



Agreement No. TD 152/2012

Traffic Study for Causeway Bay West

Executive Summary

August 2014

AECOM



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1 INTRODUCTION

- 1.1 The intensification or redevelopment of the nearby commercial sites in Causeway Bay West such as the Time Squares, Hysan Place, Lee Theatre and other hotel developments, it is expected that the current traffic congestion in the vicinity will be worsen including Leighton Road, Sharp Street East, Russell Street, Hennessy Road, Lockhart Road, Jaffe Road, Gloucester Road, Percival Street, Matheson Street and Canal Road East and West. Also the area is a densely built-up area with immense traffic demand, it is constrained to implement change to the existing infrastructure to enhance the traffic situation significantly.
- 1.2 The traffic in these business and shopping centres is always very heavy resulting in prolonged traffic queues spreading around the district. As the area is strategically located close to the Aberdeen Tunnel and Cross Harbour Tunnel, the traffic congestion would not only adversely affect the local traffic circulation within Causeway Bay but would also cause adverse impact to the two tunnels.
- 1.3 Apart from vehicular traffic problems, numerous popular shopping and leisure area are always crowded with shoppers and tourists. Lots of the footpaths in this area are very narrow. Heavy pedestrian movements at signal-controlled crossing also seriously affect the throughput of major roads.
- 1.4 Against this background, Transport Department (TD) have initiated a traffic study to identify effective measures to easing traffic congestion and enhancing pedestrian facilities in the existing year and future design years 2016 and 2021.

2 STUDY OBJECTIVES

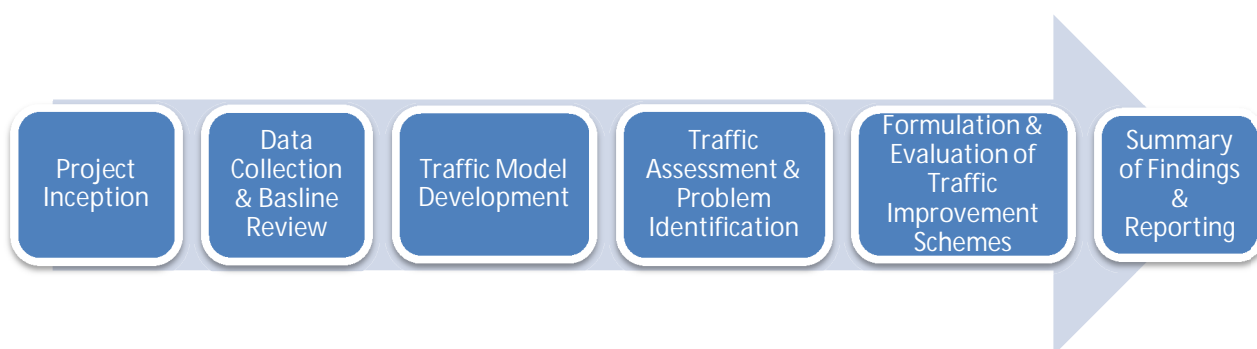
- 2.1 The main objectives of the Assignment as set out in the Study Brief are:
 - (a) To review and assess the existing traffic conditions in the road network during weekday morning and evening peak periods (as well as other time periods on both weekdays and non-weekdays, i.e. Saturday, Sunday and public holidays, if such traffic conditions are even more critical) within the Study Area;
 - (b) To carry out a comprehensive traffic impact assessment to identify traffic problems within the Study Area in the existing year and the design years 2016 and 2021;
 - (c) To carry out a pedestrian study to assess the demand in the existing year and the design years described in (b) above and identify the major pedestrian problems and corridors within the Study Area;
 - (d) To identify and develop practicable improvement schemes for each of the existing year and the design years described in (b) above including but not limited to transport infrastructure, public transport service facility improvement, traffic management measures, traffic calming, pedestrianisation schemes, and mechanised people movers, which can help alleviate the traffic congestion in the Study Area;
 - (e) To recommend improved pedestrian network after detailed study of the pedestrian facilities in the major pedestrian attraction areas as well as major pedestrian corridors in the Study Area;
 - (f) To formulate proposals to sustain the traffic and transport requirements in the design years, including detailed road network requirements, public transport facilities, locations and layout of facilities for different modes of transport, circulations for entering, leaving and within the areas designated for various Public Transport (PT) services; and

- (g) To investigate the effectiveness of the seven proposed improvement measures described in Appendix A of the Brief and to recommend further enhancements. These improvement measures are needed to be assessed individually, severally and jointly.

