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By email and fax
(Fax: 2840 0716)

21 April 2021

Dear Ms LAU,

**Legislative Council Panel on Transport
Follow-up issues arising from the meeting on 5 January 2021**

**Follow-up questions in relation to
3023TP - Public Vehicle Park at Areas 4 and 30 (Site 2), Sheung Shui
3024TP - Public Vehicle Park at Area 99, Tung Chung and
B085TI - Public Transport Interchange at Tung Chung Area 99**

Thank you for your letter dated 9 January 2021, conveying the follow-up questions raised by Hon Tony TSE in relation to the captioned three proposed works projects. Our reply is as follows. Please also refer to the supplementary information on the three projects issued by the Transport and Housing Bureau on 21 April (see **Annex**).

(1) Number of parking spaces at the public vehicle park at Areas 4 and 30 (Site 2), Sheung Shui

2. Site 1 and Site 2 at Areas 4 and 30, Sheung Shui each had a short-term tenancy (“STT”) car park. In order to vacate land for construction of public housing development (“PHD”), these two STT car parks were terminated successively in 2020. In the light of the above circumstances as well as based on parking surveys and observations conducted, including the numbers of nearby illegal parking recorded as well as the recorded utilisation rates of parking spaces at STT car parks, car parks at other private and public housing estates in the vicinity of the aforementioned PHD site, the Transport Department (“TD”) sees a genuine need to build a public vehicle park (“PVP”) within the boundaries of the aforementioned PHD to provide about 320 parking spaces for private cars (“PCs”) and about ten parking spaces for light goods vehicles (“LGVs”) in order to meet the demand for parking spaces in the areas (including Shek Wu Hui).

3. Meanwhile, in order to address the demand for parking spaces arising from the PHD at Areas 4 and 30, Sheung Shui, the Housing Department (“HD”) has liaised with TD, and will provide ancillary parking spaces for 154 PCs, 18 LGVs and 29 motorcycles in its PHD and by making reference to the requirements of the Hong Kong Planning Standards and Guidelines (“HKPSG”).

4. In summary, we consider that the proposed PVP will be able to address the demand for parking spaces in the areas. TD will continue to keep in view the illegal parking situation in the vicinity of Shek Wu Hui and the utilisation of STT public car parks, and will put in place measures as far as practicable to increase the provision of parking spaces as appropriate. For the parking conditions in the vicinity of Shek Wu Hui and the provision of temporary parking spaces during the construction, please refer to Annex.

(2) Basic information on the works projects and the principle of “single site, multiple uses”

3023TP - Public Vehicle Park at Areas 4 and 30 (Site 2), Sheung Shui

5. Regarding the proposed PVP in Sheung Shui, after excluding the at-grade greening areas, the roof-top garden and the ball courts, the construction costs of which will be borne by the Hong Kong Housing Authority (“HKHA”), the floor area of the proposed PVP is about 14 500 square meters (“m²”). Apart from parking spaces and passageways, the floor area also includes the building structure of the PVP (including load bearing walls, etc.), and the space to be occupied by ancillary facilities such as lift lobbies, shroff office and management facilities, fire escape routes and staircases, plant rooms, etc.

6. We will provide electric vehicle (“EV”) charging facilities for not less than 30% of the PC parking spaces in the proposed PVP. We will also carry out EV charging enabling works for the remaining 70% of the parking spaces, reserving spaces, cable conduits, trunkings, etc. for installing charging facilities in future.

7. In addition, for the convenience of PVP users and management staff, the PVP will be equipped with electronic equipment, including access control system, licence plate recognition system, parking bay information display panels, bay guidance and car searching systems, electronic patrol system, etc. The Government will also install indicators at prominent positions to indicate if the proposed PVP is full, and upload parking vacancy information to the mobile application “HKeMobility” so that motorists may know the number of remaining vacant parking spaces at the proposed PVP timely.

8. We have all along been planning the entire development at Site 1 and Site 2 at Areas 4 and 30, Sheung Shui as well as the PVP at the public housing site in accordance with the principle of “single site, multiple uses”. For the considerations for the location and design of the proposed PVP, please refer to **Annex**.

9. Specifically, it is stipulated in the HKPSG that greening areas and ball courts are required to be provided at PHDs for residents’ use. Following the principle of “single site, multiple uses”, we will make use of the roof-top of the proposed PVP to provide a garden and ball courts so that HKHA will have more flexibility in planning the development of other phases at Areas 4 and 30, Sheung Shui. Apart from the construction of about 3 650 public housing flats to provide affordable housing for about 8 560 persons, this PHD will also provide relevant supporting facilities to cater for the needs of the residents and the community. The details are as follows -

	Site 1, Areas 4 and 30, Sheung Shui	Site 2, Areas 4 and 30, Sheung Shui
No. of public housing flats	About 2 088	About 1 556
Design population	About 4 787 persons	About 3 773 persons
Supporting facilities	Retail facilities Kindergarten (6 classrooms) ancillary car park for public housing Footbridge connecting the existing footbridge network	Retail facilities ancillary car park for public housing
Community facilities	Public transport interchange (“PTI”)	PVP

	Site 1, Areas 4 and 30, Sheung Shui	Site 2, Areas 4 and 30, Sheung Shui
(to be built by HKHA for the Government on an entrustment basis)	Community hall District health centre Residential care home for the elderly (100 beds) Day activity centre Hostel for severely mentally handicapped persons Hostel for moderately mentally handicapped persons Integrated vocational rehabilitation services centre	

10. In addition, the single-block design to be adopted by the proposed PVP will also facilitate the early completion of the project, so that part of Site 1, which is used as a temporary fee-paying car park, could be vacated to make way for the remaining phase of the PHD. At-grade greening areas will also be provided along the perimeter of the proposed PVP to serve as a buffer zone between the public housing and nearby factories.

