

**For discussion
on 20 August 2021**

Legislative Council Panel on Transport

Update on Car Parking Initiatives

Purpose

This paper updates Members on the car parking initiatives adopted to increase the provision of parking spaces and enhance the existing parking spaces.

Policy on Parking Spaces

2. The Government's transport policy is to develop a transportation system centred on public transport with railway as the backbone. In order to fully utilise the limited road space, the Government has been encouraging the public to take public transport to reduce the use of private cars ("PCs"). In fact, 90% of passenger trips in Hong Kong are made through the public transport system every day, and such utilisation rate and the quality of service are among the highest in the world. Over the years, the Government has adopted a multi-pronged strategy to alleviate road traffic congestion, including efforts to improve transport infrastructure, expand and enhance public transportation system, and manage the use of roads.

3. The Government's policy in the provision of parking spaces is to accord priority to considering and meeting the parking demand of commercial vehicles ("CVs"), and to provide an appropriate number of PC parking spaces if the overall development permits, but at the same time not to encourage frequent users for public transport to opt for PCs in lieu of public transport, so as to avoid aggravating the burden on road traffic. Though the Government will increase the supply of parking spaces when the situation allows, it is neither reasonable nor sustainable to increase car parking spaces continuously to catch up with the growth of the vehicle fleet. Furthermore, given the hard fact that Hong Kong is a densely populated city with scarce land resources, the space required for additional parking spaces must be considered alongside housing needs and other land use demand when planning for any increase in parking spaces. As such, apart from suitably increasing provision of parking spaces, we also need to put in place appropriate road and traffic management measures, and with the aid of technology in traffic enforcement, to more effectively manage the number of vehicles on roads. To moderate the growth of PCs, the Government proposed to

increase the first registration tax and the vehicle licence fee for PCs in the 2021-22 Budget, and the proposal has been passed by the Legislative Council.

Demand and Supply of Parking Spaces

4. As at end May 2021, there were approximately 812 000 licensed vehicles across the territory, of which nearly 80% were PCs and van-type light goods vehicles (“vans”). From 2010 to 2020, the number of PCs and vans increased from around 457 000 to about 626 000¹, whereas the number of parking spaces available for use by these vehicles increased from about 633 000 to about 688 000. In other words, the ratio of the number parking spaces to the number of such vehicles dropped from 1.38 to 1.10. As for the number of CVs (e.g. goods vehicles and non-franchised buses), there was a slight drop from around 74 800 to around 71 100. Since some short-term tenancy (“STT”) car parks have been gradually terminated to make way for other long-term developments in recent years, the number of parking spaces for CVs fell from about 49 700 to around 45 300. The ratio of the number of parking spaces to the number of CVs remained roughly between 0.63 and 0.67 over the past decade.

Latest Situation on Increasing and Enhancing Parking Spaces

5. To suitably increase and enhance the parking spaces, the Transport and Housing Bureau (“THB”) and the Transport Department (“TD”) have actively pursued a host of short-term and medium- to long-term measures in recent years, including the provision of parking spaces in projects by adopting the principle of “single site, multiple uses”, which will provide 5 100 additional parking spaces. This paper highlights our work in three areas —

- (a) revising the parking standards stipulated in the Hong Kong Planning Standards and Guidelines (“HKPSG”) to increase the type and number of parking spaces in future residential developments (including subsidised housing² developments);

¹ Including 573 000 PCs and 52 600 vans. Vans may also be parked at PC parking spaces.

² The parking standards before amendment were only applicable to public rental housing (“PRH”) developments. The parking standards after amendment are applicable to both PRH and subsidised sale flats, which are collectively referred as “subsidised housing” in this paper.

- (b) enhancing the efficiency of car parks in government facilities, including the use of automated parking systems (“APS”) and dissemination of real-time parking vacancy information; and
- (c) enhancing roadside parking facilities.

The latest position of the measures is set out in paragraphs 6 to 24 below.

Revising the parking standards stipulated in HKPSG

6. The HKPSG serves as a basis for the Government to determine the type and number of ancillary parking spaces³ to be provided in each type of development. HKPSG states that the provision of ancillary parking facilities in residential developments should be sufficient to satisfy self-generated parking demand, subject to road capacity considerations; whereas provision of parking facilities in community facilities and industrial/business developments should be adequate to meet the operational requirements and such visitor parking as deemed reasonable.