3 STUDY APPROACH

- 3.1 To accomplish the study objectives, the Study was undertaken in 6 main stages as stated below. The overall study approach for this Study is detailed in **Diagram 1**.

Diagram 1 Overall Study Approach



4 STUDY AREA

- 4.1 The Study Area is bounded by Gloucester Road in the north, Percival Street and Lee Garden Road in the east, Leighton Road in the south, and Canal Road in the west. For ease of discussion, the Study Area could be subdivided by Hennessy Road into two portions (i.e. Northern Area and Southern Area) as illustrated in **Figure 1**.

5 EXISTING MAJOR TRAFFIC ISSUES

- 5.1 In general, the traffic and pedestrian characteristics, e.g. vehicular ingress/egress routes, general footpath/carriageway widths, and pedestrian attractiveness etc. were found to be different between the two areas. The Southern Area was observed to be more attractive for both vehicular and pedestrian traffic while the existing carriageways and footpaths are however narrower. Thus, the Southern Area in general has more traffic and pedestrian problems. The existing pedestrian facilities within the Study Area are shown in **Figure 2** and the major pedestrian routings are summarized in **Figure 3**. **Figures 4, 5 and 6** illustrate the vehicular and pedestrian traffic issues within the Study Area, as described above.

6 TRAFFIC SURVEY

- 6.1 To access the current traffic condition in the Study Area, various types of surveys including classified traffic count survey, queue length survey, car journey time survey, pedestrian survey, kerbside loading/unloading survey and trip generation rate survey were carried out in early 2013 to obtain up-to-date traffic data and information for evaluating the baseline traffic condition as well as validating the CWB traffic model.

7 BASE YEAR JUNCTION CAPACITY ASSESSMENT

- 7.1 Junction performance of critical junctions within the Study Area was assessed. The selected signalized junctions and non-signalized junctions are measured by Reserve Capacities (RC) or Demand Flow Capacity (DFC) to determine the capacity condition of the selected junctions during weekday and weekend peak period.

- 7.2 The junction assessment results indicated that junction nos., J8 (J/O Hennessy Road/Percival Street) and J21 (J/O Leighton Road / Morrison Hill Road) are currently operating unsatisfactory. The problems of the junctions are due to the insufficient lanes and inadequate discharge time for particular movements.

8 BASE YEAR PEDESTRIAN TRAFFIC CONDITION

- 8.1 The existing pedestrian condition on identified footway sections is represented in level-of-service (LOS) and the LOS assessment is based on the Highways Capacity Manual (HCM).
- 8.2 The LOS assessment revealed that some sections of Hennessy Road, Canal Road East/West, Kai Chiu Road, Russell Street, Sharp Street East, Matheson Street and Leighton Road are with heavy pedestrian demand with LOS D or below which indicated the walking environment are unpleasant. The critical pedestrian footway condition is possibly contributed to insufficient width of footways and significant pedestrian flows due to dining, leisure and entertainment activities at Friday night after working hours.

9 SHORT-TERM TRAFFIC IMPROVEMENT MEASURES

- 9.1 It is the aim of this Study to investigate and recommend improvement schemes in both short- and long-term to address the existing traffic / pedestrian issues as well as future demands. The short-term improvement proposals are mainly divided into two types, namely the improvement measures proposed by TD and the other improvement measures proposed by AECOM.
- 9.2 TD's improvement measures include 7 nos. of short-term improvement measures as described in the Study Brief, these measures have been reviewed throughout this Study and most of the improvement works are completed.
- 9.3 The other improvement measures such as revising junction layout / MOC, footpath / carriageway widening, pedestrian prioritized scheme etc. have been proposed by AECOM at the following locations:
- J/O Percival Street / Jaffe Road;
 - J/O Inner Gloucester Road / Percival Street;
 - J/O Percival Street / Lockhart Road;
 - General loading / unloading bays at Sharp Street East and Yiu Wa Street;
 - J/O Canal Road Flyover / Slip Road (from Wong Nai Chung Road)
 - Bowrington Road;
 - Bus stop at Hennessy Road Eastbound before J/O Hennessy Road / Percival Street;
 - J/O Morrison Hill Road / Leighton Road / Sports Road; and
 - Pedestrian crossing at J/O Canal Road East / Tang Lung Street

