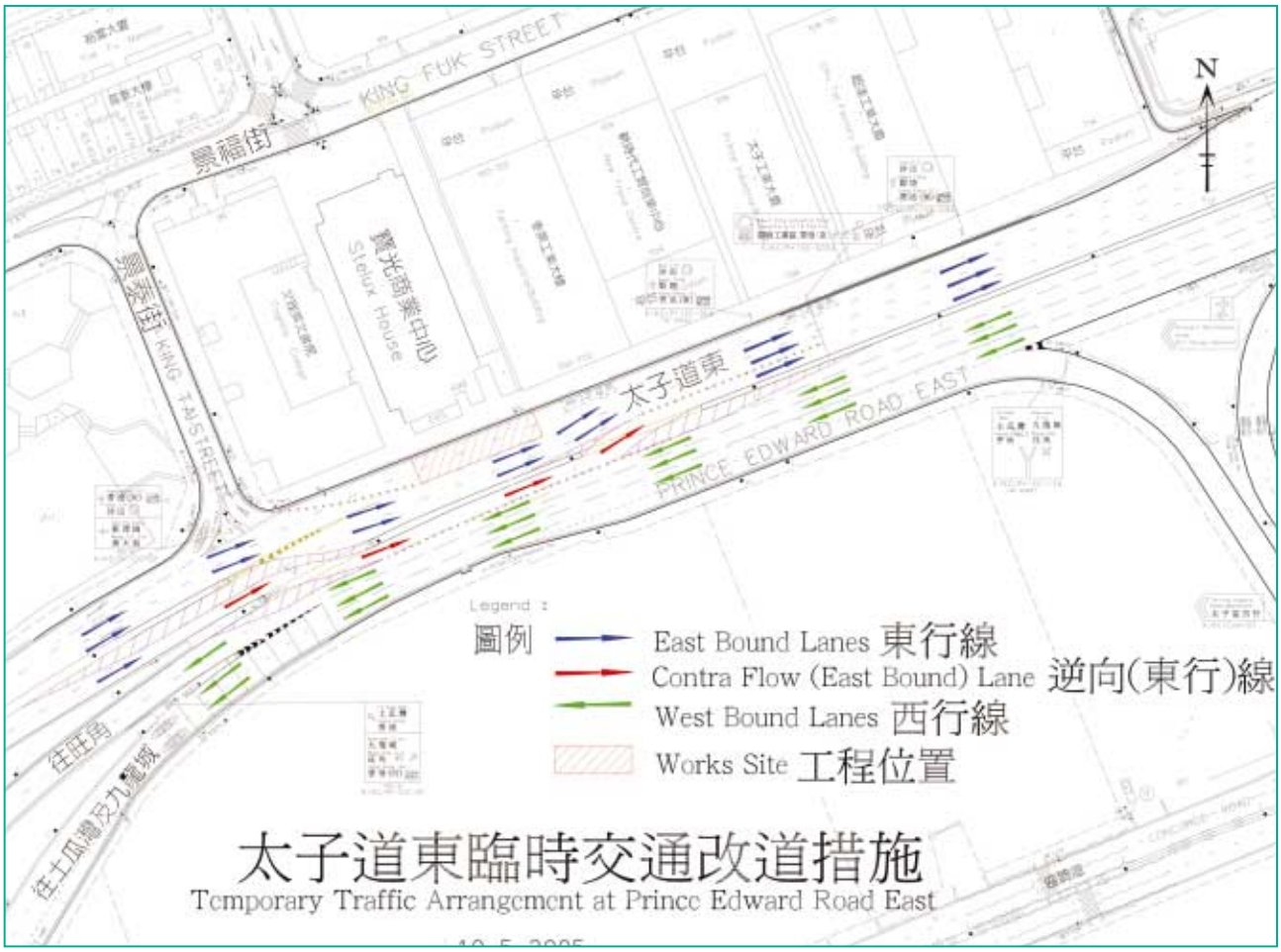
2.52 It was not until 23:00 that the Authorised Person responsible for the alteration and addition works at Stelux House informed BD that a large crane would arrive at the scene around 01:00 to 02:00 the next morning. This was in fact what happened and the securing of the scaffolding works was completed at 03:00.

2.53 After the discussions with BD and given the information provided, TD confirmed that contra-flow arrangements would be required and at 23:17 requested HyD to mobilise resources to break up the central divider.

2.54 BD confirmed at 23:30 that the stabilisation works would be completed, subject to weather conditions, by 06:00 on 10 May 2005. This would allow two outer traffic lanes to be reopened.

2.55 At 23:45, HyD and TD discussed at the scene regarding the arrangements for opening the central divider to implement the contra-flow arrangements. A map showing the contra-flow arrangements is at Figure 2.5 below.

Figure 2.5 Contra-flow arragements



2.56 The securing work of the loose scaffolding at the roof continued during night time and, as stated above, was completed at 03:00 on 10 May 2005.

2.57 As to the damaged cooling towers of the adjacent building, two cranes had to be arranged to the site such that the works could be carried out. BD estimated that it would take one to two hours to remove the cooling towers. Whilst the first crane arrived around 20:00, works could not commence because of the bad weather. We were informed by BD that the works could only commence after the second crane arrived at 22:30.

2.58 However, the contractor encountered potential dangers caused by the electrical arrangements at the three cooling towers. As a result, electricians had to be arranged to come to the site and this took place only at 01:00 the next day. The cooling towers were eventually removed and the works were completed by 05:00 on 10 May 2005.

2.59 HyD engaged its term contractor to break up the central divider. The work commenced at 01:20 at the extended island from the down ramp of the eastbound flyover at Prince Edward Road East (near its junction with King Tai Street), and at 01:45 and 03:00 at two segments, 30m each, of the central divider. However, works were suspended in the morning of 10 May 2005 to allow traffic to resume before the morning peak. Works for the two segments of the central divider were only completed at 13:00 and 16:00 on 10 May 2005 allowing the contra-flow arrangements to be implemented at 16:30.

2.60 In respect of information dissemination, TD and PPRB issued 45 press releases/advice on the traffic situation. Radio announcements were made to alert audiences of the congestion and alternative routes. TD also requested Cable TV to broadcast the

latest traffic information by rollers running on screen during its news programme. In addition, tunnel operators were requested to make break-in announcements. TD also requested KMB to disseminate the relevant traffic information to passengers through its LED display panels, and requested EMB to disseminate information to schools and asked them to take care of students in case of late arrival of school coaches.

2.61 At 07:15 on 10 May 2005, the Police reopened the third and fourth lanes on Prince Edward Road East eastbound. The contra-flow arrangements were also implemented at 16:30.

2.62 On 10 May 2005, BD continued to carry out further remedial works by erecting a catch platform to provide further protection to the public. In view of the inclement weather and the advice of the Labour Department against commencement of works during heavy rain, the works were unable to commence in the morning. The works commenced at 13:15 and was ultimately completed at 23:45 on 10 May 2005. Upon completion, BD confirmed that the remaining two lanes of the eastbound traffic for Prince Edward Road East could be opened. Hence, at 02:50 on 11 May 2005, all four lanes on Prince Edward Road East was opened for traffic and this message was passed to the various radio stations.

Observations

General

2.63 The officers involved in the incident mainly focused on their areas of responsibility without a full appreciation of the traffic impacts of the incident. There is a need for an overview and to ensure efficient intra-departmental and inter-departmental communication, so that the senior management and relevant departments can work together to shorten the response time for remedial works.

2.64 The Police and TD had made efforts to disseminate the information to the public. However, the commuters did not receive the complete message timeously, and the content of the messages could be made clearer and more specific.

Argyle Street Incident

2.65 BD could have been notified earlier given that it was reported and subsequently confirmed as an incident involving dangerous/loose scaffolding.

2.66 The incident could have been avoided had prompt action been taken by the owner of the signboard.

Waterloo Road Incident

2.67 We note that some departments such as the Police and FSD reacted very promptly to the incident. However, the arrival time of the two grab lorries of HyD's term contractor for removal of the pieces of sawn tree trunk and FEHD's street washing vehicle for washing the carriageway could have been improved.

2.68 HyD might not have needed LCSD's assistance if its term contractor were equipped with additional or more powerful chain saws. Hence it may be useful if the specifications of the term contract could be reviewed to see if this could be improved.

Prince Edward Road East Incident

2.69 After the arrival of FSD and the cordoning off of the scene, there was nothing anyone could do even if they had arrived on site. However, the Police could have notified BD earlier so that the travelling time of BD staff to the scene could take place in parallel when FSD was carrying out the rescue work.

2.70 Whilst it is known that the fallen scaffolding is a matter that has to be attended to by BD, there appears to be confusion as to who should be calling the department. It is understandable that police officers on site would not have the time to make the necessary calls. Hence the calls have to be made from an off-site support office. Possibly as a result of the overwhelming numbers of

incidents at the time and therefore the stretched resources, the matter was only attended to by the Kowloon RCCC at 14:40 when they rang up BD and later ICC reporting the Prince Edward Road East Incident as well as two other incidents requiring BD's support.

2.71 Whilst ICC was not, strictly speaking, responsible for inter-departmental communication during emergencies, ICC attended to the request without delay and made the necessary contacts with the subject officer of BD.

2.72 There was only one communication via the telephone between the officer deployed by BD to the scene and his senior. It was a day when BD had 13 incidents to attend to in Kowloon and resources were stretched. However given that this was clearly a major incident, the internal line of communication to more senior staff was not timely activated within BD. This resulted in insufficient senior level supervision deployed by BD for the accident until after 18:30.

2.73 Having said that, it is to be noted that BD informed us that even if senior level staff of BD had attended to the scene earlier, there was nothing that could have been done to remove or secure the cooling towers at the adjacent building and the loose scaffolding at the roof until the two small cranes and the one large crane arrived. The large crane, we were told, could not be transported on roads unless with a permit and hence one needed to wait till midnight or request Police escort given its dimensions.

2.74 If that is the case, measures must be in place to address urgent recovery measures that may be needed to remove or secure loose scaffoldings. This is especially so, if for whatever reasons, the scaffolding could not be secured quickly from the inside without the help of a large crane. It would clearly be unacceptable if any loose scaffolding posing a safety hazard and causing road closure could not be secured because the crane could only be delivered to the scene either after midnight or alternatively with Police escort.

2.75 There had been no realistic estimate of the completion of the remedial works provided by BD for ETCC to report the public until at night. The reason is that whilst the duration of the works could be estimated, the starting time, which was dependent on the availability of the cranes, could not be confirmed earlier. An early estimate of the time as to when the road would remain closed would be useful information for the public. If it were known that the road could not be fully reopened before the peak hours, other measures, which would not remove the congestion but might have alleviated its effects, could be devised.

2.76 Whilst it is perfectly understandable, it should be noted that the choice of the drivers who did not wish to go on alternative routes but insisted on staying in the queues and passengers who did not agree to the bus going on a diverted route, had rendered the recovery measures more difficult.

2.77 Given the time needed to prepare for the contra-flow arrangements, such a diversion measure was not a solution that would have removed or alleviated the congestion even if the decision to adopt this measure was made earlier.

Chapter 3
Crisis Management Mechanism

Introduction

3.1 Effective crisis management requires adequate contingency planning, prompt and accurate assessment of the situation and efficient response and remediation.

3.2 We note that the Government has in place a "Three Tier" Emergency Response System (ERS) to handle emergency situations that threaten life, property and public security. While the System goes beyond the scope of the Task Force, it sheds light on the philosophy and modus operandi of the crisis management arrangements adopted by the Government.

3.3 After examining the Government-wide system, we focus on emergency handling arrangements for incidents with substantial traffic impact and recommend improvement measures to the current practices.

Emergency Response System

3.4 We understand that ERS is developed with the objective of keeping emergency command and communication systems as simple as possible with minimum layers of command and control.

The activation parameters and mode of response under ERS are at Figure 3.1.

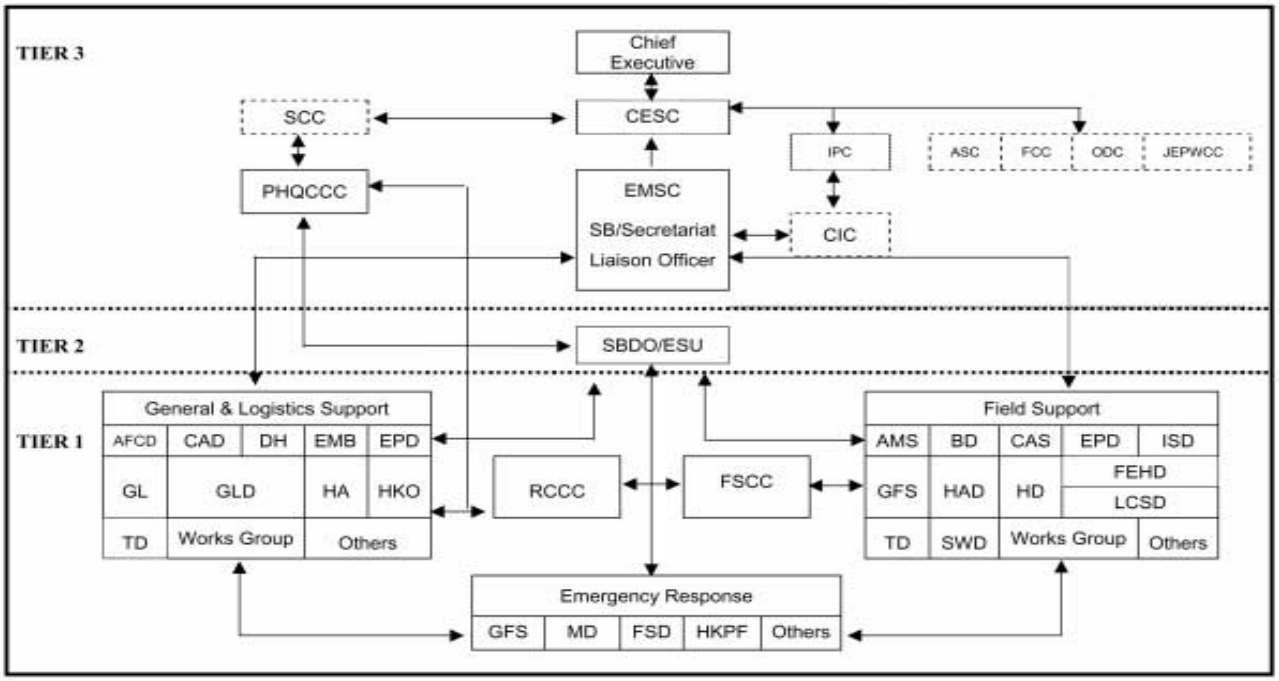
Figure 3.1

Tier	Activation parameters	Mode of Response
Tier 1	An incident that can be handled within departmental capabilities.	The emergency services, such as the Police and the Fire Services Department, operate entirely under the direction, monitoring and support of their own commands.
Tier 2	The scale of the incident is likely to grow in terms of threats to life, property and security, and a more complex emergency response operation may be required.	Government Secretariat will closely monitor the unfolding of incidents through the Emergency Support Unit[2].
Tier 3	A major incident involving widespread threats to life, property and security and where extensive Government emergency response operations are required.	The Emergency Monitoring and Support Centre will be activated upon the direction of the Secretary for Security or a designated senior Security Bureau official. Other high-level security committees may be convened.

2 The Emergency Support Unit is established within the Security Bureau in 1996 to coordinate the activities of Security Bureau Duty Officers who are the first points of contact in the Bureau for emergency matters.

The flow chart on graduated response to emergencies is at Figure 3.2.

Figure 3.2



Departments

AFCD	Agriculture, Fisheries and Conservation Department
AMS	Auxiliary Medical Service
BD	Buildings Department
CAD	Civil Aviation Department
CAS	Civil Aid Service
DH	Department of Health
EMB	Education and Manpower Bureau
EPD	Environmental Protection Department
FEHD	Food and Environmental Hygiene Department
FSD	Fire Services Department
GFS	Government Flying Service
GL	Government Laboratory
GLD	Government Logistics Department
HA	Hospital Authority
HAD	Home Affairs Department
HD	Housing Department
HKO	Hong Kong Observatory
HKPF	Hong Kong Police Force
ISD	Information Services Department
LCSD	Leisure and Cultural Services Department
MD	Marine Department
TD	Transport Department
SB	Security Bureau
SWD	Social Welfare Department

Committees

ASC	Aviation Security Committee
CESC	Chief Executive Security Committee
FCC	Food Control Committee
IPC	Information Policy Committee
JEPWCC	Joint Emergency Public Works Coordinating Committee
ODC	Oil Distribution Committee
SCC	Security Control Committee

Others

CIC	Combined Information Centre
EMSC	Emergency Monitoring and Support Centre
FSCC	Fire Services Communication Centre
PHQCCC	Police Headquarters Command and Control Centre
RCCC	Regional Command and Control Centre
SBDO/ESU	Security Bureau Duty Officer/Emergency Support Unit

3.5 The Emergency Monitoring and Support Centre (EMSC) activated under the Tier 3 Response is located in the Central Government Offices.

3.6 EMSC works closely with other coordination centres on issues which require Government-wide attention; with the Information Services Department on matters that have public relations and media implications; and with the Home Affairs Department on the coordination of emergency relief efforts, with particular regard to facilitating victims' access to comprehensive assistance by different Government departments.

3.7 While EMSC provides the overall monitoring capability, all departments involved in emergency response have their prescribed roles during emergencies. They provide monitoring, support and coordination in their own areas of responsibility by operating off-site emergency coordination centres. The Emergency Transport Coordination Centre (ETCC) is one of such emergency coordination centres (more details in paragraphs 3.14 to 3.20).

3.8 Liaison officers from involved bureaux and departments, including the Transport Department (TD), may also be called into EMSC to act as expert advisers on issues within their areas of knowledge.

Emergency Handling Arrangements for Individual Departments

3.9 We note that apart from the Government-wide ERS that caters for major emergencies which threaten life, property and security, some departments have their own emergency handling arrangements that are modelled on ERS. Depending on the different practices adopted by the departments, such standing orders define emergency situations; set out parameters and procedures for alerting the senior management; and outline contingency plans and action checklists.

Role of the Transport Department in Handling Transport Emergencies

Emergency Transport Arrangements

3.10 We have examined in detail the standing orders adopted by TD in handling transport incidents.

3.11 Under the current arrangements, there are four main types of transport emergencies -

(a) **natural disaster emergencies** like rainstorms, tropical cyclones and landslips;

(b) **public transport emergencies** that involve major and widespread disruptions or breakdown of public transport services;

(c) **major road emergencies** caused by severe traffic congestion, road collapse or blockage or accidents. For the purpose of handling road obstruction emergencies, traffic sensitive routes, public transport sensitive routes and routes to vulnerable areas have been identified. Major road emergencies are defined as those resulting in partial or full closure of the above routes for an extended period; and

(d) **tunnel emergencies** which occur inside tunnel tube or on an approach road within the tunnel area. Serious tunnel incidents are defined as those resulting in closure of traffic lanes in the tunnel or on approach roads for an extended period.

3.12 We understand that TD has established a 24-hour contact point for departments and public transport operators. Emergency messages will be passed to the relevant TD officers that handle all the transport emergencies during the Standby and Mobile Modes of ETCC. Details of the two modes of ETCC are set out in paragraphs 3.15 and 3.16 below.

3.13 TD also upkeeps traffic and transport contingency plans for handling specific types of incidents that may occur at strategic routes or locations. It reviews and makes improvements to the operational arrangements set out in the contingency plans from time to time.

Emergency Transport Coordination Centre

3.14 The role of ETCC is mainly to:

(a) monitor traffic and transport situation in an emergency;

(b) alert and liaise with public transport operators for service strengthening or route diversions;

(c) liaise with the Police, the Fire Services Department (FSD) and all emergency services departments and tolled road operators on emergency traffic plans; and

(d) disseminate information on emergency traffic and transport arrangements to the public.

