

**For discussion  
19 March 2021**

## **Legislative Council Panel on Transport**

### **Implementation of Traffic e-Enforcement System**

#### **PURPOSE**

The Government plans to develop a new Traffic e-Enforcement System to facilitate the processing of Fixed Penalty Notices for traffic contraventions by electronic means in order to enhance enforcement accuracy and efficiency of the Hong Kong Police Force (“the Police”) which in turn would help ensure the proper use of limited road space more effectively, enhance road safety and alleviate traffic congestion. This paper aims to seek Members’ views on the financial proposals of the Traffic e-Enforcement System and the preliminary proposals on the relevant legislative amendments.

#### **BACKGROUND**

2. At present, the Police is responsible for issuing Fixed Penalty Notices (“FPNs”) to traffic offenders in accordance with the Fixed Penalty (Traffic Contravention) Ordinance (Cap. 237) and the Fixed Penalty (Criminal Proceedings) Ordinance (Cap. 240). In general, the traffic contraventions under Cap. 237 refer to illegal parking offences and the fine is \$320, whereas those under Cap. 240 refer to moving offences such as speeding, failing to comply with traffic signals, etc and the fine varies from \$320 to \$1,000 depending on the offence involved. Besides, for the traffic contraventions that are not covered under Cap. 237 and Cap. 240 such as jaywalking and dangerous driving, the Police will submit the “Traffic Summons Application Forms” to the Judiciary under the Road Traffic Ordinance (Cap. 374), and the Judiciary will then issue the summons to the road traffic offenders.

3. Since 1970s, the frontend and backend processes of traffic enforcement have been operated manually by the frontline law enforcement officers and backend clerical staff of the Police respectively, using paper-based records and inputting relevant data into the computer afterwards. The processes are time-consuming and involve considerable manpower. Frontline law enforcement officer has to provide details about the vehicle registration mark of the vehicle concerned, location, time of the offence, etc on a FPN and record the offence

details such as the discussion with driver and sketches of the incident scene on his notebook. The whole process generally takes 15 to 30 minutes, and more time is required for complicated cases. For the backend processes, backend clerical staff have to sort and check the duplicates of FPNs manually and then input data into various backend systems. If the vehicle owner or driver raises enquiries or disputes liability on prosecution after receiving the FPN, backend clerical staff have to retrieve the paper records or wait until the offence details have been input into the backend systems before they can deal with various enquiries, payment issues and related disputes raised by the public. As for traffic contraventions prosecuted by way of summons, a frontline law enforcement officer has to fill in the “Traffic Summons Application Form” for the backend clerical staff to input the details into the Case and Summons Management System (“CASEMAN”) of the Judiciary, in order to apply to the Judiciary for the issuance of summons to the offender. Between 2017 and 2020, the Police stepped up efforts in combating traffic contraventions and the total number of FPNs and summons applications issued increased from 2.4 million in 2017 to 3.2 million<sup>1</sup> in 2020, representing an increase of 33%. If we continue to rely on the current manual operation for traffic enforcement, it would be difficult to effectively manage the possible increase in the number of traffic offence cases and further enhance traffic enforcement actions.

4. Due to the manual mode of operation in traffic enforcement, human errors are inevitable, such as illegible handwriting on FPNs and traffic summons application forms, inputting incorrect/missing data, etc. Between 2017 and 2020, the Police issued on average about 1.7 million FPNs for illegal parking each year, among which 6 700 FPNs were withdrawn due to human errors.

## **THE e-TICKETING PILOT SCHEME**

5. Since March 2020, the Police has launched an “e-Ticketing Pilot Scheme” (“the Pilot Scheme”). Under the Pilot Scheme, frontline law enforcement officers use their handheld devices to input data on illegally parked vehicles or extract relevant data through scanning the QR code<sup>2</sup> printed on the

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<sup>1</sup> The figure for 2020 includes the electronic FPNs issued under the “e-Ticketing Pilot Scheme” implemented by the Police since mid-March 2020. Please refer to paragraph 5 for details.