10 FUTURE TRAFFIC AND PEDESTRIAN CONDITIONS

- 10.1 The Causeway Bay West Traffic Model (CBWTM) was developed for projecting the traffic conditions for years 2016 and 2021. The forecasts indicated that 3 junctions will be overloaded including:
- J/O Hennessy Road / Percival Street
 - J/O Leighton Road / Morrison Hill Road
 - J/O Leighton Road / Canal Road East
- 10.2 The above problematic junctions will be overloaded due to the natural traffic growth in the district and shall require traffic improvement measures to increase the junction capacities so as to enhance the overall traffic condition within the Study Area.
- 10.3 The pedestrian environments in years 2016 and 2021 are projected and some footpaths and pedestrian crossings could not be able to achieve LOS C or above.

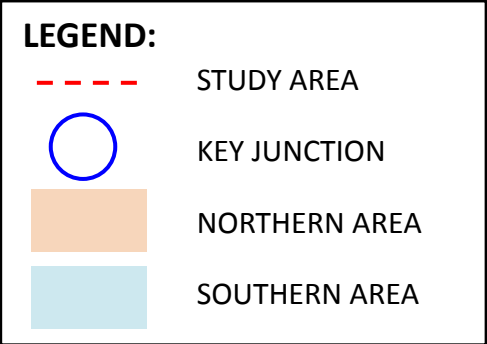
11 LONG-TERM TRAFFIC IMPROVEMENT MEASURES

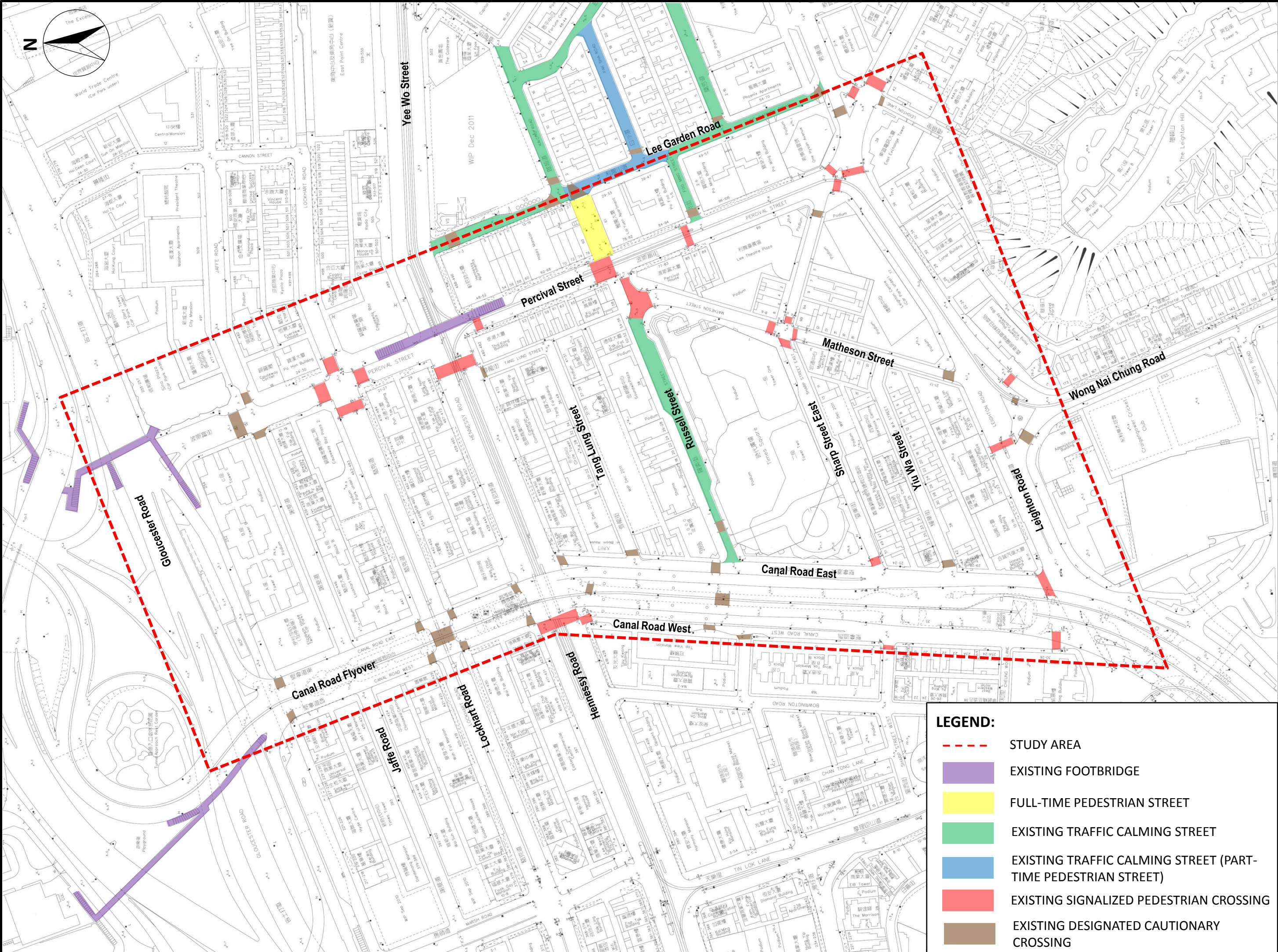
- 11.1 Long-term improvement schemes recommended under the Study are all conceptual proposals. Further investigation / study / site monitoring should be conducted in future to demonstrate their feasibility, taking into account various factors such as site constraint, local activities, temporary traffic arrangement and the traffic impact on the surrounding area.
- 11.2 Under the Study, 3 schematic improvement measures are proposed for further investigation in long run, which aim at improving the junction capacity or pedestrian walking environment at the following locations:
- J/O Leighton Road / Morrison Hill Road / Canal Road West;
 - J/O Matheson Street / Sharp Street East; and
 - Junctions along Canal Road East Southbound.
- 11.3 On pedestrian environment, according to the Policy Address 2014/15, the Government is actively taking forward further studies on underground space developments. The original pedestrian subway system in Causeway Bay shall be further reviewed in order to provide a more comprehensive underground pedestrian network to improve the at-grade pedestrian environment.