3.15 Duty officers of TD are always under the Standby Mode. They will be on alert to receive calls from the contact point round the clock.

3.16 The Mobile Mode will be activated as soon as one of the duty officers is contacted. The duty officer will operate in the place where he is contacted.

3.17 The Fixed Mode ETCC will be activated in cases of serious traffic or transport incidents causing major public transport disruptions; planned events such as opening of new railway lines and Disney Theme Park or congestions over widespread area in the territory.

3.18 The Fixed Mode ETCC operates in the Control Room of TD Headquarters. There is one ETCC Control Room of a smaller scale in the Kowloon Regional Office of TD.

3.19 The ETCC Control Room is equipped with Closed-Circuit Television (CCTV) monitoring systems showing part of major trunk roads and strategic areas.

3.20 ETCC has direct lines to public transport operators, tunnel and bridge operators, Airport Authority, EMSC, radio stations and Police Regional Command and Control Centres (RCCCs). There are also audio-visual facilities, computer facilities and a meeting room for discussion and decision-making in ETCC.

Role of the Police and Other Departments

3.21 Apart from TD, the following five departments have their respective roles to play in the emergency incidents on 9 May 2005 -

(a) the Police are responsible for diverting traffic on roads affected by emergency incidents, arranging tow vehicles to remove vehicles damaged by traffic accidents, and liaising with other departments for quick road recovery, such as removal of fallen trees and scaffolding, etc.

(b) FSD is responsible for fire-fighting and rescue operations;

(c) The Leisure and Cultural Services Department is responsible for cutting and clearing fallen trees within urban area and on public roads;

(d) The Buildings Department is responsible for dealing with dangerous signboards and scaffoldings;

(e) The Highways Department is responsible for clearing and repairing blocked public roads.

3.22 We have examined the emergency handling procedures of the above departments with respect to incidents with traffic impact vis-à-vis those adopted by TD.

3.23 We appreciate that in addition to the above departments that were involved in the three incidents under study, many other departments also play an important part in responding to emergencies that have traffic impact. In particular, we have examined the emergency handling procedures for chemical spillage, flooding, water main bursts and landslips adopted by the Environmental Protection Department, the Drainage Services Department, the Water Supplies Department and the Civil Engineering and Development Department respectively given the traffic impact of such incidents. In cases of major traffic accidents such as multiple collisions, the Hospital Authority will also have a key role to play in providing emergency medical services for casualties.

Areas for Improvement and Recommendations

Contingency Plans

3.24 We find that ETCC functions more effectively in the case of planned events and well-practised emergencies such as typhoons, rather than the present case where three major incidents occured within a short period of time without any advance warning.

3.25 While TD upkeeps a range of contingency plans on public transport disruptions and blockages or accidents at major infrastructure, there are fewer diversion plans or action checklists for congestions resulting from closure of major trunk roads in the urban area. The absence of such contingency plans makes it very difficult for staff of different departments to manage crisis situations or unplanned incidents. Better planning could prevent the traffic from building up to the state of a gridlock.

3.26 **We therefore recommend that TD should develop a set of contingency plans on closure or congestion occurring on traffic sensitive or public transport sensitive routes with reference to traffic models and traffic information collected through different sources. The plans should include diversion options, signal control strategies capable of handling over-saturated traffic, as well as manpower and logistics requirements. The diversion plans should also include bus route diversions and plans for capacity expansions in alternative modes such as rail and shuttle services.** We note that there are similar suggestions from the public.

3.27 **It would also be useful for TD and other relevant departments to conduct regular emergency drills to test the efficacy of the contingency plans and to ensure that their staff are familiar with the procedures.** These points are echoed by the public.

Emergency Transport Arrangements

3.28 We notice that despite the circulation of TD's emergency transport arrangements to all major departments, some departments are still not fully aware of the arrangements or the classification of traffic sensitive or public transport sensitive routes. In the present case, most departments were not aware that the three affected roads were all traffic sensitive routes with a high degree of significance in the road network. This has caused certain departments not to give due consideration to the traffic impact when they carry out their own responsibilities. This also hinders inter-departmental coordination at the working level in handling the emergencies.

3.29 **We understand that TD is reviewing and fine-tuning their emergency transport arrangements, based on the experience gained in the incidents that occurred on 9 May 2005. It is important for TD to bring the emergency arrangements to the attention of other departments, especially those officers on the ground, and to re-circulate the guidelines on a regular basis.**

3.30 **We also recommend that different departments should ensure that their emergency handling procedures are in line with those of other departments to facilitate communication and coordination in the future.**

3.31 There are suggestions that the Government should examine the strengths and weaknesses of each crisis management phase including hazard identification, operational readiness, emergency preparedness, crisis handling and recovery of crisis. **We agree and consider that apart from conducting thorough reviews on the existing emergency transport arrangements, departments should adopt the concept of dividing incident management into different stages and look for ways to streamline actions at each stage. A detailed discussion is set out in Chapter 7.**

3.32 We have also received suggestions to invite universities or consultants to propose improvements to Hong Kong's incident management system and road network hazard relief, making reference to overseas emergency transport coordination systems. While one should be careful when making such comparisons given the unique characteristics of the traffic systems and road networks of different places, **we consider that such kind of studies is worth conducting in the longer term if resources permit.**

Assessment of the Situation

3.33 We understand that the initial assessment on the severity of the problem and many decisions on the proper courses of action and manpower requirements are made by officers at the scene. However, they may not have knowledge of the big picture, or in some cases, sufficient experience to make an accurate assessment of the situation. This hinders the progress of the emergency handling actions.

3.34 **We consider it important for departments to provide their officers with sufficient guidance, such as checklists and guidelines, to enhance their judgement. Officers should also be made aware of the macro-picture and the wider implications of their actions. In addition, an established mechanism should be built within each department for officers at the scene to escalate the issues and for senior officers to monitor the developments and to give timely directives.**

3.35 In this connection, we have considered situations where officers from the supporting departments and other officers on the ground may not be able to make a firm assessment of the situation and give a clear indication of the lane closure time. **We recommend that under such circumstances, officers at the site should escalate the issues to more senior level for direction. In addition, the Police and TD should be informed of the departments' inability to make a realistic assessment of the closure time, so that more long-term traffic diversion plan and the Joint Steering Mode as described below could be triggered.**

Steer and Coordination

3.36 The three major incidents show the importance of information sharing and seamless coordination among different departments.

3.37 We have received comments that ETCC should be led by a senior Government official to ensure that prompt actions will be taken by relevant supporting departments in times of crisis. We appreciate that individual departments have their own expertise and that officers on the ground may be

in a better position to give instantaneous response. However, we see the benefit of bringing senior officers of relevant departments together to expedite the decision-making process and improve coordination.

3.38 **To enhance steer and coordination in cases of major emergencies, we recommend that ETCC should operate under the Joint Steering Mode. This is a further escalation from the Fixed Mode mentioned in para. 3.17. The key for this recommendation is joint Police and TD steer. This mechanism should be activated by triggering events such as large-scale planned events (e.g. opening of new transport infrastructure and festive events), major incidents (e.g. natural disasters, closure of major routes for an extended period and cross-boundary incidents) and other situations that warrant high level steer and coordination.**

3.39 **Under this mechanism, a senior officer of TD (e.g. Assistant Commissioner or above) will inform the Traffic Branch Headquarters of the Police to arrange for an experienced senior-ranking officer to be stationed at ETCC. While the seniority of the officer will depend on circumstances, he/she must be of sufficient seniority to fulfill the role entrusted to him/her. Apart from TD, the Police can also activate the Joint Steering Mode according to the triggering parameters mentioned above. The joint steer will enhance communication and coordination between TD and the Police RCCCs as well as police officers on the ground. It will also bring about the added benefit of coordinated and consistent dissemination of information about the incident as well as traffic and transport arrangements.**

3.40 **In addition, it would be desirable for the Environment, Transport and Works Bureau to be represented by a directorate officer at ETCC to enhance coordination with other bureaux and the senior echelon. This will enhance communication and expedite the decision-making process. Where necessary, senior officers of other supporting departments may be required to station at ETCC or be available on line to facilitate efficient communication and the decision-making process.**

Facilities of ETCC

3.41 We note that ETCC's current facilities are fairly basic for a coordination centre.

3.42 **To enable ETCC to perform its role more effectively, we recommend that its facilities should be upgraded. In particular, more advanced computer systems with enhanced inter-departmental connectivity and Geographical Information System as described in paragraph 5.17 for monitoring the traffic conditions should be procured.**

Use of Technologies in Crisis Management

3.43 We have received a number of suggestions on the use of technologies in crisis management. For instance, it was suggested that more roadside devices, e.g. CCTV cameras, Automatic Incident Detection technology and Global

Positioning System-based technology (such as monitoring devices on buses) should be used to allow decision-makers to have a better overview of the incident. A real-time Transport Information System or other Intelligent Transport Systems (ITS) should be used to assist traffic diversion, generate response plans when roads are blocked and disseminate information to the public. A fully integrated system which integrates all the current Traffic Control and Surveillance Systems and the Area Traffic Control Systems for urban roads is also suggested. More discussion of the technologies for congestion relief is included in Chapter 5.

3.44 We understand that TD has reviewed its ITS strategy in 2001, and the aforementioned suggestions are part of the ITS strategy. **In view of the incidents that occurred on 9 May 2005, we recommend that TD should update its ITS strategy, incorporate some of the latest technologies and implement the recommendations as soon as possible.**

3.45 **We also recommend that TD should harness advanced technologies to strengthen its emergency handling capabilities subject to the availability of resources.**

Chapter 4
Internal Coordination to Expedite Immediate Remedial Works

Introduction

4.1 The impact of a traffic incident could be minimised if remedial actions are taken promptly and effectively. The incidents that occurred on 9 May 2005 have raised considerable concern about the effectiveness of coordination among different departments to expedite immediate remedial works.

4.2 We consider that effective communication both within a department and among different departments is required. We have examined the current framework and identified areas for improvement.

Key Departments and Current Practices

Police

4.3 We note that members of the public usually call the "999" hotline in cases of emergency. As the department responsible for manning the hotline, the Police are thus always the first contact point among the departments for emergency incidents.

Liaison with the Transport Department/Emergency Transport Coordination Centre

4.4 The emergency calls are handled by the three Regional Command and Control Centres (RCCCs) located in Hong Kong, Kowloon and the New Territories.

4.5 After getting the necessary information, the traffic console of RCCC will assign officers to the site to handle the case. The officers will assess the situation and report to the traffic console. The traffic console will inform the Transport Department (TD) if it is considered that the incident will have some traffic impact.

Liaison with Other Departments

4.6 There are a number of action cards for police officers to follow when certain types of incidents occur (e.g. traffic accident, typhoon, etc.). In case assistance from other departments, such as removal of fallen trees and oil dirt, is required, RCCC or officers on the ground will contact the relevant departments direct, or via the Integrated Call Centre (ICC) (discussed below).

Fire Services Department

4.7 There are established channels for direct communication between the Police and the Fire Services Department (FSD). The Communication Centre of FSD may receive reports from members of the public simultaneously with RCCC if the operator in RCCC considers that FSD's involvement is necessary. One example is the need to rescue passengers trapped inside a car in a traffic accident.

4.8 FSD will then dispatch fire engines with the necessary equipment and ambulances for rescue operations. Frontline officers and other departments will communicate through FSD's Communication Centre.

Integrated Call Centre

4.9 ICC is established under the Efficiency Unit of the Chief Secretary for Administration's Office. It was launched in July 2001 and became fully operational in October 2002.

4.10 ICC handles enquiries and complaints from members of the public on a wide range of services provided by 13 Government departments[3]. The general hotlines of these departments have been diverted to ICC.

4.11 ICC provides a one-stop service to deal with callers' enquiries and complaints, which can be made by telephone (the 1823 Citizen's Easy Link and participating departments' hotlines), letter, fax, Internet and e-mail, to offer faster, more efficient and simpler service to the public. It also provides specific services in handling enquiries relating to promotional projects or campaigns on an ad-hoc basis.

4.12 At present, there are more than 200 lines at ICC, when it is fully manned. ICC handles 180 000 - 200 000 calls every month, 80% of which are general enquires and the remaining 20% are complaints and other calls. Its performance standard is to have more than 80% of the calls answered within 12 seconds, and more than 90% of the enquiries resolved at the first time of call.

4.13 The incoming calls are prioritised according to the time they are received. In case many citizens call ICC at the same time, and the computer system estimates that the caller has to wait for 120 seconds or more, the caller will be given the option of leaving a voicemail to the Customer Service Officer (CSO), who will revert within three hours under the performance pledge.

3 Namely, Architectural Services Department, Agricultural, Fisheries and Conservation Department, Buildings Department, Civil Engineering and Development Department, Electrical and Mechanical Services Department, Food and Environmental Hygiene Department, Highways Department, Labour Department, Leisure and Cultural Services Department, Marine Department, Hongkong Post, Rating and Valuation Department and Transport Department.

Liaison with the Transport Department/Emergency Transport Coordination Centre

4.14 At present, around 17 000 - 20 000 calls received by ICC each month are related to TD, and 1-2% of these calls are enquiries on traffic conditions.

4.15 TD provides traffic advice to ICC by fax to facilitate handling of enquiries from members of the public. Such advice will be kept by the Duty Manager. In case there are major traffic incidents, the relevant information will be broadcast to the workstations of all CSOs to facilitate handling of public enquiries.

4.16 If a CSO receives a call from a citizen, enquiring why a particular road is congested, he/she will check either the relevant broadcast on his workstation or the traffic advice kept by the Duty Manager to see if TD has provided any information on the case. If the reason of congestion can be found, the caller will be informed accordingly. If there is no such information on the congestion, and the Duty Manager suspects that there may be a major traffic incident after receiving a number of similar enquiries, he will contact the Emergency Transport Coordination Centre (ETCC) for verification and further information.

4.17 The details concerning the dissemination of information by ICC will be discussed in the chapter on information dissemination.

Liaison with Participating Departments and the Role of ICC

4.18 The CSOs of ICC handle enquiries and complaints from the public on the services provided by the 13 participating departments. If the CSO is unable to give immediate answers or information to the caller, he/she will contact the relevant subject officer in the department concerned for follow-up actions. The computer system will automatically alert the subject officer of unresolved cases when the deadline for response is approaching. The case will also be escalated to the subject officer's supervisor if the deadline is missed. The department is required to report to ICC if the action on its part is completed. After the department has given ICC the required information or has completed the action required, the CSO will notify the citizen.

4.19 If the caller requests information of non-participating departments, the CSO will provide the caller with the contact information of the relevant department.

4.20 The participating departments provide ICC with detailed guidelines on what questions the CSO should ask on different subject matters and case scenarios. Such information is captured in ICC's knowledge base. For example, in case the CSO receives a complaint on building defects, he/she will ask the caller the location, size and type of defects, whether there is anybody injured, etc to assist the Buidling Department (BD) to evaluate the situation and take appropriate follow-up actions.

Emergency Transport Coordination Centre

4.21 As mentioned in Chapter 3, the main function of ETCC is to monitor the traffic and transport situation and liaise with public transport and tunnel/bridge operators as well as the Police and other emergency services departments on emergency traffic plans and service strengthening.

4.22 When the Fixed Mode ETCC is activated, TD will notify all relevant departments[4] and the Environment, Transport and Works Bureau. The Hong Kong Observatory will also alert TD of warnings issued regarding rainstorms, floodings, landslips and tropical cyclone signals directly.

Highways Department

4.23 The Highways Department (HyD) is required to disseminate information on incidents occurring on traffic sensitive or public transport sensitive routes that require emergency actions to be carried out by HyD. Such information has to be disseminated to the Police RCCC, as well as TD and the relevant works departments or utilities companies within 30 minutes after the detection of the incident.

4 Departments to be notified include Civil Aviation Department, Education and Manpower Bureau, Electrical and Mechanical Services Department, Emergency Monitoring and Support Centre, Fire Services Department, Highways Department, Home Affairs Department, Information Services Department, Marine Department and Water Supplies Department.

Other Departments

4.24 Individual departments have their internal circulars/guidelines on actions to be taken during emergency situations. Relevant departments will be notified of an incident as and when necessary.

Areas for Improvement and Recommendations

Gaps and Grey Areas in Inter-departmental Coordination

4.25 Remedial actions will not be effective if there is inadequate communication among the departments involved. Relevant departments have to be notified and respond promptly. There are criticisms regarding the lack of coordination among different departments involved in the incidents on 9 May 2005.

4.26 In addition, it appears that there is a certain degree of confusion as to which department should take up a particular task. The result could be either extreme - one extreme is to have more than one party dealing with the situation, or the other extreme is to have no department taking ownership, and the matter being overlooked.

4.27 There are suggestions ensure clear delineation of responsibilities amongst Government departments and enhance communication on the division of labour. These suggestions have our support. While we note that the roles and responsibilities of various departments in handling emergency incidents have been set out in the circulars issued by the Emergency Monitoring and Support Centre and TD, the descriptions are rather general and may not be specific enough.

4.28 **We therefore recommend that the designated roles of different departments in traffic-related emergency incidents should be set out clearly in departmental circulars. Such circulars have to be re-circulated regularly as an aide-memoir to officers who would be involved in handling emergency situations.**

4.29 **To ensure that different departments are familiar with the actions to be taken on their part in emergency situations, regular emergency drills are necessary. (See Chapter 3 - Crisis Management Mechanism).**

Inadequate Internal Communication within a Department

4.30 It is important that senior officers are alerted to important emergency incidents as soon as possible, so that they could decide on the most appropriate remedial actions that should be taken in good time, and deploy resources internally for those actions. Officers dealing with emergency situations should also be reminded to be sensitive to the implications of an incident, and inform senior officers as necessary, so that sufficient senior level supervision can be given.

4.31 **We recommend that all departments involved in dealing with emergency situations should review its internal communication mechanism, with a view to establishing an effective reporting system for the senior management to have an overview of the incidents that are being handled for effective deployment of resources.**

4.32 **In addition, as mentioned in Chapter 3, all departments involved in handling emergency situations should review their internal circulars. The importance of considering the traffic implications of an incident and alerting TD as early as possible should be highlighted.**

Public Expectation of the Role of the Emergency Transport Coordination Centre

4.33 The name of ETCC - Emergency Transport Coordination Centre - suggests that it has the authority to coordinate different departments and give instructions as necessary. However, this is currently not the case.

4.34 The majority of decisions on road closure and diversion plans are made by police officers at the scene. Depending on the nature of the incident, the Police also contact other departments for assistance. However, while the frontline police officers may be able to make immediate judgement on the spot, they may not have an overview of what is happening nearby, and what could be done further up the road, including whether traffic diversion further away from the incident site would be more effective.

4.35 While ETCC should have a better overview of the various incidents happening throughout the territory through the Closed-Circuit Television (CCTV) cameras, we note that there are many "blind spots" in the CCTV system that have to be supplemented by other information sources. Where appropriate, TD would send a site observer to the scene.

4.36 The effectiveness of the remedial works would be enhanced if decisions are based on data, adequate information and realistic assessment. Discussions with the Police on the appropriate diversion routes and alternative transport arrangements to be implemented are essential to the workability of such measures. Liaison with other departments will also be necessary to decide what diversion measures should be adopted. The time required for rescue operations or remedial works at the scene will impact on what traffic diversions would be most appropriate.