<sup>2</sup> In tandem with the launch of the Pilot Scheme, TD has been issuing vehicle licences with encrypted QR code to new or renewal applicants since April 2020. The newly issued vehicle licence, with encrypted QR code, carries seven types of information including (1) licence expiry date, (2) vehicle class, (3) vehicle registration mark with check digit, (4) vehicle make, (5) colour, (6) seating capacity and (7) transaction number, which are the same as the types of information shown on the vehicle licence displayed on the vehicle’s windscreen. As at 31 January 2021, the TD has issued about 0.7 million vehicle licences with encrypted QR code.

vehicle licences displayed on the vehicle's windscreen. The frontline law enforcement officers would also capture images of the incident scene as supporting evidences of illegal parking, fix the electronic FPNs ("e-FPNs") instantly printed out on the vehicle's windscreen and upload all the details captured to the backend system for further processing, in order to reduce human errors in issuance of handwritten FPNs and manual data input, thereby enhancing the overall enforcement accuracy.

6. Between April and December 2020 (i.e. within nine months after the launch of the Pilot Scheme), the Police issued a total of 2.2 million of FPNs against illegal parking of which more than 40% (about 1 million) were e-FPNs. The total number of FPNs issued in 2020 was about 2.7 million, showing an increase of 33% as compared with the number of FPNs issued in 2018<sup>3</sup>. The major reason is that issuing e-FPNs is less time-consuming<sup>4</sup>. Besides, in 2020, only about 800 e-FPNs (i.e. about 0.08% of the total number of e-FPN issued), were withdrawn due to human errors. The Pilot Scheme proved that e-FPNs can further enhance the overall accuracy and efficiency of traffic enforcement in combating illegal parking.

## **PROPOSAL AND JUSTIFICATIONS**

### Functions of Traffic e-Enforcement System

7. Having regard to the success of the Pilot Scheme, the Government proposed to develop a new Traffic e-Enforcement System with the following functions and features to deal with all traffic violations (i.e. not limited to illegal parking offences)-

- (a) to digitalise the existing manual traffic enforcement workflows including the collection of traffic offence details and evidences, data processing and storage as well as issuing FPNs and summons applications by electronic means;
- (b) to develop an external citizen-centric Traffic e-Enforcement thematic portal; and

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<sup>3</sup> Due to the Public Order Events in 2019, the manpower of the Police deployed for traffic enforcement was reduced. As such, the traffic enforcement figure in 2019 is not suggested to be used for comparison.

<sup>4</sup> The Police deployed largely the same manpower for traffic enforcement in 2018 and 2020. In general, issuing an e-FPN takes about 5 to 15 minutes, which can save 10 to 15 minutes as compared with the time for issuing a handwritten FPN.

- (c) to build an internal traffic enforcement platform for managing traffic enforcement related information and data.

8. The proposed System will digitalise the process in collecting and filling in offence details and will use electronic means to issue FPNs to traffic offenders and submit “Traffic Summons Application Forms” to the Judiciary. With the e-Ticketing applications running on handheld devices, the frontline law enforcement officers can extract the information of the drivers and vehicles through scanning the QR codes on the driving licences<sup>5</sup> of the drivers who commit traffic offences and vehicle licences of the vehicles concerned, and pre-fill the location information retrieved from the global positioning system. The frontline law enforcement officers can also utilise the handheld devices to take pictures or videos to record the evidences. All the above-mentioned data will be uploaded to the Police’s backend system in real-time using mobile 4G/ 5G connection. The e-FPNs will then be issued to the concerned vehicle owners or drivers via email or Short Message Service (“SMS”) of mobile phone<sup>6</sup> and the “Traffic Summons Application Forms” will be issued to the CASEMAN of the Judiciary electronically.