7. As mentioned in paragraph 4, the ratio of the number of parking spaces to that of PCs has been decreasing due to the continuous growth of PCs in recent years. Noting this continued trend, the Government needs to increase the provision of ancillary parking spaces while implementing appropriate traffic management measures. TD commenced a consultancy study in 2018 to review the HKPSG standards for the provision of ancillary parking spaces for CVs and PCs. During the course of the review, TD conducted large-scale parking demand survey⁴ and consulted relevant stakeholders⁵. TD completed the review in July 2021 and the Planning Department has uploaded the newly revised parking

³ Parking spaces can be divided into two types, namely ancillary parking spaces and public parking spaces. Ancillary parking spaces serve the parking requirements of that development and are restricted to owners and authorised users; while public parking spaces are available to the general public and serve the area around which the car park is located. As the demand for public parking spaces may vary according to the unique circumstances of different districts, HKPSG does not prescribe standard parameters for public parking spaces.

⁴ Including surveying the provision of parking spaces and the demand of residents in private and subsidised housing developments, and conducting survey among CV drivers through questionnaires.

⁵ Including Transport Advisory Committee, the Strategic Planning Committee of the Hong Kong Housing Authority and Real Estate Developers Association of Hong Kong.

standards to its website.

8. With reference to the results of the abovementioned survey, the parameters on the PC parking standards for private and subsidised housing developments have been adjusted. Overall speaking, the revision will increase the provision of parking spaces in future private and subsidised housing developments in response to the parking needs of residents. At **Annex 1** is a comparison of the standard parameters for ancillary PC parking facilities in residential developments before and after the amendment.

9. Given the current practice note on calculation of gross floor area (“GFA”) concessions⁶, most private developers tend to develop underground car parks. With regard to the increased provision of parking spaces under the revised HKPSG, the space requirement of underground car parks may be further expanded, which may in turn increase the construction cost and works difficulties. To cater for certain developments with small site area or severe technical constraints, the revised HKPSG also set out that TD may accept provision of parking spaces slightly below the new standards on a discretionary basis, having regard to actual circumstances and objective criteria. Individual subsidised housing projects may encounter similar situation mentioned above, and we will allow for flexibility when processing these projects to avoid affecting the number of housing units to be provided or their delivery schedule.

10. As regards the supply of ancillary parking spaces for CVs, the survey conducted by TD shows that a considerable number of CV drivers (including private light buses, coaches and various types of goods vehicles) live in subsidised housing with a demand for CV parking spaces during non-business hours (e.g. night time). The parking standards before revision only specified light goods vehicle (“LGV”) parking standard in PRH without addressing the parking demand of other types of CVs. As such, the revision will increase the number of loading/unloading (“L/UL”) bays ancillary to subsidised housing which will be opened up for the large-size CV’s (i.e. coaches and medium/heavy goods vehicles (“M/HGV”)) overnight parking where feasible. In addition, in order to make optimal use of spaces and to improve utilisation rates, the revised standards will introduce two types of “shared-use” parking spaces with reference to the similar

⁶ Under the existing mechanism, 100 per cent GFA concessions will be granted to underground private car parks equipped with electric-vehicle (“EV”) charging-enabling facilities at each parking space. For aboveground private car parks that are EV charging-enabling, 50 per cent GFA concessions may be granted. Exceptions may be considered for granting 100 per cent GFA concessions if the developer provides sufficient evidence to prove that an underground car park is technically infeasible, or if an aboveground car park poses no adverse environmental or visual impact.

vehicle dimensions of CVs, one of which to be shared by LGV and light buses and another shared by M/HGV and coaches. The “shared-use” parking spaces offer flexibility to the supply of parking spaces by allowing CVs of similar dimensions to share parking spaces. In addition, the standard on the number of LGV parking spaces provided in subsidised housing is increased⁷. It can be seen that the revision makes effective use of limited space to increase the type and number of parking spaces for CVs provided in subsidised housing projects.

11. As mentioned above, the provision of parking facilities in community facilities, commercial facilities, and industrial and business developments should follow the principle of meeting operational needs and such visitor parking demand as deemed reasonable. A substantial increase in the supply of parking spaces at destination-end should however be avoided as this may incentivise some to switch from public transport to PCs for their daily trips. Meanwhile, we appreciate that some members of the public would have the practical need to own their PCs and park them at home-end destinations, thus we have come up with a suitable adjustment to the parking standards for residential developments as described above based on the findings of the latest parking demand survey.

12. The TD will continue to conduct regular review on the parking standards under HKPSG and make timely amendments to cope with the latest changes in social and economic environment.

Enhancing the efficiency of car parks in government facilities

(a) Promoting the application of APS

13. The Government has all along been providing STT car parks in various districts as necessary, as well as public parking spaces in suitable Government, Institution or Community facilities and public open space projects in line with the principle of “single site, multiple uses”. To further increase parking spaces and spatial efficiency in these parking facilities, TD is actively taking forward a number of APS projects.