Two proposed works projects at Area 99, Tung Chung

11. Regarding the locations selected for the two proposed projects, in the light of the geological consideration, the layout of the north-east of the present site at Area 99, with the rock stratum about 70 to 90 meters below ground, is suitable for constructing high-rise public housing buildings, while the south-west of the site is identified with complex geological conditions and with the rock stratum about 160 meters below ground, thus the layout is more suitable for constructing low-rise buildings, including the two proposed projects. We have considered the provision of the proposed PTI or PVP at the base or basement of the public housing buildings, but this will lengthen the construction period of the PHD.

12. To facilitate the public to take public transport, we will build the proposed PTI at ground level and the proposed PVP at the basement.

13. Regarding the alternative scheme, we have considered the option of building the PVP above the proposed PTI. However, construction of any structure above the PTI will block the ventilation openings above the PTI. As the proposed PTI will be located at the wind corridor in the whole design layout of the Area 99 project, blockage of the ventilation openings will affect air circulation of the whole site, resulting in a loss of part of the construction floor area concessions and a reduction of about 200 flats in the PHD. An enclosed

design for the cover of the PTI will also require an increase in the height of the PTI so as to accommodate extra ancillary electrical and mechanical facilities required for enhancing air ventilation in the PTI. There will be space, height and cost implications on the PTI. Meanwhile, the provision of an upper floor PVP will also require building a longer ramp for vehicular access to connect the ground level, which will have a direct impact on the reserved space for bus routes and pedestrian passageways in the PTI. As a result, this will affect the feasibility of the PTI.

14. The current overall layout of Area 99 could provide 4 800 public housing flats through optimisation of plot ratio, it is expected that the two proposed projects and other ancillary facilities will be completed concurrently in 2024. The considerations for the layouts and designs of the two proposed works projects are set out in Annex.

3024TP - Public Vehicle Park at Area 99, Tung Chung

15. The site area of the proposed basement PVP and PTI is about 4 900 m², while the floor area of the PVP is about 3 300 m². In addition to parking spaces and passageways, the floor area also includes the building structure of the PVP (including load bearing walls, etc.), and the space to be occupied by ancillary facilities such as lift lobbies, shroff office and management facilities, fire escapes routes and staircases, plant rooms, etc. The lift lobby at ground level will be connected to the passenger waiting area and the covered walkway of the PTI so as to facilitate PVP users to go to the public housing estate in Area 99 or interchange for transit to buses.

16. The proposed PVP will be accessed from Ying Tung Road at ground level. The access gate of the PVP will be installed at basement level. The passageway connecting the ground level and the basement could serve as a vehicular-waiting area to minimise the possible congestion in Ying Tung Road caused by the queuing up for parking in the PVP.

17. We will provide EV charging facilities for not less than 30% of the PC parking spaces in the proposed PVP. We will also carry out EV charging enabling works for the remaining 70% of the parking spaces, reserving spaces, cable conduits, trunkings, etc. for installing EV chargers in future. In addition, the PVP will be equipped with electronic equipment to facilitate PVP users and management staff, including access control system, licence plate recognition system, parking bay information display panels, bay guidance and car searching systems, electronic patrol system, etc. The Government will also install indicators at prominent positions to indicate if the proposed PVP and the public housing estate car park are full, and upload parking vacancy information to mobile application “HKeMobility” so that motorists may know the numbers of available parking spaces at the car parks timely.

B085TI - Public Transport Interchange at Tung Chung Area 99

18. The site area of the PTI at Tung Chung Area 99 is about 4 900 m². There will be seven pick-up/drop-off bays and eight stacking bays for buses to meet the transport demand arising from the local housing developments. Taking into account the future development of electric buses, electricity supply will be provided at the eight bus stacking bays of the PTI to enable bus companies to install suitable types of bus charging facilities. As for bus route planning, TD, having regard to the completion date of the PTI and the local population growth, will review the arrangements for bus routes and service levels, etc. in the vicinity and make specific recommendations, including increasing the numbers of bus routes and enhancing service levels of existing routes, etc., in the “Bus Route Planning Programme” submitted to the relevant District Councils every year in a timely manner, so as to meet residents’ demand for bus services.

19. The proposed PTI adopts a semi-opened environment-friendly design with a view to increasing natural air ventilation and sunlight, and reducing the use of mechanical ventilation and lighting systems. This PTI and the basement PVP will act as the wind corridor in the overall design layout of the public housing project and allows for wind penetration, which would increase natural light and air circulation in Area 99 and the surrounding environment and is in compliance with the Sustainable Building Design Guidelines. In addition, the semi-opened design also complies with the Building Regulations and fire safety requirements. Thus, installation of additional mechanical ventilation system and fire sprinkler system at the PTI is not required, thereby achieving environmental benefits.

20. The proposed PVP and PTI are designed with independent electrical and mechanical as well as sewage installations to ensure that the two facilities will be able to operate separately.

21. On the whole, having balanced the above considerations, we consider that the current proposal in respect of location, design and construction of the three proposed works projects is currently the most preferred option.

(3) Cost control of the two proposed PVP works projects

22. We have made reference to cost information of similar works projects when preparing the estimates of the two proposed PVP works projects. Nevertheless, we must point out that the construction cost of each development project will be affected by factors unique to the project, such as topography, geology, site constraints, supporting facilities, requirements of project development, etc. Take car park project as an example, on the top of the above engineering factors, the construction cost of car parking spaces will vary depending on the size of parking space for different types of vehicles, the required headroom, width and length of the passageways, the area required for the

vehicular swift paths. Therefore, we could not directly adopt the construction cost of similar works projects for the cost estimates of the projects concerned. In fact, such direct comparison is not possible in respect of the construction costs and breakdowns of the two PVP projects mentioned in this letter because of the factors mentioned above. We have given consideration to the relevant design factors unique to the two locations, and prepared professional estimations for the two proposed works projects based on the latest market situation, such as the latest trends in index numbers of the labour and selected materials cost, works tender price index, etc.