12 WAY FORWARD

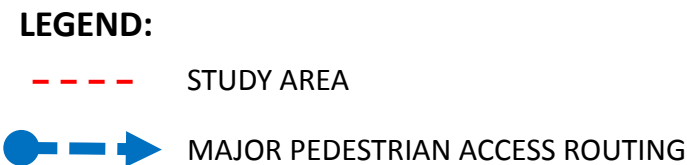
- 12.1 Several short-term improvement measures are proposed under the Study. Consultation with the major stakeholders such as the District Council and public transport operators will be required for a better understanding of their views and concern before the actual implementation of the scheme. For the long-term improvement measures, continuous monitoring of the change in traffic conditions and pattern should be conducted, and a further study to identify their actual need and to demonstrate the feasibility of the proposals will be required in future.

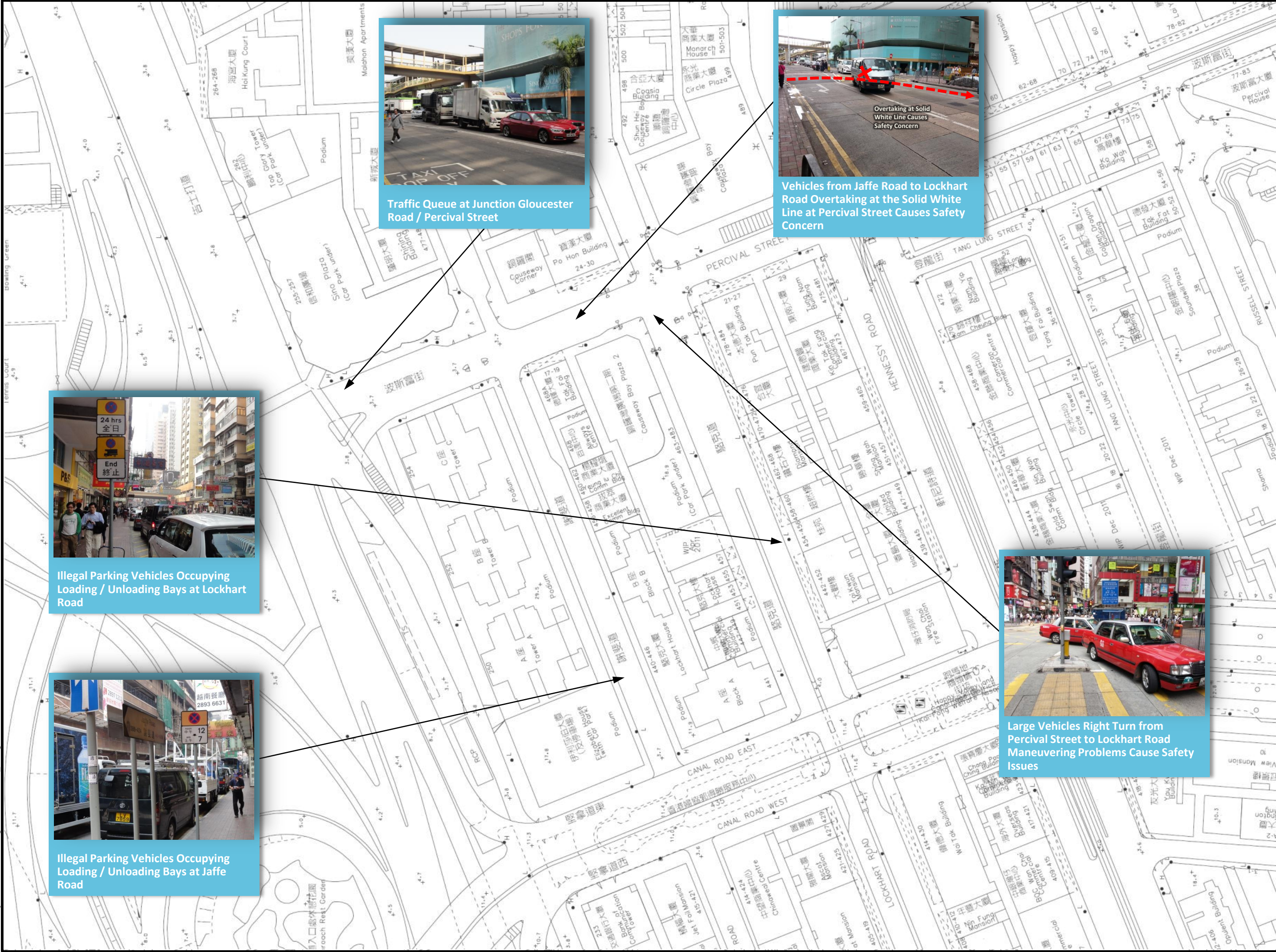
Figures

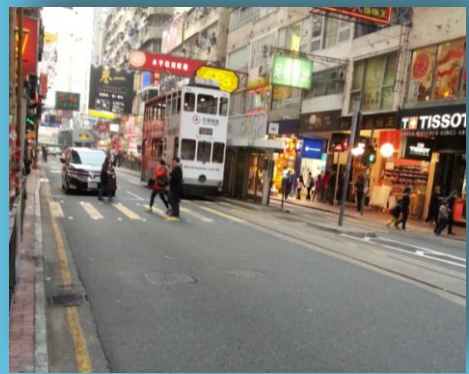




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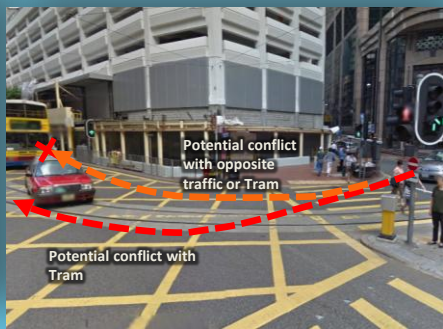
Safety Concerns of Tram Shelter



Left turn vehicles often blocked by queuing vehicles at Sharp Street East



Large Vehicles Right Turn from Percival Street to Shape Street East Maneuvering Problems Cause Safety Issues. Potential Conflict of Vehicular Traffic and Tram



Long Traffic Queue along Sharp Street East due to Traffic to Car Park and Loading / Unloading Operation



Long Traffic Queue at Matheson Street



Long Taxi Queue from Russell Street Queuing back to Matheson Street



Frequent Weaving Movements at slip road (from Wong Lai Chung and Flyover of Canal Road West)



Carriageway Width Occupied by Parking Vehicles at Tang Lung Street



Long Traffic Queues at Canal Road East F/O



Frequent Weaving Demand along at-grade Section of Canal Road East



Illegal Parking at Yiu Wa Street

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