

Executive Summary

Full Investigation Report

Transport Department's Improper Arrangement for Implementation of Two-way Toll Collection at the Lantau Link That Caused Serious Traffic Congestion

Foreword

The Lantau Link is the only road access to Lantau Island before the Hong Kong-Zhuhai-Macao Bridge (“HZMB”) comes into service. A one-way toll collection arrangement had been adopted at the Lantau Link since its opening in 1997. Motorists were not required to pay when driving towards the airport, but had to pay the toll of a round trip when returning to Kowloon. With the upcoming opening of HZMB, the Lantau Link would no longer be the only road access to Lantau Island. Hence, it was necessary for the Transport Department (“TD”) to make preparations and switch the toll collection system from one-way to two-way.

2. As HZMB would be ready for commissioning by the end of 2017, TD had to implement the two-way toll collection arrangement before the year end. Having estimated the time required for the works to build the lanes and install the traffic and toll collection facilities, TD decided that the two-way toll collection arrangement be implemented on 20 August 2017 (Sunday). However, on the morning of 21 August 2017 (Monday), the first working day following the implementation of two-way toll collection, there was serious traffic congestion at the Lantau Link, affecting many travellers and local residents going to work. The incident aroused wide attention. This Office received public complaints alleging that TD had hastily implemented two-way toll collection arrangement without adequate ancillary facilities resulting in the serious traffic congestion.

3. After our full investigation, we found that TD’s decision to implement the two-way toll collection arrangement on 20 August 2017 was made with sufficient justification. Nevertheless, there were apparent inadequacies in TD’s temporary traffic arrangements (“TTA”) and contingency plan for the first working day after the implementation.

Our Findings

Preparation for Implementation of Two-way Toll Collection

4. In changing the toll collection from one-way to two-way, TD had to reinstate the traffic islands and toll collection facilities, as well as replacing the entire toll collection system. Between April 2016 and August 2017, the installation works for toll collection facilities on 15 of the 20 toll collection lanes had been completed in phases. As of August 2017, the relevant works were in the final phase, and TD had to close and reinstate the toll collection facilities on the remaining three free flow lanes and the two adjacent lanes. That would mean when the works was in progress, vehicles must choose a traffic lane with toll collection facilities already installed. After studying the situation, TD, the Hong Kong Police Force (“the Police”) and Government departments concerned held that for road safety reasons, two-way toll collection should be implemented concurrently with the reinstatement works in progress on the three remaining free flow lanes. Accordingly, the two-way toll collection arrangement had to be implemented concurrently with the final phase of the reinstatement works (on airport-bound lanes) of the Lantau Link Toll Plaza (“the Toll Plaza”), and should not wait until the latter was completed.

5. Before finalising the arrangement for implementing the two-way toll collection, TD collated the traffic flow data at different time periods at the Lantau Link and the data on processing time at manual toll lanes and Autotoll lanes respectively in order to assess how many toll lanes should be provided. Based on the data collected, the Kowloon-bound traffic flow at the Toll Plaza during peak hours was 4,400 vehicles per hour, with over 50% of these vehicles using the manual toll lanes while the remaining 40% or so were using the Autotoll lanes. Each Autotoll lane could handle no less than 900 vehicles per hour, and each manual toll lane could handle no more than 800 vehicles per hour. In the light of the above data, TD considered that four manual and two Autotoll lanes together would be enough to process 5,000 vehicles per hour and cope with the peak-hour traffic volume.

6. Before the two-way toll collection arrangement was implemented, TD had issued documents to the Traffic and Transport Committees under the Tsuen Wan, Islands and Kwai Tsing District Councils to notify them of the commencement date of two-way toll collection at the Lantau Link and details of the TTA. TD had also written to the transportation sector including franchised bus companies, the taxi industry, the goods vehicles associations concerned and non-franchised bus operators. From July 2017, TD had started publicising the two-way toll collection arrangement through various channels, including pamphlets and letters, press releases, variable message signs installed on major motorways, as well as announcements made inside tunnels to inform the public and related stakeholders of the new arrangement.

7. On 9 August 2017, TD conducted a drill simulating the operation of two-way

toll collection at the Toll Plaza jointly with the Police, the contractor of the Tsing Ma Control Area (“the Contractor”), the Highways Department (“HyD”), the Electrical and Mechanical Services Department (“EMSD”) as well as its works contractors. The drill went smoothly on the whole. During the process, TD did not close the airport-bound lanes to test the road marking and the TTA so as to avoid any road safety risks that might be brought by vehicles going through toll collection booths without the need to stop and pay the toll. According to TD, reference was made to the Code of Practice for the Lighting, Signing and Guarding of Road Works in devising the relevant road marking and the TTA, which had been approved by TD and the Police before submitting to the works contractors for installation and implementation. On the evening of 19 August, TD conducted a site visit jointly with the Police to check the TTA facilities to ensure that they fully complied with the approved layout plans.