23. Before consulting the Legislative Council (“LegCo”) Panel on Transport, we have already submitted the projects to the Project Strategy and Governance Office (“PSGO”) of the Development Bureau for examination. Taking into account the factors and constraints mentioned above, PSGO considers that there is still room for improvement in the foundation design for the PVPs. We have made adjustments accordingly before consulting the Panel on Transport to ensure that the projects will become more cost-effective. Meanwhile, PSGO also requested us to adopt parallel tendering arrangements, with a view to reflecting the actual tendering prices in the Public Works Subcommittee (“PWSC”) discussion paper.

24. To ensure that the estimated construction costs of the works projects can reflect the prevailing market situation, we invited tenders for the proposed works projects from interested contractors by open tender, and have updated the estimated construction costs of the projects to seek support from the LegCo PWSC. We will strictly follow guidelines and procedures for awarding construction contracts to qualified contractors with competitive tender prices. During the construction stage, we will streamline workflow and exercise stringent control over expenditure on works to achieve optimal cost effectiveness.

25. In addition, relevant departments will continue to discuss with PSGO in earnest with a view to enhancing the cost effectiveness of the PVP projects. Under the overriding principles of not compromising functionality, quality and safety of works, the Government will optimise designs for future projects based on the principles of “fitness for purpose and no frills” to ensure the proper use of public funds.

3023TP - Public Vehicle Park at Areas 4 and 30 (Site 2), Sheung Shui

26. The estimated total cost of the whole project is \$385.1 million, including administration cost and contingencies. Excluding the expenditure of these items, the estimated construction cost per parking space is about \$960,000.

27. The proposed PVP is the first public works project in recent years under which the HKHA is entrusted by the Government to build a single-block multi-storey PVP. Hence, actual construction cost data of similar works projects in recent years is not available for comparison. That said, in preparing the estimate of this project, we still made reference to the construction costs of ancillary car parks of similar type and scale to ensure that the project price is within a reasonable range.

3024TP - Public Vehicle Park at Area 99, Tung Chung

28. The total estimated cost of the whole project is \$167.5 million, including administration cost and contingencies. Excluding expenditure of these items, the estimated construction cost per parking space is about \$1,700,000.

29. The two proposed works projects at Area 99, Tung Chung are located at the Designated Area of Northshore Lantau stipulated in the Geotechnical Engineering Office Technical Guidance (TGN 12). Given the complex geological conditions of the site, which is also a new reclamation area, future risks of high water level and settlement need to be addressed. Therefore, underground shoring works of the projects are more complex, the areas involved are more extensive, and the excavation depth is greater as compared with ordinary basement car parks. To address the above risks, the project needs to have a buoyancy foundation to accommodate a basement PVP and to support a PTI at ground level, with a view to saving the high construction costs arising from the use of pile foundation because of the deep bedrock. The above complex geological conditions are reflected in the construction costs of the two proposed works projects. Moreover, the locations of the two proposed works are currently surrounded by a number of works projects, including the public housing project in the same area and nearby infrastructure projects that are being carried out by the Civil Engineering and Development Department, resulting in a relatively small site that leads to increasing difficulty and complexity of the works involved.


30. We also made reference to ancillary basement car parks which provide similar numbers of parking spaces in recently completed public housing projects. Taking into account the complex geological conditions of the site and the risk of high water level, foundation design, underground propping works, excavation depth and extent of the projects, etc., we consider that the construction costs of parking spaces of the proposed basement PVP are comparable to basement car parks of similar conditions.

(4) Estimation of operation and maintenance costs of the public vehicle park at Area 99, Tung Chung

31. The operation and maintenance costs of the proposed PVP at Area 99,

Tung Chung are estimated at \$1,560,000 per year¹. The above costs include the electricity cost, staff cost and maintenance cost for structure, electrical and mechanical installations and electronic equipment, etc. The Government made the above estimation by making reference to the recurrent expenditure of existing government PVPs, and having regard to the extra maintenance cost required for the new electronic equipment to be provided at the proposed PVP. The Government will also review the operation and maintenance costs of the proposed PVP in the light of the market situation before the completion of the project to ensure the proper use of public funds.

Yours sincerely,



(Alexander LEUNG)

for Secretary for Transport and Housing

c.c.

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¹ Excluding the electricity fees of EV chargers.

**Legislative Council Panel on Transport
Follow-up issues arising from the meeting on 5 January 2021**

**Supplementary information on
3023TP - Public Vehicle Park at Areas 4 and 30 (Site 2), Sheung Shui
3024TP - Public Vehicle Park at Area 99, Tung Chung and
B085TI - Public Transport Interchange at Tung Chung Area 99**

At the Panel on Transport meeting held on 5 January 2021, Members requested the Administration to submit supplementary information on the captioned three proposed works projects. The relevant information is consolidated as follows.

(1) Location and construction method of the proposed public vehicle park at Sheung Shui and Tung Chung

3023TP - Public Vehicle Park at Areas 4 and 30 (Site 2), Sheung Shui

2. Site 1 and Site 2 at Areas 4 and 30, Sheung Shui each had a short-term tenancy (“STT”) car park. In order to vacate land for construction of public housing development (“PHD”), these two STT car parks were terminated successively in 2020. In the light of the above circumstances as well as based on parking surveys and observations conducted, including the numbers of nearby illegal parking recorded as well as the recorded utilisation rates of parking spaces at STT car parks, car parks at other private and public housing estates in the vicinity of the aforementioned PHD site, the Transport Department (“TD”) sees a genuine need to build a public vehicle park (“PVP”) within the boundaries of the aforementioned PHD to provide about 320 parking spaces for private cars (“PCs”) and about ten parking spaces for light goods vehicles (“LGVs”) in order to meet the demand for parking spaces in the areas (including Shek Wu Hui).

3. To address the local demand for parking spaces before the commissioning of the proposed PVP, a new STT car park at part of Site 1, providing about 300 parking spaces, was opened for public use in early March 2021. Upon commissioning of the proposed PVP, the STT car park at Site 1 will be terminated to vacate land for the remaining works of the PHD.

