

Tung Chung New Town Extension Study
- Provision of Supplementary Information Requested by Members

Introduction

Among the items on the List of Follow-up Actions of the Panel on Development is a request of the Panel for the Government to provide the following additional information related to the development of the Tung Chung New Town Extension (TCNTE) -

Environmental issues

- (a) regarding the concerns about noise pollution in Tung Chung caused by the movement of aircrafts in the Hong Kong International Airport (HKIA), information about the present situation and projections at a 5-year interval until 2030, under the two different circumstances that the third runway of HKIA would be and would not be constructed:
 - (i) details of the Noise Exposure Forecast (NEF) 25 contour;
 - (ii) details of the NEF 20 contour; and
 - (iii) the number of aircraft movements at night that would generate noise exceeding 80 decibels (dB);

- (b) daily figures for a number of pollutants (including respirable suspended particulars and sulphur dioxide) detected in the air in Tung Chung during the period from 12:00 noon to 2:00 pm;

Capacity of MTR Tung Chung Line

- (c) whether the MTR Tung Chung Line could meet the transportation needs of the new population given a member's view that the spare capacity of the MTR Tung Chung Line was around 4,000 yet around 15,000 more people would use the train service during peak hours upon the completion of TCNTE in 2031;

Local employment problems

- (d) the measures to be taken by the Government to tackle the existing manpower mismatch in Lantau, reflected by the existence of a large number of job vacancies in HKIA and the Lantau Hospital on one hand

and the great demand for jobs from local residents of Tung Chung on the other; and

- (e) whether the Government would consider some members' suggestion of abolishing the tolls of Tsing Ma Bridge and the proposed Tuen Mun - Chek Lap Kok Link (TM-CLK Link) to vitalise economic development of Tung Chung.

2. The requested information provided is based on the contributions of the relevant policy bureaux and departments.

(a) Aircraft Noise

3. In the Technical Memorandum on Environmental Impact Assessment Process (TM), NEF contour (instead of spot noise level measured in dB) is adopted as the standard for assessing aircraft noise impact. The same standard is adopted in the Hong Kong Planning Standards and Guidelines (HKPSG) which require that no residential developments should be located within the NEF 25 contour and no office developments should be located within the NEF 30 contour. Under the statutory Environmental Impact Assessment (EIA) Study of the Three-Runway System (3RS) project carried out by the Airport Authority Hong Kong (AAHK), noise impact on Tung Chung caused by the movement of aircrafts in the HKIA was assessed. Accordingly, NEF 25 contours have been prepared in the 3RS EIA for Year 2011, 2021, 2030 and 2032 scenarios in accordance with the requirements stipulated in the TM and the EIA Study Brief under the EIA Ordinance.

4. Tung Chung is close to the HKIA and its development and possible extension are subject to noise arising from the operation of the HKIA, among other environmental and technical constraints. Based on the 3RS EIA findings, the predicted NEF 25 contours of the 3RS would be at a distance away from TCNTE upon the full commissioning of the 3RS currently planned for 2023. AAHK has proposed a number of mitigation measures in the EIA report to address the various environmental issues including aircraft noise. On the other hand, without implementation of the 3RS project of the HKIA, part of the proposed Tung Chung East reclamation on the seaward side would fall within the NEF 25 contour based on the current operation of HKIA, and the planning of Tung Chung East reclamation under the Tung Chung New Town Extension

Study (Tung Chung Study) which envisages a mix of residential and commercial development would need to be reviewed.

5. AAHK has undertaken to submit an Aircraft Noise Monitoring Plan to the Director of Environmental Protection (DEP) for approval before the 3RS commences operation. The said Plan will include monitoring of aircraft noise at representative locations, including Tung Chung. Upon full commissioning of the 3RS, AAHK will collect and review the operation data annually and update the NEF 25 contour if there are major deviations from the assumptions adopted in the EIA report.