Monitoring and Incidents Coordination

8 After consulting EMSD, the Police and HyD, TD confirmed that all relevant Government departments would monitor the implementation of two-way toll collection between 19 and 21 August 2017. From 8 pm on 19 August to 2:30 am on 20 August, TD set up an Operation Centre at the control room of the Toll Plaza (“the Control Room”) and monitored the operation of the Toll Plaza together with the Police, HyD, the Contractor, EMSD and the contractor for the toll collection system. Meanwhile, the staff of TD’s Tunnel and Tsing Ma Section monitored the implementation of two-way toll collection at the 24-hour Emergency Transport Coordination Centre (“the Coordination Centre”) and kept in contact with the other stakeholders such as the Airport Authority (“AA”), the MTR Corporation (“the MTR Corp”) and the franchised bus companies, so that necessary arrangements could be made where warranted.

Main Events on the Day of Incident (21 August)

9. On 20 August (Sunday), the first day of implementation of two-way toll collection, overall operation was normal and vehicular traffic smooth in general.

10. On 21 August (Monday), the first working day after implementation of two-way toll collection, two TD officers had been stationed at the Control Room since 6 am to monitor jointly with the Contractor’s staff and the Coordination Centre the operation and traffic condition at the Toll Plaza. Airport-bound traffic was smooth initially.

11. At around 7 am, the two TD officers stationed at the Control Room noticed heavier traffic and vehicles waiting to enter the manual toll collection lanes began to pile up, forming a queue of about 300 metres long. At that time, six of the ten toll collection lanes were open. At 7:18 am, the vehicle queues on the Toll Plaza airport-bound were already almost 2.8 kilometres long, reaching as far as the tower of the Tsing Ma Bridge. In the interim, the Coordination Centre issued several press releases to

inform the public of the latest traffic condition there.

12. At 8:05 am, TD requested that the responsible persons from the Police, the Contractor, EMSD, HyD and the relevant works contractor go to the Toll Plaza to discuss traffic improvement proposals. At 8:44 am, TD followed the preset contingency plan to open for motorists' use the manual toll collection lane on the far left of the Toll Plaza airport-bound (the A20 Lane), which was originally an emergency vehicular access. Nevertheless, that did not help much in easing the traffic flow. At around 9 am, the responsible officers of TD and the Police arrived at the scene to hold a meeting and subsequently decided at 9:19 am to begin adjusting the TTA. Adjustments included narrowing down the enclosed area and opening more toll collection lanes as quickly as possible. At 9:48 am, the A20 Lane was closed. At 10:26 am, another manual toll lane (the A13 Lane) near the middle lane was opened to help ease the traffic. Then on the afternoon that day, the Contractor installed one more toll collection booth on the A17 Lane. This manual toll lane was opened at 4:30 pm. TD also instructed the Contractor to open all the six available manual toll lanes and the two Autotoll lanes airport-bound should the traffic condition so required, in order to maintain free traffic flow.

13. TD asserted that the officers on duty had been in touch with the Coordination Centre to keep the public and relevant organisations (including AA) abreast of the latest traffic condition at and about the Lantau Link. They also contacted the public transportation service providers so that they could adjust their services as the traffic condition might require. Between 7:23 am and 10:59 am, the Coordination Centre had issued a total of 15 press releases to update the public on the latest traffic condition. Between 8:30 am and 9:15 am, the Coordination Centre released information to the public through radio broadcast and mobile applications like GovHK Notifications and the eTraffic News, advising people to consider using non-road transportation means to go to the airport. Meanwhile, the officers kept in touch with the MTR Corp, requesting the company to watch closely passengers' demand for services of the Airport Express Line and the Tung Chung Line and strengthen the train services in a timely manner. Officers at the Coordination Centre and the Control Room also disseminated the latest traffic news to motorists via the variable message signs on carriageways and inside tunnels, as well as via re-broadcast radio systems. All these were intended to reduce the number of people driving to Lantau Island/the airport, or passing through the roads nearby. The information would also help motorists heading to the airport to consider taking the train at the nearest train station instead.

TD's Analysis of the Incident

14. Upon analysis, TD considered that the serious traffic congestion on that day was mainly attributed to the inadequacies of the TTA, which included: (1) the water-filled barriers on the Toll Plaza were placed over too wide an area and too long a distance, making it difficult for vehicles to change lanes and switch to the Autotoll lanes in a

timely manner, thus causing obstruction among them; (2) traffic signs and instructions had not been placed in earlier road sections to alert motorists to the locations of the manual toll collection booths and the Autotoll lanes; (3) insufficient space for vehicles using the manual toll lanes to wait in line, such that those vehicles queuing for the manual toll lanes blocked the way leading to the Autotoll lanes; and (4) processing time on the manual toll lanes had also been longer than originally estimated.

15. Furthermore, when vehicle queues emerged at 7 am that morning, two traffic accidents occurred respectively on the airport-bound side of the Tsing Ma Bridge at around 7 am, and on the Kowloon-bound side of the Ting Kau Bridge at around 8 am. There were injuries involved in the Ting Kau Bridge accident, and the middle lane was closed for three minutes. Those accidents exacerbated the congestion problem on Tsing Long Highway and Tuen Mun Road.