4. According to TD’s recent observations, there are still vacant public parking spaces in the car parks in the vicinity of Shek Wu Hui available for use during peak hours. TD will continue to monitor the demand for parking spaces in the vicinity of Shek Wu Hui. If necessary, TD will consider requesting provision of public parking spaces in other suitable developments.

5. Regarding the proposed location, according to traffic assessment, it is more appropriate to build a public transport interchange (“PTI”) at Site 1 for the

use of the residents living in the new PHD and in the vicinity of Po Shek Wu Estate. Given that there is already a PVP at Po Shek Wu Estate, which is near Site 1, it is more appropriate to build the proposed PVP at Site 2 which is further away from Po Shek Wu Estate. After detailed planning and striking a proper balance in respect of the PHD schedule, we have decided to construct the PTI as well as other community facilities at Site 1 and the PVP at Site 2.

6. The proposed PVP is a nine-storey aboveground car park, the number of storeys of which are comparable to the Government's current multi-storey car parks, e.g. Rumsey Street Car Park (eight storeys) and Tin Hau Car Park (eight storeys). According to TD's observations, motorists using upper-level parking spaces would take more time to enter and exit car parks, and hence, the current utilisation rates of upper-level parking spaces in car parks are generally lower. Thus, we consider that the design of the proposed PVP is already the most appropriate option, and it is not cost-effective to increase the number of storeys beyond the current design to provide additional parking spaces. For the internal layout, the width of the passageway is designed in accordance with the requirements of car park planning standards of the relevant department and have balanced different considerations. The proposed PVP will adopt a two-side parking design (i.e. parking spaces are provided on both sides of the passageway) to enhance the practicality of the car park.

7. We will provide electric vehicle ("EV") charging facilities for not less than 30% of the PC parking spaces in the proposed PVP. We will also carry out EV charging enabling works for the remaining 70% of the parking spaces, reserving spaces, cable conduits, trunkings, etc. for installing EV charging facilities in the future. In addition, the PVP will be equipped with electronic equipment to facilitate PVP users and management staff, including access control system, licence plate recognition system, parking bay information display panels, bay guidance and car searching systems, electronic patrol system, etc. The Government will also install indicators at prominent positions to indicate if the proposed PVP is full, and upload parking vacancy information to mobile application "HKeMobility" so that motorists can be aware earlier of the number of available parking spaces at the PVP.

8. Regarding automated parking systems ("APSS"), TD is actively taking forward pilot projects on APSS and has identified four sites for the purpose. The proposed PVP adopts a conventional car park design, which not only will be able to provide the required number of parking spaces, but will also be easier to control the construction schedule to tie in with the development timetable for the public housing programme and PTI at Site 1. Thus, it is more appropriate for the proposed PVP to adopt a conventional car park design.

9. Nevertheless, TD will continue to actively take forward the application of APSS. TD is currently studying the feasibility of providing APSS in other suitable sites, including an STT site at Pak Shek Kok.

10. Meanwhile, in order to address the demand for parking spaces arising from the PHD at Areas 4 and 30, Sheung Shui (involving about 3 650 public housing flats), the Housing Department ("HD") has liaised with TD, and will

provide ancillary parking spaces for 154 PCs, 18 LGVs and 29 motorcycles in its PHD and by making reference to the requirements of the Hong Kong Planning Standards and Guidelines (“HKPSG”).

11. Regarding the alternative scheme for the proposed PVP, HD has considered adopting the design of a podium-type car park, i.e. building a five-storey podium car park to accommodate the ancillary parking spaces of the public housing and public parking spaces, and constructing the public housing above the podium. However, after detailed assessment, it is considered that not only will this alternative lengthen the construction period of the project, but the addition of podium level for the car park will also lead to non-compliance with the building height restrictions and the requirements of the “Sustainable Building Design Guidelines”, resulting in a reduction of about 150 flats in the public housing project.

12. In addition, the huge base structure will also have an adverse impact on the air circulation and visual effect of the surroundings, and therefore not preferable from the town planning point of view. In comparison, wind corridors are incorporated in the current design of the proposed PVP as proposed by the Government to facilitate air circulation, and greening areas will be provided along the pavement to act as a buffer zone between the public housing and industrial area in the vicinity.

13. In short, the Government has developed the PVP at the public housing site in accordance with the principle of optimising land use. The current location and design of the proposed PVP have balanced various factors (e.g. traffic assessment and statutory requirements, etc.), and optimised site parameters (e.g. plot ratio, height restrictions, site coverage and the required greening ratio, etc.), while enabling the construction of the adjacent public housing to be carried out independently so as to expedite the supply of public housing. We therefore consider the current proposed location and construction method the most preferred option. For the location plan of the public housing and PVP development at Site 1 and Site 2 at Areas 4 and 30, Sheung Shui, please refer to Appendix I.

3024TP – Public Vehicle Park at Tung Chung Area 99

14. In the light of the population intake at Tung Chung East in recent years, we consider that it is necessary to build a PVP in Tung Chung East to meet the PC parking demand in the vicinity. Based on the parking surveys and observations conducted, including the numbers of nearby illegal parking recorded as well as the recorded utilisation rates of parking spaces at STT car parks, car parks at other private and public housing estates in the vicinity of the aforementioned PHD site, TD considers it necessary to provide 80 PC parking spaces at the proposed PVP with a view to meeting the local demand for parking spaces.

15. By TD’s recent observations, there are still vacant public parking spaces in the car parks in the vicinity of Tung Chung Area 99 available for public use at night. TD will continue to monitor the local demand for parking spaces. If necessary, TD will consider requesting provision of public parking spaces in other suitable developments.

16. Meanwhile, in order to address the demand for parking spaces arising from the PHD (involving about 4 800 public housing flats) at Tung Chung Area 99, HD has liaised with TD, and will provide ancillary parking spaces for about 200 PCs, 21 LGVs and 39 motorcycles in its PHD and by making reference to the requirements of the HKPSG.

17. According to the approved Tung Chung Extension Area Outline Zoning Plan, a new PTI will be provided in Tung Chung Area 99. The planning of the proposed PTI is based on the relevant standards and requirements drawn up by TD. There will be seven pick-up/drop-off bays and eight stacking bays for franchised buses at the PTI.