4.37 **We therefore recommend that ETCC should take up a more proactive coordination role to handle transport and traffic incidents. We have recommended the introduction of the Joint Steering Mode to handle cases that require the attention of senior officers of TD, the Police and other relevant departments. The details are described in paragraphs 3.38-3.40.**

4.38 **In addition, we recommend that other departments should give a realistic assessment of the time required for the remedial works for which they are responsible, where practicable, so as to facilitate decisions on transport and traffic management. If an estimate could not be provided, TD and the Police should also be informed.**

Lack of Designated Communication Channels between Departments

4.39 One of the possible difficulties encountered by the Police was the time required to reach ICC, and thereafter the time required to relay the message to the relevant departments. On 9 May 2005, for instance, when the police officers or Police RCCC tried to contact the Buildings Department (BD) for remedial actions through the department's hotline (which was diverted to ICC), the CSO could not be reached since the number of calls made to ICC on that day was exceptionally high. Between 13:00 and 14:45 of 9 May 2005, ICC received about 950 calls.

4.40 Since there was no designated line for the Police or other Government departments at ICC, the Police had made a number of unsuccessful attempts to contact the relevant departments. Even if the call was connected to ICC, it had to remain in the queue like the calls from other members of the public. In other words, the Police had to compete with less urgent enquiries for a line. It would save a lot of time if the Police had been able to contact the subject officer of BD earlier.

4.41 **We therefore recommend that designated communication links among different departments should be established to expedite remedial works. The designated lines could be manned by ICC. In addition, the knowledge base kept by the CSO has to be updated regularly so that adequate information can reach the subject officer without delay.**

4.42 As an alternative before the designated lines are established, departments could implement an emergency duty officer system to facilitate direct communication during emergencies. It is important to promulgate and update the contact details of the duty officers and to ensure that they can be reached after office hours.

4.43 **In the longer term, inter-departmental dispatch coordination can be enhanced through the development of a shared computerised dispatch database among the involved departments in the form of a computer-aided dispatch system. With such a system, all the requests as well as conditions of the incident can be updated and logged as the event unfolds itself. The involved parties including personnel at the scene would then have a real-time comprehensive understanding of events happening at the scene as well as the status of equipment and manpower dispatch.**

Chapter 5
Congestion Relief Measures

Introduction

5.1 The implementation of congestion relief measures during an incident is time-critical. Prompt traffic diversion can stop accumulation of vehicles at specific spots, and prevent the congestion from spreading to other portions of the transportation network. Dissemination of timely traffic information, on the other hand, facilitates travellers to avoid the congested region by changing their travel plans, such as their choice of route or destination, departure time and transport modes. In addition, traffic management measures such as traffic signal control and contra-flow arrangements can ease the congestion during and after an incident.

Key Departments and Current Practices

Police

5.2 Police officers on the ground have first-hand information about the traffic conditions and incidents that occur within their regions. They also obtain information about incidents through "999" emergency calls. However, the different Police regions or Regional Command and Control Centres do not have information about the traffic conditions of the transport network outside their domain.

5.3 We note that the Police have command over traffic diversion through formulating and implementing traffic diversion plans, taking control over signalised junctions by manual control of the traffic light by a field officer, and directing traffic at strategic locations to enhance vehicular flow.

Transport Department

5.4 We understand that the Transport Department (TD) uses different devices to collect real-time traffic information. One of the prime sources of such information is the Closed-Circuit Television (CCTV) system. Currently, there are 544 CCTV cameras installed at strategic locations to give TD a general overview of the traffic conditions across the territory. However, there are many "blind spots" in the CCTV system, such as the affected location at Prince Edward Road East, that have to be supplemented by information from the Police on the ground.

5.5 Incidents that occur on free flowing key routes, in particular road tunnels, can be detected by Automatic Incident Detection (AID) technology. At the moment, detection devices are installed in some road tunnels[5] and the Tsing Ma Control Area to detect incidents which result in slow moving or stagnant traffic, so that instantaneous response can be made by the operators.

5.6 In addition, the journey time to the three road harbour crossings is measured by the Journey Time Indication System (JTIS) through tracking the

5 AIDs are currently installed at the Eastern Harbour Crossing, Western Harbour Crossing, Aberdeen Tunnel, Airport Tunnel, Tate's Cairn Tunnel, Tai Lam Tunnel, Shing Mun Tunnels and Tseung Kwan O Tunnel.

position and general speed of a fleet of buses equipped with Global Positioning System (GPS), supplemented by video images captured by cameras at strategic locations, thus showing the speed of vehicles.

5.7 There are also loop detectors embedded underneath the roadway. They are used to collect traffic information.

5.8 Apart from the above devices, TD obtains traffic information from sources such as public transport and tunnel operators, as well as the Integrated Call Centre.

5.9 On traffic control, TD liaises with the Police on diversion arrangements and plans contra-flow arrangements in the case of prolonged road closure[6]. To prevent the building up of traffic queues, TD adjusts the traffic signals through the Area Traffic Control (ATC) System to provide more green time for the diversion routes. TD also alerts tunnel operators to monitor the traffic situation and take prompt actions to enhance the traffic flow within their tunnels.

5.10 On transport arrangements, TD liaises with bus companies on bus diversion plans, and alerts the railway operators to monitor the transport demand and strengthen train services when there is serious congestion.

6 Contra-flow arrangements may not be effective short-term relief measures because of the lead-time required to remove the barriers, especially in cases where there are concrete central dividers.

Highways Department

5.11 Apart from the Police and TD, the Highways Department (HyD) helps to facilitate early reopening of the roads by carrying out emergency repair and removing blockages on the roads. HyD also assists the Police, TD, other works departments and utility companies to decide on the course of actions; gives advice on the duration of an incident that involves their expertise; and plans for the reopening of the road.

Areas for Improvement and Recommendations

Data Collection

5.12 We note that the three major incidents occurred at approximately the same time in separate locations with traffic interaction. As a result, neither TD nor the Police had the overall picture of the traffic situation individually. Insufficient real-time data hinders planning and implementation of diversion plans in a holistic manner to achieve the maximum effect.

5.13 **For immediate improvement, it is important for the Police and TD to update and supplement each other on traffic information. We recommend using an incident map to collate information from different sources so that the severity and spread of congestion can be better assessed.**

5.14 **Taking advantage of the technology that Hong Kong has already deployed, TD could explore the feasibility of using loop detectors underneath the roadway to collect real-time traffic data. If it is feasible, TD may consider widening the coverage of these detectors along traffic sensitive or public transport sensitive routes in the future .**

5.15 **In the longer term, we recommend improving the coverage of the CCTV system, especially along traffic sensitive or public transport sensitive routes. The concept of deploying mobile CCTVs can also be explored to make the data collection process more effective.** This is in line with some public suggestions.

5.16 **We also recommend that TD explore the feasibility of deploying a fleet of probe vehicles, probably buses and other public transport vehicles installed with GPS, to measure the network travel time and speed. The JTIS has already adopted this approach to estimate the travel time through different cross-harbour tunnels.** We have received similar suggestions in this respect.

5.17 **In addition, we recommend that TD examine the possibility of developing a system based on Geographical Information System to display real-time traffic information in the form of a Traffic Speed or Queue Map. It provides a convenient way to observe the growth of traffic congestion over time and space, as well as the spread of congestion in the region surrounding the incident site. This graphic display of traffic congestion will be useful for early detection of an incident, and for devising and monitoring the effects of diversion and signal control plans around the scene.**

Traffic Management

5.18 At the moment, traffic diversions are mainly formulated and implemented by police officers on the ground. TD only comes into play when prolonged road closure or more elaborate diversions are involved.

5.19 **As mentioned in Chapter 3, we recommend that joint coordination and steer between the Police and TD under the Joint Steering Mode be triggered by some agreed parameters to oversee and respond to the situation. Jointly developing the diversion routes would mean that the issues of the feasibility of the plan, staffing concerns, as well as the bigger picture of traffic management around the affected region can be addressed at the same time.**

5.20 **To enhance the ability to manage traffic during an incident, we recommend that TD develop a set of contingency plans on incidents occurring on traffic sensitve or public transport sensitive routes as mentioned in paragraph 3.26.** The manpower and logistical arrangements in the plans will help ensure adequate police officers to be deployed at major junctions to direct traffic, prevent emergency vehicles from being trapped in the congested traffic and relieve congestion to shorten the queue.

5.21 We have received a suggestion that the Government should conduct debriefings on incidents for bureaux and departments as frequently as the situation warrants. **We agree that there are merits for such debriefings so that lessons learned from an incident can be consolidated for future reference to enable better handling of similar situations in the future.**

5.22 **In the future, we recommend that TD can explore the feasibility of developing a computerised expert-system-based incident management system. It can be used to monitor incidents and the traffic conditions of the affected areas, and help select and implement pre-programmed signal control strategies or diversion plans which are prepared based on contingency scenarios and lessons learned from past incidents. ETCC staff can fine-tune the pre-programmed plans based on real-time traffic conditions. All the data pertaining to how traffic evolved over the course of the incident, together with the control and management strategies adopted, will be logged in the computer system for future reference and improvements.**

Traffic Impact Assessment

5.23 One key factor in formulating an effective response is the incident duration and its resultant impact on traffic. Indeed, the activation of the Fixed Mode ETCC and its escalation to the Joint Steering Mode also rely on such an assessment.

5.24 Whereas the duration of an incident is estimated by the staff of the involved departments at the scene, its impact on traffic is assessed by TD, relying mainly on the experience of the staff involved.

5.25 To improve the accuracy of the traffic impact assessment, it is useful to develop a systematic way to learn from past experiences. **We recommend that records involving the types of incidents, their duration, clearance time,**

responses, resultant traffic conditions, extent and spread of congestion, as well as other important parameters be stored in the form of an Incident Database for evaluation and analysis.

5.26 **In the longer term, with the development of a real-time computer-aided dispatch system as described in paragraph 4.43, the process of maintaining the Incident Database can be automated for easy access and retrieval.**

5.27 **Based on actual cases in the Incident Database, as well as contingency plans developed, traffic models can be developed and applied to provide a priori estimates of the traffic impact in terms of delay, spread and extent of congestion, etc. These a priori assessments will be useful for identifying critical sites, and for issuing early alerts should incidents occur.**

Measures to Facilitate Diversion

5.28 We understand that on 9 May 2005, the Government departments experienced difficulty in diverting some motorists to use alternative routes and getting some buses to change routes due to objection of passengers. Understandably, such reactions were, to a great extent, due to the inclement weather and the lack of rail network around the congested area. Besides, some motorists and bus passengers preferred to stick to their original routeings and destinations because they were unfamiliar with the alternative routes.

5.29 There are suggestions that if a particular area is too congested, franchised bus services to the area should be suspended, or bus drivers should skip certain bus stops during emergencies. Given that these measures would give rise to serious disruption to the scheduled bus services, they should not be taken lightly. In particular, whether there are alternative modes of transport along the congested route has to be considered.

5.30 We also note suggestions that bus companies should provide special bus services on diverted routes to ferry passengers accumulated in the congested area. We understand that it has been the practice of bus companies to adjust the frequency of their services and implement bus diversion plans if such are required. The effectiveness of this method depends on the reaction of the passengers.

5.31 **To facilitate diversion arrangements, we recommend that more information and guidance be given to motorists on the alternative routes. On the other hand, prior arrangements and procedures should be established with public transport operators to ensure that bus route diversions are feasible and acceptable to the passengers on board. In addition, the information disseminated to passengers should be improved. The role of the bus regulators engaged by the bus companies to liaise with passengers under emergency situations should be strengthened. More training and clear guidelines for handling traffic congestion and incidents should be given to them.**

5.32 We also note that it took quite a long time to implement contra-flow arrangements at Prince Edward Road East. There is a suggestion that emergency openings be provided at central dividers at intermittent locations of major roads. We understand that such emergency openings are already available. **We recommend that Government should consider whether to increase its provision taking into account the financial and safety implications.**

5.33 We have received suggestions regarding the provisioin of better signages for traffic diversion. While this will facilitate diversion, it will be a more viable measure for planned incidents. However, for emergencies, such signages would be difficult to manage. TD may consider the feasibility of using mobile Variable Message Signs as mentioned in paragraph 6.11(i) to achieve the same effect.

Recovery Management

5.34 We consider that while a lot of actions are taken to clear the site and divert traffic at the height of the emergency, follow-up actions after the clearance of the site should not be overlooked.

5.35 **We recommend that traffic management measures such as diversion should continue to be adopted even after the clearance of the site to ensure that traffic will return to normal in a smooth and swift manner. New alternative routes may need to be tailored to the evolving traffic situation in the aftermath of an incident. Besides, TD should continue to monitor the traffic conditions in the affected region and adjust the traffic signals through the ATC System for**

effective queue management and dissipation.

Road Design and Rail Network

5.36 There are a number of suggestions related to enhancement of the road design and rail network, such as reviewing the adequacy of relief roads, incorporating the concepts of network connectivity and reliability in planning and constructing the road networks and building more rail lines. Some also comment that while the north-south bound roads in Kowloon are more developed, the east-west bound roads are not adequate. They consider that there is a need to increase the capacity for east-west bound traffic.

5.37 While we recognise that the unavailability of diversion routes had contributed to the serious congestion on 9 May 2005, and the lack of rail network in central-eastern Kowloon had made diversion even less feasible, the planning and provision of this long-term infrastructure is outside the Task Force's ambit.

Chapter 6
Dissemination of Information to the Public

Introduction

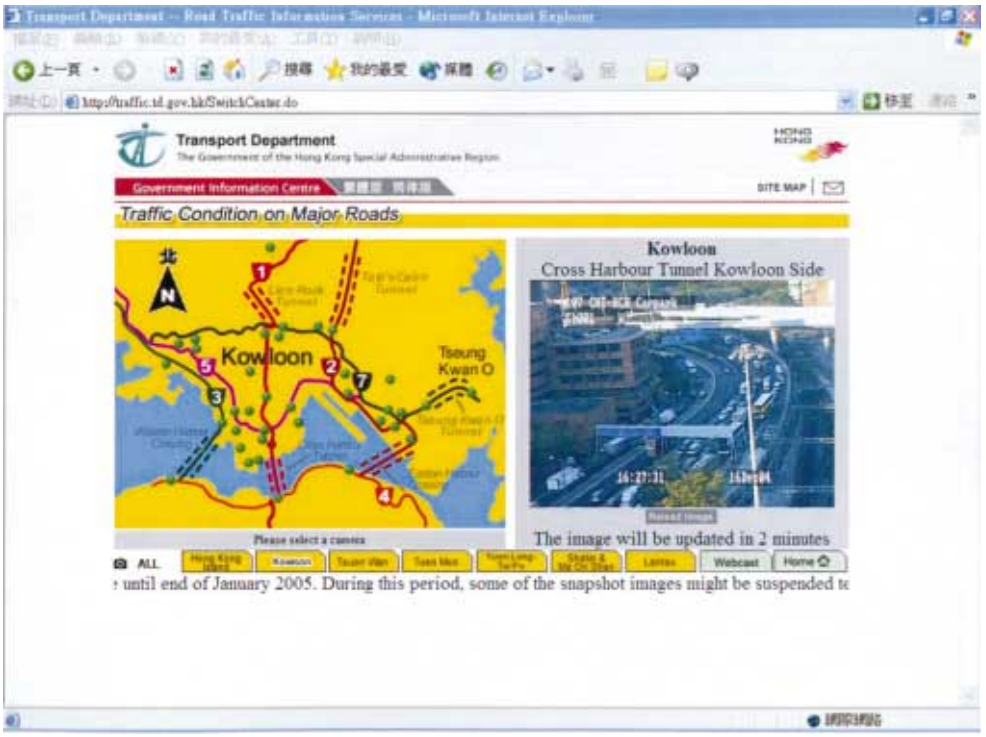
6.1 Access to traffic information is a most critical factor in reducing the build-up of a gridlock.

6.2 With the benefit of traffic information, members of the public can avoid or reduce travel delay by making an informed decision on the route or mode of transport. Such information should be disseminated in a timely and accurate manner, and through as many channels as possible.

Key Departments and Current Practices

Dissemination of information by the Transport Department

6.3 At present, traffic information is mainly disseminated by the Transport Department (TD). Real-time images captured by Closed-Circuit Television (CCTV) cameras at individual strategic locations are made available to the electronic media so that the public can view the traffic conditions at these locations. CCTV images are also uploaded onto TD's homepage <www.info.gov.hk/td> for viewing by the public.



6.4 When a traffic incident occurs, TD will issue traffic advice on emergency traffic and transport arrangements to the Information Services Department (ISD), the Integrated Call Centre (ICC), radio stations, as well as mobile phone and pager companies. In case there are incidents that have serious implications on the traffic, TD will disseminate the relevant information to the public through the following additional channels -

- Radio broadcast to alert audiences of the congestion and alternative routes

- Break-in announcements inside tunnel tubes by tunnel operators

- Variable message signs (VMS) at the Tsing Ma Control Area, Aberdeen Tunnel and Airport Tunnel

- In-station and in-journey announcements by the MTR Corporation (MTRC) and Kowloon-Canton Railway Corporation (KCRC)

- Light-emitting diode (LED) panels at major bus terminals and ferry piers

- Government webpage (The Hong Kong SAR Government Information Centre at www.info.gov.hk, and TD's homepage)

6.5 Specifically, TD had taken the following steps to inform the public of the three incidents which occurred at 12:37 (Argyle Street), 12:39 (Waterloo Road) and 12:42 (Prince Edward Road East) on 9 May 2005 -

- Starting with the first press release issued at 12:58, a total of 38 press releases were sent to the media, ISD, mobile phone and paging companies and ICC via multi-fax.

- Starting with the first contact made at 12:51, a total of 16 direct telephone contacts were made with radio stations via the direct lines installed at the Emergency Transport Coordination Centre (ETCC).

- Starting from 13:41, requests for regular break-in announcements at all tunnels (except Discovery Bay Tunnel) were made.

- By 14:00, Cable TV was requested to broadcast the latest traffic situation by running rollers on the screen during its news programme.

- Starting from 14:07, the LED display panels at selected bus terminals and bus stops of The Kowloon Motor Bus Co. Ltd (KMB) displayed information on the three incidents.

- Starting from 14:52, the Education and Manpower Bureau was requested to disseminate information to students that school buses might be affected by the traffic congestion and might arrive late.

- Starting with the first radio interview at 15:25, sound bites and radio interviews were provided on 11 occasions for radio news and phone-in programmes.

Police Public Relations Branch

6.6 The Police Public Relations Branch (PPRB) of the Police will also notify the public of road closures and traffic diversions. On 9 May 2005, the PPRB had taken the following steps -

- Starting from 12:58, a total of 28 direct calls were made to radio stations to inform them of road closures at the three incident sites and to provide them with updated traffic information; and

- The public transport operators (KMB/New World First Bus/CityBus) and the operator of Lion Rock Tunnel were informed of the traffic diversions.

Integrated Call Centre

6.7 Apart from TD and PPRB, ICC is another channel for disseminating traffic information to the public. Members of the public can call the hotline (1823) to enquire about the traffic conditions or the reasons why a particular road is congested. The Customer Service Officer will check the relevant broadcast on his/her workstation or the traffic advice kept by the Duty Manager to provide updated traffic information to the public.

6.8 On 9 May 2005, between 13:00 and 14:45, ICC received about 950 calls, including enquiries on traffic conditions.

Areas for Improvement and Recommendations

Timely Dissemination of Information

6.9 As shown in the Radio Communication Log at Appendix V, further improvements can be made to make the release of traffic information to the public more efficient.

6.10 We attach great importance to the timely dissemination of traffic information to enable the audience to use alternative routes or modes of transport. This in turn will reduce the number of motorists and passengers being caught in the traffic congestion. In this regard, we recognise the crucial role played by the media in the dissemination process. On the other hand, we also recognise the independence of the media in deciding whether and when an announcement should be made.

