立法會
Legislative Council

LC Paper No. CB(3)200/2025(05)

File Ref: CB3/PL/TP

Panel on Transport
Meeting on 21 February 2025

Background brief on
upgrading and enhancement of pedestrian crossing facilities

Purpose

This paper provides background information on pedestrian crossing facilities and summarizes the major views and concerns expressed by Members of the Legislative Council ("LegCo") during previous discussions on this subject.

Background

2. Hong Kong has heavy traffic volume, particularly in the urban areas. According to the website of the Transport Department ("TD"), the guiding principles for the provision of pedestrian crossing facilities are to balance the needs of motorists and pedestrians and to reduce the risk of road accidents. Pedestrian crossing facilities provided by the Government include grade-separated crossings constructed above or below a carriageway (i.e. footbridges or subways), zebra crossings, signal-controlled crossings and uncontrolled cautionary crossings.

3. The Administration has also taken appropriate measures to help foster friendly communities for the elderly and people with disabilities. For example, smart devices are being installed at pedestrian traffic signal poles to allow the elderly and persons with disabilities to use their JoyYou Cards or Octopus Cards to extend the pedestrian flashing green time, making it easier for them to cross the road.

4. In addition, TD has implemented the following pilot projects and trial schemes in recent years to explore the effectiveness of the measures in enhancing traffic management efficiency and facilitating public commuting:

(a) implementation of the real-time adaptive traffic signal system ("RTATSS") at selected junctions;

(b) trial implementation of "diagonal crossings"; and

(c) installation of countdown timers on pedestrian crossing lights.

Real-time adaptive traffic signal system

5. To promote smart traffic management, TD launched a RTATSS pilot project at five selected independent signalized junctions in 2021[1] ("pilot project"). Ancillary equipments, such as sensors and computing systems, were installed at the existing signalized junctions to calculate appropriate signal timing using artificial intelligence technology. The Administration said that the pilot project had operated smoothly in general, and statistics showed that installation of RTATSS at independent signalized junctions could reduce delays caused by crossing the junctions by about 5% to 10%. Subsequently, TD began the installation and trial of RTATSS at eight linked signalized junctions[2] at Tung Chung Town Centre in 2022. TD indicated that if the trial outcome was satisfactory, it would consider extending RTATSS to all suitable linked signalized junctions across the territory.

6. In June 2024, the Administration sought the approval of the Finance Committee ("FC") of LegCo for a new commitment of $62,304,000 for the installation of sensors and ancillary equipment at 50 independent signalized junctions (see **Appendix 1**) for the implementation of RTATSS. The Administration planned to commence the project in the second quarter of 2024 and to start installing RTATSS at selected independent signalized junctions from early 2026 in phases. The project was expected to complete in 2027. The financial proposal was approved at the FC meeting on 21 June 2024.

---

1 The selected independent signalized junctions under the pilot project on RTATSS are: (a)Victoria Road / Sandy Bay Road; (b)King Cho Road / Lim Cho Street; (c)Yen Chow Street / Cheung Sha Wan Road; (d)Castle Peak Road / So Kwun Wat Road; and (e)Castle Peak Road / Ka Wo Li Hill Road.

2 Linked signalized junctions refer to junctions operating in a co-ordinated fashion with signalized junctions nearby. The eight selected linked signalized junctions at Tung Chung Town Centre are: (a) Shun Tung Road / Tat Tung Road (East); (b) Tat Tung Road / Hing Tung Street; (c) Tat Tung Road outside Citygate; (d) Tat Tung Road / Mei Tung Street; (e) Tat Tung Road near MTR Exit D (new signalized junction); (f) Yu Tung Road / Shun Tung Road; (g) Shun Tung Road / Tat Tung Road (West); and (h) Yu Tung Road / Chung Yan Road. Among these junctions, (a) to (e) have started operation as independent signalized junctions.