9. Meanwhile, the Government plans to develop a citizen-centric Traffic e-Enforcement thematic portal. The public can access the thematic portal via “iAM Smart” mobile application for authentication of personal identity and can view his/her e-FPNs as well as relevant offence photos and/or videos<sup>7</sup>, make online payment to settle the penalty via electronic means (such as PPS, credit cards, Faster Payment System or other electronic payment methods provided by the Treasury and applicable for settling payment of traffic penalties), raise enquiries and dispute liabilities on prosecution, apply for the “Traffic Conviction

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<sup>5</sup> The Police is planning to expand the Pilot Scheme in March 2021 to cover the traffic offences under Cap.240. To cater for such expansion, TD will also issue driving licence with encrypted QR code later on to enable frontline law enforcement officers to extract the details of the drivers who commit traffic offences through handheld devices. The encrypted QR code will carry the same types of information shown on the driving licence.

<sup>6</sup> This function can only be realised after the passage of relevant legislative amendments and the full implementation of the proposed system. Please refer to paragraphs 18 to 19 for details.

<sup>7</sup> If the Police possesses the relevant traffic offence photos and/or videos, the offenders have to submit applications to the Police and can only view the requested information online after having the approval.

Record<sup>8</sup>” and receive as well as submit the “Notice requiring Identification of Driver<sup>9</sup>” through the thematic portal.

10. The proposed Traffic e-Enforcement System will process all the traffic enforcement related information and data. These information and data come from various devices related to traffic enforcement such as Red Light Cameras (“RLCs”), Speed Enforcement Cameras (“SECs”) and the aforementioned handheld devices to be used by frontline law enforcement officers, etc. In processing the information related to traffic contraventions, the proposed System will interface with the Vehicle and Driver Licensing Integrated Data System (“VALID<sup>10</sup>”) under the Transport Department (“TD”) for information of the vehicle, vehicle owner and driver, etc. involving in the traffic offence, in order to issue the e-FPNs to the offenders, prepare summons applications to the Judiciary and notify the offenders of the related traffic enforcement and prosecution via electronic messages. With this centralised platform, traffic enforcement data can be better integrated and analysed to facilitate traffic management work of the Police.

### Expected Benefits

11. The functions and features of the proposed Traffic e-Enforcement System will improve the current workflow of traffic enforcement and bring more convenient public services for citizens. This is in line with the policy to develop Hong Kong into a smart city. The expected benefits to be brought by the proposed System are explained in ensuing paragraphs.

#### **(a) Enhance traffic enforcement accuracy and efficiency**

12. The experience of the Pilot Scheme tells us that the proposed Traffic e-Enforcement System can enhance the traffic enforcement accuracy and efficiency.

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<sup>8</sup> The information of the Record includes (1) previous conviction record under the Road Traffic Ordinance, Chapter 374 in the past ten years; (2) payment record under the Fixed Penalty (Criminal Proceedings) Ordinance, Chapter 240 in the past five years; and (3) record of driving-offence points under Section 3(2) of the Road Traffic (Driving-Offence Points) Ordinance, Chapter 375 in the past five years. At present, members of public have to submit application for this Record in person, by post, by fax or by email.

<sup>9</sup> At present, the Police issues by post the Notice to the registered owner of the vehicle involving in a traffic offence to identify the driver concerned. The registered owner has to complete, sign and return the Notice to the Police in person or by post within 21 days of the date of the Notice.

<sup>10</sup> At present, in the process of traffic enforcement, the Police will obtain information of the relevant vehicles and/or drivers from the VALID of TD. To support the interface between the Traffic e-Enforcement System and the VALID and to allow the above mentioned process to be digitalised, the funding requested (see paragraph 21) already covered the costs required for upgrading the VALID.

As mentioned in paragraphs 3, 4 and 6 above, the time required for issuing an e-FPN under the Pilot Scheme can be shortened substantially and the number of e-FPNs withdrawn due to human errors can also be reduced significantly. In 2020, only about 800 e-FPNs (about 0.08%) were withdrawn out of about one million of e-FPNs issued. The ratio is much lower than that for handwritten FPNs, which is about 0.39% on average. Since the offence details, photos and/or videos will be instantly captured by handheld devices at the scene and then uploaded to the proposed System automatically, data accuracy and reliability of the evidences can be enhanced, thereby minimising the occurrences of public complaints and disputes on traffic enforcement.