6.11 We recognise that during the incidents on 9 May 2005, the various Government departments tried very hard to disseminate traffic information to the public through different channels. **With technological innovation, we recommend that Government should continue to explore innovative and effective means of dissemination of public information.** Such means could be divided into the following categories -

	Can be initiated within the Government	Require cooperation from outside parties
For pre-trip planning	> Designated radio broadcast channel for traffic news > Use of GIS technology > Emergency telephone hotline for public enquiry	> Live TV broadcast on traffic information > Dissemination of information by management companies of commercial buildings and shopping arcades > Dissemination of information through email > Use of mobile phone cell broadcast
For motorists/ passengers who are on the road	> Designated radio broadcast channel for traffic news > Variable Message Signs > Highway Advisory Radio > Emergency telephone hotline for public enquiry (for passengers)	> Radio channels of public transport associations > Radio on buses and railways > Use of mobile phone cell broadcast (for passengers)

The following paragraphs set out the various means in detail -

(a) Setting up a designated radio broadcast channel for traffic news

By setting up such a designated channel, motorists could have readily available traffic information for both pre-trip planning and choosing alternative routes if they are already on their way to the destinations. Although this suggestion is echoed by some members of the public, we note that this proposal would have substantial resource implications. **Alternatively, TD could work with the radio stations to enhance the timeliness of the traffic information by increasing the frequency of traffic information broadcasts.**

(b) Use of Geographical Information System technology

As explained in Chapter 5, Geographical Information System (GIS) provides a convenient way to observe the spread of congestion in the region surrounding the incident by displaying real-time traffic information in the form of a Traffic Speed or Queue Map through the Internet. **Through this technology, the public can be informed of the traffic conditions of different roads through a digitised map, and this in turn will help them avoid using the congested roads.**

(c) Provide an emergency telephone hotline for public enquiry

There are suggestions that a hotline should be established to answer public enquiries on traffic conditions. ICC is performing similar functions by passing on traffic information from TD to the callers. **We recommend that TD should discuss with ICC additional measures to strengthen the latter's role in disseminating emergency transport information.**

(d) Live TV broadcast at TD on traffic information

At present, officers of TD conduct interviews with radio stations or provide sound bites for broadcasting to disseminate the latest traffic information. Further to this arrangement, **TD may consider arranging for live TV broadcast of traffic conditions at TD following the mode of the Hong Kong Observatory.** This arrangement can alert the public of the severity of the incident.

There is also a suggestion that a media centre be set up when ETCC is activated. As not all incidents require publicity of this level, the feasibility of and necessity for doing so has to be considered having regard to resource constraints.

(e) Dissemination of information by management companies of commercial buildings and shopping arcades

Nowadays, there are many intelligent commercial buildings that allow information to be provided at the display panels in the lift lobbies or inside the elevators. **TD can notify the management companies of these buildings of the traffic incidents, so that such information can reach the people in those buildings and shopping arcades before they embark on their journeys.**

(f) Dissemination of information through email

It is common for employees of large organisations to have internet and intranet access in the office. Through prior arrangement with a contact person, TD can send traffic information via email to a large group of employees of these organisations and encourage them to use alternative routes or modes of transport.

(g) Use of mobile phone cell broadcast

Some telecommunication companies suggest that cell broadcast technology can be used to disseminate information to a large group of people in a short time. **We recommend that TD should explore with the mobile phone companies how this technology can be deployed to facilitate dissemination of information.**

We have received a suggestion that TD should explore with the Office of the Telecommunications Authority about the possibility of imposing licensing requirements or operating guidelines for the mobile network operators to offer a certain number of free short messages for delivering emergency messages. At present, the operators are not required to send Government messages free of charge. **We consider that TD could discuss with mobile phone companies for an agreement on information dissemination, before it considers resorting to any regulatory means.**

(h) Radio channels of public transport associations

There are suggestions that traffic information can be disseminated to taxi associations, public light bus associations and other public transport associations for onward transmission to their members through radio (if available) or other means. **We agree with the suggestion, as this would enable drivers of these trades to be informed of the latest traffic conditions and they would accordingly avoid going to the congested areas.**

(i) Variable Message Signs

Variable Message Signs (VMSs) can provide information about the traffic conditions of the roads ahead. At

present, 11 VMSs are installed at the Tsing Ma Control Area, Aberdeen Tunnel and Airport Tunnel. **We recommend that VMSs should be installed at more strategic locations and junctions. In addition, mobile VMSs may also be deployed on the roads where no fixed VMSs are available.** Similar views have been received from members of the public.

(j) Radio on buses and railways

Since many buses are equipped with audio-visual equipment, bus companies may consider enabling the buses to receive radio broadcast, so that passengers can be informed of the latest traffic information and diversion plans in case of major incidents. The option of utilising the audio-visual equipment on trains of MTRC and KCRC could also be considered.

There is also a suggestion to develop a communication network among bus drivers, so that they can exchange information among themselves and pass the information to the passengers. We agree that this will help enhance communication and coordination among buses in case of emergencies. However, the safety aspect of installing such communication equipment on board has to be considered.

(k) Highway Advisory Radio

Similar to the break-in radio broadcast system inside tunnels, this mobile system could be placed at strategic locations or areas close to the incident site, so that motorists within the signal range of the mobile unit can be informed of the latest traffic conditions

and diversion plans. However, we note that such a device may affect the radio reception of the residents in the vicinity. Accordingly, there are many legal and technical issues that need to be considered before this device can be used.

6.12 Apart from exploring new means to disseminate information, we have also received suggestions to improve the existing arrangements, such as using email and phone calls in addition to multi-fax to ensure that the message is receiving attention, and including all relevant parties (like tunnel operators) in the multi-fax list. **We agree and recommend that TD should use as many means of contact as possible. A follow-up phone call after a faxed press release will help to draw the media's attention to the messages sent.**

6.13 There are also suggestions to install more LED panels at bus terminals to disseminate emergency traffic information to passengers. **We recommend that TD should discuss with bus companies the suggestion, and consider whether the content of the information can be enhanced by including information on expected delay.**

6.14 While there are suggestions to use Short Messaging Service (SMS) as the dissemination tool, this mode of communication has a number of constraints. First, SMS rides on a store and forward transmission mechanism. There is no guarantee on the delivery time. Second, its network resource consumption is huge and the broadcast time is long if the message has to reach a large number of recipients within a short period of time. There is also a limitation on the maximum length of the message. Therefore, SMS is not an effective tool for mass communication when the message to be sent is time-critical.

Clarity and Effectiveness of Messages

6.15 There are criticisms that TD's traffic advice could not accurately reflect the level of congestion, and that the description of the traffic conditions on 9 May 2005 was so standard that the radio stations were not aware of the severity of the congestion.

6.16 In addition, one of the reasons that motorists refused to be diverted was that they did not have enough information or were not familiar with the alternative routes. Although the behaviour of the motorists was understandable given the inclement weather, this had rendered the recovery measures more difficult.

6.17 To address these two problems, **we recommend that the content of the messages issued by TD should be improved by providing -**

(a) Clear indication of the degree of congestion

The description of the degree of congestion (e.g. queue length) should be more specific to alert motorists of the severity of the congestion, and to increase the chance for the mass media to broadcast the message at once. Special forms for major incidents could be devised so that they stand out from the routine press releases of TD. Phone calls shall be made to ensure that the messages are receiving attention.

(b) Provision of alternative routes

Although motorists may originate from different roads and have different destinations, TD may advise on alternative routes/roads with relatively smooth traffic conditions that allow through traffic,

so that motorists can modify their routes if possible. For non-motorists, it may also be useful to provide information on alternative public transport services available.

(c) Estimate of closure time of the road

We consider that by indicating roughly the reopening time where possible, motorists can plan their journeys in advance and avoid using the roads that are expected to be congested. Such estimate, if given, has to be reasonably realistic. If it is not practicable to give such an estimate in the circumstances, the uncertainty of the road closure time should also be made known to the public.

6.18 We also note the suggestion to set up an alert system similar to the typhoon signal system to provide emergency messages to the public. While this can be considered, it is important to ensure that the message about the affected area is clear as traffic incidents are not likely to be territory-wide.

Unclear delineation of duties between the Transport Department and the Police Public Relations Branch

6.19 At present, both TD and PPRB disseminate emergency transport information to the general public. We consider that there is a need for better coordination to avoid causing confusion to the mass media and the public. **We recommend that the information released by TD and the Police should be passed to each other to ensure consistency, minimise contradiction and reduce unnecessary repetition.**

Chapter 7
A Framework for Incident Management

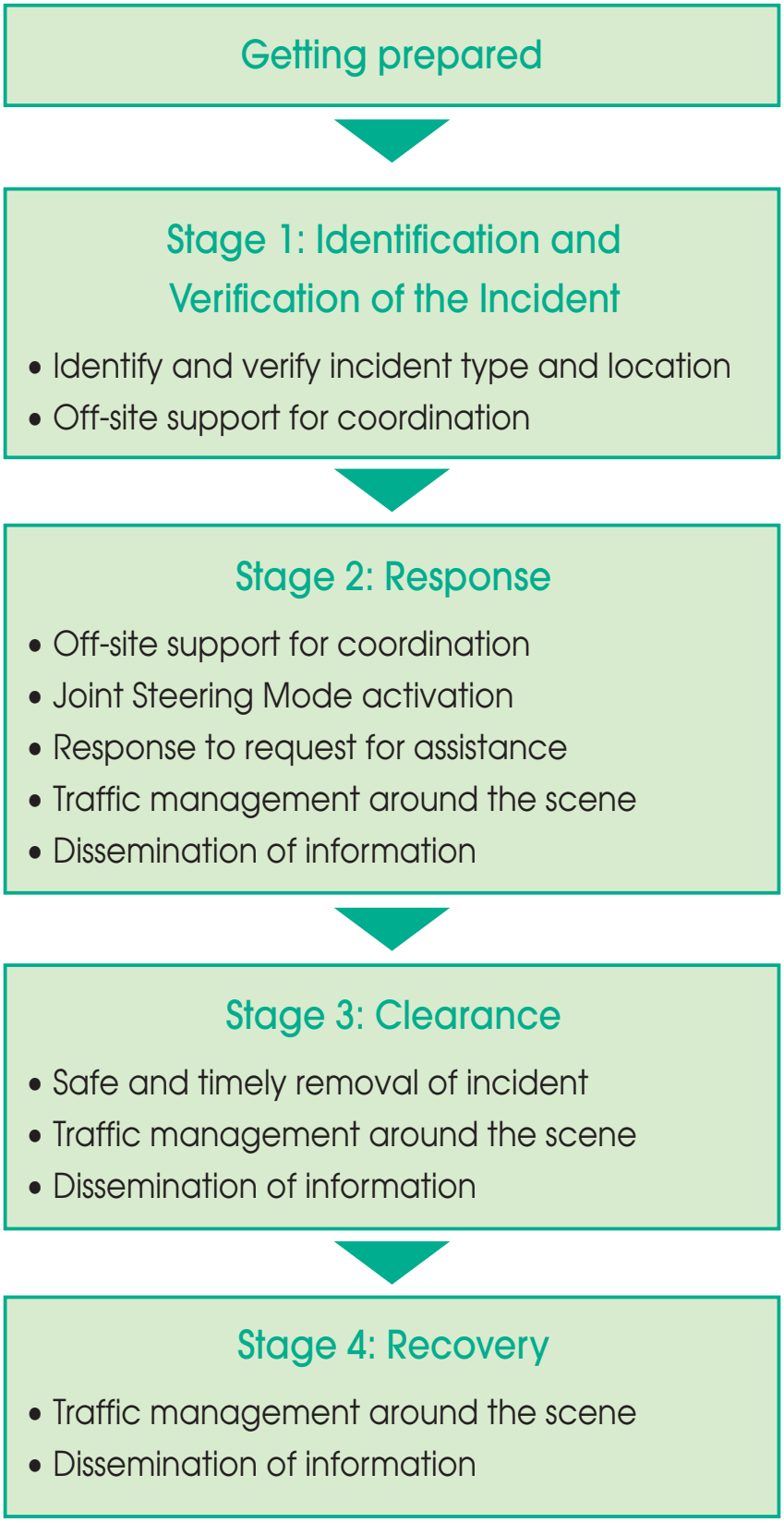
Introduction

7.1 The recommendations made thus far in the previous chapters vary from those which can be easily implemented to those which require both longer term planning and additional resources. In this Chapter, we provide a framework which consolidates the various operations involved to handle incidents with adverse traffic impacts and which illustrates how these recommendations may enhance overall operational efficiency.

7.2 We have divided the different procedures for handling incidents into four stages. We consider that the key to alleviate adverse traffic impact effectively is to reduce the response time at each of the four stages.

7.3 Figure 7.1 below schematically depicts the four stages of incident management.

Figure 7.1 The Four Stages of Incident Management



Getting Prepared

7.4 Devising appropriate contingency plans that are ready to be implemented is a fundamental task. Using the traffic data and information that have been accumulated over the years together with the expertise of the Transport Department (TD), various scenarios could be generated to assess in advance how best to manage the traffic under a prescribed set of circumstances.

7.5 Simplicity in communication and command is essential to efficient implementation of plans. Hence, it is absolutely necessary to prepare and update clear and precise circulars for inter- and intra-departmental communication. An appropriate and prompt judgement from individual officers on the ground is crucial at times of emergency. These frontline officers should therefore know exactly when to report to senior officers, request assistance or inform other relevant departments. Departmental circulars should provide such guidance.

7.6 Officers need to appreciate not only his departmental responsibilities but also the impact of his actions or inactions on other areas, such as the traffic. In the absence of such an appreciation on the frontline, appropriate clearance, diversion and recovery measures will not be effected in good time.

7.7 Where appropriate, departments should conduct drills at regular intervals to raise the alertness of staff and to ensure awareness of how actions on the circulars should be properly implemented. Such drills should involve different departments so as to ensure mutual understanding of the respective roles of various departments. This ensures good teamwork in times of real emergencies.

Stage 1 - Identification and Verification of the Incident

7.8 Incidents can be detected and reported by many means - Police patrol, calls to the "999", information relayed from transport operators or Closed-Circuit Television (CCTV) monitors at the Emergency Transport Coordination Centre (ETCC).

7.9 With ubiquitous usage of mobile phones in Hong Kong, incident identification through calls from members of the public to "999" remains the most commonly adopted means.

7.10 Typically, upon receipt of such reports, officers would be sent to the scene. The first officer arriving at the scene would verify the type, nature and extent of the incident. He will then report the necessary details to the off-site support, such as the Police Regional Command and Control Centre (RCCC).

7.11 If incidents are not relayed to ETCC timeously, the response time will be delayed. This is particularly so when there is a number of localised incidents across the territory. Clearer guidelines and procedures as elaborated in Chapter 4 for coordination between TD and the Police and when the Police should notify TD of localised incidents will enhance the speed of response. A compatible system of classification of routes and of levels of seriousness of the incident(s) provides a common language and understanding.

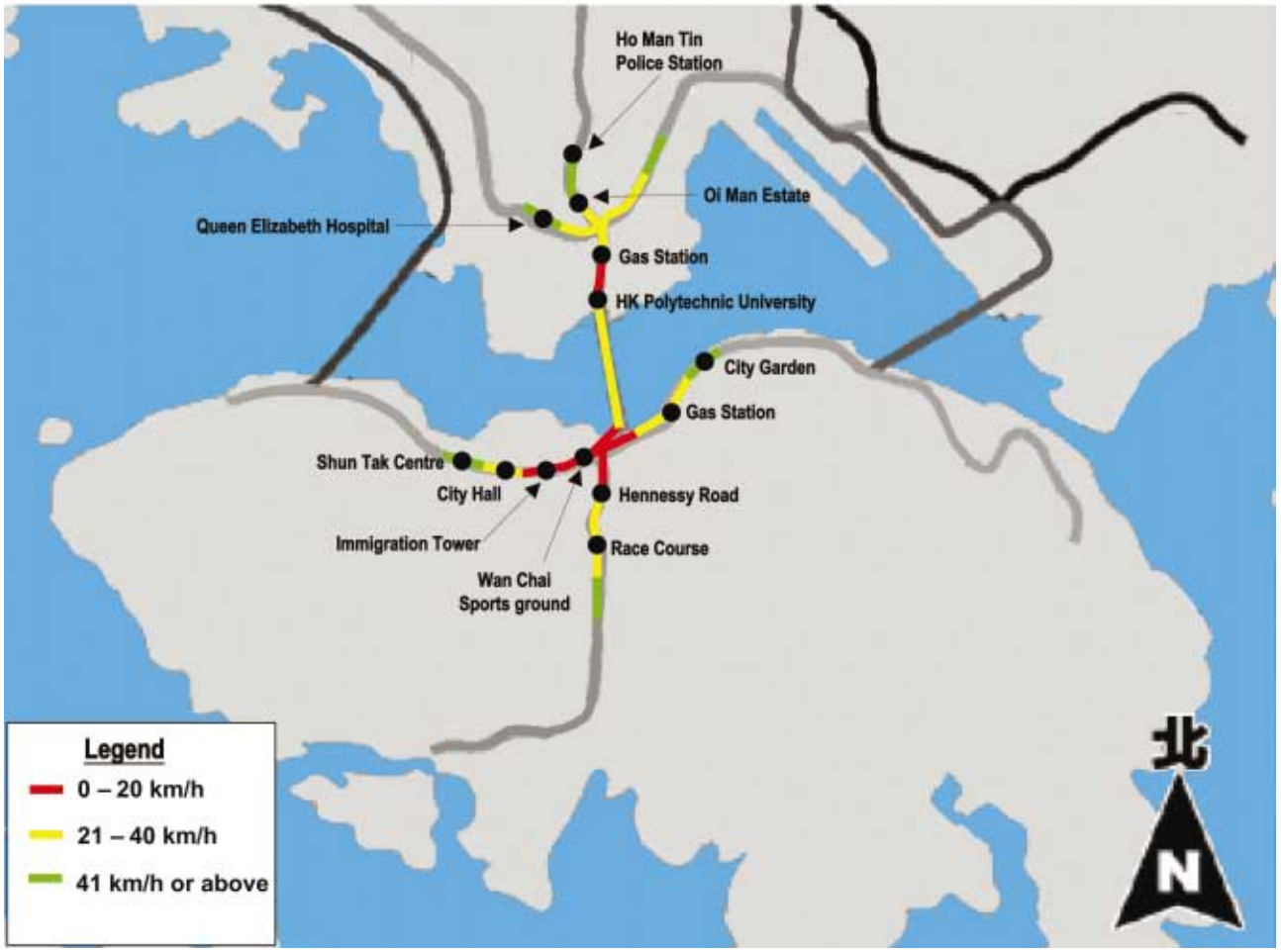
Further Improvements

7.12 Taking advantage of the technology already being deployed in Hong Kong, even though not to a great extent, it is possible to monitor real-time traffic conditions using the CCTV system, Automatic Incident Detection technology, Journey Time Indication System and loop detectors as described in paragraphs 5.4 - 5.7 above.

7.13 The use of real-time traffic information in the form of a Traffic Speed or Queue Map through a Geographical Information System (GIS) provides a convenient way to observe the growth of traffic congestion over time and space as explained in paragraph 5.17 above. An illustration of the real-time traffic speed map for major roads to Cross-Harbour Tunnel is shown in Figure 7.2. The road segments are colour-coded according to the average speed of vehicles travelling on them .

Figure 7.2

Traffic Speed Map for Major Roads to Cross-Harbour Tunnels



7.14 We emphasise that as additional financial and manpower resources would be required for these technological improvements, further discussions and consultation on their desirability should be conducted before proceeding further.

Stage 1/2 - Off-site Support for Coordination

7.15 In view of the fact that the first arriving police officer would typically be attending to the various events at the scene, the procedures for requesting support from other departments can be handled by the Police RCCC off-site. In any case, there should be clearly specified procedures to ensure seamless coordination between the police officer at the scene and the Police RCCC.

