For information
12 April 2012

Legislative Council Panel on Transport

Maintenance of High Speed Roads in Hong Kong

Purpose

This paper briefs Members on the high speed road maintenance works in Hong Kong conducted by the Highways Department (HyD) and the special features.

Background

2. High speed roads form a vital part of Hong Kong's transport network and play an important role in the economic and social activities. Disruption of traffic on high speed roads will affect traffic of an extensive area. Owing to the high traffic speed on high speed roads, defective road surface or obstacles left on the road surface will pose risk to the safety of road users. Hence, it is of paramount importance to ensure proper maintenance of high speed roads. The HyD strives to ensure smooth operation and road safety of high speed roads. At present, the HyD is responsible for the maintenance of high speed roads of about 362 kilometres (km) in length. Please refer to **Annex** for the locations of the road sections concerned.

Maintenance of High Speed Roads and Special Features

3. In general, the speed limit of high speed roads is 70 km per hour or above. There are no signal-controlled crossings or at grade pedestrian crossings on the high speed roads, and restrictions on stopping are effective at all times. The maintenance of high speed roads and the special features are set out in the ensuing paragraphs :

Daily "Safety Inspections" of High Speed Roads and Maintenance Works

4. The HyD will deploy staff to carry out "safety inspections" on all sections of high speed roads on a daily basis. In the event that defects on road surface and conditions that cause danger or inconvenience to the public are found, follow-up actions will be taken immediately. The

Department will make arrangements for maintenance works not causing significant impact on road traffic to be carried out during daytime, which include :

(i) operation of road sweepers on both sides of trunk roads to clear away rubbish on the roads and at roadsides to keep the high speed roads clean;
(ii) conducting road safety inspections once per day to inspect every road section within the entire high speed road areas; and
(iii) inspection of roadside slopes within high speed road areas in a cycle of six months. The scope of maintenance works includes removing weeds, repairing damaged drains, treating slope surface, etc.

5. For those maintenance works which may affect traffic flow, the HyD will arrange for the works to be carried out at night when traffic flow is lower, and the closed lanes also need to be reopened for traffic before dawn. In order to minimize the impact of nighttime maintenance works on residents living near high speed roads, works that will generate a high level of noise are usually required to be completed before midnight or have to be completed within the timeframe stipulated in the Construction Noise Permit.

<u>Cyclic Lane Closure for Road Surface Inspection and Maintenance Works</u>

6. The high speed road network is divided into different sections ranging from a few hundred metres to about three km in length. The slow and fast lanes will be closed separately in a cycle of six months, while the central lane will be closed in a cycle of twelve months when traffic conditions permit. Under normal circumstances, only one lane of a road section will be closed each night for the following road inspection and maintenance works :

(i) clearing of gullies on roadsides by vacuum tankers. Gullies at flooding blackspots will be cleared every month during March to October each year to ensure that large amount of rain water can be drained away effectively by road drainage systems during heavy rain;
(ii) cleaning of road surface, road marking and facilities, including traffic signs, barriers, etc. for the clearing of debris and keeping the surfaces of road facilities clear;
(iii) recording the surface and structural conditions of high speed

roads and collecting relevant data for planning mid- and long-term maintenance works, so that preventive maintenance works can be carried out in an organized manner;

(iv) repairing damaged or discoloured road markings and traffic signs, replacing defected studs and carrying out small scale road surface maintenance works in order that road surfaces can be maintained in good conditions; and

(v) trimming overgrown branches and plants and removing weeds on roadsides, thus ensuring that traffic safety will not be affected by roadside vegetation and traffic signs will not be blocked by branches or plants.

<u>"Detailed Inspections" of High Speed Roads and Mid and Long Term Maintenance Works</u>

7. As mentioned above, during the cyclic lane closure, the HyD will make detailed record of surface and structural conditions of high speed roads and collect relevant data for planning mid and long term maintenance works, so that maintenance could be done in an organized manner for preventive purpose. Major planned reinstatement and improvement works within high speed road areas include:

(i) **resurfacing of defective asphalt road surfaces:** High speed roads are mainly covered with asphalt surfaces, while trunk roads are surfaced with polymer modified friction course (PMFC). With high surface friction and the ability to drain off accumulated water on road surface effectively, permeable porous asphalt material can enhance traffic safety of high speed roads during rainy period. Besides, PMFC can also lower noise caused by friction between tyres and road surfaces, thereby alleviating the noise impact on residents living near high speed roads. As PMFC is porous and non-compact in structure, reinstatement of road surface is normally required every five to six years, depending on the conditions of the road surfaces. For road sections with heavy traffic, such as tunnel toll plazas and slip roads with heavy traffic, surface friction caused by frequent braking and starting of cars will result in high rate of depletion of PMFC. Therefore, more durable stone mastic asphalt will be used as the road surface material for such road sections;

(ii) **reinstatement of defective road drainage system:** To ensure traffic safety of high speed roads during rainy periods, it is of vital importance to maintain the drainage system at high speed

roads in good conditions. The HyD inspects road drainage pipes in the high speed roads with closed circuit television every five years. In the event that the degree of damage to drainage pipes affect their draining capability, internal lining will be installed inside the drainage pipes to repair the damaged pipes;

(iii) **protective device at major road crossing:** Installing crash cushions at dividers of road crossings, thus reducing the level of possible injury of drivers and passengers in traffic accidents; and

(iv) **installing movable steel barriers and removable concrete barriers:** Replacing conventional tubular crash gates so that emergency crossings or contingency crossings can be opened quickly for the passage of vehicles during emergencies. Safety of these locations can also be enhanced when these facilities are not in use during normal situations.