18. In terms of planning, the proposed PVP and PTI and the aforementioned PHD at Area 99 are all located in Tung Chung Area 99. Thus, including all of them in the same construction works contract is beneficial from the perspective of design, resource utilisation and cost effectiveness. Various factors have been taken into consideration in the overall location and layout, including full utilisation of plot ratio, height restrictions, construction period, construction cost, environmental concepts, geological uniqueness of new reclamation areas, and other relevant statutory requirements. When studying the location and construction method of the two proposed projects, we have also taken into account the impact of the two projects on the output and construction period of public housing flats.

19. Regarding the locations for the two proposed projects under the works premise, in the light of the geological consideration, the layout of the north-east of the present site at Area 99, with the rock stratum about 70 to 90 meters below ground, is suitable for constructing high-rise public housing buildings, while the south-west of the site is identified with complex geological conditions and with the rock stratum about 160 meters below ground, thus the layout is more suitable for constructing low-rise buildings, including the two proposed projects. We have considered the provision of the proposed PTI or PVP at the base or basement of the public housing buildings, but this will lengthen the construction period of the PHD.

20. To facilitate the public to take public transport, we will build the proposed PTI at ground level and the proposed PVP at the basement. In respect of construction and design, the PTI adopts a semi-opened environment-friendly design, which is overall in compliance with the sustainable building design concept of the Area 99 project, and will increase natural lighting and air circulation in the area and the surrounding environment.

21. Regarding the alternative scheme, we have considered the option of building the PVP above the proposed PTI. However, construction of any structure above the PTI, including a PVP (in the form of either conventional parking spaces or automated parking systems ("APS")), will block the ventilation opening above the PTI. As the proposed PTI will be located at the wind corridor in the layout of the whole Area 99 project, blockage of the ventilation openings will affect air circulation of the whole project, resulting in a loss of part of the construction floor area concessions under the project and a reduction of about 200

flats in the PHD. An enclosed design for the cover of the PTI will also require an increase in the height of the PTI so as to accommodate extra ancillary electrical and mechanical (e.g. fire services and mechanical ventilation, etc.) facilities required for enhancing air ventilation in the PTI. This will have space, height, and cost implications on the PTI. Meanwhile, the provision of an upper floor PVP will also require the building of a longer ramp for vehicular access to connect the ground level, which will have a direct impact on the reserved space for bus routes and pedestrian passageways in the PTI. As a result, this will affect the feasibility of the PTI.

22. Regarding APS, the proposed PVP needs to dovetail with the development programme of the PTI located at ground level and the public housing at Area 99. On the premise that a conventional car park design can provide the required number of parking spaces and it is easier to control the construction schedule, it is more appropriate for the proposed PVP to adopt a conventional car park design. Nevertheless, upon the commissioning of the proposed PVP, TD will closely monitor the utilisation rate of the PVP and the development of technology, and will explore the feasibility of providing additional parking spaces by using APSs in other public car parks in the vicinity.

23. We will provide EV charging facilities for not less than 30% of the PC parking spaces in the proposed PVP. We will also carry out EV charging enabling works for the remaining 70% of the parking spaces, reserving space, cable conduits, trunkings, etc. for installing charging facilities in future. In addition, the PVP will be equipped with electronic equipment to facilitate PVP users and management staff, including access control system, licence plate recognition system, parking bay information display panels, bay guidance and car searching systems, electronic patrol system, etc. The Government will also install indicators at prominent positions to indicate if the proposed PVP and the public housing estate car park are full, and upload parking vacancy information to the mobile application “HKeMobility” so that motorists can be aware earlier of the numbers of remaining vacant parking spaces at the car parks.

24. In view of the above considerations, we consider that the current proposed location and construction method of the proposed PVP and PTI at Area 99 are the most preferred option. For the location plan of the public housing, PTI and PVP development at Tung Chung Area 99, please refer to **Appendix II**.

(2) Detailed design of the proposed PTI at Tung Chung Area 99

25. Due to the limited space at the site, the overarching principle in the design of the PTI is to optimise land use. When designing the internal layout, the Government has already taken into account a basket of factors, including making reference to the “Transport Planning and Design Manual” and the HKPSG, past experiences, site constraints, etc. Apart from meeting the above criteria, the Government has thoroughly considered the layout and design of the PTI, including available site area, ingress/egress locations, vehicular and pedestrian flow patterns, pick-up/drop-off arrangements for bus passengers, bus stacking

bays, bus operation and operational needs, etc., so that the limited site area can be properly utilised in the layout of the PTI to cater for the local demand for and development of the public transport services, and that segregation between pedestrian and vehicular traffic can be achieved as the carriageway ingress/egress and the pedestrian entrance/exit are separated.

26. To provide passengers with a comfortable waiting environment, the layout of the PTI has been carefully designed. In addition to the noise screen cover at its top, sheltered facilities will be provided at bus pick-up/drop-off bays for passengers awaiting buses, and passengers who have alighted buses can walk along the covered walkway which connects the covered walkway system of the public housing at Area 99.

27. In addition to the above factors, the proposed PTI adopts a semi-opened environment-friendly design with a view to increasing natural air ventilation and sunlight as well as minimising the use of mechanical ventilation and lighting systems. This PTI and the basement PVP will act as wind corridors that allow wind penetration in the whole layout of the public housing project, which is in compliance with the sustainable building design guidelines, and natural light and air circulation will be increased in Area 99 and the surrounding environment.

28. Although the PTI adopts a semi-opened design, HD has conducted computer simulation tests to ensure that the noise screen cover, including the design of ventilation openings, is effective in mitigating the noise impact on the surrounding environment. The Environmental Protection Department also agrees with the adoption of the design of the noise screen cover by HD. In addition, the semi-opened design also complies with the requirements of building and fire services legislation. Thus, environmental benefits will be achieved without the installation of an additional mechanical ventilation system and fire sprinkler system at the PTI.