7.16 Contacts with TD and other relevant departments from which assistance is required should be made by the Police RCCC.

7.17 The communication channels between departments should be simplified and made clear to all on duty. As we have recommended in paragraph 4.28, this is achievable through proper planning by issuing and circulating appropriate and workable circulars.

7.18 Currently, quite a number of inter-departmental dispatch requests are routed through the Integrated Call Centre (ICC). ICC was initially set up for public use. Over the years, many departments have been using ICC to relay service or contact requests. One proposal to enhance departmental coordination on equipment and manpower dispatch is to set up designated telephone lines, which could be manned by ICC, to relay and follow up on these requests. A special telephone system would be needed for coordinating inter-departmental requests for assistance so that the waiting time on the phone could be reduced.

7.19 As an alternative, direct communication between departments could be restored. The contact details of the duty officers in different departments should be promulgated and updated regularly. It is also important to ensure that they can be reached after office hours.

7.20 Emergency procedures of the departments should include clear guidance on the information needed for making judgement on the type and amount of resources that should be deployed. Inappropriate deployment of resources will lead to re-mobilisation thereby prolonging the response time. Planning in advance is again essential so as to devise an appropriate checklist for the information required.

7.21 Prompt contact and coordination with the supporting departments is vital to the early completion of clearance works.

Further Improvement

7.22 Inter-departmental coordination can be enhanced through the computer-aided dispatch (CAD) system described in paragraph 4.43 above.

Stage 2 - Joint Steering Mode

7.23 As recommended in paragraphs 3.38-3.40, where appropriate, the Joint Steering Mode should be activated as an escalation from the Fixed Mode ETCC.

7.24 In case of serious incidents, the Fixed Mode ETCC would have been activated. As the number of incidents increases or if the severity of the incident escalates, so would the Fixed Mode ETCC - it would escalate to the Joint Steering Mode according to the trigger parameters elaborated in paragraph 3.38. At that point in time, a senior police officer of the Traffic Branch Headquarters should be co-located at ETCC to oversee the situation, and communicate and coordinate with the Police RCCC and police officers on the ground. The co-location of the Police and ETCC staff will facilitate better steer and coordination. Issues regarding the feasibility of the diversion plans, staffing concerns, as well as the bigger picture of traffic around the affected area can be better addressed. The diversion routes that are jointly developed by the Police and TD would likely to be more practicable.

7.25 As stated above, to improve the ability for managing traffic in the midst of an incident, it is important for TD to have a set of contingency plans on incidents occurring on traffic sensitive or public transport sensitive routes as described in paragraphs 5.20 and 5.27.

7.26 The Joint Steering Mode ETCC will oversee the incidents and provide steer on the contingency plans and longer term diversion measures to be adopted. The communication and coordination between ETCC and the Police RCCCs as well as front line police officers will be enhanced.

Stage 2 - Response to Requests for Assistance

7.27 Once a request or notification for assistance has been received, the relevant department has to respond by activating, coordinating, and managing appropriate departmental officers and equipment to clear the incident.

7.28 For this purpose, an accurate and detailed identification of the type, nature and extent of the incident is crucial for shortening the response time. Depending on the nature of the incident, different kinds of support may be needed from various departments. For example, chemical spills will involve the Environmental Protection Department and the Fire Services Departmen(FSD) while scaffolding collapse and removal of road blockage will involve the Buildings Department and the Highways Department respectively.

7.29 By this time, the Joint Steering Mode is in place and the first step is to ensure that the relevant departments have already been notified and that appropriate manpower and equipment resources have been deployed.

7.30 The importance of the professional judgement of the staff on the ground from the supporting departments cannot be underestimated. To ensure that proper and sound judgements are made by those staff, sufficient guidance and an established mechanism for escalating the issues to more senior and experienced staff within the department for verification and advice should be provided. With common use of smart phones with video and picture recording capabilities, pictures or video of the scene, in addition to voice descriptions, can be relayed back for verification purposes.

7.31 The professional judgement of the staff on the ground from the supporting departments should also include a best estimate of the incident duration, especially the duration of the road closure, which could then be forwarded to all the concerned departments, especially ETCC. Based on the estimated incident duration, appropriate traffic management measures around the scene can be formulated, and dissemination of information could be enhanced.

Further Improvement

7.32 The CAD system described in paragraph 4.43 enables all the dispatch requests as well as conditions of the incident to be updated and logged. A real-time comprehensive understanding of the events happening at the scene facilitates proper judgement on the deployment of equipment and manpower resources.

Stage 2 - Traffic Management around the Scene

7.33 Under the Joint Steering Mode and with the benefit of better estimate of incident duration, more effective traffic diversion plans can be devised. The ability to manage traffic during an incident could be further enhanced by the development of a set of contingency plans on incidents occurring on traffic sensitive or public transport sensitive routes as described in paragraph 5.20.

Further Improvement

7.34 We consider it desirable to examine the feasibility of developing a computerised expert-system-based incident management system, which is capable of incorporating lessons learnt from past incidents and providing data for future references. This is set out in paragraph 5.22.

Stage 2 - Dissemination of Information

7.35 At present, ETCC relies heavily on the media to broadcast press releases and sound bites. This approach has the limitations of the time and the contents of the broadcast. Setting up agreed arrangements with the media and developing a better categorisation of the press releases with different levels of urgency will minimise the above limitations.

7.36 ETCC has to devise different forms to provide precise but accurate statements on the incidents that will immediately highlight its importance to the media. A follow-up phone call after a faxed press release will also help to ensure timely dissemination of information to the public.

7.37 Given that the timeliness of such information is critical to minimising the traffic impact of incidents, TD should try to expand the channels for information dissemination through closer cooperation with tunnel operators, mobile phone companies, property managers, major employers and other web-based media companies.

Further Improvements

7.38 In the future, ETCC can consider setting up designated communication channels to ensure that accurate information about traffic conditions and diversion plans can be disseminated in a timely manner. The installation of variable message signs at strategic locations of the road network is one possible means. Setting up a designated radio broadcast channel for traffic news and the use of Highway Advisory Radio may also be options but the resource and legal implications have to be carefully considered.

Stage 3 - Clearance

7.39 The safe and timely clearance of the incident and termination of the incident is of utmost significance.

7.40 Once the staff and equipment from the supporting departments have begun to arrive at the scene, efficient management at the scene is crucial. Good coordination directly affects the success of the incident response process, especially for more serious incidents. A clearly defined, well-understood, strictly followed command and control structure among departments will enhance the coordination work substantially. Such a structure needs to be established, agreed upon and tested beforehand. We consider that the Police should continue to take the leading role at the scene (save where FSD is present carrying rescue operations).

7.41 Management at the scene may cover a lot of details, such as parking for departmental vehicles and equipment, and Police escort for heavy plant and equipment to facilitate early arrival. Careful consideration of and prior agreement on these logistical details will facilitate more effective clearance.

7.42 The liaison between officers at the scene and ETCC under the Joint Steering Mode is vital and has to be maintained until traffic conditions have returned to normal. Information about the incident and traffic conditions has to be updated on a continuous basis. Traffic diversion plans and signal control strategies have to be monitored and fine-tuned according to the real-time traffic conditions.

7.43 Traffic management around the scene has to continue. Updated information should continue to be disseminated to the public during this stage.

Further Improvement

7.44 We can harness advanced technologies to devise better plans. Information on traffic conditions, the procedures taken and the plans adopted can be logged onto a computerised system for future reference and improvements.

Stage 4 - Recovery to Normal Conditions

7.45 Once an incident has been completely cleared the, traffic will gradually return to normal. Steps can be taken to shorten this recovery time. The major goals are to restore normal traffic flow as soon as possible and to prevent queues from building up and spreading to other portions of the transport network.

7.46 Information about the traffic conditions should continue to be updated. The signal control system should continue to be monitored and fine-tuned according to real-time traffic conditions.

7.47 Traffic management around the scene has to continue. Updated information should continue to be disseminated to the public during this stage.

Further Improvement

7.48 If real-time traffic information about a wide region can be made available, ETCC could devise and implement traffic management plans from a strategic perspective, taking into account their impact on the overall transport network. This process should continue until the entire transport network returns to its normal performance.

Chapter 8
Summary of Recommendations

Introduction

This Chapter gives a summary of our recommendations on various aspects of emergency transport coordination.

Contingency Plans

1. Develop contingency plans for closure of or congestion occurring on traffic sensitive or public transport sensitive routes. The plans should include diversion options, signal control strategies, manpower and logistics requirements.

2. Conduct regular emergency drills to test the efficacy of the contingency plans and to ensure that staff are familiar with the procedures.

Data Collection

3. The Police and the Transport Department (TD) to update and supplement each other on traffic information.

4. Use an incident map to collate information from different sources to assess the severity and spread of congestion.

5. Explore the feasibility of using loop detectors underneath the roadway to collect real-time traffic data. If it is feasible, consider widening the coverage of these detectors along traffic sensitive or public transport sensitive routes in the future.

6. In the longer term, improve the coverage of the Closed-Circuit Television (CCTV) system, especially along traffic sensitive or public transport sensitive routes.

7. Examine the feasibility of deploying mobile CCTVs to make the data collection process more effective.

8. Explore the feasibility of deploying a fleet of probe vehicles, probably buses and other public transport vehicles installed with Global Positioning System, to measure the network travel time and speed.

9. Examine the possibility of developing a system based on Geographical Information System to display real-time traffic information in the form of a Traffic Speed or Queue Map for early detection of incidents and formulation of diversion and signal control plans.

Assessment of the Situation

10. Provide realistic assessment of the time required for remedial works, where practicable, to facilitate decisions on transport and traffic management.

11. Inform TD and the Police if an estimate of the time required for remedial works could not be provided, so that they can devise suitable traffic and transport plans.

12. Provide officers at the scene with sufficient guidance, such as checklists and guidelines, to enhance their judgement and assessment.

13. Make officers aware of the macro-picture and the wider implications of their actions, and inaction.

Incident Management

14. Store records involving the types of incidents, duration, clearance time, responses, etc in the Incident Database for evaluation and analysis to improve the accuracy of traffic impact assessment.

15. In the longer term, develop a real-time computer-aided dispatch system. The process of maintaining the Incident Database can be automated for easy access and retrieval.

16. Develop traffic models and apply them to provide a priori estimates of traffic impact in terms of delay, spread and extent of congestion, based on actual cases in the Incident Database, as well as contingency plans developed.

17. Conduct debriefings so that lessons learnt from an incident can be consolidated for future reference to enable better handling of similar situations in the future.

18. Explore the feasibility of developing a computerised expert-system-based incident management system to monitor incidents and help select and implement pre-programmed signal control strategies or diversion plans based on contingency scenarios and lessons learned from past incidents.

Measures to Facilitate Diversion

19. Provide more information and guidance to motorists on the alternative routes to facilitate diversion arrangements.

20. Establish arrangements with public transport operators to ensure that bus route diversions are feasible and acceptable to passengers on board.

21. Improve the information disseminated to passengers if bus route diversions are needed.

22. Strengthen the role of the bus regulators engaged by the bus companies to liaise with passengers under emergency situations. Provide them more training and clear guidelines for handling traffic congestion and incidents.

23. Consider whether and how to increase the provision of emergency openings at central dividers at intermittent locations of major roads, taking into account the financial and safety implications.

Recovery Management

24. Continue to adopt traffic management measures after the clearance of the incident to ensure that traffic will return to normal in a smooth and swift manner.

25. Continue to monitor the traffic conditions in the affected region and adjust the traffic signals through the Area Traffic Control system for effective queue management and dissipation.

Internal Communication within a Department

26. Establish a mechanism within each department for officers at the scene to escalate the issues and for senior officers to deploy resources, monitor the developments and give timely directives.

Inter-departmental Coordination

27. Review and fine-tune emergency transport arrangements having regard to the experience gained on 9 May 2005.

28. Bring the transport emergency arrangements to the attention of other departments, especially frontline officers, and re-circulate the guidelines on a regular basis.

29. Review internal circulars to set out the designated roles of different departments and highlight the importance of considering the traffic implications of an incident as well as alerting TD as early as possible.

30. Align emergency handling procedures of different departments to facilitate communication and coordination.

31. Adopt the concept of dividing incident management into different stages and look for ways to streamline actions at each stage.

32. In the longer term, invite universities or consultants to propose improvements to Hong Kong incident management system, making reference to overseas systems if resources permit.

Designated Communication Channels between Departments

33. Establish designated communication links among different departments to expedite remedial works.

34. In the longer term, enhance inter-departmental dispatch coordination through the development of a shared computer-aided dispatch system.

Role of the Emergency Transport Coordination Centre

35. The Emergency Transport Coordination Centre (ETCC) to take up a more proactive coordination role to handle transport and traffic incidents. Set up the Joint Steering Mode at ETCC to improve communication and allow joint steer from the Police and TD.

36. Make available a directorate officer of the Environment, Transport and Works Bureau to station at ETCC under the Joint Steering Mode to enhance coordination with other bureaux and the senior echelon.

37. Where necessary, make available senior officers of other supporting departments to station at ETCC or be available on line to facilitate the communication and decision-making process.

Facilities of the Emergency Transport Coordination Centre

38. Upgrade the facilities of ETCC. In particular, procure computer systems with enhanced inter-departmental connectivity and Geographical Information System for monitoring the traffic conditions.

Use of Technologies in Crisis Management

39. Update the Intelligent Transport System strategy and implement the recommendations as soon as possible.

40. Harness advanced technologies such as new CCTV system, Automatic Incident Detection technology, Global Positioning System and Traffic Control and Surveillance System to strengthen emergency handling capabilities subject to availability of resources.

Timely Dissemination of Information

41. Explore more innovative and effective means for dissemination of information to the public.

42. Set up a designated radio broadcast channel for traffic news. Alternatively, work with the radio stations to increase the frequency of traffic information broadcasts.

43. Use Geographical Information System technology to inform the public of the traffic conditions of different roads through a digitised map on the Internet.

44. Discuss with the Integrated Call Centre additional measures to strengthen its role in disseminating emergency transport information.

45. Arrange for live TV broadcast of traffic conditions at TD.

46. Notify the management companies of commercial buildings and shopping arcades of the traffic incidents, so that the information can reach the people in those buildings and arcades before they embark on their journeys.

47. Send traffic information via email to employees of large organisations.

48. Explore with the mobile phone companies to see whether and how cell broadcast technology can be deployed to facilitate dissemination of information.

49. Discuss with mobile phone companies the feasibility of arriving at an agreement on information dissemination, before resorting to any regulatory means.

50. Disseminate traffic information to taxi organisations, public light bus associations and other public transport associations for onward transmission to their members.

51. Install Variable Message Signs (VMS) at strategic locations and junctions. Mobile VMS may also be deployed on the roads when no fixed VMS are available.

52. Consider enabling the buses to receive radio broadcast. Alternatively, utilise the audio-visual equipment on trains of the MTR Corporation and Kowloon-Canton Railway Corporation.

53. Use as many means of contact as possible. A follow-up phone call after a faxed press release will help to draw the media's attention to the messages sent.

Clarity and Effectiveness of Messages

54. Improve the content of the messages issued to the media, especially radio stations, and provide clear indication of the degree of congestion and alternative routes.

55. Indicate roughly the reopening time of the road where possible. If it is not practicable to give such an estimate, inform the public of the uncertainty of the road closure time.

Delineation of duties between the Transport Department and the Police Public Relations Branch

56. Enhance coordination between TD and the Police to avoid causing confusion to the mass media and the public. The information released by TD and the Police should be passed to each other to ensure consistency, minimise contradiction and reduce unnecessary repetition.

Acknowledgements

We would like to express our gratitude to all those who have provided valuable advice to us, including professional bodies, academic institutions, telecommunication companies, electronic media and press, public transport operators, tunnel operators, transport trade associations, other transport-related organizations, District Councils and other members of the public who have shared their views in written submissions and through other channels.

We are grateful to the Environment, Transport and Works Bureau, the Buildings Department, the Efficiency Unit of the Chief Secretary for Administration's Office, the Fire Services Department, the Food and Environmental Hygiene Department, the Highways Department, the Hong Kong Observatory, the Hong Kong Police Force, the Leisure and Cultural Services Department and the Transport Department for providing timely information to facilitate our work. We would also like to thank other departments for sharing information about their emergency handling arrangements with us. Our thanks also go to the Official Languages Division of the Civil Service Bureau for their Chinese translation service.

We wish to record our appreciation to the Secretariat for their assistance during the review.

Appendix I
Biographical Notes on Members

Chairman

Ms Teresa CHENG Yeuk-wah, SC, JP

Ms Teresa Cheng is a barrister by profession and was appointed Senior Counsel in 2000. She is also a chartered engineer and a chartered arbitrator. Ms Cheng is currently the Chairman of the Transport Advisory Committee and is fully conversant with road traffic legislation and the local transport scene. Ms Cheng is the Vice-Chairman of the Hong Kong International Arbitration Centre and is a member of the Board of Trustee of the Chartered Institute of Arbitrators. In addition, Ms Cheng has extensive experience in public service and has taken up the chairmanship of a number of tribunals.

Members

Mr. Herbert HUI Ho-ming, JP

Mr. Herbert Hui is the Chairman of The Hong Kong Institute of Directors and the Deputy and Vice Chairman of the Ocean Grand Group. Mr. Hui has extensive commercial, management and corporate finance experience. He serves on the boards of a number of listed companies. In addition, Mr Hui is the Vice Chairman of the Hong Kong Council for Academic Accreditation. He also serves an a number of Government Boards and Committees.

Professor LO Hong-kam

Professor Lo Hong-kam is an Associate Professor of the Department of Civil Engineering of the Hong Kong University of Science and Technology. Prior to his present position, he was with the Institute of Transportation Studies at the University of California, Berkeley. He specialises in transportation system modelling, traffic control and public transportation analysis. He is on the editorial boards of several transportation journals. Professor Lo was also the recipient of the prestigious 2001 World Conference on Transportation Research Society Prize and the 2000 Hong Kong Institution of Engineers Transactions Prize.

Appendix II
Public Consultation

Invitation for written submissions

(1) Professional Bodies

- ☐ The American Society of Civil Engineers - Hong Kong Section
- ☐ The Association of Consulting Engineers of Hong Kong
- ☐ The Chartered Institute of Logistics and Transport in Hong Kong
- ☐ The Hong Kong Institution of Engineers
- ☐ Hong Kong Society for Transportation Studies
- ☐ The Institute of Highways & Transportation (UK) - Hong Kong Branch
- ☐ Institution of Civil Engineers (UK) - Hong Kong Association

(2) Academic Institutions

- ☐ Chinese University of Hong Kong
  - ■ Department of Computer Science and Engineering
  - ■ Department of Information Engineering
  - ■ School of Journalism & Communication

- ☐ City University of Hong Kong
  - ■ Faculty of Science and Engineering

- Hong Kong Baptist University
  - Department of Geography
  - School of Communication

- Hong Kong Polytechnic University
  - Department of Civil and Structural Engineering
  - Department of Land Surveying & Geo-Information
  - Department of Logistics

- Hong Kong University of Science and Technology
  - Department of Civil Engineering
  - Department of Information and Systems Management

- The University of Hong Kong
  - Centre of Urban Planning and Environmental Management
  - Department of Civil Engineering
  - Department of Computer Science
  - Department of Geography
  - Institute of Transport Studies
  - Journalism and Media Studies Centre
  - The Division of Information Technology, School of Professional and Continuing Education (SPACE)
  - Centre for Logistics and Transport, School of Professional and Continuing Education (SPACE)

(3) Telecommunication Companies

- ☐ Hong Kong CSL Ltd
- ☐ Hutchison Global Communication Ltd
- ☐ New World PCS Limited
- ☐ China Resources People's Telephone Company Limited
- ☐ Smartone Mobile Communications Ltd
- ☐ Mandarin Communications Ltd

(4) Electronic Media

- ☐ Asia Television Ltd
- ☐ Cable TV (HK Cable Television Ltd)
- ☐ Hong Kong Broadband Network Ltd
- ☐ Hong Kong Commercial Broadcasting Co. Ltd.
- ☐ Metro Broadcast Corporation Ltd.
- ☐ Phoenix Chinese Channel
- ☐ Radio Television Hong Kong
- ☐ Television Broadcasts Ltd.