Trial Implementation of "diagonal crossings"

7. Diagonal crossings are new pedestrian-friendly crossing facilities introduced by TD. With additional pedestrian crossings to connect footpaths diagonally through the centre of an appropriate crossroad, such facilities give pedestrians an option to take a diagonal route to cross the road directly to the footpath on the other side, shortening the walking distance and time required.

8. TD had selected two signalized junctions for the trial scheme, one in Sha Tin (junction of Sha Kok Street and Yat Tai Street), and the other in Tsim Sha Tsui (junction of Carnarvon Road and Granville Road). The diagonal crossing in Sha Tin had been commissioned since 31 January 2024. In a paper submitted to LegCo in May 2024 (LC Paper No. CB(4)584/2024(05)), the Administration pointed out that there were about 100 pedestrians crossing the road diagonally within a "Green man" signal period during the peak hours at the location, accounting for about 50% of the total pedestrian flow across the junction. The walking distance for pedestrians using the diagonal crossings was shortened from about 39 metres to 22 metres, taking an average walking time of about 19 seconds, and saves about 14 seconds as compared with that for the original staggered crossings. The average waiting time for vehicles at the junction was generally comparable to that with the original crossings.

9. With regard to the relevant works for the Tsim Sha Tsui trial location, the trial had commenced in mid-2024. TD advised that it would continue to monitor the operation of diagonal crossings at the two trial locations for about six to nine months. TD would, after giving due considerations to the pedestrians and motorists' adaptation to the facilities and behavioural changes observed, review and adjust the design of the diagonal crossings in due course, before considering the way forward on the basis of the trial results.

Installation of countdown timers on pedestrian crossing lights

10. In 2018, the Government installed timers on pedestrian crossing lights at a number of locations in the territory for trial purpose. The original intention of the countdown device is to inform pedestrians in advance of the changes of traffic lights for them to make appropriate judgments, thereby enhancing pedestrian safety. In 2006 and 2018, TD commissioned the City University of Hong Kong and the University of Hong Kong respectively to conduct on-site observation and research on the trial of "pedestrian traffic light countdown device" in Hong Kong to explore the effectiveness of the countdown device. The device installed next to a pedestrian traffic light displayed the remaining time by means of decrementing number or inverted

triangles from the time when a pedestrian "Green man" light began to flash, until the signal turned into a "Red man". The results of the studies revealed that after the installation of the "pedestrian traffic light countdown device", more pedestrians were still crossing the road when the flashing "Green man" light ended. The Administration pointed out that in general, the studies concluded that the devices brought no material improvement and benefit to pedestrian safety. In view of this, TD did not further apply the "pedestrian traffic light countdown device" more extensively at that time.

Major concerns and views expressed by Members

Implementation of the real-time adaptive traffic signal system

11. While Members generally supported the implementation of RTATSS to expedite the promotion of smart traffic management, they considered that **the project expected to complete and commence operation until 2027 was an unduly long time**. Some Members opined that the relevant technology were already mature, and that more advanced technologies were already widely used in a number of Mainland cities. Given that Hong Kong was significantly behind in implementing smart mobility initiatives, they argued that **it was unnecessary** for the Administration **to conduct further trials of RTATSS**, and that **the system should be installed on a wider scale at more linked signalized junctions**.

12. The Administration responded that in order to accelerate progress, the financial proposal for independent signalized junctions was put forward prior to the completion of system trials at linked signalized junctions. Subject to FC's approval of the financial proposal, it would endeavour to expedite the implementation progress so that RTATSS could commence service in phases as soon as possible. With regard to linked signalized junctions, if the trial outcome was satisfactory, it would consider extending RTATSS to all suitable linked signalized junctions throughout the territory.