(3) Construction costs of the proposed works projects

29. We have made reference to cost information of similar works projects when preparing the estimates of the three proposed works projects. Nevertheless, we must point out that the cost of each development project will be affected by factors unique to the project, such as topography, geology, site constraints, supporting facilities, project development requirements, etc. Take car park project as an example, in addition to the above engineering factors, the construction cost of car parking spaces will also vary depending on the size of the type of parking space, the headroom required, the width and length of the carriageway, the area required for the vehicle to make turns. Therefore, direct adoption of the estimates of similar projects as the estimates of construction costs of the projects concerned is impracticable. In fact, a direct comparison is not possible in respect of the construction costs and breakdowns of the two PVP projects mentioned in this document because of the factors mentioned above. We have given consideration to the relevant designs in the light of factors unique to the two locations, and prepared professional estimations for the three proposed works projects based on the latest market situation, such as the latest trends in

index numbers of the costs of labour and selected materials, works tender price index, etc.

30. Before consulting the Legislative Council (“LegCo”) Panel on Transport, we have already submitted the projects to the Project Strategy and Governance Office (“PSGO”) of the Development Bureau for examination. Taking into account the factors and constraints mentioned above, PSGO considers that there is still room for improvement in the foundation design for the PVPs. We have made adjustments accordingly before consulting the Panel on Transport to ensure that the projects will become more cost-effective. Meanwhile, PSGO also requested us to adopt parallel tendering arrangements, with a view to reflecting the actual tendering prices in the Public Works Subcommittee (“PWSC”) discussion paper.

31. To ensure that the estimated construction costs of the works projects can reflect the prevailing market situation, we invited tenders for the proposed works projects from interested contractors by public tender, and have updated the estimated construction costs of the projects to seek support from the LegCo PWSC. We will strictly follow guidelines and procedures in awarding construction contracts to qualified contractors with competitive tender prices. During the construction stage, we will streamline workflow and exercise stringent control over expenditure on works to achieve optimal cost effectiveness.

32. In addition, relevant departments will continue to discuss with PSGO in earnest with a view to enhancing the cost effectiveness of the PVP projects. Under the overriding principles of not compromising functionality, quality and safety of works, the Government will optimise designs for future projects based on the principles of “fitness for purpose and no frills” to ensure the proper use of public funds.

3023TP – Public Vehicle Park at Areas 4 and 30 (Site 2), Sheung Shui

33. The site area of the proposed PVP is 3 300 m². After excluding the at-grade greening areas, roof-top garden and ball courts of which the construction costs will be borne by the HKHA, the floor area of the proposed PVP is about 14 500 m². Apart from parking spaces and aisles, the floor area also includes the building structure of the PVP (including structural walls, etc.), and the space to be occupied by ancillary facilities such as lift lobbies, a shroff office and management facilities, fire escapes and stairs, plant rooms, etc.

34. The estimated total cost of the whole project is \$385.1 million, including administration cost and contingencies. Excluding expenditure of these items, the estimated construction cost per parking space is about \$960,000. The proposed PVP is the first public works project in recent years under which the HKHA is entrusted by the Government to build a single-block multi-storey PVP. Hence, actual construction cost data of similar projects in recent years is not available for comparison. That said, in preparing the estimate of this project, we still made reference to the construction costs of ancillary car parks of similar type and scale to ensure that the project price is within a reasonable range.

3024TP – Public Vehicle Park at Area 99, Tung Chung

35. The two proposed works projects at Area 99, Tung Chung are located at the Designated Area of Northshore Lantau stipulated in the Geotechnical Engineering Office Technical Guidance (TGN 12). Given the complex geological conditions of the site, which is also a new reclamation area, future risks of high water level and settlement need to be addressed. Therefore, underground shoring works of the project are more complex, the areas involved are more extensive, and the excavation depth is greater as compared with ordinary basement car park. To address the above risks, the project needs to have a buoyancy foundation to accommodate a basement PVP and to support a PTI at ground level, with a view to saving the high construction costs arising from the use of pile foundation because of the deep bedrock. The above complex geological conditions are reflected in the construction costs of the two proposed projects. Moreover, the locations of the two proposed works are currently surrounded by a number of works projects, including public housing projects in the same area and nearby infrastructure projects that are being carried out by the Civil Engineering and Development Department, resulting in a relatively small site that leads to increasing difficulty and complexity of the works involved.

36. The site area of the proposed underground vehicle park and PTI is about 4 900 m², while the floor area of the vehicle park is about 3 300 m². Apart from parking spaces and passageways, the floor area also includes the building structure of the vehicle park (including structural walls, etc.) and the space to be occupied by ancillary facilities such as lift lobbies, a shroff office and management facilities, fire escapes and stairs, and plant rooms. The lift lobby at the ground level will connect with the passenger waiting area of the interchange and the covered walkway to facilitate PVP users to go to the public housing estate in Area 99 or interchange for taking bus.

37. The total estimated cost of the whole project is \$167.5 million, including administration cost and contingencies. Excluding expenditure of these items, the estimated construction cost per parking space is about \$1,700,000.

38. We have also made reference to ancillary basement car parks which provide similar numbers of parking spaces in recently completed public housing. Taking into account the foundation design, underground propping works, excavation depth and extent of the project, etc., we consider that the construction costs of parking spaces of the proposed basement vehicle park are comparable to basement car parks of similar scale.

B085TI - Public Transport Interchange at Tung Chung Area 99

39. The PTI needs to use extensive and wide noise screen cover and perimeter hoarding to prevent the neighbouring environment and residences from being affected by the noise of public transport vehicles operating at the PTI. The PTI can accommodate seven pick-up/drop-off bays and eight stacking bays for buses. Given the relatively limited construction space, large parts of the PTI need to adopt long span steel structure, construction costs of which are high, to provide adequate carriageways and parking spaces.

40. When considering the design of the PTI's cover, in line with the environmental concept of Area 99, Tung Chung, we adopt a semi-opened environment-friendly noise screen cover, similar in design to the one used at the Ping Yan Court PTI, Tin Shui Wai. The semi-opened environment-friendly design of the proposed PTI will make use of steel structure to support the cover in order to maintain adequate space for carriageways and stacking bays for buses.