(5) Press

- ☐ Apple Daily

- ☐ China Daily (HK Edition)
- ☐ Hong Kong Commercial Daily
- ☐ Hong Kong Daily News
- ☐ Hong Kong Economic Journal
- ☐ Hong Kong Economic Times
- ☐ Metro Publishing HK Ltd
- ☐ Ming Pao Daily News
- ☐ Oriental Daily News
- ☐ Sing Pao Newspaper Company Ltd
- ☐ Sing Tao Daily
- ☐ South China Morning Post
- ☐ Ta Kung Pao
- ☐ The Standard
- ☐ The Sun
- ☐ Wen Wei Po

(6) Public Transport Operators

Franchised Bus Companies

- ☐ Citybus Limited
- ☐ The Kowloon Motors Bus Co. (1933) Ltd

- ☐ Long Win Bus Co. Ltd
- ☐ New Lantao Bus Co. (1973) Ltd
- ☐ New World First Bus Services Ltd

Railway Companies

- ☐ Kowloon Canton Railway Corporation
- ☐ MTR Corporation Limited

Ferry Companies

- ☐ Chuen Kee Ferry Ltd.
- ☐ Coral Sea Ferry Service Co. Ltd.
- ☐ Discovery Bay Transportation Services Ltd.
- ☐ Eastern Ferry Co.
- ☐ Fortune Ferry Company Ltd.
- ☐ Hong Kong & Kowloon Ferry Ltd.
- ☐ The Hongkong & Yaumati Ferry Co. Ltd
- ☐ New World First Ferry Services Ltd.
- ☐ Park Island Transport Co. Ltd.
- ☐ Peng Chau Kai To Ltd.
- ☐ The "Star" Ferry Company Ltd

(7) Tunnel Companies

- ☐ China Tollways Ltd
- ☐ Discovery Bay Road Tunnel Co Ltd
- ☐ Hong Kong Tunnels & Highways Management Co Ltd
- ☐ New Hong Kong Tunnel Co Ltd
- ☐ Route 3 (CPS) Co Ltd
- ☐ Serco Group (HK) Ltd
- ☐ Tate's Cairn Tunnel Co Ltd
- ☐ Tsing Ma Management Ltd
- ☐ Western Harbour Tunnel Co Ltd

(8) Transport Trade Associations

- ☐ Motor Transport Workers General Union

Non-franchised Bus Associations

- ☐ Motor Transport Workers General Union (Non-franchised Bus Branch)
- ☐ Non-franchised Public Bus Association
- ☐ Non-franchised Public Buses Workers Association
- ☐ Public Omnibus Operators Association
- ☐ School Buses Operators Association

Taxis - Urban Taxi Associations

- ☐ Chuen Lee Radio Taxis Association Ltd.
- ☐ Chung Shing Taxi Ltd.
- ☐ CTOD Association Company Ltd.
- ☐ Fraternity Taxi Owners Association
- ☐ Happy Taxi Operator's Association Ltd.
- ☐ Hong Kong & Kowloon Radio Car Owners Association Ltd.
- ☐ Hong Kong and Kowloon Rich Radio Car Service Centre Association Ltd.
- ☐ Hong Kong Kowloon Taxi & Lorry Owners Association Ltd
- ☐ Hong Kong Taxi Association
- ☐ The Hong Kong Taxi and Public Light Bus Association Ltd.
- ☐ The Kowloon Taxi Owners Association Ltd.
- ☐ Motor Transport Workers General Union
- ☐ Pak Kai Taxi Owners Association Ltd.
- ☐ Quadripartite Taxi Service Association Ltd.
- ☐ Rambo Taxi Owners Association Ltd.
- ☐ Rights of Taxi Owners & Drivers Association Ltd.
- ☐ Royal Best Quality Taxi Association Ltd.
- ☐ Tai Wo Motors Ltd.
- ☐ Taxi Drivers & Operators Association Ltd.
- ☐ The Taxi Operators Association Ltd.
- ☐ Taxicom Vehicle Owners Association Ltd.

- ☐ Traffic Services Employees Association
- ☐ United Friendship Taxi Owners & Drivers Association Ltd
- ☐ Urban Taxi Drivers Association Joint Committee Co. Ltd
- ☐ Wai Fat Taxi Owners Association Ltd.
- ☐ Wai Yik HK & Kln & NT Taxi Owners Association
- ☐ Wing Lee Radio Car Traders Association Ltd.
- ☐ Wing Tai Car Owners & Drivers Assn. Ltd.

Taxi - NT Taxi Associations

- ☐ The Association of N.T. Radio Taxicabs Ltd.
- ☐ The Fraternity Association of NT Taxi Merchants
- ☐ H.K. Tele-call Taxi Association
- ☐ N.T. Taxi Merchants Association Ltd
- ☐ N.T. Taxi-call Service Centre
- ☐ N.T. Taxi Owners & Drivers Fraternal Assn.
- ☐ New Territories Taxi Drivers Association
- ☐ New Territories Taxi Drivers' Rights Alliance
- ☐ New Territories Taxi Operations Union
- ☐ North District Taxi Merchants Association
- ☐ Public Vehicle Merchants Fraternity Assn
- ☐ Sai Kung Taxi Operators Association Ltd
- ☐ Sun Hing Taxi Radio Association

- ☐ Sun Hing Taxi Radio Service General Association
- ☐ Taxi Association Ltd.
- ☐ Taxi Dealers & Owners Association Ltd.

Taxi - Lantau Taxi Association

- ☐ Lantau Taxi Association

Public Light Bus Associations

- ☐ G.M.B. Maxicab Operators General Association Ltd.
- ☐ HK Kln & NT Public & Maxicab Light Bus Merchants' United Association
- ☐ HK Public-light Bus Owner & Driver Association
- ☐ Hon Wah Public Light Bus Association Ltd.
- ☐ Hong Kong Public & Maxicab Light Bus United Association
- ☐ Hong Kong Scheduled (GMB) Licensee Association
- ☐ The Kln PLB Chiu Chow Traders & Workers Friendly Association
- ☐ Kowloon Fung Wong Public Light Bus Merchants & Workers' Association Ltd.
- ☐ Lam Tin Wai Hoi Public Light Bus Association
- ☐ Lei Yue Mun Ko Chiu Road Public Light Bus Merchants Association Ltd.
- ☐ Lung Cheung Public Light Bus Welfare Advancement Association Ltd.
- ☐ Motor Transport Workers General Union
- ☐ NT San Tin PLB (17) Owners Assn.

- ☐ PLB General Association
- ☐ Tsuen Wan PLB Commercial Association Ltd.
- ☐ Tuen Mun PLB Association
- ☐ Yuen Long-Tai-Po Public Light Bus Route Drivers' Association

(9) Other Transport-related Organisations

- ☐ Road Safety Council
- ☐ Institute of Advanced Motorists Hong Kong
- ☐ Hong Kong Automobile Association
- ☐ Hong Kong Road Safety Association
- ☐ Hong Kong Airport Authority

(10) Traffic and Transport Committees of District Councils

Appendix III
Summary of Public Views

	Responses (relevant paragraph number)
(1) Crisis management mechanism	
■ Enhance crisis management capability	
☐ Re-examine the strengths and weaknesses of each crisis management phase including hazard identification, operational readiness, emergency preparedness, crisis handling and recovery of crisis;	3.31
☐ Review current practices and eliminate unnecessary procedures;	3.29
☐ Ensure crisis management team to stand by for similar incidents, not only to monitor but to take swift and decisive actions.	Note 1
☐ Make available contingency plans for traffic diversion;	3.26, 5.20
☐ Make ready all types of recovery vehicles to stand-by and clear the site; and	3.26, 5.20

Note 1 TD has established a dedicated team to handle emergency transport incidents 24 hours daily. The team, however, may need to be strengthened to cope with new requirements.

	Responses (relevant paragraph number)
☐ Suggest to shift from Scenario-Driven contingency planning to Response-Driven contingency planning. The latter focuses on the coordination and integration of a multi-agency response to manage the crisis rather than coming up with a contingency plan to manage each scenario.	3.29-3.31
■ Improve technology and communication	
☐ Install more roadside devices e.g. Closed-Circuit Television cameras and devices with Global Positioning System technology to help commuters to have a better overview of the incident for decisive actions;	3.43-3.45, 5.15
☐ Cooperate with public transport operators to monitor the traffic along major corridors through installation of monitoring devices on the buses;	3.43-3.45, 5.16
☐ Develop a real-time travel information system, and use map-based technique, such as Geographical Information System, for data visualization and information dissemination;	3.42, 5.17
☐ Provide a fully integrated system at the Traffic Management and Information Centre, which integrates all the current scattered Traffic Control & Surveillance Systems of highways and the Area Traffic Control Systems of urban roads; and	3.43-3.45

	Responses (relevant paragraph number)
☐ Examine the installation of Automatic Incident Detection devices in urban areas;	3.43-3.45
☐ Consider Transport Information System or other Intelligent Transport System as a tool to assist traffic diversion and generate response plans when roads are blocked; and	3.43-3.45
☐ Enhance telecommunication facilities between front-line police officers and decision makers in control room by transmitting video images to facilitate assessment of situation.	Note 2

Note 2 The Police support this suggestion but resources implications have to be taken into consideration.

	Responses (relevant paragraph number)
■ Strengthen the structure of Emergency Transport Coordination Centre (ETCC)	
☐ Upgrade ETCC to a Transport Crisis Management Centre, which is led by a senior Government official at Secretary or at least Permanent Secretary level, with the authority to ensure that prompt actions are taken at the time of crisis;	3.37-3.40
☐ Define the duties of ETCC and ensure that the Commissioner for Transport or the Officer-in-charge can effectively react and give directions from ETCC to relevant recovery agents; and	3.14, 3.36-3.40
☐ Suggest to assign representatives from major public transport companies to ETCC.	Note 3
■ Conduct overseas research	
☐ Invite universities or consultants to suggest enhancements to the incident management system and hazard relief of Hong Kong's road network, taking into account overseas emergency transport co-ordination systems.	3.32

Note 3 This is the current arrangement for major planned events that have substantial traffic impact.

	Responses (relevant paragraph number)
(2) Internal co-ordination to expedite immediate remedial works	
☐ Ensure clear delineation of responsibilities amongst Government departments by setting out their roles and responsibilities;	4.27-4.28
(3) Congestion relief measures	
■ Review and improve infrastructure	
☐ Review the adequacy of relief roads;	5.36-5.37
☐ Incorporate network connectivity and reliability concepts in planning and constructing Hong Kong road networks to ensure that the future road network will be resistant to internal and external disturbances and events, such as floods, severe weather, landslides or traffic accidents;	5.36-5.37
☐ Enhance the railway network by introducing more railways such as the Shatin to Central Link;	5.36-5.37
☐ Provide emergency openings at central dividers at intermittent locations of major roads for implementation of contra-flow arrangement; and	5.32
☐ Expedite the renewal and maintenance of urban facilities such as water pipes.	Note 4

Note 4 This suggestion will be forwarded to works department for consideration.

	Responses (relevant paragraph number)
■ Deploy adequate staff	
☐ Ensure adequate police officers on the ground to direct traffic at major road junctions;	5.20
■ Review emergency public transport services	
☐ Suspend franchised bus services at the terminals to the affected area;	5.29-5.30
☐ Request bus drivers to skip bus stops during emergencies; and	5.29-5.30
☐ Operate special bus services on diverted routes to ferry passengers from congested areas.	5.29-5.30
■ Develop emergency plan	
☐ Avoid emergency vehicles being trapped in heavily congested traffic;	5.20
☐ Formulate a regional traffic diversion plan for use during emergencies with scenario of multiple failures in the network with relief routeings;	5.20
☐ Relief congestion quickly by Police on site before traffic queues are formed;	5.20
☐ Conduct debriefings to update bureaux/departments on emergency transport arrangements.	5.21
☐ Provide better signage for traffic diversion.	5.33

	Responses (relevant paragraph number)
(4) Dissemination of information to the public	
■ Strengthen communication links	
☐ Inform media and public transport operators by email, internet or telephone call to draw their attention to the message, as the current communication by fax may cause delay in transmitting messages, and cannot arouse the attention of the media;	6.12
☐ Improve the frequency of radio broadcasting, say at a15-minute interval, with updated messages;	6.11(a)
☐ Set up a communication system with all public transport operators (including railway, franchised bus, public light bus, ferry) and associations (including taxi, nanny van and coach) to disseminate information;	6.11(j)
☐ Include tunnel operators in the multi-fax list in addition to current communication channel via direct telephone lines;	6.12
☐ Suggest transport officials to be more proactive in working with the media, and to speak on radio (in both English and Chinese) to transmit real-time emergency information;and	6.4-6.6
☐ Use the radio channels of public transport associations for information dissemination.	6.11(h)

	Responses (relevant paragraph number)
■ Content of information disseminated by TD	
☐ Develop a three-tier alert system for emergency messages;	6.18
☐ Improve the substance of the message to draw media's attention to the incident; and	6.17
☐ Include in the message the incident spot, affected and relief routes and alternative public transport services, diversion plans, expected recovery time, and traffic queue and delay etc.	6.17

	Responses (relevant paragraph number)
■ Increase and enhance the channels for disseminating traffic information	
☐ Review Transport Information System to improve information dissemination at right time;	3.43 - 3.44
☐ Explore other forms of mobile messaging alerts other than the most popular format of Short Messaging Service, where users can proactively and voluntarily choose to subscribe, such as cell broadcast for sending message to a large group of mobile users simultaneously;	6.11(g)
☐ Explore with the Office of the Telecommunications Authority the possibility to impose licensing requirements or operating guidelines for the mobile network operators to offer a certain number of free short messages for the delivery of emergency messages;	6.11(g)
☐ Install more Variable Message Signs at strategic locations to advise motorists of road incidents ahead and relief roads;	6.11(i)
☐ Install more light-emitting diode panels at bus terminals, and to use the liquid crystal display monitors on buses for dissemination of emergency traffic information to passengers, such as the expected duration of the delay;	6.13
☐ Consider spot broadcasting from each of the affected areas with information of relief roads;	6.11(k)

	Responses (relevant paragraph number)
☐ Put up electronic notices at bus stops and shopping malls;	6.11(e), 6.13
☐ Alert the media through the Information Services Department;	6.4-6.6
☐ Set up a media center when ETCC is activated;	6.11(d)
☐ Set up a traffic news channel under the Radio Television Hong Kong;	6.11(a)
☐ Provide emergency telephone hotline for public enquiry; and	6.11(c)
☐ Provide direct reports to radio stations with the aerial view;	Note 5

(5) General

☐ Examine the reasons why the mechanism of crisis management did not work on 9 May;	3.29
☐ Review the reasons for late arrival of staff from recovery agencies;	Please see Chapter 2
☐ Examine the reasons why there is no quick remedy to remove the fallen scaffolding at the side in San Po Kong;	Please see Chapter 2
☐ Enhance the Hong Kong Observatory of its alertness on arrival of gust wind; and	Note 6
☐ Consider a licence bidding scheme to address traffic problem.	Note 6

Note 5 The Administration may consider this suggestion in cases of major planned events or incidents with territory-wide traffic impact.

Note 6 The suggestions will be forwarded to relevant departments for consideration.

Appendix IV
Summary of Events

Events/ Actions on 9 May 2005

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
1237	> Police "999" hotline received report of the incident				
		1239	> Police "999" hotline received report of the incident		
		1241	> Police arrived at scene and formulated traffic diversion plans for the closure of northbound (N/B) traffic of Waterloo Road		
				1242	> Police "999" hotline received report of the incident
1243	> Police arrived at scene				
		1245	> Radio Television Hong Kong (RTHK) informed Transport Department (TD) of the incident > Fixed Mode Emergency Transport Coordination Centre (ETCC) activated.		
				1247	> Police arrived at scene
		1248	> TD informed the franchised bus companies, operators of Lion Rock Tunnel (LRT) and Cross-Harbour Tunnel (CHT) and Integrated Call Centre (ICC) of the incident		

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
		1251	> TD replied to RTHK > CHT was requested to broadcast the message on incident and advise motorist to use alternative routes to Sha Tin.		
		1256	> TD called Commercial Radio (CR)	1256	> Fire Services Department (FSD) received a call on the incident
		1258	> TD issued the 1st press release > Police Public Relations Branch (PPRB) informed radio stations of the road closure		
				1300	> PPRB informed radio stations of the road closure
		1302	> TD replied to RTHK	1302	> FSD arrived at scene
		1305	> Police informed TD of the details of the incident > FSD informed that its officers were on site > CHT confirmed that they had broadcast the incident on Waterloo Road in CHT.		
		1307	> RTHK traffic news		
		1308	> CR traffic news		
		1310	> Police informed ICC of the incident and requested officers of Highways Department (HyD) to scene through ICC.	1310	> FSD observed that scaffolding fell on top of the rear portion of a double-decker. No casualty involved.

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
1311	> Police closed three westbound (W/B) lanes and implemented road diversion plans				
		1313	> LRT informed that its southbound (S/B) tube was intermittently closed		
1315	> PPRB advised motorists of the road closure through radio stations.				
				1317	> PPRB advised motorists of the blockage through radio stations
				1318	> Police informed bus operators of the road diversion and requested bus supervisors to render assistance for bus route diversion
		1319	> ICC informed HyD officer of Police's request.	1319	> Police closed all eastbound (E/B) lanes and implemented road diversion. All E/B traffic of Prince Edward Road East (PERE) was diverted to Choi Hung Road.
		1320	> HyD instructed the term contractor to mobilise labour and equipment for emergency clearance work		
		1323	> FSD informed that its equipment could not cut the tree. The site was handed over to the police.		
1324	> Kowloon Motor Bus (KMB) informed TD of the incident > FSD arrived at scene > Police implemented road diversion.	1324	> TD liaised with KMB on the bus diversion plan for Waterloo Road closure.	1324	> KMB informed TD of the incident > Police informed TD of the incident.
		1325	> Police notified ICC to contact the Leisure and Cultural Services Department (LCSD)		

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
				1328	> New World First Bus (NWFB) reported that a 796C bus was hit by the fallen scaffolding but no passengers were injured
1330	> TD issued the 1st press release				
1331	> Police closed all W/B lanes.			1331	> Bus companies were informed of the incident
				1333	> TD issued the 1st press release
1335	> PPRB advised motorists of the traffic diversion arrangement through radio stations.	1335	> HyD arrived at scene.		
		1338	> LCSD received a telephone call from ICC for assistance to cut a large fallen tree		
		1340	> TD issued the 2nd press release > Food and Environmental Hygiene Department (FEHD) was requested by Police to clean up the area with fallen trees in Waterloo Road.		
1341	> TD informed tunnel operators of the three incidents and requested them to broadcast information on serious congestion in various locations of Kowloon.	1341	> TD informed tunnel operators of the three incidents and requested them to broadcast information on serious congestion in various locations of Kowloon.	1341	> TD informed tunnel operators of the three incidents and requested them to broadcast information on serious congestion in various locations of Kowloon.
				1343	> FSD confirmed no casualty.
				1344	> Police requested Area Traffic Control Centre of TD to adjust the traffic light sequence of all traffic lights within San Po Kong area to allow more green phase.