**(b) Enhance road safety and alleviate traffic congestion**

13. By taking more prudent and efficient traffic enforcement actions, it may effectively deter the drivers and vehicle owners from committing traffic offences and foster good driving attitude, which is conducive to avoiding traffic accidents and reducing the number of illegal parking incidents, thereby alleviating the traffic congestion in the long run.

**(c) Provide convenient and transparent public services**

14. The proposed citizen-centric Traffic e-Enforcement thematic portal will provide a convenient online platform for the vehicle owners and drivers to view their e-FPNs and handle related matters online.

15. In addition, as real-time traffic offence data collected by frontline law enforcement officers would be automatically uploaded to the proposed System instantly, this will enable the Police's responsible officers to retrieve relevant electronic records immediately for responding to public enquiries.

**(d) Promote green traffic enforcement**

16. By issuing e-FPNs to traffic offenders and submitting summons applications to the Judiciary through electronic means, paperless traffic enforcement can be achieved, thereby promoting environmental protection. Besides, there will no longer be a need to use valuable office space for storage of the papers FPNs and summons application forms.

**WAY FORWARD**

17. To facilitate wider application of technology on traffic management and enforcement in the future, the proposed Traffic e-Enforcement System will be

scalable and flexible. On the other hand, the Police will keep abreast of technology advancement and collaborate with other departments as well as institutions to explore the use of technology with a view to replacing frontline officers in conducting traffic enforcement so as to enhance the efficiency in traffic management and enforcement.

## LEGISLATIVE AMENDMENTS

18. To provide legal basis for implementing the new functions and features of the proposed Traffic e-Enforcement System, the Government will make amendments to the Fixed Penalty (Traffic Contraventions) Ordinance (Cap. 237), the Fixed Penalty (Traffic Contraventions) Regulations (Cap. 237A), the Fixed Penalty (Criminal Proceedings) Ordinance (Cap. 240), the Fixed Penalty (Criminal Proceedings) Regulations (Cap. 240A), the Road Traffic Ordinance (Cap. 374), the Road Traffic (Driving Licences) Regulations (Cap. 374B) and the Road Traffic (Registration and Licensing of Vehicles) Regulations (Cap. 374E). Specifically, the major proposed legislative amendments are as follows –

- (a) To allow the serving of FPNs on parking-related offences under Cap. 237 by electronic means<sup>11</sup>;
- (b) To allow the serving of FPNs on traffic offences under Cap. 240 by electronic means<sup>12</sup>;
- (c) To empower the Commissioner of Transport to collect email addresses or mobile phone numbers of registered vehicle owners and holders of various types of driving licences, licences and permits for the Police to issue FPNs and relevant notifications;
- (d) To allow the issuing of notifications by way of electronic means mentioned in (a) and (b) by sending email or SMS to the email address or mobile phone number to inform the liable person to log in the citizen-centric thematic web portal to view the e-FPN online; and
- (e) To request the registered vehicle owners and holders of various types of driving licences, licences and permits to notify the TD within 72 hours of the change of their email addresses or mobile phone numbers; and to

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<sup>11</sup> At present, the FPNs issued under Cap. 237 must be delivered personally and immediately to the person in charge of the vehicle or fixed on the vehicle. There is no other delivery means.

<sup>12</sup> At present, the FPNs issued under Cap. 240 can be delivered personally to the offender or fixed on the vehicle; or the Police can also issue the relevant "Notice for the Payment of Fixed Penalty" to the offender by post.

repeal and replace the prescribed format of FPNs under Cap. 237 and Cap. 240 by listing the prescribed information required for FPNs in order to increase the flexibility in amending the format in future.

19. The Government plans to introduce the relevant legislative amendments into the Legislative Council in the 2021-22 legislative session, with a view to providing legal basis for commencing the Traffic e-Enforcement System by phases starting from 2023.