14. Compared with conventional car parks, car parks with APS installed can generally provide 30% to 100% more parking spaces within the same footprint, and they are more convenient for users. The number of additional parking spaces provided depends on the system features and requirements of the

⁷ Before revision, HKPSG specified LGV parking standard of 1 space per 200-600 flats in PRH. With the newly introduced “shared-use” parking spaces, the revised parking standard prescribes 1 “shared-use” parking space for LGV and light bus per 260 flats in subsidised housing.

projects. Specifically, TD will take forward five types of APS, namely puzzle stacking system, tower lifting system, rotary carousel system, circular shaft lifting system, as well as vertical lifting and horizontal sliding system. Details of these APS are at Annex 2.

15. Although APS can provide more parking spaces within the same footprint, TD's study has revealed certain difficulties for the existing APS to accommodate large vehicles (including PCs of larger size) due to the current technological constraints. Besides, APS have more sophisticated requirements on car parks in terms of the size of waiting area and level of maintenance, resulting in a higher operating cost than that of conventional car parks. The Government has all along been identifying suitable sites for implementing APS projects having regard to the above considerations.

16. The APS project at the STT site on Hoi Shing Road in Tsuen Wan will adopt a puzzle stacking system and is expected to be commissioned in the fourth quarter this year. In addition, TD has identified an STT car park site at Pak Shek Kok in Tai Po which is suitable for APS installation. Tender invitation will commence in October this year, and the system is expected to be commissioned in the second half of 2022.

17. Looking ahead, we will examine the feasibility of adopting APS when we invite tenders for new STT car parks or carry out re-tendering for the existing STT car parks. In fact, drawing on the experiences from the APS projects at Hoi Shing Road in Tsuen Wan and Pak Shek Kok in Tai Po, we will have a better grasp on the factors affecting the feasibility of introducing APS to different STT car parks such as financial viability, obstruction by underground utilities, and whether the sites will be taken back shortly for long-term development, etc.

18. Furthermore, the Government has been actively pursuing introduction of APS in public works projects. The Joint-user Government Office Building in Area 67 in Tseung Kwan O (construction works have commenced, and are expected to be completed in 2025) is one of the projects that will adopt APS. As for the project at the junction of Yen Chow Street and Tung Chau Street in Sham Shui Po, we applied to the Town Planning Board for planning permission in July 2021. We plan to commence construction in the first half of 2023 upon completion of the demolition of the down ramp of West Kowloon Corridor at Yen Chow Street West and the funding approval of the Finance Committee. The Government will continue to actively take forward the remaining APS projects, including the Joint-user Complex at the junction of Shing Tai Road and Sheung Mau Street in Chai Wan and the Joint-user Complex at Chung Kong Road in Sheung Wan, and will consider promoting the use of APS in more public works projects. As for the District Open Space, Sports Centre cum Public Vehicle Park project at Sze Mei Street, the latest engineering study shows that it is feasible to

install APS at the public vehicle park to increase the number of parking spaces. We aim at seeking funding approval from the Legislative Council in 2022 and the project is expected to be completed in 2026.

19. The THB/TD will continue to explore the use of APS as far as possible in our future public vehicle park projects, taking into account the project characteristics, design requirements, site constraints and cost-effectiveness. For future public works projects with ancillary car parks, we will ask the responsible departments to consider the feasibility of using APS at the planning stage.

(b) Dissemination of parking vacancy information

20. The TD has been encouraging car park owners and operators to disseminate real-time parking vacancy information to the public via “HKeMobility” and the Government’s Public Sector Information Portal “DATA.GOV.HK”. The number of car parks releasing parking vacancy information via “HKeMobility” has more than doubled from about 220 in July 2018 to about 482 as at end June 2021 (of which about 375 are non-government car parks), involving about 72 000 parking spaces in total.

21. For government car parks, we expect that the parking vacancy information of all government car parks can be fully disseminated within the coming two years as we are progressively renewing the car park management contracts. Furthermore, in response to TD’s suggestion, the Lands Department (“LandsD”) has since mid-2018 included conditions in all new STT agreements of public car parks, requiring operators to provide parking vacancy information to TD. LandsD has also incorporated similar conditions where appropriate in new land leases since February 2021, requiring developers to provide TD with real-time parking vacancy information after completion of the developments.

Enhancing roadside parking facilities

22. On providing and enhancing roadside parking facilities, in line with the Smart Mobility Initiative, TD has commenced the installation of around 12 000 new generation on-street parking meters in phases since January 2021 (including to replace 9 800 existing meters). While the existing meters only accept Octopus for payment of parking fees, the new meters support multiple electronic payment means and accept remote payment through the “HKeMeter” mobile application, which enhance operational efficiency and bring convenience to drivers. To assist drivers in finding vacant on-street parking spaces, new meters are equipped with sensors to detect the occupancy of parking spaces, and the information will be disseminated to the public through the “HKeMobility” and “HKeMeter” mobile applications.