13. In response to Members' enquiry on **how the 50 independent signalized junctions for the implementation of RTATSS were selected**, the Administration advised that RTATSS would have more significant effects on independent signalized junctions with the following characteristics: (a)those with vehicular and pedestrian flows in different directions, which were prone to more dynamic and irregular variations within a short period of time; (b)those with sufficient junction capacity to allow flexible allocation of traffic signal green times to the direction with heavier vehicular flow; (c)those with vehicular flows in a certain direction that was prone to dynamic variations, thus causing heavy traffic; and (d)those where pedestrians, upon pressing the push button at the pedestrian crossing,

often left the crossing before the pedestrian signal was on. The Administration indicated that relevant District Councils had been consulted on the proposed projects and had all expressed support or raised no objection.

14. Some Members **expressed concern whether an upper limit would be set for the allocation of traffic signal time to prevent vehicles driving from the direction with lower vehicular flow from having to wait for a long time before being allocated green light. Some Members also suggested the provision of covers at the locations of signalized junctions for public convenience**. The Administration responded that the system calculated the optimal green traffic signal time for vehicles and pedestrians at any given moment using traffic control logical algorithms, so that appropriate traffic signals could then be adopted. An upper limit would be set for the allocation of traffic signal time for traffic flows in different directions. As to the suggestion of providing covers at junctions, the Administration advised that it would need to take into account the geographical environment of various signalized junctions, including the condition of underground facilities at the locations concerned. It would review the utilization situation of junctions among pedestrians and, where appropriate, adjust the size of pedestrian waiting areas to better meet actual needs.

15. Members expressed concern **whether the data collected by RTATSS would be made public to assist motorists in grasping real-time traffic conditions**. Some Members also enquired about the system's security measures. The Administration pointed out that TD had completed the installation of 1 200 traffic detectors along strategic roads at the end of 2020. The data collected by the traffic detectors had been disseminated to the public through TD's website, mobile applications and the Government's public information portal, to assist motorists in grasping real-time traffic conditions. It would examine the actual use of the data collected by RTATSS to the commuters. On security issues, the Administration advised that the data collected by the system would be encrypted during transmission while the computing system would be protected by a firewall. It would engage independent consultants every two years to conduct detailed security audits of the system to ensure its safety.

Trial Implementation of "Diagonal Crossings"

16. Members noted that TD would monitor the operation of "diagonal crossings" in Sha Tin and Tsim Sha Tsui for six to nine months and consider the way forward on the basis of the trial results. Members were of the view that **the time required for the study and implementation was too long**, and hence **suggested that the Administration should consider running trials in parallel at one to two trial locations in each district, as well as**

conducting trials at crossroads near Light Rail stations. The Administration responded that it had initially selected two locations of different nature for the trial scheme. After implementing the trial scheme in Sha Tin, it had taken on board the experience gained thereat to refine the arrangements for the trial in Tsim Sha Tsui in a timely manner. Due to seasonal changes in pedestrian flows, the Administration believed that a review period of 6 to 9 months was indeed necessary.

Installation of countdown timers on pedestrian crossing lights

17. Some Members opined that the installation of countdown timers for the "Green man" light could allow pedestrians to clearly gauge the remaining green time of the pedestrian crossing signal when crossing the road. Members asked whether the Administration would consider **relaunching the test scheme for timers, and put such timers on trial use at more locations, so as to collect more data to assess if such timers should be installed across the territory**.

18. The Administration replied in May 2022 that TD had been paying attention to the use of the "pedestrian traffic light countdown device" and the development of related technologies. The department was currently optimizing the operation of the device for trial (e.g. the countdown would start to display when the "Green man" light was on, rather than upon flashing of the "Green man" light), and would integrate the operation with pedestrian sensors and application of artificial intelligence. TD would conduct trials at suitable pedestrian crossings. The design of the system and procurement of components were currently underway, and the detailed trial was expected to begin in 2023. The Administration indicated that it would summarize the experience gained and explore the effectiveness of the new pedestrian countdown device.

