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For circulation

For information

## **Installation of Additional Traffic Detectors, Speed Map Panels and Journey Time Indication Systems**

### 1. Purpose

1.1 This paper seeks Members' views on the following –

- (i) installation of some 520 sets of traffic detectors on strategic roads<sup>1</sup> and major roads<sup>2</sup> of Hong Kong to enhance the efficiency of traffic and incident management; and
- (ii) provision of a total of 11 Journey Time Indication Systems (JTISs) and improvement of an existing Speed Map Panel (SMP) before critical divergent points of strategic roads and major roads, to facilitate the commuters to plan their journeys and select suitable route choices or transport modes.

### 2. Background

2.1 At present, traffic detectors are installed in Traffic Control and Surveillance System (“TCSS”)<sup>3</sup>. TCSS helps monitor and manage traffic to improve road safety and efficiency. Currently, not all the strategic routes in Hong Kong are

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<sup>1</sup> Strategic routes are major traffic corridors connecting major districts with high traffic flow, e.g. Route 1 connecting Shatin and Hong Kong Island.

<sup>2</sup> The major roads are selected based on the following criteria:  
(i) Their design speed is not less than 70 km/h; and  
(ii) They are Expressways, Trunk Roads or Primary Distributors.

<sup>3</sup> TCSS comprises CCTV cameras, vehicle detectors, variable speed limit signs, lane control signals and variable message signs installed on highways and bridges with central computer facilities to help monitor and control traffic flows.

- equipped with TCSS. TCSSs are usually installed as part of the road projects when new strategic routes are built, or existing routes are reconstructed<sup>4</sup>.
- 2.2 In addition to TCSS, traffic detectors are installed along the parts of strategic routes covered by JTISs<sup>5</sup> and SMPs<sup>6</sup>. These traffic detectors, together with those for TCSS, cover only about 45% of the strategic routes in Hong Kong.
- 2.3 Installation of traffic detectors on all strategic routes to provide real-time traffic information is one of the smart mobility initiatives in the “Hong Kong Smart City Blueprint” published in December 2017. This initiative is implemented in two phases. For Phase 1 with about 550 traffic detectors to be installed on part of the strategic routes, the design and construction costs were approved by the Legislative Council in mid 2016, and the related design works were completed in October 2017. It is anticipated that the installation contract for Phase 1 will be awarded in mid 2018, and the works will be completed by end 2020.
- 2.4 At present, JTISs are installed at critical divergent points to provide the journey time from that divergent point to the exits of different cross-harbour routes, and assist motorists to make an informed route choice. SMPs are schematic electronic maps installed at critical divergent points of strategic routes, using different colours to indicate the real-time traffic conditions on the roads ahead and the estimated journey times. There are 10 JTISs and 5 SMPs in Hong Kong. The information of JTISs and SMPs is also disseminated through Transport Department (TD)’s websites, mobile applications and the Government’s website “data.gov.hk” for the commuters’ reference, which enhances their journey planning and selection of route choices or transport modes.

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<sup>4</sup> TCSSs have been installed in the following locations: the Aberdeen Tunnel, the Cross Harbour Tunnel, the Eastern Harbour Crossing, the Kai Tak Tunnel, the Lion Rock Tunnel, the Shing Mun Tunnels, the Tai Lam Tunnel, the Tate’s Cairn Tunnel, the Tseung Kwan O Tunnel, the Western Harbour Crossing, the Shenzhen Western Corridor, the Tolo Highway between Sha Tin and Tai Po near Hong Lok Yuen, the Tsing Ma Control Area and the Tsing Sha Control Area. TCSSs will also be installed at the Central–Wanchai Bypass, Hong Kong Boundary Crossing facilities of Hong Kong–Zhuhai–Macao Bridge, Hong Kong Link Road and Tuen Mun–Chek Lap Kok Link, connecting road linking up the Liantang/Heung Yuen Wai Boundary Control Point and the existing Fanling Highway, the Tolo Highway between Tai Po near Hong Lok Yuen and Fanling, Tseung Kwan O–Lam Tin Tunnel, Tseung Kwan O Cross Bay Link, and the Tai Po Road (Sha Tin Section) between Fo Tan Road and Sha Tin Rural Committee Road.