23. As at end June 2021, TD has installed about 3 700 new generation parking meters across the territory. It is anticipated that the installations will be fully completed in the first half of 2022.

24. The TD will continue to study the parking needs of different types of vehicles in various districts and to provide additional on-street parking spaces at suitable locations to meet drivers' short-duration parking needs while ensuring that traffic flow, road safety and the L/UL activities of other road users will not be affected.

Advice Sought

25. Members are invited to note the latest position of various parking measures as outlined above.

**Transport and Housing Bureau
Transport Department
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Comparison of PC parking standards for residential developments before and after amendment

Type of Development	Parameters	Before Amendment	After Amendment	
Subsidised Housing ¹	Parking Requirement	GPS x R1 x R2		
	Global Parking Standard (GPS)	1 space per 6 - 9 flats ²	1 space per 4 - 7 flats ²	
	Demand Adjustment Ratio (R1)	0.23	0.52	
	Accessibility Adjustment Ratio (R2)	Within a 500m-radius of rail station	0.85	
		Outside a 500m-radius of rail station	1	
	Visitor Parking Requirement	Nil	Up to 5 spaces per block	
Private Housing	Parking Requirement	GPS x R1 x R2 x R3		
	Global Parking Standard (GPS)	1 space per 6 - 9 flats	1 space per 4 - 7 flats	
	Demand Adjustment Ratio (R1)	Flat size ³ ≤ 40m ²	0.4	0.5
		40m ² < Flat size ³ ≤ 70m ²	0.7	1.2
		70m ² < Flat size ³ ≤ 100m ²	2.1	2.4
		100m ² < Flat size ³ ≤ 130m ²	5.5	4.1
		130m ² < Flat size ³ ≤ 160m ²	7.5	5.5
		Flat size ³ > 160m ²	9.5	7.0
	Accessibility Adjustment Ratio (R2)	Within a 500m-radius of rail station	0.75	
		Outside a 500m-radius of rail station	1	
	Development Intensity Adjustment Ratio (R3)	Domestic Plot Ratio ≤ 1	1.30	
		1 < Domestic Plot Ratio ≤ 2	1.10	
		2 < Domestic Plot Ratio ≤ 5	1.00	
		5 < Domestic Plot Ratio ≤ 8	0.90	
	Domestic Plot Ratio > 8	0.75		
Visitor Parking Requirement	(a) 1 - 5 spaces per block with more than 75 units (b) to be determined on a case by-case basis with up to 75 units per block	(a) 5 spaces per block with more than 75 units (b) to be determined on a case by-case basis for blocks with 75 units or less		

Notes:

1. The parking standards before amendment were only applicable to PRH developments. The parking standards after amendment are applicable to both PRH and subsidised sale flats developments.
2. “One person/two persons” flats shall be excluded from the calculation of the overall PC parking provision in subsidised housing.
3. Flat size in gross floor area.

Types of Automated Parking Systems (APS)

APS types	Operating Principles and Characteristics
Puzzle Stacking System (<i>"Puzzle"</i>)	Puzzle moves vehicles to/from ground level for retrieval/parking through vertical lifting and horizontal sliding of parking pallets. Due to its relatively simple form of structure, the operating cost of puzzle is lower as compared with other systems. Puzzle is suitable for use inside newly-built or existing buildings or outdoor. Puzzle could also be installed in different modular forms (with one module occupying three to five parking spaces at ground level), so as to match with the site characteristics. The drawback of Puzzle is, when compared with other systems, the number of parking spaces increased within the same footprint is lower.
Tower Lifting System (<i>"Tower"</i>)	Tower's operating principles are similar to those of an elevator. Each layer of tower can accommodate two to four parking spaces. Tower is operated according to a relatively simple operating mode with high retrieval/parking speed. The number of parking spaces increased within the same footprint is higher compared with other systems. However, Tower can only perform well if development is allowed at a considerable height.
Rotary Carousel System (<i>"Rotary"</i>)	Similar to Tower, the Rotary's parking pallets circulate on track to the ground level for vehicle's retrieval/parking. Rotary is particularly suitable for use in sites with relatively small footprint.
Circular Shaft Lifting System (<i>"Circular"</i>)	Circular can be considered as a type of tower. When compared with Tower, Circular can accommodate more parking spaces (10 to 20), but at the same time, occupies a larger site area.
Vertical Lifting and Horizontal Sliding System (<i>"VLHS"</i>)	Equipped with vertical elevator(s) and horizontal moving platform(s), VLHS can retrieve/park vehicles at multi-layers (front, back, left and right). VLHS is mainly deployed in relatively large car park (more than 200 parking spaces).