41. The total estimated cost of the whole project is \$269 million, including administration cost and contingency. Excluding this item of expenses, the estimated construction cost is about \$217.4 million. With reference to the Ping Yan Court PTI, Tin Shui Wai, which has a semi-opened environment-friendly noise screen cover of similar design, the estimated cost of the proposed PTI at Area 99 Tung Chung is comparable to that of Ping Yan Court PTI.

42. We will provide breakdowns of the construction costs of the above three proposed works in the documents for submission to the PWSC.

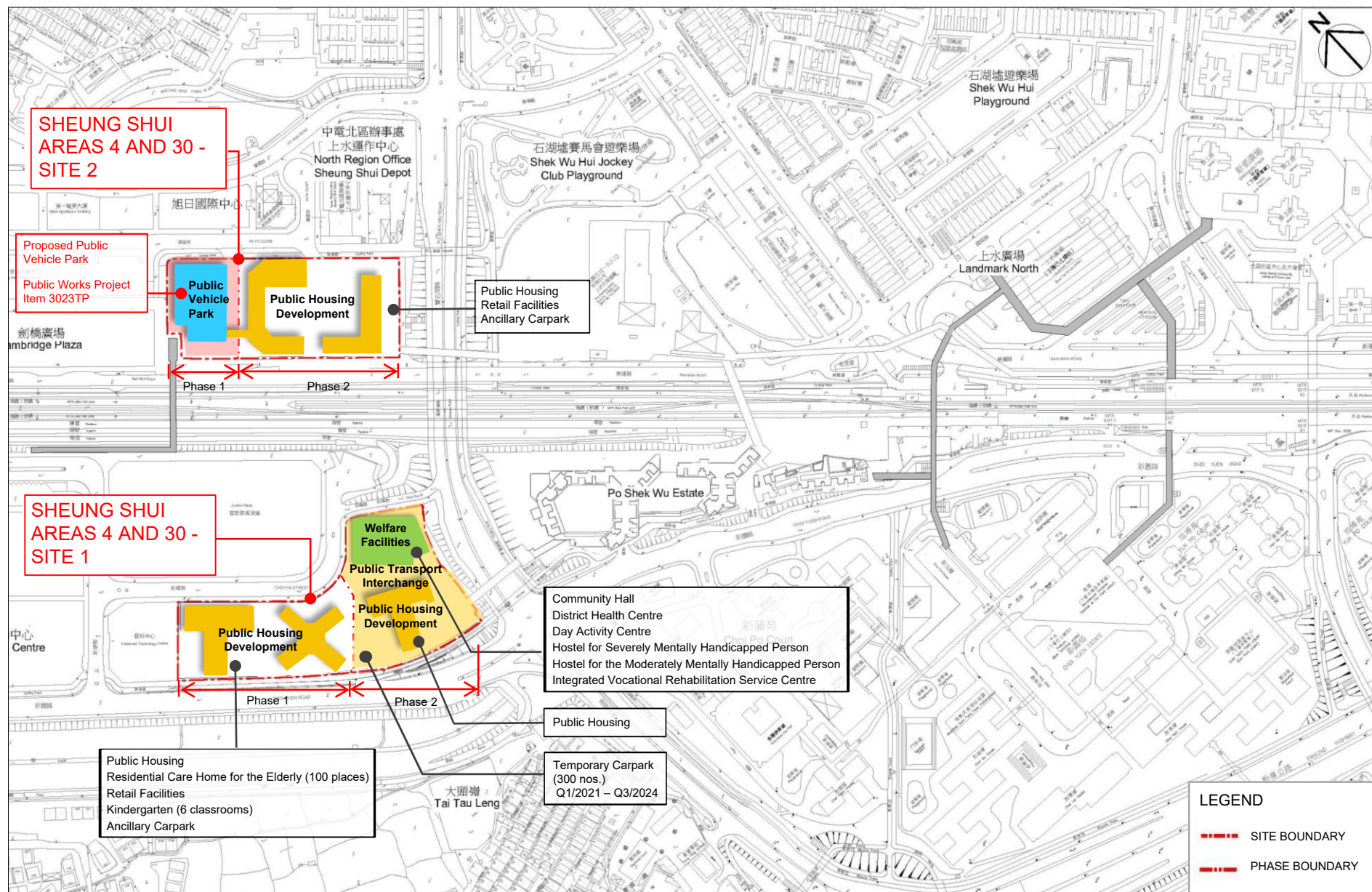
(4) Planning for public parking spaces in Kowloon in the next decade