16. TD explained that the officers stationed at the Control Room had been closely monitoring the traffic situation of the Lantau Link. They also liaised with the Coordination Centre to publish the latest traffic updates and activate the preset contingency plan. However, the preset contingency plan did not include making any immediate alteration to the TTA. As critical safety considerations would be involved in altering the TTA, it could only be done after careful discussion between relevant departments and the Contractor. Nevertheless, the relevant TD and police officers mainly responsible for the TTA regarding two-way toll collection did not arrive at the scene until 9 am to hold a meeting for deciding on adjustments to the TTA. Based on the observation on that day, the traffic congestion eased off after TD started to narrow down and shorten the configuration of water-filled barriers at 9:19 am, and open one more manual toll lane located near the middle traffic lane at 10:26 am.

Our Comments

17. Before implementation of the two-way toll collection arrangement at the Lantau Link, TD had taken an array of preparatory measures, including studying past traffic flow data, considering road safety factors, formulating the TTA strategies, devising a contingency plan, setting up the Operation and Coordination Centres, informing the relevant District Councils and the transportation sector, publicising the relevant arrangement, as well as conducting a drill. We find no evidence that TD had implemented the two-way toll collection arrangement without adequate ancillary or preparatory measures. However, on the first working day after implementation of the two-way toll collection arrangement, there were apparent inadequacies on the part of TD in the following areas.

TTA Far from Satisfactory

18. In response to our inquiries, TD admitted that the TTA adopted on that day,

including the placement of water-filled barriers, the locations of traffic signs and instructions for alerting motorists, and the space allocated for vehicles queuing before the manual toll collection lanes, was far from satisfactory. This showed that the TTA formulated beforehand could hardly cope with the actual traffic situation during peak hours, which was the major technical factor that led to the incident.

On-site Officers Not Authorised to Activate Contingency Measures

19. Nevertheless, a more important cause was TD's obvious lack of a well-thought-out plan for any contingency situation on that day. It was not until after the arrival of those authorised officers for the meeting that contingency measures were activated. Consequently, TD failed to seize every minute and second to dissipate quickly the vehicle queues, which showed its deficiencies in administrative arrangements. This was why TD failed to control and resolve the congestion problem soonest possible, and which ultimately escalated into a total traffic gridlock.

20. On the day of the incident, while TD had deployed two officers tasked with monitoring the traffic situation at the Control Room, its preset contingency plan did not include making any immediate alteration to the TTA. In other words, those two officers simply had no authority to immediately adjust the TTA in response to emergency situation. As a result, even though they were aware of the 2.8-kilometre vehicle queues as early as 7:18 am on that day, all they could do was liaising with the Coordination Centre to issue relevant messages to the public, as they were not authorised to adopt any contingency measures. It was not until 8:05 am that a formal request for a meeting of relevant parties was made. Eventually, after the relevant officers of TD and the Police arrived at the scene for the meeting and issued instructions at 9 am, the TTA was adjusted (including immediately changing the configuration of water-filled barriers) from 9:19 am.

TTA Adjustments Two Hours after Emergence of Vehicle Queues

21. Two hours had elapsed between the emergence of vehicle queues (at 7 am) and the arrival of the relevant personnel for a meeting at the scene to discuss adjustments to the TTA. Those two hours were exactly the peak period with more and more vehicles heading towards the area. The serious situation caused by the traffic congestion was all too obvious. It was indeed unacceptable that the authorities had failed or been unable to react swiftly and take effective contingency measures in those two hours. We consider that TD's original contingency plan was inadequate, such that it was incapable of making immediate adjustments in response to the actual circumstances.

No Timely Support for Motorists Stuck at the Site

22. Moreover, the Lantau Link is the only vehicular access to Lantau Island.

While TD continuously advised motorists on that day to travel to the airport by other means, it could only help those motorists or passengers who were not stuck in the vehicle queues. For those who had already been stranded, this advice was really pointless. In such circumstances, it was more appropriate for TD to consider how to provide an exit for motorists willing to take a U-turn and leave the scene, thereby dissipating the vehicle queues more quickly. Unfortunately, TD had not done anything to that effect.

23. In the light of the above analysis, The Ombudsman considered that although TD had made adequate preparations before implementing the two-way toll collection arrangement at the Lantau Link, there were clearly deficiencies in its TTA and contingency measures. TD should make improvements to prevent recurrence of similar incidents.

Recommendations

24. The Ombudsman makes the following recommendations to TD:

- (1) to learn the lessons from this incident, step up staff training on similar TTA strategies (such as placement of water-filled barriers, locations of road signs and instructions, and the distribution of toll collection lanes), and enhance their ability and sensitivity in activating and adjusting contingency measures;
- (2) to review its staff deployment to ensure that authorised officers who can immediately activate contingency measures and revise the TTA are stationed on site for the first working day upon implementation of similar TTA in future, such that adjustments in response to change in circumstances can be made without delay; and
- (3) to consider, where appropriate, instituting a “contingency U-turn point” arrangement as one of the contingency measures before implementing similar TTA. In case serious traffic congestion occurs, motorists get stuck in the vehicle queues can opt to leave the scene, thereby dissipating the vehicle queues as soon as possible.

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