Emergency Maintenance Works

8. Taking into account the possibility of emergency road maintenance, the HyD has already deployed sufficient manpower, plant and equipment to key locations along the high speed road network. As soon as information is made available from road safety inspections, traffic policemen or the public via 1823 call center, the Department endeavors to arrive at the locations of emergency as soon as possible, and to restore the road sections to a condition that is safe for use. Emergency maintenance works include removing obstacles, temporary filling of potholes on road surfaces, enclosing damaged facilities (such as barriers and crash cushions) with water-filled barriers, cleaning up car scraps and oil spills on road surfaces after traffic accidents and arranging for the maintenance works concerned.

Requirements on Lighting, Signing and Guarding of Road Works

9. When carrying out road works on high speed roads, stringent requirements on lighting, signing and guarding, such as those stipulated in the "Code of Practice for the Lighting, Signing and Guarding of Road Works", have to be complied with. Those practices which apply include road closure arrangement, use of tall traffic cones and larger traffic signs, arrangement of shadow vehicles to follow mobile operations and assist in entering or leaving the lane closure, usage of works vehicles with flashing

arrow signs on high speed roads, etc. All these practices aim at providing clear instructions to drivers and safeguarding road users, including the safety of works personnel.

Way Forward

10. The HyD will continue to strive for the provision of swift, efficient and high quality maintenance works of high speed roads, to maintain road surfaces at the best condition for the utilisation by drivers and ensure the safety of road users.

Highways Department
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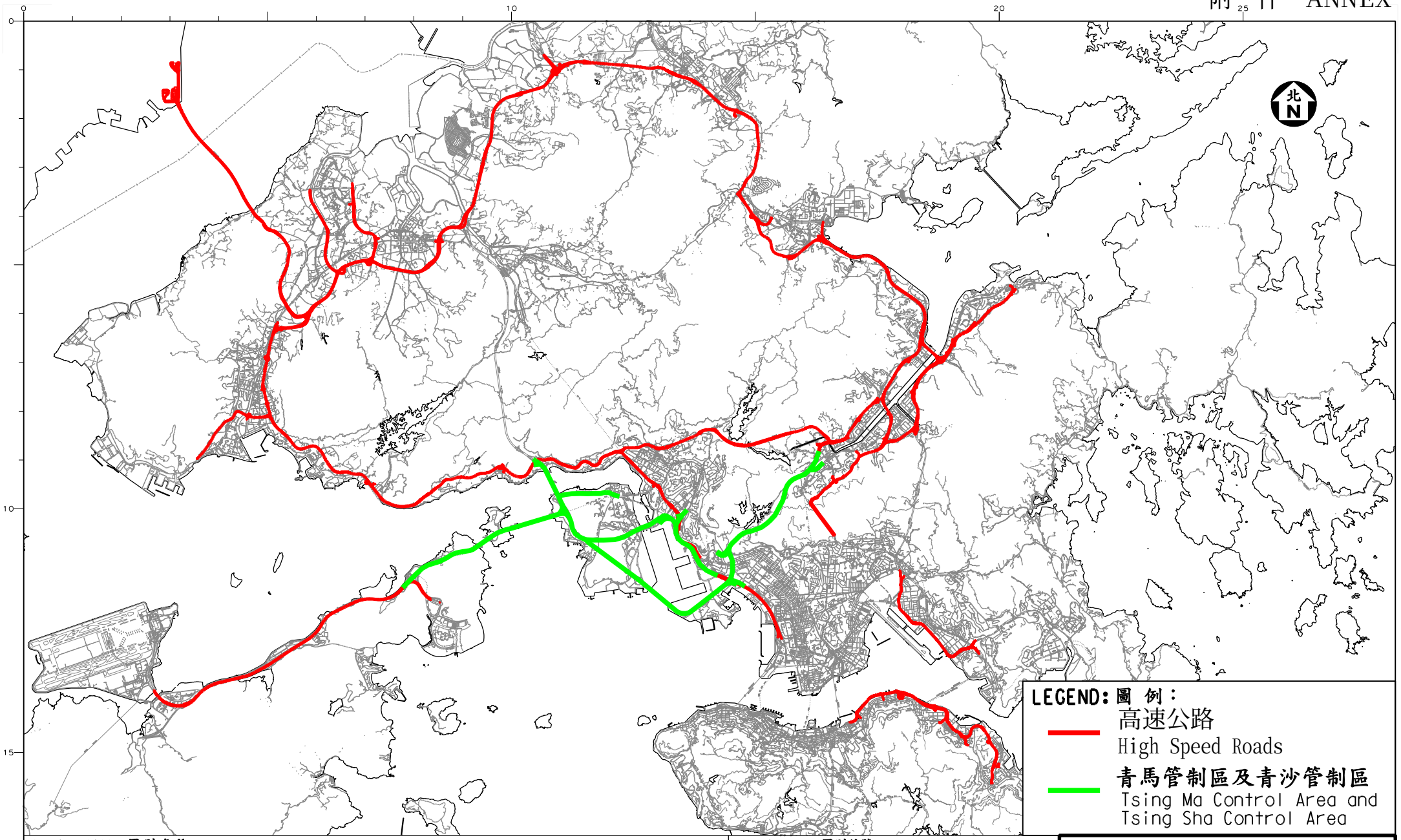

drawing title 圖則名稱

以高速公路模式保養及維修的道路網絡

Road Network under High Speed Road Maintenance

drawing no. 圖則編號

HNTDM12-013

scale 比例

示意圖
DIAGRAMMATIC

office 辦事處

新 界 區
NEW TERRITORIES REGION

HIGHWAYS DEPARTMENT HONG KONG 香港路政署

A4 297 x 210