<sup>5</sup> JTISs provide the estimated journey times of different cross harbor routes.

<sup>6</sup> SMPs provide the traffic conditions and estimated journey times of different routes from the New Territories towards Kowloon.

### 3. Proposal

3.1 To enable TD to have a complete picture of the traffic conditions of all strategic routes and major roads of Hong Kong, enhance the efficiency of handling traffic incident and traffic management, and to provide traffic data for the proposed JTISs and SMP mentioned in paragraph 3.2 below, we propose to install additional some 520 traffic detectors. The locations of the proposed traffic detectors are shown in Annex 1.

3.2 In addition, to facilitate the public to better plan their journey and select suitable route choices or transport modes, we propose to provide a total of 11 JTISs (refer to Annex 2 for details) and improve an existing SMP at San Tin Highway near Fairview Park so that the traffic conditions up to the Airport can be shown (refer to Annex 3 for details). The information of the new JTISs and SMP will also be disseminated through TD's websites, mobile applications and the Government's website "data.gov.hk".

### 4. Scope of the Project

4.1 The scope of this Project comprises the following –

- (a) Installation of traffic detectors on strategic routes and major roads for collection of real-time traffic data for automatic detection of traffic incidents, traffic management and dissemination of real-time traffic information to the public;
- (b) Provision of JTISs and improvement of SMP, and the associated installation of traffic detectors and data processing equipment for dissemination of real-time traffic conditions to the commuters;
- (c) Provision of data communication equipment for transmission of data collected by the traffic detectors and for dissemination of information to the JTISs and SMP; and
- (d) Associated civil engineering works including installation of overhead gantries, mounting poles, roadside cabinets and cable ducts.

### 5. Justifications

5.1 After completion of the Project, all the strategic routes and major roads in Hong Kong will be equipped with traffic detectors, so that TD could comprehensively monitor the traffic conditions along the entire strategic route network and major roads, which strengthens TD's capability in handling traffic incidents as well as

traffic management. Besides, part of the traffic incident information will also be disseminated to other stakeholders (including public transport operators, Hong Kong Police Force and Fire Services Department) for coordination of various parties in handling traffic incident, which enhances traffic incident management.

5.2 TD has been disseminating real-time traffic information through different electronic platforms, such as websites and mobile applications; and also uploading the datasets of real-time traffic information to the Government public information portal “data.gov.hk”. The expanded coverage of traffic detectors, JTISs and SMPs under this Project will facilitate opening of more real-time traffic data for public use, which assists the commuters to better plan their journey and select suitable transport modes for avoidance of congested areas.

## 6. Implementation Programme

6.1 We propose to seek funding from Legislative Council within this legislative session. Subject to funding approval, the implementation programme for the Project will be as follows –

<u>Activity</u>	<u>Target Completion Date</u>
(a) Invitation of tender for the installation works	August 2018
(b) Commencement of installation contract	January 2019
(c) Systems commissioning	December 2020

## 7. Advice Sought

7.1 Members’ views on this paper are welcome and may be addressed to Senior Engineer/Survey & Projects of the TD (Address: 39/F, Immigration Tower, 7 Gloucester Road, Wan Chai, Hong Kong; Tel No.: 2294 2513; Fax No.: 2845 7489; E-mail: SE-SP-TTS@td.gov.hk)

**Transport Department**  
**April 2018**

**Locations of the Proposed Traffic Detectors** (see the attached Drawing No. 6029TC/SK/001)

**擬議安裝交通探測器的地點** (見附圖編號 6029TC/SK/001)

<p>Hong Kong Island 香港島</p>	<p>Gloucester Road 告士打道 Shek Pai Wan Road 石排灣道</p>	<p>Aberdeen Praya Road 香港仔海傍道 Pok Fu Lam Road 薄扶林道</p>
<p>Kowloon 九龍</p>	<p>Prince Margaret Road East 太子道東</p>	
<p>New Territories East 新界東</p>	<p>Route 1 一號幹線 Route 2 二號幹線 Route 9 九號幹線 New Clear Water Bay Road 新清水灣道 Tai Po Tai Wo Road 大埔太和路 Ting Kok Road 汀角路 Yuen Shin Road 完善路</p>	<p>Tai Po Road – Tai Po Kau to Tai Po Road – Ma Liu Shui 大埔公路-大埔滘段至大埔公路-馬料水段 Tai Chung Kiu Road 大涌橋路 Ma On Shan Road 馬鞍山道 Po Shun Road 寶順路 Po Hong Road 寶康路 Jockey Club Road 馬會道</p>