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
		9 May 2005			
		1345	> HyD and a representative of its term contractor Chiu Hing arrived at the incident site. > Police was cutting the tree branches with a chain saw at S/B carriageway. > LCSD supervisory staff arrived on site to examine the situation.		
		1347	> HyD staff joined Police to move the tree branches from carriageway to adjacent footway until labourer of Chiu Hing arrived.		
		1349	> TD attempted to contact LCSD for assistance in tree cutting but in vain.		
		1350	> Commissioner for Transport (C for T) alerted Director of Leisure and Cultural Services to the incident and requested assistance. > Labourers of Chiu Hing arrived with two lorries and a chain saw and commenced to cut and clear the tree branches away from S/B carriageway. > HyD instructed Chiu Hing to provide two grab lorries and one heavy duty crane lorry and requested escort from Police		
		1351	> TD enquired about the reopening time of Waterloo Road. Police replied that they tried to contact LCSD but in vain.		

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
1354	> TD informed KCRC and MTRC of the three incidents. TD requested them to closely monitor the situation especially at the Kowloon Tong Interchange Station. > TD appealed to KCRC to broadcast the incidents and advised the passengers to use rail.	1354	> TD informed KCRC and MTRC of the three incidents. TD requested them to closely monitor the situation especially at the Kowloon Tong Interchange Station. > TD appealed to KCRC to broadcast the incidents and advised the passengers to use rail.	1354	> TD informed KCRC and MTRC of the three incidents. TD requested them to closely monitor the situation especially at the Kowloon Tong Interchange Station. > TD appealed to KCRC to broadcast the incidents and advised the passengers to use rail.
1355	> PPRB advised motorists of the road closures through radio stations.	1355	> C for T informed Director of Highways of the incident and requested assistance.		
		1357	> LCSD returned call stating that its staff were on the way to the scene for follow-up. Some staff were on site.		
				1358	> Police reopened the 4th lane.
1400	> TD alerted ICC duty manager to take note of traffic advice by fax. > BD was informed of the incident by the Police.	1400	> TD requested RTHK, CR and Metro Broadcast (Metro) to report the incident of collapse tree at Waterloo Road. > TD alerted ICC duty manager to take note of traffic advice by fax. > Police contacted Emergency Tree Cutting Team of LCSD again.	1400	> TD alerted ICC duty manager to take note of traffic advice by fax. > PPRB advised motorists of the reopening of the 4th lane through radio stations.
1405	> TD activated ETCC/Kowloon (ETCC/K).	1405	> TD activated ETCC/K. > Police informed TD that the concerned office duty officer of HyD was contacted. He had informed their outdoor team for urgent action.	1405	> TD activated ETCC/K.

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
		9 May 2005			
1407	> KMB displayed traffic congestion information on LED at bus terminals	1407	> KMB displayed traffic congestion information on LED at bus terminals	1407	> KMB displayed traffic congestion information on LED at bus terminals
		1410-1416	> LCSD's Emergency Tree Cutting Team arrived		
		1411	> TD issued the 3rd press release.		
				1412	> Police closed the 4th lane again
		1413	> TD requested RTHK to enhance broadcasting of the road closure at Waterloo Road.	1413	> PPRB advised motorists of the full closure at PERE through radio stations.
		1414	> KMB confirmed that information on road closure of Waterloo Road had been displayed on LED panels in bus terminals.		
1415	> KMB informed TD of the list of bus routes affected by the three incidents.	1415	> KMB informed TD of the list of bus routes affected by the three incidents.	1415	> KMB informed TD of the list of bus routes affected by the three incidents.
1416	> Police located the owner and contractor of the scaffolding works				
				1417	> TD informed HyD of the incident.
1419	> TD issued 2nd press release				
				1421	> A member of the public reported the incident to the Police
1422	> TD requested Tate's Cairn Tunnel (TCT) to advise motorists to pay attention to radio announcement for updated information.	1422	> TD requested TCT to advise motorists to pay attention to radio announcement for updated information.	1422	> TD requested TCT to advise motorists to pay attention to radio announcement for updated information.
		1428	> FEHD staff arrived at scene. Police requested for a street washing vehicle to clear the carriageway.		

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
1430	> RTHK broadcasted the traffic news.	1430	> TD requested RTHK, CR and Metro to report the incident of collapse tree at Waterloo Road, and collapse scaffolding at PERE. > RTHK broadcasted the traffic news. > Chiu Hing's grap lorries arrived under Police escort and joined clearance action.	1430	> TD requested RTHK, CR and Metro to report the incident of collapse tree at Waterloo Road, and collapse scaffolding at PERE. > RTHK broadcasted the traffic news.
				1433-1436	> Police advised TD that E/B full closure was implemented. Police estimated reopening by 18:00.
				1433	> Police diverted small vehicles via King Tai Street and large vehicles via Choi Hung Road.
		1435	> FEHD asked the contractor to send a street washing vehicle as requested by the Police		
		1438	> PPRB urged motorists to use TCT instead of Waterloo Road through radio stations.		
1439	> BD arrived at scene and contacted the owners who agreed to appoint a contractor to carry out the removal works				
		1440	> Police said that LCSD would need about two hours to remove the tree. Police also advised that Emergency Tree Cutting Team would take up the tree removal works.	1440	> Police informed BD of the incident and requested EMSD to scene.
		1442	> TD confirmed that CHT had arranged radio broadcasting.		> Police called ICC and requested BD staff to follow up on the PERE incident.

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
		1446	> TD issued the 4th press release		
1449	> TD informed the Hong Kong Examinations Authority (HKEA) of the three incidents and HKEA advised that all examinations were in session. There was no need to update HKEA on the incident.	1449	> TD informed HKEA of the three incidents and HKEA advised that all examinations were in session. There was no need to update HKEA on the incident.	1449	> TD informed HKEA of the three incidents and HKEA advised that all examinations were in session. There was no need to update HKEA on the incident.
		1450	> TD requested RTHK, CR and Metro to report the incidents of collapsed tree at Waterloo Road and collapsed scaffolding at PERE and advice on alternative routes. > HyD Lighting Division was informed of the slightly inclined street lighting pole at N/B footway. > A lorry with 17-tonne lifting crane ordered by Chiu Hing arrived.	1450	> TD requested RTHK, CR and Metro to report the incidents of collapsed tree at Waterloo Road and collapsed scaffolding at PERE and advice on alternative routes. > HyD arrived at scene.
1452	> EMB was requested to alert schools of the road closure and school buses might be delayed. Schools should take care of the students.	1452	> EMB was requested to alert schools of the road closure and school buses might be delayed. Schools should take care of the students.	1452	> EMB was requested to alert schools of the road closure and school buses might be delayed. Schools should take care of the students.
1453	> Break-in news of the roads closure.	1453	> Break-in news of the roads closure. > Police requested FSD to send a fire engine to assist in washing the carriageway.	1453	> Break-in news of the roads closure. > Police informed ICC of the incident.
1500	> RTHK main news reported the three incidents.	1500	> RTHK main news reported the three incidents. > S/B middle lane reopened. > FEHD contractor's tipper lorry arrived at the scene.	1500	> RTHK main news reported the three incidents.

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
				1503	> ICC contacted BD and referred the incident to BD staff to follow up.
		1504	> TD replied to RTHK	1504	> 2nd press release was issued. Details of the bus diversion were published.
1505	> Citybus (CTB) informed TD of the details of bus diversion	1505	> HyD removed the damaged railing and cleared the branches on S/B fast lane		
				1508	> ICC completed the telephone conversation with BD
		1509	> A fire engine arrived at scene.		
		1510	> Police reopened the S/B lanes.		
1515	> The removal of the scaffolding commenced				
		1520	> FEHD's street washing vehicle arrived at scene.		
1525	> Recorded interview conducted by TD with RTHK and CR	1525	> Recorded interview conducted by TD with RTHK and CR	1525	> Recorded interview conducted by TD with RTHK and CR
				1527	> Police informed that Hanison arrived at the incident site. Hanison estimated that the site could be cleared by 1630.
1528	> TD issued 3rd press release. Details of the bus diversion were published.				
1530	> Police estimated that Argyle Street would be reopened in 1.5 hours.	1530	> Police estimated that Waterloo Road would be reopened in 30 minutes > S/B fast lane cleared and whole carriageway fully reopened to traffic.	1530	> Police estimated that PERE would be reopened in 2 hours

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
		1540	> TD issued 5th press release. All lanes of Waterloo Road (S/B) were reopened to all traffic.		
				1550	> Police advised TD that the fallen scaffolding would be removed and all lanes of the section would be opened around 1630.
1552	> ETCC/K advised that the reinforcing works for the loose scaffolding at Argyle Street would start soon and Argyle Street was estimated to be reopened for traffic at 1630.				
		1555	> CHT informed that owing to the lane closure of Waterloo Road N/B, traffic headed for Ho Man Tin and Waterloo Road tailed back to tunnel control area and N/B traffic to Kowloon was stopped intermittently.		
		1600	> One lane of N/B Waterloo Road was reopened for traffic. Bus services resumed normal routing at 1556. > PPRB advised motorists of the reopening of S/B lanes through radio stations. > LCSD's Emergency Tree Cutting Team finished tree cutting and left the site. > FEHD's contractor started cleaning the carriageway after HyD removed most of the trunk sections on carriageway.		

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
		1607	> N/B middle lane re-opened to traffic.		
				1609	> TD issued 3rd press release. Member of the public were advised to consider using MTR.
		1610	> TD informed LRT that one traffic lane of Waterloo Road N/B was reopened to traffic. > Street lighting contractor of HyD arrived and started fixing the inclined street lighting pole.		
				1620	> BD arrived at scene
1623	> CHT reported heavy traffic tailed back from other areas.	1623	> CHT reported heavy traffic tailed back from other areas.	1623	> CHT reported heavy traffic tailed back from other areas.
		1625	> FEHD's washing operation completed.	1625	> Police advised that the clearance work was still in progress. Road could not be reopened at 1630.
		1630	> N/B slow lane reopened to traffic. > PPRB advised motorists of the reopening of N/B fast lane and S/B all lanes.		
		1632	> TD issued 6th press release. All lanes of Waterloo Road were reopened to all traffic.		
1635	> BD informed Police that two outer lanes could be reopened upon removal of the most dangerous parts of the scaffolding by approximately 17:00	1635	> PPRB advised motorists of the reopening of all lanes.	1635	> TD requested MTRC to arrange stand-by trains and monitor passenger demand.
		1636	> TD advised CR of the reopening of the Waterloo Road N/B. > TD informed LRT that all lanes of Waterloo Road N/B were reopened to traffic.		

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
1640	> BD confirmed that demolition was in progress. Two traffic lanes of Argyle Street were expected to reopen at 17:00			1640	> ETCC requested West Rail to arrange stand-by trains and monitor passenger demands.
		1643	> Due to heavy traffic congestion at Waterloo Road, the N/B tube of CHT was closed intermittently.		
1645	> BD reassured that the fast and middle lanes of Argyle Street could be reopened as scheduled at 1700.			1645	> Police informed TD that BD had arrived to assess the safety of suspending scaffoldings. PERE could not be opened at the moment. Clearance of road surface was in progress. > ETCC/K informed Police that traffic tailed back to CHT.
1659	> Police reopened the 3rd and 4th lane of Argyle Street (W/B) after the imminent hazard was removed.				
1700	> RTHK Newscast > KMB informed that the 3rd and 4th traffic lanes of Argyle Street (W/B) were reopened to traffic. The bus diversion was withdrawn at 1657. > TD issued 4th press release. Fast and middle lanes of Argyle Street (W/B) were reopened to all traffic.	1700	> RTHK Newscast	1700	> RTHK Newscast > BD informed Police that the four traffic lanes should remain closed.

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
1705	> RTHK broadcasted traffic news			1705	> RTHK broadcasted traffic news
1707	> PPRB advised motorists of the reopening of two traffic lanes of Argyle Street.				
1711	> TD Informed bus companies of the reopening of fast and middles lanes of Argyle Street (W/B).				
				1715	> TD issued 4th press release. > Gondola operator/contractor arrived at scene.
1730	> RTHK broadcasted traffic news	1730	> The staff of FEHD's contractor left the scene.	1730	> CTB informed that they did not make any bus diversion. > ABT informed that W/B tube was intermittently closed. > RTHK broadcasted traffic news. > Police issued traffic bulletins and urged motorists to use Junction Road and Lung Cheung Road.
				1732	> TD requested MTRC to strengthen train services. > MTRC informed that there was no crowd problem and they would strengthen train services.
		1735	> RTHK traffic news		
				1737	> TD advised CR of the latest traffic information

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
				1738	> ETCC/K asked KMB to divert buses to East Kowloon Corridor. It also sought Police's assistance on bus diversion. > TD called RTHK to advise on latest traffic situation. > Police issued traffic bulletins and advised motorists of CHT's congestion and urged motorists to use alternative routes to Kowloon.
				1739	> Police advised TD that BD might need at least 30 minutes to check and fix the unstable parts. The fallen objects on 3rd/4th lane of PERE (E/B) lanes had been cleared. The lanes were ready to be reopened at 1830.
				1745	> Completion of clearance of scaffolding on carriageway.
				1749	> BD opined that all lanes should remained closed.

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
1800	> All loose bamboos were removed	1800	> TD conducted live interview with CR.	1800	> KMB informed TD that some buses were diverted to East Kowloon Corridor but passengers refused to alight at Chatham Road. Bus would therefore use Sung Wong Toi Road to leave East Kowloon Corridor. > TD advised members of the public of the latest traffic information through RTHK and CR news programme. > BD informed Police that scaffolding blocking carriageway of PERE had been cleared, but in view of the damaged cooling towers and the loose scaffolding at high level were yet to be secured/removed, all four lanes should remain closed.
				1804	> ICC called and enquired about the traffic conditions at ABT. TD reported that owing to the congestion on Canal Road, which tailed back to ABT, ABT was intermittently closed.
				1805	> RTHK broadcasted traffic news

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
				1806	> PPRB advised motorists that CHT HK entrance closed at interval due to congestion at Kowloon side exit through radio stations.
				1809	> Police informed that the 3rd and 4th lanes could not be re-opened.
1815	> Upon confirmation with BD that the site was safe, Police reopened all W/B lanes of Argyle Street.			1815	> MTRC informed that Kwun Tong Line would provide additional train for service enhancement.
				1818	> KMB issued a red alert.
1825	> PPRB advised motorists of the reopening of all traffic lanes at Argyle Street.				
1830	> RTHK broadcasted traffic news			1830	> TD called Director of Buildings for assistance regarding the PERE incident.
				1832	> Police advised that PERE could not be opened because BD needed to remove the suspending parts of scaffolding for safety reason. The job could not be completed in one hour.
				1840	> BD advised that it would check the details of the fallen scaffolding at PERE and reply in due course.
				1850	> TD issued 5th press release.

Argyle Street Fallen Scaffolding Incident		Waterloo Road Fallen Tree Incident		Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions	Time	Events / Actions	Time	Events / Actions
9 May 2005					
1900	> RTHK broadcasted traffic news			1900*	> BD advised TD that the fallen objects on the ground had been cleared. Nevertheless, BD still needed time to clear the hanging scaffolding. Contractors were arranging for the removal of hanging scaffolding. Cranes for assisting the removal works were on the way to the scene. > RTHK broadcasted traffic news
1929	> TD issued press release				

* The events after 1900 for the Prince Edward Road East Incident are to be continued in p.165.

Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions
9 May 2005	
1909	> Police converted King Fuk Street W/B into E/B to allow small vehicles to pass through the incident site.
1910	> Police informed that bus only lane at Choi Hung Bus Terminus had been opened for general traffic. > Another BD officer arrived at scene.
1911	> Police advised that King Fuk Street W/B between King Hong Street and King Tai Street was converted to E/B traffic only.
1915	> BD advised that the cranes had yet to arrive. > PPRB advised motorists of the above arrangement through radio stations.
1920	> TD issued the sixth press release. The BD officer who arrived at 16:20 left the scene.
1930	> RTHK broadcasted traffic news > Hanison started mobilising workers to commence the securing works.
1950	> TD sought Police's view on: (a) converting King Fuk Street to E/B only to relieve congestion; and (b) converting PERE W/B lanes for E/B traffic. > Police replied to TD that King Fuk Street scheme was implemented at 1909, but diversion of E/B traffic on W/B lanes was not feasible.
2000	> The first crane arrived.
2003	> TD requested KMB to divert buses via Airport Tunnel and Kai Cheung Road and provide interchange in Kowloon Bay on other W/B buses. KMB reported that passengers on broad objected to the diversion. > TD drew the attention of the Police that there was crowd problem on Chatham Road North near Ulfert. Police replied that they would send staff to check the situation.
2008	> BD advised that the crane vehicle had not yet arrived at the scene. TD enquired what could be done to help BD expedite of the work. BD said that they needed to use a heavy crane but they were still contacting the relevant contractor to arrange for its arrival. > BD did not agree to reopen PERE before ensuring safety of the site.
2018	> Assistant Director of Buildings indicated that he was on the way to the incident scene.
2110	> PPRB advised motorists that CHT was closed at interval due to congested traffic through radio stations
2118	> TD urged BD to give an estimate on the reopening time, especially if the road could not be reopened by the next day.
2120	> BD discussed with TD and advised that it would endeavour to seek completion of the removal/securing works early next morning with a view to allowing two lanes to be reopened to traffic.
2140	> TD was exploring contra-flow arrangement on PERE by converting traffic lanes W/B into E/B.
2146	> TD issued press release to ISD.
2200	> CR broadcasted traffic news.
2205	> TD discussed with HyD contra-flow arrangement
2230	> The second crane arrived. > Police advised motorists of the traffic diversion in Sze Mei Street.
2300	> RTHK Newscast

Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions
9 May 2005	
2306	> Hanison informed TD that another crane would soon arrive at scene, and the removal of scaffolding would commence at 0600 on 10 May 2005 and it was expected to take about four hours to complete. During the removal works, some or even all lanes of PERE (E/B) might be required to be closed. TD disagreed to the aforesaid plan as the continual closure of traffic lanes in PERE would lead to serious congestion in morning peak and strongly requested the contractor to expedite the works.
2317	> TD confirmed that the contra-flow arrangement was required, and the term contractor (SFK) of HyD was instructed to carry out the works.
2325	> PPRB advised motorists from Boundary Street E/B to use Lomond Road, Argyle Street or Junction Road and Lung Cheung Road to Kwun Tong area
2330	> BD confirmed that temporary stabilisation works would be completed subject to weather condition by 0600 on 10 May and two traffic lanes on PERE (E/B) could be reopened to traffic.
2345	> Police stopped all traffic via King Tai Street and rerouted it to Choi Hung Road > HyD and TD arrived at site for the opening of central divider at PERE
2349	> PPRB urged motorists to use Junction Road and Lung Cheung Road to Kwun Tong
2357	> PPRB advised motorists from Ma Tau Wai Road to use Tin Kwong Road, Lomond Road, and Argyle Street to Kwun Tong. Vehicles intending to go to Kwun Tong can also use Junction Road and Lung Cheung Road

Events / Actions on 10 May 2005

Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions
10 May 2005	
0023	> Police confirmed that the contra-flow arrangement at PERE could be implemented
0100	> Electricians cut off the electricity supply.
0120	> Hydraulic breaker arrived. Started breaking opening 1.
0122	> HyD would like ETCC to contact the Water Supplies Department (WSD) to carry out the works jointly.
0123	> TD referred the request from HyD to WSD and asked them to contact HyD.
0145	> KMB informed that PERE (E/B) near King Tai Street was still closed. > Started breaking opening 2.
0300	> Started breaking opening 3. > BD informed TD that loosen scaffolding had been fixed and that two lanes of the E/B carriageway could be opened to traffic.
0500	> BD informed TD that the securing of loose scaffolding and the removal of the cooling towers and supporting frames had been completed. Two outer lanes of the E/B carriageway could be opened to traffic.
0530	> BD informed that their works at PERE had been completed but HyD had not completed their works yet.
0545	> HyD started clearance of the site as requested by the Police.

Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions
10 May 2005	
0554	> TD informed that the works at PERE had been partially completed. It was estimated that two traffic lanes (E/B) and four traffic lanes (W/B) would be opened for use after 0630. > TD updated the bus companies of the estimated partial reopening of PERE.
0658	> Police informed that the estimated reopening of 2 E/B traffic lanes would be at about 0715. Police would inform PPRB and requested TD to inform media.
0700	> TD issued press release.
0702	> TD informed KMB, CTB and NWFB of the expected reopening time of the two traffic lanes of PERE (E/B).
0715	> Cable TV reported that Police reopened two lanes of PERE (E/B) at 0715
0720	> PPRB advised motorists of the reopening of the 3rd and 4th lane of E/B PERE
0725	> TD issued press releases.
0800	> TD gave an interview with RTHK newscast. > HyD resumed working on opening 2. > TD issued press release.
0810	> TD gave an interview with CR "On a Clear Day".
0835	> TD gave an interview with RTHK "Talkabout"
0950	> PPRB informed motorists that traffic at PERE was heavy through radio stations
1030	> BD requested the contractor to erect a catch platform to provide further protection to enable the remaining lanes to be reopened.
1035	> Labour Department staff on site advised that the erection of the catch platform should only commence when heavy rain stopped. In the meantime, BD proceeded with the preparation for erecting the catch platform by requiring the installation of anchor bolts and steel bracket for supporting the catch platform.
1057	> TD discussed with the Police the implementation of contra flow proposal at 12:00
1130	> Deputy Commissioner for Transport/Planning and Technical Services (DC/PTS) inspected the PERE site and gave a stand-up briefing for the media. > TD gave a separate interview with Cable TV on request.
1142 1220 1247	> TD issued the press releases that no traffic queue was observed on PERE (E/B) near King Tai Street.
1300	> HyD completed works on opening 2.
1315	> HyD resumed works on opening 3. > Contractor started to erect a catch platform to provide further protection to the public and to facilitate removal of the loose scaffolding.
1330 1400 1430 1501	> TD issued press releases.
1600	> HyD completed works on opening 3.
1622 1645	> TD issued press releases.
1630	> Contra-flow lane at PERE opened to traffic.
1700 1730 1745	> TD issued press releases

Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions
10 May 2005	
1730	> C for T inspected the PERE site to observe the traffic conditions after the contra-flow arrangement was introduced and gave a stand up briefing for the media
1745	> TD gave an interview with RTHK's news programme and with CR's news programme.
1800	> CR broadcasted the traffic news and TD's sound bite > PPRB advised motorists the new traffic arrangement (contra-flow) scheme was in place.
1815 1840	> TD issued press releases.
1850	> TD had an interview with CR's "左右大局"
1900	> TD issued press release. > DC/PTS had an interview with CR's "左右大局"
1942	> TD issued press release.
1945	> TD issued press release saying that contra-flow made PERE traffic smooth and normal.
1950	> TD informed KMB on possible opening of four lanes by next morning.
2148	> Police re-opened 2nd lane of PERE E/B and advised the motorists of the reopening of E/B second lane. Only one lane was blocked at the moment.
2205	> BD advised that works on the catch platform would be completed between 23.30 and 00:00 midnight.
2345	> BD informed that they had completed the erection of a catch platform to provide further protection to the public, and necessary actions should be taken for converting the contra flow lane back to a W/B lane. The reinstatement works were estimated to be completed in an hour.
2353	> Police informed that fast lanes of both sides of PERE were closed and the closed lanes were estimated to be reopened in about 2 hours.

Events / Actions on 11 May 2005

Prince Edward Road East Fallen Scaffolding Incident	
Time	Events / Actions
11 May 2005	
0005	> BD informed that the works of the catch platform were completed at 23:50 on 10 May.
0202	> Police advised that the reopening time of the slow lane would be delayed for 30 minutes.
0250	> Police reopened all lanes of PERE and motorists were advised through radio stations.
0300	> Lane reinstatement works were completed at 0252. > All traffic lanes at PERE (E/B) were reopened for traffic.

Appendix V
Radio Communication Log

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
			1240	RTHK Traffic Centre received the information from sources				
			1245	RTHK called TD to clarify the information				
			1250		RTHK special traffic announce-ment in Radio 2 (R2), Radio 5 (R5), Putonghua Channel (PTC)			
			1251	TD replied to RTHK's enquiry				
			1254		RTHK special traffic announce-ment in R2, PTC			
			1256	TD called CR				

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
			1258	TD issued press release to Integrated Call Centre (ICC), ISD, TV, radio stations, page and mobile phone companies Police Public Relations Branch (PPRB) informed radio stations of road closures				
						1300	PPRB advised motorists the closure of three eastbound lanes at Prince Edward Road East through radio stations	
			1302	TD replied to RTHK's enquiry				
			1305		RTHK traffic news in Radio 1 (R1), R5	1305		RTHK traffic news in R1, R5
			1308		CR traffic news	1308		CR traffic news
1315	PPRB advised motorists of road closure at Argyle Street through radio stations							
						1317	PPRB advised motorists the blockage of Prince Edward Road East through radio stations	

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
1330	TD issued press release to ICC, ISD, TV, radio stations, page and mobile phone companies		1330		CR News Report			
1332		CR traffic news	1332		CR traffic news	1332		CR traffic news
1333		RTHK traffic news in R2	1333		RTHK Traffic news in R2	1333	TD issued press release to ICC, ISD, TV, radio stations, page and mobile phone companies	RTHK traffic news in R2
1335	PPRB advised motorists of the traffic diversion arrangement for the road closure at Argyle Street through radio stations							
			1340	TD issued press release to ICC, ISD, TV, radio stations, page and mobile phone companies				
			1349		RTHK special traffic announce ment in R1, R5			
1355	PPRB advised motorists of the road closures at Argyle Street through radio stations							

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
			1359		RTHK special traffic announce-ment in R2			
			1400	TD requested RTHK, CR and Metro Broadcast (Metro) to report the incident of collapsed tree at Waterloo Road	RTHK PTC Newscast interview with Dr Sarah Liao Metro News CR News Report	1400	PPRB advised motorists of the reopening of the 4th lane through radio stations	RTHK traffic news
1405		RTHK traffic news in R1, R5 CR traffic news	1405		RTHK traffic news in R1, R5 CR traffic news	1405		CR traffic news
			1407		PTC special traffic announce-ment			
			1411	TD issued repeated press release to ICC, ISD, TV, radio stations, page and mobile phone companies				
			1413	TD called RTHK		1413	PPRB advised motorists of the full closure at Prince Edward Road East through radio stations	
1416	RTHK called ETCC on road closure							
1418	TD replied to RTHK's enquiry							

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
1419	TD issued press release to ICC, ISD, TV, radio stations, page and mobile phone companies							
			1422		PTC special traffic announce-ment			
1430		RTHK Newscast recorded interview by TD Metro News	1430	TD requested RTHK, CR and Metro Broadcast to report the incident of collapsed tree at Waterloo Road	RTHK Newscast recorded interview by TD Metro News CR News Report	1430		RTHK Newscast recorded interview by TD Metro News
1434		CR traffic news	1434		CR traffic news	1434		CR traffic news
			1438	PPRB urged motorists to use Tate's Cairn Tunnel instead of Waterloo Road through radio stations				
			1445		RTHK special traffic announce-ment in R5			
			1446	TD issued press release to ICC, ISD, TV, radio stations, page and mobile phone companies				

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
			1450	TD requested RTHK, CR and Metro Broadcast to report the incident of collapsed tree at Waterloo Road and alternative routes advice		1450	TD requested RTHK, CR and Metro Broadcast to report the incident of collapse scaffolding at Prince Edward Road East and alternative routes advice	
			1453		RTHK break-in news of the road closure			
			1457		RTHK special traffic announce-ment in R2			
1500		RTHK main news reported road closures in Waterloo Road, Argyle Street and Prince Edward Road East PTC Newscast Metro News CR news interview with TD	1500		RTHK main news reported road closures in Waterloo Road, Argyle Street and Prince Edward Road East PTC Newscast CR news interview with TD	1500		RTHK main news reported road closures in Waterloo Road, Argyle Street and Prince Edward Road East PTC Newscast Metro News CR news interview with TD
1503		RTHK traffic news in R1, R2, R5	1503	RTHK called TD on road closure	RTHK traffic news in R1, R2, R5	1503		RTHK traffic news in R1, R2, R5
			1504	TD replied to RTHK's enquiry		1504	TD issued repeated press release to ICC, ISD, TV, radio stations, page and mobile phone companies	

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
1508		CR traffic news	1508		PTC special traffic announce-ment CR traffic news	1508		CR traffic news
1525	Recorded interview by TD with RTHK and CR		1525	Recorded interview by TD with RTHK and CR		1525	Recorded interview by TD with RTHK and CR	
1528	TD issued repeated press release to ICC, ISD, TV, radio stations, page and mobile phone companies							
1530		Metro News	1530		CR News Report	1530		Metro News CR News Report
1533		RTHK traffic news in R1, R2	1533		RTHK traffic news in R1, R2	1533		RTHK traffic news in R1, R2
			1540	TD issued repeated press release to ICC, ISD, TV, radio stations, page and mobile phone companies				
1600		RTHK Newscast PTC Newscast RTHK traffic news in R1, R2, R5 Metro News	1600	PPRB advised motorists the reopening of Southbound lanes through radio stations	RTHK Newscast PTC Newscast RTHK traffic news in R1, R2, R5 CR News Report	1600		RTHK Newscast PTC Newscast RTHK traffic news in R1, R2, R5 Metro News
1608	TD called RTHK		1608	TD called RTHK		1608	TD called RTHK	

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
						1609	TD issued press release to ICC, ISD, TV, radio stations, page and mobile phone companies	
1612		CR traffic news	1612		CR traffic news	1612		CR traffic news
1628		Metro News / Traffic News	1628		Metro News / Traffic News	1628		Metro News / Traffic News
			1630	PPRB advised motorists of the reopening of N/B fast lane and S/B all lanes.				
			1632	RTHK called TD to update the information TD issued press release to ICC, ISD, TV, radio stations, page and mobile phone companies				
1633		RTHK traffic news in R1, R2, R5	1633		RTHK traffic news in R1, R2, R5	1633		RTHK traffic news in R1, R2, R5
1634		CR traffic news	1634		CR traffic news	1634		CR traffic news
1635	TD called RTHK		1635	TD called RTHK PPRB advised motorists of the reopening of all lanes.		1635	ETCC called RTHK	
			1636	TD called CR				
1700	TD issued press release to ICC, ISD, TV, radio stations, page and mobile phone companies	RTHK Newscast Metro News CR news report interview with TD	1700		RTHK Newscast PTC Newscast CR news report interview with TD	1700		RTHK Newscast PTC Newscast Metro News CR news report interview with TD
1705		RTHK traffic news in R1, R2, R5	1705		RTHK traffic news in R1, R2, R5	1705		RTHK traffic news in R1, R2, R5
			1706		PTC special traffic announce-ment			

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
1707	PPRB advised motorists of the reopening of two traffic lanes in Argyle Street.							
1708		Metro traffic news	1708		Metro traffic news	1708		Metro traffic news
						1715	TD issued press release to ICC, ISD, TV, radio stations, page and mobile phone companies	
1730		RTHK Newscast	1730		RTHK Newscast	1730	Police issued traffic bulletins and urged motorists to use Junction Road and Lung Cheung Road.	RTHK Newscast
1733		RTHK traffic news in R1, R2, R5 PTC special traffic announce-ment	1733		RTHK traffic news in R1, R2, R5 PTC special traffic announce-ment	1733		RTHK traffic news in R1, R2, R5 PTC special traffic announce-ment
1734		CR traffic news				1734		CR traffic news
1736	TD called RTHK	Metro traffic news	1736	TD called RTHK	Metro traffic news	1736	TD called RTHK	Metro traffic news
						1737	TD called CR	
						1738	TD called RTHK Police issued traffic bulletins and urged motorists to use alternative roads to Kowloon.	
1758		RTHK traffic news in R1	1758		RTHK traffic news in R1	1758		RTHK traffic news in R1
1759		CR traffic news				1759		CR traffic news

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
1800		CR News Bulletin	1800		RTHK Newscast PTC Newscast CR News Bulletin	1800		TD conducted news interview with CR TD conducted news interview with RTHK CR News Bulletin
1802		Metro traffic news	1802		Metro traffic news	1802		Metro traffic news
						1805		RTHK traffic news in R2
						1806	PPRB advised motorists through radio stations that the HK entrance of Cross-Harbour Tunnel was closed at interval due to congestion at Kowloon exit	
1808		Metro News				1808		Metro News
1824		CR traffic news						
1825	PPRB advised motorists of the release of all traffic lanes at Argyle Street					1825		RTHK traffic news in R5
1830		RTHK traffic news in R1	1830		RTHK traffic news in R1	1830		RTHK traffic news in R1
1834		CR traffic news				1834		CR traffic news
1839		Metro traffic news				1839		Metro traffic news
						1850	TD issued press release to ICC, ISD, TV, radio stations, page and mobile phone companies	

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
1900		Metro News CR News Report	1900		CR News Report	1900		Metro News CR News Report
1905		RTHK traffic news in R1, R2, R5				1905		RTHK traffic news in R1, R2, R5
						1906		CR traffic news
						1915	PPRB advised motorists of this arrangement through radio stations	
1917	RTHK called TD on road closure							
						1920	TD issued press release to ICC, ISD, TV, radio stations, page and mobile phone companies	
1925	TD replied to RTHK's enquiry							
1929	TD issued press release to ICC, ISD, TV, radio stations, page and mobile phone companies							
1930		CR News Report				1930		CR News Report Metro News
1932		Metro News						
1933		RTHK traffic news in R1, R2				1933		RTHK traffic news in R1, R2 CR traffic news
2000		CR News Report				2000		CR News Report

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
						2007		CR traffic news
			2030		RTHK Newscast	2030		Metro News
						2034		CR traffic news
2100		CR News Report	2100		CR News Report	2100		CR News Report interview with school bus operator
						2110	PPRB advised motorists that Cross-Harbour Tunnel was closed at interval due to congested traffic through radio stations	
						2130		CR News Report
						2134		CR traffic news
						2146	TD issued press release to ISD	
2200		RTHK Newscast	2200		RTHK Newscast	2200		CR Newscast RTHK Newscast
						2230	PPRB advised motorists of the traffic diversion in Sze Mei Street.	Metro News CR special report
			2300		CR News Report	2300		RTHK Newscast Metro News CR News Report

Argyle Street Fallen Scaffolding Incident			Waterloo Road Fallen Tree Incident			Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination	Time	Release	Dissemination	Time	Release	Dissemination
9 May 2005								
						2325	PPRB advised motorists from Boundary Street eastbound to use Lemond Road Argyle Street or Junction Road and Lung Cheung Road to Kwun Tong area	
						2330		Metro News CR News Report
						2349	PPRB urged motorists to use Junction Road and Lung Cheung Road to Kwun Tong	
						2357	PPRB advised motorists from Ma Tau Wai Road to use Tin Kwong Road, Lemond Road, Argyle Street to Kwun Tong. Vehicles intending to Kwun Tong can also use Junction Road and Lung Cheung Road	

From 2357, the dissemination of information focuses on the Prince Edward Road East Incident.

Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination
10 May 2005		
0000		Metro News CR News Report interview with Buildings Department (BD)
0030		Metro News CR News Report
0100		Metro News CR News Report
0130		Metro News CR News Report
0200		Metro News CR News Report
0230		Metro News
0300		Metro News
0330		Metro News
0400		Metro News
0430		Metro News
0500		Metro News
0530		Metro News CR News Report
0600		Metro News CR News Report
0630		Metro News CR News Report
0700	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	Metro News CR News Bulletin live report / interview with TD
0720	PPRB advised motorists that the 3rd and 4th lane of Prince Edward Road East reopened through radio stations	
0725	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	
0730		Metro News CR News Report
0734		CR traffic news
0739		Metro News
0800	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	RTHK newscast interview with TD CR News Report live report
0807		CR traffic news
0808		Metro traffic news
0810		TD gave an interview with CR "On a Clear Day"
0830		Metro News CR News Report
0834		CR traffic news
0835		TD gave an interview with RTHK "Talkabout"
0900		Metro News CR News Report
0905		CR traffic news
0930		Metro News CR News Report

Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination
	10 May 2005	
0934		CR traffic news
0950	PPRB informed motorists that traffic at Prince Edward Road East was heavy through radio stations	
1000		Metro News CR News Report
1008		CR traffic news
1030		Metro News CR News Report interview with Sarah Liao
1100		Metro News CR News Report interview with Sarah Liao
1106		CR traffic news
1130		Deputy Commissioner for Transport conducted a standup briefing Metro News
1142	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	
1200		Metro News CR News Bulletin
1220	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	
1230		Metro News
1247	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	
1300		Metro News CR Report Live report / interview with TD
1330	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	Metro News CR News Report
1400	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	Metro News CR News Report
1430	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	Metro News CR News Report interview with BD
1500		Metro News CR News Report
1501	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	
1530		Metro News CR News Report
1600		Metro News
1622	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	
1628		Metro traffic news
1630		Metro News CR News Report
1634		CR traffic news
1645	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	
1700	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	Metro News

Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination
10 May 2005		
1708		Metro traffic news
1730	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	Metro News CR News Report Commissioner for Transport inspected the Prince Edward Road East site and conducted a stand-up press briefing
1734		CR traffic news
1735		Metro traffic news
1745	TD gave interview to RTHK and CR. ETCC issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	
1800	PPRB advised motorists of the contra-flow scheme	RTHK newscast played up TD's sound bites CR newscast
1802		Metro traffic news
1804		Metro News
1815	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	
1837		CR traffic news
1839		Metro traffic news
1840	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	
1850		TD had an interview with CR's "左右大局".
1900	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	Metro News CR News Report DC/PTS had an interview with CR's "左右大局".
1906		CR traffic news
1930		CR News Report
1931		Metro News
1942	TD issued press release to ICC, ISD, TV, radio stations, pager and mobile phone companies	
1945	TD issued press release to ISD	
2000		Metro News CR News Report
2030		Metro News
2148	Police advised motorists of the reopening of E/B second lane.	
2234		CR traffic news

Prince Edward Road East Fallen Scaffolding Incident		
Time	Release	Dissemination
11 May 2005		
0250	Police advised motorists of the reopening of all lanes.	

Sources: TD, Police, CR, Metro, RTHK

Glossary

AID	Automatic Incident Detection
ATC	Area Traffic Control
BD	Buildings Department
CAD	Computer-aided Dispatch
CCTV	Closed-Circuit Television
CSO	Customer Service Officer
EMB	Education and Manpower Bureau
EMSC	Emergency Monitoring and Support Centre
ERS	Emergency Response System
ETCC	Emergency Transport Coordination Centre
FEHD	Food and Environmental Hygiene Department
FSD	Fire Services Department
GIS	Geographical Information System
GPS	Global Positioning System
HyD	Highways Department
ICC	Integrated Call Centre
ISD	Information Services Department
ITS	Intelligent Transport Systems
JTIS	Journey Time Indication System
KCRC	Kowloon-Canton Railway Corporation
KMB	The Kowloon Motor Bus Co. Ltd.
LCSD	Leisure and Cultural Services Department
LED	Light-emitting diode
MTRC	MTR Corporation Ltd.
PPRB	Police Public Relations Branch
RCCC	Regional Command and Control Centre
SMS	Short Messaging Service
TD	Transport Department
TIMS	Transport Incident Management Section
VMS	Variable Message Sign