20. Since lead time is required to develop the proposed Traffic e-Enforcement System, we plan to first seek funding support from the Finance Committee of the Legislative Council (“the Finance Committee”) in this legislative session, in order to take forward the implementation of the project as soon as possible

## FINANCIAL IMPLICATIONS

### Non-recurrent expenditure

21. The Police estimated the total non-recurrent expenditure for implementing the proposed Traffic e-Enforcement System to be HK\$ 352 million. The detailed breakdown is as follows –

	<b>Total (\$'000)</b>
(a) Procurement of Hardware (including server, storage device, backup device, load balancer, workstation, smartphone and printer, etc.)	110,000
(b) Related Computer Software (including system management, database application, application server, storage device and mobile device management, etc.)	35,000
(c) Communication Network (including router, firewall, network transceiver, network charges, etc.)	26,000
(d) Cloud Services (including Government Cloud Infrastructure Service)	10,000
(e) Implementation Services (including thematic portal, backend enterprise application system, external application system interface, mobile application, etc.)	72,000
(f) Employment of Contract Staff (including for the support of developing mobile application and backend	60,000



enterprise application, system security, project tendering and management, etc.)

(g) Staff Training	1,000
(h) Site Preparation (including network port and electric switch, etc.)	1,000
(i) Others	5,000
(j) Contingency (10% of items (a) to (i) above)	32,000
<b>Total</b>	<b>352,000</b>

22. The estimated cash flow requirement is as follows –

<b>Financial Year</b>	<b>(\$'000)</b>
2021-22	23,000
2022-23	53,000
2023-24	199,000
2024-25	35,000
2025-26	10,000
Subtotal	320,000
Contingency (10% of Subtotal)	32,000
<b>Total</b>	<b>352,000</b>

### Recurrent expenditure

23. The proposed Traffic e-Enforcement System will adopt a phased-implementation approach starting from the first quarter of 2023. The estimated recurrent expenditure for the proposed System will be HK\$ 36.89 million in 2024-25 and will gradually increase to HK\$ 62.46 million<sup>13</sup> each year starting from 2026-27 onwards. The recurrent expenditure will mainly cover hardware and software maintenance, day-to-day support services, communication networks and cloud services, consumables and other expenses.

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<sup>13</sup> After the full commissioning of the System in January 2024, the Police will engage service providers and contract staff to provide continuous system maintenance and support services by phases. Hence, the full year recurrent expenditure will be reflected in 2026-27 onwards.

## Realisable savings

24. Upon full implementation of the proposed System, the breakdown of the estimated annual realisable savings is as follows –

- (a) about HK\$11.84 million<sup>14</sup> realisable savings in manpower, which refers to the backend clerical staff who originally handle paper-based FPNs and entering prosecution data manually; and
- (b) about HK\$0.6 million realisable savings for no longer having to print paper documents (such as the paper FPNs).

With the above realisable savings, the estimated annual recurrent expenditure for the proposed System would be reduced to about HK\$50.02 million.

## **IMPLEMENTATION SCHEDULE**

25. Upon approval of funding from the Finance Committee, the Police will proceed to conduct open tender for selecting contractor to develop the proposed System. It is expected that basic thematic web portal will be launched in the first quarter of 2023 which will allow the public to view e-FPNs, make online payment to settle the penalty via electronic means, or raise enquiries on prosecution related matters as well as dispute liabilities, etc. The tentative implementation schedule is as follows –

	<b>Task</b>	<b>Target Completion Date</b>
(a)	Tender preparation	November 2021
(b)	Tendering, tender evaluation and award of contract	March 2022
(c)	Design of the infrastructure platform	September 2022
(d)	Basic citizen-centric thematic portal rollout (with the application of Government Cloud Infrastructure Service)	January 2023
(e)	Delivery and installation of hardware and software, and testing of the platform	December 2023
(f)	Delivery and full commissioning of the	January 2024

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<sup>14</sup> The realisable savings could only be confirmed after the passage of relevant legislative amendments and the full implementation of the proposed system, and subject to further review by the Police taking into account actual operations.

	<b>Task</b>	<b>Target Completion Date</b>
	System	
(g)	System nursing	September 2024

**ADVICE SOUGHT**

26. Members are invited to advise on the proposed implementation of Traffic e-enforcement System and the preliminary legislative amendments proposal.

**Transport and Housing Bureau  
Hong Kong Police Force  
March 2021**