Relevant papers

19. A list of relevant papers is set out in **Appendix 2.**

Council Business Divisions
Legislative Council Secretariat
19 February 2025

Appendix 1

Locations of Suitable Independent Traffic Signal Junctions for Implementation of Real-time Adaptive Traffic Signal System

Hong Kong Island	Pok Fu Lam Road near The Belcher's	Stubbs Road near Stubbs Road Sitting-out Area
	Pok Fu Lam Road/Bonham Road/Hill Road	Tai Hang Road near Li Kwan Avenue
	Bonham Road near Hing Hon Road	Kennedy Road near St. James' Primary School
	Park Road near Breezy Path	Wong Nai Chung Road/Broadwood Road
	120 Caine Road	Braemar Hill Road near Choi Sai Woo Park
	Magazine Gap Road near Brewin Path	Tin Hau Temple Road near Dragon Road
	Blue Pool Road/Sing Woo Road/Holly Road	Stanley Village Road near Stanley New Street
	Blue Pool Road near Green Lane	Victoria Road/Cyberport Road
	Gloucester Road/Cleveland Street	Cyberport Road/Information Crescent
	Gloucester Road near Fleming Road (Old Wan Chai Police Station)	Pok Fu Lam Road near Queen Mary Hospital

Kowloon	Tai Po Road/Caldecott Road	Sheung Shing Street/Shek Ku Street/Sheung Shing Lane
	Wylie Road near Methodist School	Chuk Yuen Road near Chuk Yuen Sports Centre
	Museum Drive near M+ Museum of Visual Culture	Tsat Po Street/Kai San Road/Pat Tat Street
	Hoi Fai Road/Hoi Fan Road	Wang Kwong Road/Sheung Yuet Road
	Hoi Ting Road/Hoi Wang Road near Olympian City 3	
New Territories East	Clear Water Bay Road/Ngan Ying Road	Plover Cove Road/Tung Cheong Street
	Hiram's Highway near Pak Sha Wan	On Chee Road/On Po Road
	Tai Wai Road/Tsuen Nam Road	Pak Wo Road/Yu Tai Road/Kat Cheung Crescent
	Kong Pui Street/Sha Kok Street	Lung Sum Avenue/Tin Ping Road

New Territories West	Tin Ha Road/Ping Ha Road	Ming Kum Road/Tin King Road
	Castle Peak Road - Tam Mi/Kam Pok Road East	Tin King Road near Leung King Estate Bus Terminus
	Castle Peak Road - Tam Mi/San Tam Road	Tuen Lung Street/Tuen Shun Street
	Shap Pat Heung Road/Kiu Hing Road/Kung Um Road	Tin Hau Road/Yip Wong Road
	Lung Mun Road/Wu Shan Road	Castle Peak Road - Sham Tseng near Bellagio
	Lung Mun Road near Lung Mun Light Rail Stop	Sheung Kok Street near Kwai Chung Shopping Centre
	Tsun Wen Road/Leung Wan Street/Leung Shun Street	

Source: Paper provided by the Administration for the Finance Committee meeting of the Legislative Council on 21 June 2024 (Enclosure 1 to FCR(2024-25)19)

Appendix 2

Upgrading and enhancement of pedestrian crossing facilities

List of relevant papers

Committee	Date of meeting	Minutes of meeting/Paper
Panel on Transport	14 July 2023	Agenda Item IV: Real-time adaptive traffic signal system Minutes of meeting
	17 May 2024	Agenda Item IV: The trial implementation of "diagonal crossings" Minutes of meeting
Finance Committee	21 June 2024	Agenda HEAD 186 –TRANSPORT DEPARTMENT Subhead 603 – Plant, vehicles and equipment New Item "Implementation of real-time adaptive traffic signal system at suitable independent traffic signal junctions" Minutes of meeting

Council meeting	Paper
28 February 2024	Question 16: Improving traffic light control system
23 October 2024	Question 21: Crackdown on pedestrians crossing roads without complying with traffic rules

Council Business Divisions
Legislative Council Secretariat
19 February 2025