<p>New Territories West 新界西</p>	<p>Route 3 三號幹線 Route 9 九號幹線 Wong Chu Road 皇珠路 Lung Fu Road 龍富路 Tsing Tin Road 青田路 Hung Tin Road 洪天路</p>	<p>Castle Peak Road – Hung Shui Kiu 青山公路-洪水橋段 Long Tin Road 朗天路 Tin Ying Road 天影路 Castle Peak Road – Kwai Chung 青山公路-葵涌段 Shap Pat Heung Interchange (via Castle Peak Road – Yuen Long) to Castle Peak Road – Kwu Tung 十八鄉交匯處(經青山公路-元朗段)至青山公路-古洞段</p>
<p>Islands 離島</p>	<p>Penny's Bay Highway 竹篙灣公路</p>	

**Proposed Locations of Journey Time Indication System**  
**擬議的行程時間顯示系統的地點**

1. Wong Nai Chung Road (near junction with Queen's Road East)  
黃泥涌道 (近皇后大道東交界)
2. Ap Lei Chau Bridge  
鴨脷洲大橋
3. West Kowloon Highway (near MTR Nam Cheong Station)  
西九龍公路 (近港鐵南昌站)
4. Long Tin Road (near Parkside Villa)  
(To be commissioned after opening of Tuen Mun – Chek Lap Kok Link)  
朗天路(近柏麗豪園) (將在屯門至赤鱗角連接路通車後投入使用)
5. Hong Tin Road (near junction with Hung Chi Road)  
(To be commissioned after opening of Tuen Mun – Chek Lap Kok Link)  
洪天路 (近洪志路交界) (將在屯門至赤鱗角連接路通車後投入使用)
6. Yuen Long Highway (near Shap Pat Heung Interchange)  
元朗公路 (近十八鄉交匯處)
7. Fanling Highway (near Kwu Tung)  
粉嶺公路 (近古洞)
8. Tai Po Road (near Kwong Fuk Estate)  
大埔公路 (近廣福邨)
9. Po Shun Road (near Chung Ming Court)  
寶順路 (近頌明苑)
10. Wan Po Road (near Hong Kong Velodrome)  
環保大道 (近香港單車館)
11. Po Hong Road (near KMB Tseung Kwan O Depot)  
寶康路 (近九巴將軍澳車廠)

1

# Wong Nai Chung Road (near junction with Queen's Road East) 黃泥涌道 (近皇后大道東交界)



Existing Directional Signs 現時的路線指示標誌:

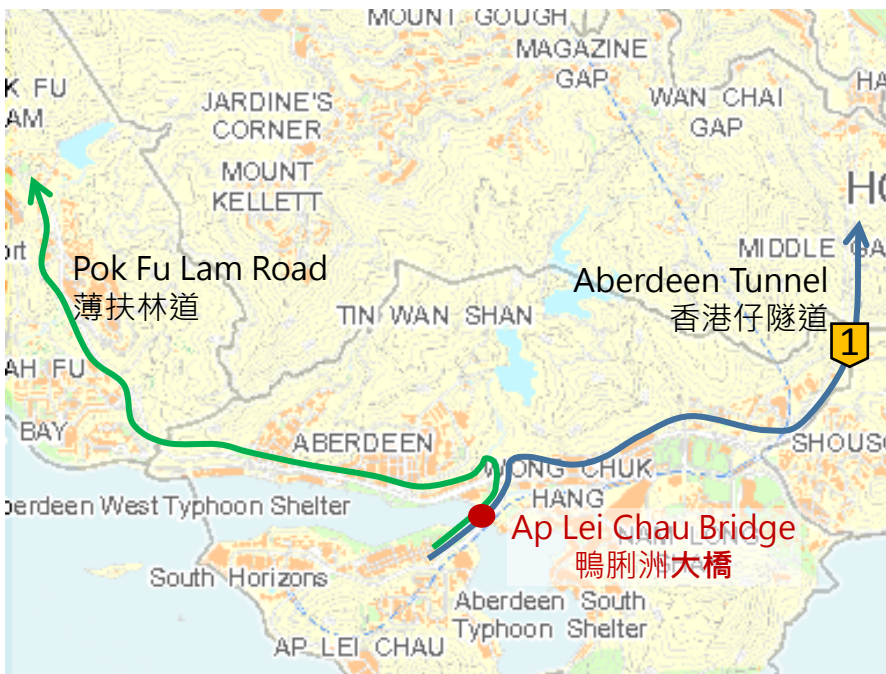


Directional Signs after Addition of Proposed Journey Time Indication System 加設擬議行車時間顯示系統後的交通標誌:



2

# Ap Lei Chau Bridge 鴨脷洲大橋



Existing Directional Sign 現時的路線指示標誌:



Directional Signs after Addition of Proposed Journey Time Indication System 加設擬議行車時間顯示系統後的交通標誌:



### 3 West Kowloon Highway (near MTR Nam Cheong Station) 西九龍公路 (近港鐵南昌站)



Existing Directional Sign 現時的路線指示標誌:



Directional Signs after Addition of Proposed Journey Time Indication System 加設擬議行車時間顯示系統後的交通標誌:



# 4 Long Tin Road (near Parkside Villa) 朗天路(近柏麗豪園)



Existing Directional Sign 現時的路線指示標誌:



Directional Signs after Addition of Proposed Journey Time Indication System 加設擬議行車時間顯示系統後的交通標誌:



# 5 Hong Tin Road (near junction with Hung Chi Road) 洪天路 (近洪志路交界)

Existing Directional Sign 現時的路線指示標誌:



Directional Sign after Addition of Proposed Journey Time Indication System 加設擬議行車時間顯示系統後的交通標誌:



6

# Yuen Long Highway (near Shap Pat Heung Interchange) 元朗公路 (近十八鄉交匯處)



Existing Directional Signs 現時的路線指示標誌:



Directional Signs after Addition of Proposed Journey Time Indication System 加設擬議行車時間顯示系統後的交通標誌:



# 7 Fanling Highway (near Kwu Tung) 粉嶺公路 (近古洞)



Existing Directional Signs 現時的路線指示標誌:



Directional Signs after Addition of Proposed Journey Time Indication System 加設擬議行車時間顯示系統後的交通標誌:



# 8 Tai Po Road (near Kwong Fuk Estate) 大埔公路 (近廣福邨)



Existing Directional Sign 現時的路線指示標誌:

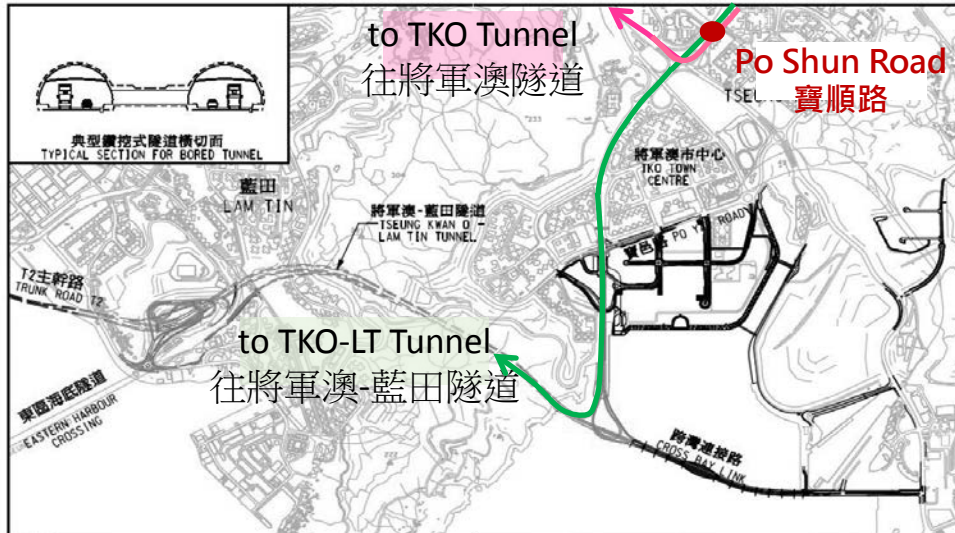


Directional Sign after Addition of Proposed Journey Time Indication System:  
加設擬議行車時間顯示系統後的交通標誌:



# 9 Po Shun Road (near Chun Ming Court) 寶順路 (近頌明苑)

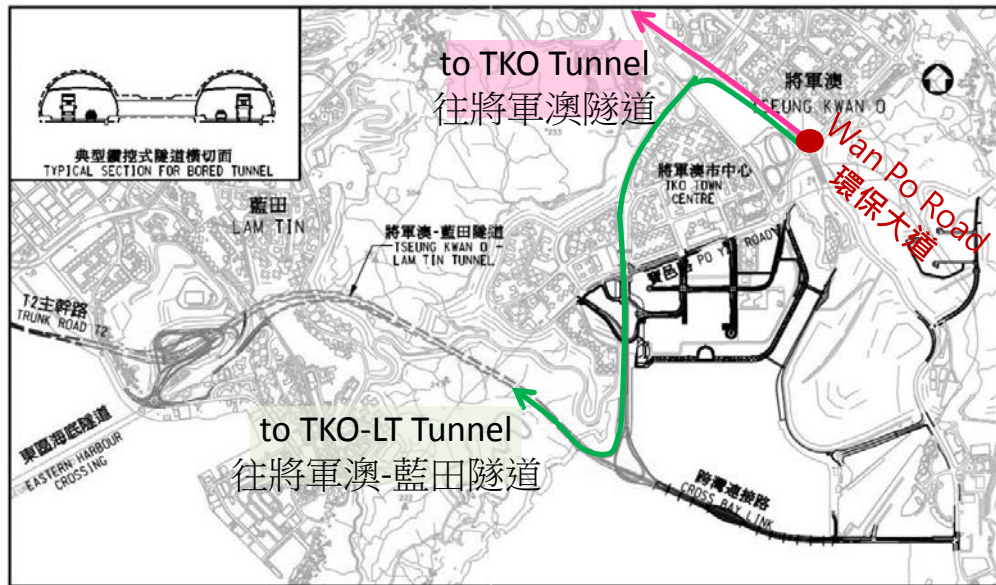
Existing Directional Sign 現時的路線指示標誌:



Directional Sign after Addition of Proposed Journey Time Indication System 加設擬議行車時間顯示系統後的交通標誌:



# 10 Wan Po Road (near Hong Kong Velodrome) 環保大道 (近香港單車館)



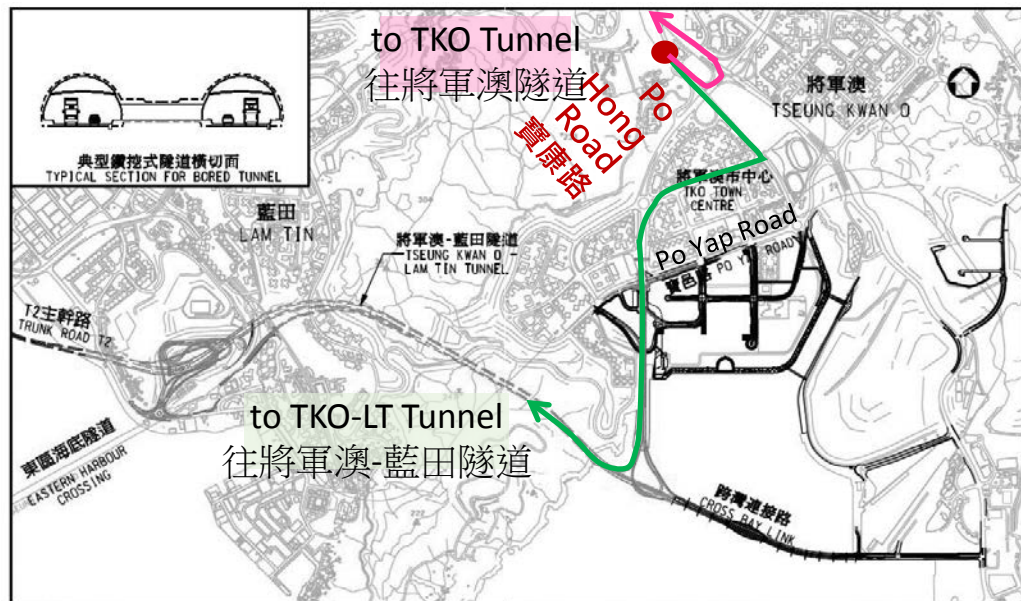
Existing Directional Signs 現時的路線指示標誌:



Directional Signs after Addition of Proposed Journey Time Indication System 加設擬議行車時間顯示系統後的交通標誌:



# 11 Po Hong Road (near KMB Tseung Kwan O Depot) 寶康路 (近九巴將軍澳車廠)



Existing Directional Sign 現時的路線指示標誌:



Directional Sign after Addition of Proposed Journey Time Indication System 加設擬議行車時間顯示系統後的交通標誌:



**Proposed Renewal of a Speed Map Panel**

**擬議更新的行車速度屏**

1. San Tin Highway (near Fairview Park)  
新田公路（近錦鏤花園）

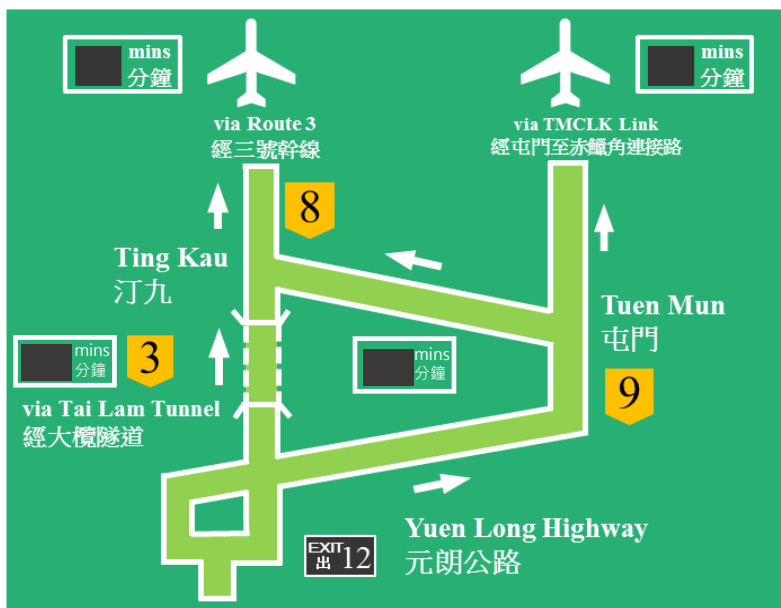
# ① San Tin Highway (near Fairview Park) 新田公路 (近錦綉花園)