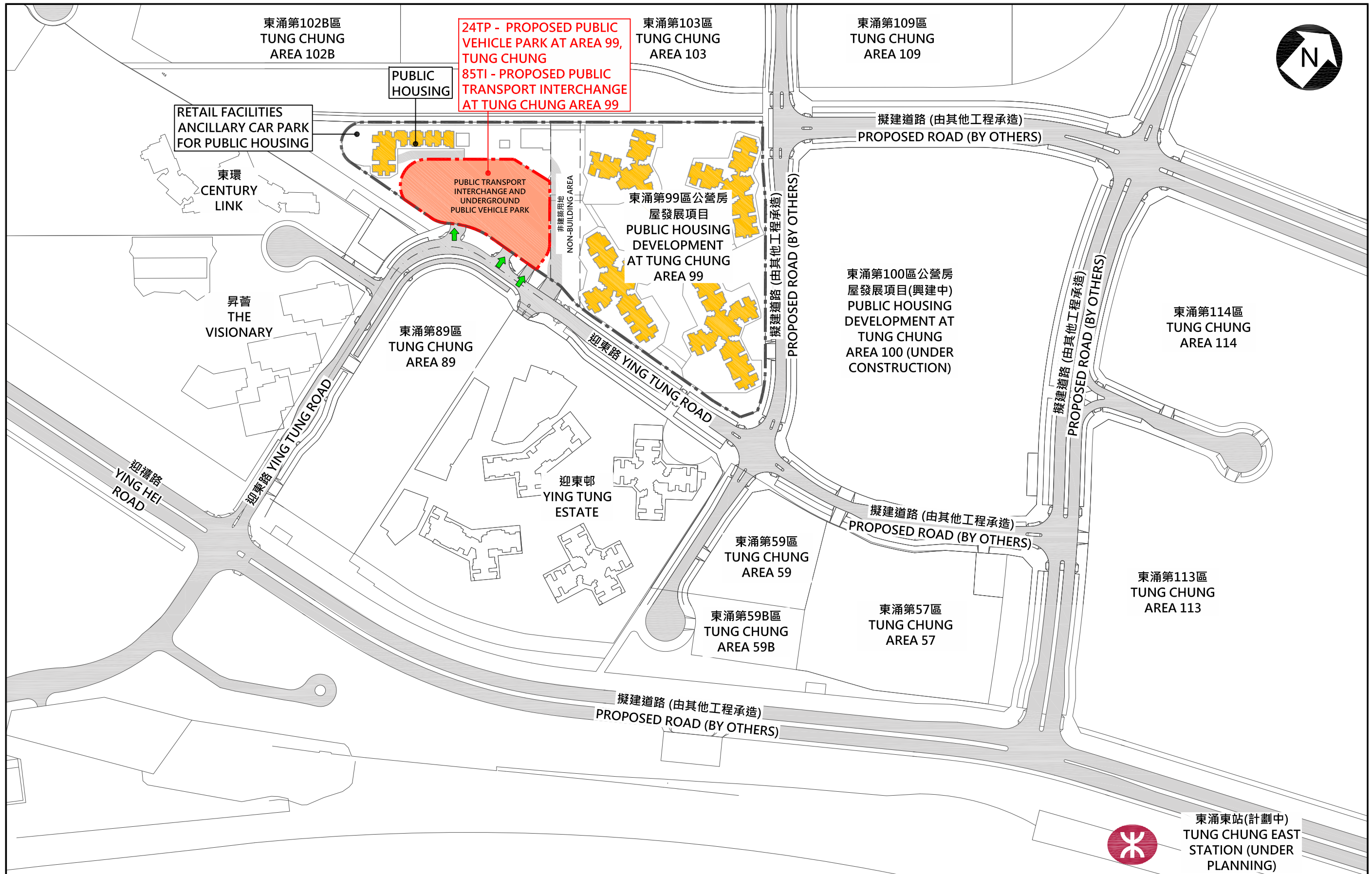
43. Regarding the provision of parking spaces in Hong Kong, TD is actively liaising with relevant departments to provide PVP in suitable "Government, Institution or Community" facilities and public open space ("POS") projects. Proposed PVP projects under planning are scattered throughout Hong Kong Island, Kowloon and New Territories. It is anticipated that about 5 100 parking spaces can be provided by batches. Subject to technical feasibility, outcomes of district consultation and the progress of funding applications, we estimate that the proposed PVP projects will be completed successively from 2024-25. Among others, four PVP projects in Kowloon with the relevant District Councils ("DC") consulted are listed in the table below.

Project	Provisional number of parking spaces	Latest update
District open space, sports centre and public vehicle park at Sze Mei Street, San Po Kong	About 300	Wong Tai Sin DC consulted
Open space and public vehicle park at Yen Chow Street West, Sham Shui Po	About 200	Sham Shui Po DC consulted
Joint-user complex on Site G2 Anderson Road Quarry, Kwun Tong	About 200	Kwun Tong DC consulted
Open space cum underground car park at To Wah Road	About 130	Yau Tsim Mong DC consulted

44. The Government will also continue to take forward a host of short- and medium- to long-term measures to increase the provision of parking spaces, having regard to the situation of various districts, so as to mitigate the shortage of parking spaces. These measures include continuing to designate on-street locations as night-time parking spaces, requiring developers to adopt as far as possible the higher end of the parking standards under the current HKPSG for new developments, revising the standards for provision of commercial vehicle (“CV”) and PC parking spaces in the HKPSG, as well as taking forward APS pilot projects, etc. As at end-February 2021, the latest situation of the above measures is set out below -

Measure	Progress
Designating suitable on-street locations as night-time parking spaces	Between 2016 and February 2021, a total of 322 on-street night-time parking spaces for CVs were put into service.
Requiring new developments to adopt as far as possible the higher end of the parking standards under the HKPSG	Between 2018 and February 2021, TD requested the provision of more parking spaces, or followed up on such requests, in respect of 57 new developments involving over 10 300 ancillary parking spaces.
Revising the standards for provision of CV and PC parking spaces in the HKPSG	TD has substantially completed the review of the standards for parking facilities specified in the HKPSG, and consulted relevant stakeholders. The Government will promulgate the revised parking standards after giving duly considering the views gathered. The revised parking standards will increase the number of PC parking spaces in private and subsidised housing developments and the number of CV parking spaces in subsidised housing in future.
Taking forward APS pilot projects	TD is actively taking forward APS pilot projects. So far, TD has identified four sites, including an STT site at Hoi Shing Road in Tsuen Wan, a POS site at the junction of Yen Chow Street and Tung Chau Street in Sham Shui Po, and the proposed government building sites at Chung Kong Road in Sheung Wan and Sheung Mau Street in Chai Wan. In respect of the first pilot project in Tsuen Wan, the Lands Department awarded the tender for the STT site at Hoi Shing Road, Tsuen Wan in December 2020 with a view to commissioning the APS for public use in the fourth quarter of 2021. TD is currently studying the feasibility of providing APSs in other suitable sites, including an STT site at Pak Shek Kok.





PWP ITEM NO. 24TP - PUBLIC VEHICLE PARK AT AREA 99, TUNG CHUNG
PWP ITEM NO. 85TI - PUBLIC TRANSPORT INTERCHANGE AT TUNG CHUNG AREA 99

LOCATION PLAN