LCQ17: Design, repair and maintenance for traffic lights
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Following is a question by the Hon Kam Nai-wai and a written reply by the Secretary for Transport and Housing, Ms Eva Cheng, in the Legislative Council today (November 16):

Question:

It has been reported that the traffic lights at Jordan Road and Lin Cheung Road of Yau Ma Tei were blown askew by strong winds when a storm hit Hong Kong recently, and as a result, the traffic signals had confused drivers and caused collisions involving several taxis. It has also been reported that the traffic lights involved were of the design of "one pole with three groups of traffic lights", i.e. three groups of traffic lights are mounted on a pole by cable wires. Regarding the design as well as repair and maintenance for traffic lights and other road facilities in Hong Kong, will the Government inform this Council:

(a) of the number of traffic lights in Hong Kong at present; whether a system is in place for conducting regular inspection, repair and maintenance for traffic lights and other road facilities (such as zebra crossings, pedestrian signals and buttons on traffic light poles, electronic audible traffic signals, footbridge, and pedestrian subways, etc.); if so, of the details as well as the manpower and resources involved; if not, the reasons for that;

(b) of the number of traffic accidents caused by the failure of traffic lights due to insufficient repair and maintenance in each of the past five years; whether there were cases of members of the public instituting civil actions for compensation; if so, of the details;

(c) of the number and percentage of traffic lights using compact fluorescent lamps at present; whether the authorities have plans to replace the lamps in all the traffic lights in Hong Kong with more energy-efficient types of lamps; if so, of the implementation timetable; if not, the reasons for that;

(d) of the number of traffic lights of the design of "one pole with three groups of traffic lights" or "one pole with several groups of traffic lights" and the number of accidents similar to the aforesaid accident caused by "traffic lights blown askew by

strong winds", in each of the past five years, broken down by the number of light signals on the pole and the 18 District Council districts; and

(e) whether the authorities have reviewed if the design of "one pole with three groups of traffic lights" or "one pole with several groups of traffic lights" can facilitate road users to cross the roads and ensure their safety (including conducting tests on the resistance of the design of cable wire fixture in the "one pole with three groups of traffic lights" design to strong winds); given the suggestion by some experts that the occurrence of similar accidents can be avoided by welding an "iron fixture" onto the poles and using screws to fix the traffic lights firmly on the poles, whether the authorities will accept such a suggestion; if so, whether there is a timetable in this respect?

Reply:

President,

(a) There are 1,807 road junctions in the territory with traffic lights. The Electrical and Mechanical Services Department (EMSD) is responsible for the maintenance of traffic lights and other electrical and mechanical facilities on the roads. The maintenance services cover all traffic lights, belisha beacons at zebra crossings, push buttons for signal lights at pedestrian crossings, electronic audio traffic signals (e-ATS) and traffic surveillance closed circuit television camera systems (CCTV). EMSD inspects traffic signal heads and CCTV cameras once every six months, and other facilities once a year. Relevant expenses on maintenance were about $53.3 million in the 2010-11 financial year. As regards manpower resources, apart from some 50 EMSD staff, maintenance services are also outsourced to contractors.

(b) All traffic lights are being regularly inspected and maintained to ensure that they are functioning properly. Traffic accidents involved various factors. The Transport Department (TD) had no record of traffic accident arising from delay in repair and maintenance of traffic light and had not handled any compensation requests thereof.

(c) Traffic light operation requires immediate switching from black out to maximum brightness. Compact fluorescent lamp cannot meet this requirement, while light emitting diode (LED) lamp can meet the requirement with compatible energy efficiency. We have implemented a project to replace all the incandescent lamp traffic lights with LED throughout the territory. Out of the 1,807 road junctions with

traffic lights, traffic lights at about 1,300 (about 72%) junctions have been replaced with LED. We estimate that the whole replacement exercise will complete in end 2012.

(d) and (e) The design of "one pole with several groups of traffic lights" provides proper indications to motorists and pedestrians coming from different directions on the same road section. This is a safe design. The traffic lights are designed in such a way to allow rotation of signal heads when a traffic light is subject to external force beyond a certain level. In case the traffic light is hit by a vehicle in accident, the rotation of signal heads can absorb part of the impact force to reduce direct damage to the vehicle and injury caused to passengers. This is a commonly adopted safety design. The current signal heads can at least withstand a wind speed of 160 km/hr, and are capable of withstanding gale or storm, but the possibility where a sudden gust exceeding the design limit causing traffic signal heads askew cannot be ruled out. In order to reduce the possibility of such occurrence, EMSD pays particular attention when inspecting the traffic signal heads during the routine maintenance of traffic signals equipment. TD will review the design of traffic signals and related maintenance arrangement from time to time to consider whether there is room for improvement.

At present, all traffic light poles are structurally safe and, whether adopting the design of one pole with one group of traffic lights or several groups of traffic lights, are capable of bearing the loading of all signal heads and withstanding a certain degree of wind force. Therefore, TD does not have statistics breakdown of the number of traffic lights by their designs, nor statistics breakdown of the number of incidents of and accidents caused by "traffic lights blown askew by strong winds". The number of incidents where traffic lights were blown askew by strong winds in the past five years is listed in the Table.

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