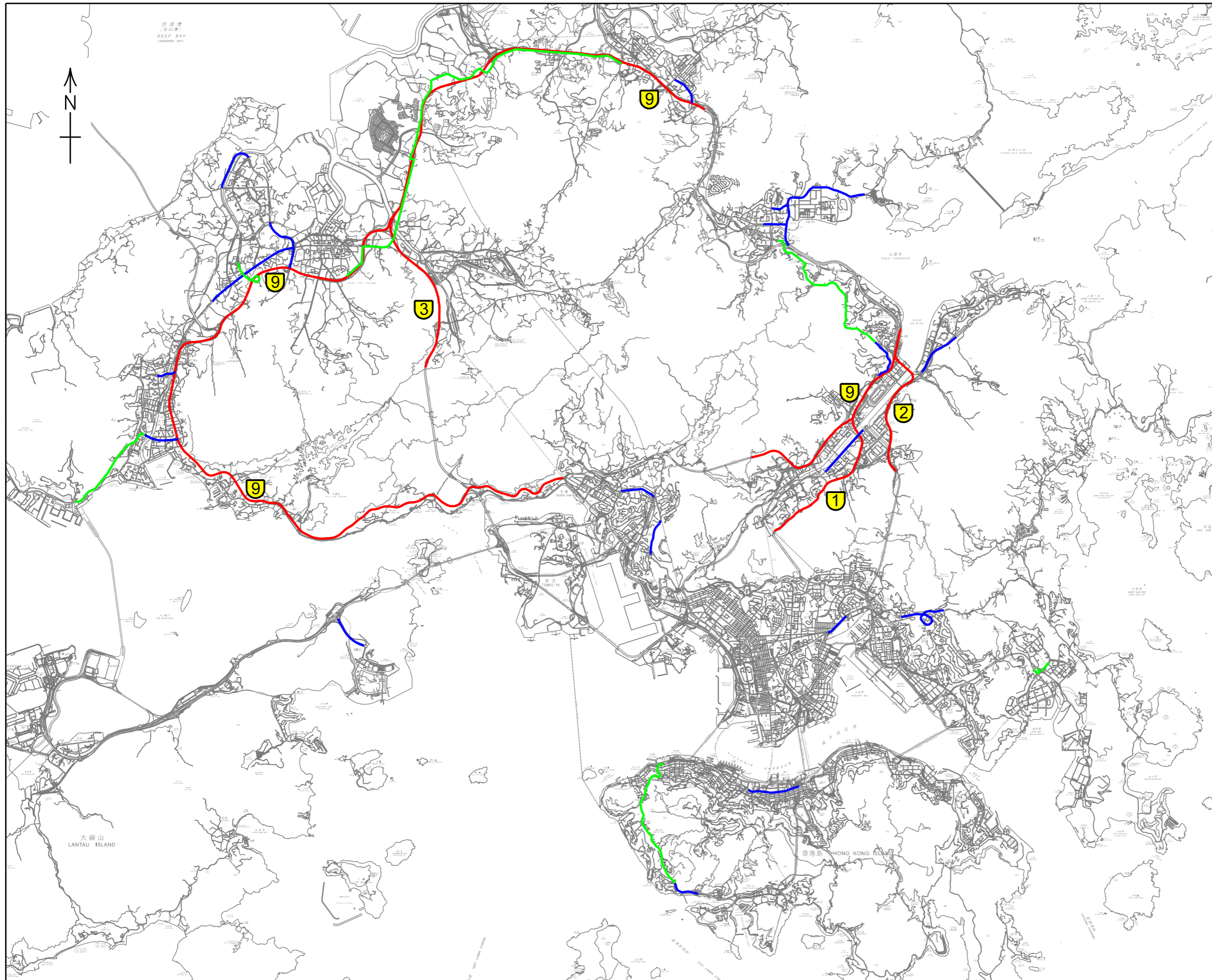


Existing Speed Map Panel 現時的行車速度屏:



Proposed Speed Map Panel 擬議的行車速度屏:





- LEGEND :  
圖例 :
-  STRATEGIC ROUTE NUMBER  
主要幹線編號
  -  STRATEGIC ROUTES WITH ADDITIONAL TRAFFIC DETECTORS  
新增交通探測器的主要幹線
  -  MAJOR ROADS WITH ADDITIONAL TRAFFIC DETECTORS  
新增交通探測器的主要道路
  -  OTHER ROADS WITH ADDITIONAL TRAFFIC DETECTORS  
( TO PROVIDE TRAFFIC DATA TO PROPOSED JTISs & SMP )  
新增交通探測器的其他道路  
( 為擬議的行車時間顯示系統及行車速度屏提供交通數據 )

INSTALLATION OF ADDITIONAL TRAFFIC DETECTORS, SPEED MAP PANEL AND JOURNEY TIME INDICATION SYSTEMS  
安裝新增的交通探測器、行車速度屏和行車時間顯示系統

drawing title  
LOCATION PLAN FOR TRAFFIC DETECTORS  
交通探測器位置圖

drawing no. 6029TC/SK/001	scale 1 : 120 000
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office  
TRAFFIC AND TRANSPORT SURVEY DIVISION