6. The 3RS EIA report was approved by DEP on 7 November 2014 and is available in the office and website of the Environmental Protection Department (EPD) for public information (http://www.epd.gov.hk/eia/english/alpha/aspd_651.html).

(b) Air Quality in Tung Chung

7. The air quality monitoring data of 2013 recorded by EPD for Tung Chung are presented below and compared with those of three other new towns, namely Yuen Long, Shatin and Tai Po, and the Air Quality Objectives (AQOs) promulgated by EPD. Data for Tuen Mun is not available as the monitoring station only started operation in 2014. Data for Tap Mun, which is a rural area, is also included as reference to indicate the general background air quality in Hong Kong.

Table 1 2013 Air Quality Monitoring Data

Air Pollutant	Parameter	Tung Chung	Yuen Long	Shatin	Tai Po	Tap Mun (Reference only)	AQOs ^[1]	
							Conc. Limit (µg/m ³)	Number of Exceedances Allowed
NO ₂	Max. 1-hour Conc. (µg/m ³)	210	230	259	186	109	200	18
	No. of Exceedance	2	7	4	0	0		
	19 th highest 1-hour Conc. (µg/m ³)	177	183	180	159	79		
	Annual Conc. (µg/m ³)	<u>49</u>	<u>54</u>	<u>47</u>	<u>53</u>	11	40	Not applicable

Air Pollutant	Parameter	Tung Chung	Yuen Long	Shatin	Tai Po	Tap Mun (Reference only)	AQOs ^[1]	
							Conc. Limit ($\mu\text{g}/\text{m}^3$)	Number of Exceedances Allowed
RSP	Max. 24-hour Conc. ($\mu\text{g}/\text{m}^3$)	133	184	144	145	175	100	9
	No. of Exceedance	<u>16</u>	<u>47</u>	<u>14</u>	<u>11</u>	<u>28</u>		
	10 th highest 24-hour Conc. ($\mu\text{g}/\text{m}^3$)	<u>108</u>	<u>142</u>	<u>107</u>	<u>102</u>	<u>119</u>		
	Annual Conc. ($\mu\text{g}/\text{m}^3$)	42	<u>56</u>	42	43	49	50	Not applicable
FSP	Max. 24-hour Conc. ($\mu\text{g}/\text{m}^3$)	93	140	118	112	127	75	9
	No. of Exceedance	<u>10</u>	<u>33</u>	<u>15</u>	<u>12</u>	<u>13</u>		
	10 th highest 24-hour Conc. ($\mu\text{g}/\text{m}^3$)	<u>76</u>	<u>106</u>	<u>85</u>	<u>80</u>	<u>84</u>		
	Annual Conc. ($\mu\text{g}/\text{m}^3$)	26	<u>37</u>	29	30	30	35	Not applicable
O ₃	Max. 8-hour Conc. ($\mu\text{g}/\text{m}^3$)	234	183	244	191	246	160	9
	No. of Exceedance	<u>15</u>	<u>11</u>	<u>12</u>	6	<u>20</u>		
	10 th highest 8-hour Conc. ($\mu\text{g}/\text{m}^3$)	<u>171</u>	<u>163</u>	<u>167</u>	156	<u>180</u>		
SO ₂ ^[2]	Max. 24-hour Conc. ($\mu\text{g}/\text{m}^3$)	54	53	45	36	51	125	3
	No. of Exceedance	0	0	0	0	0		
	4 th highest 24-hour Conc. ($\mu\text{g}/\text{m}^3$)	39	33	33	24	29		
CO	Max. 1-hour Conc. ($\mu\text{g}/\text{m}^3$)	1810	2690	No data	No data	1530	30,000	0
	Max. 8-hour Conc. ($\mu\text{g}/\text{m}^3$)	1640	1950	No data	No data	1441	10,000	0

Note:

[1] Values underlined are non-compliant with the relevant AQOs. According to Hong Kong's AQOs, the following number of exceedance against the respective concentration limits are allowed:

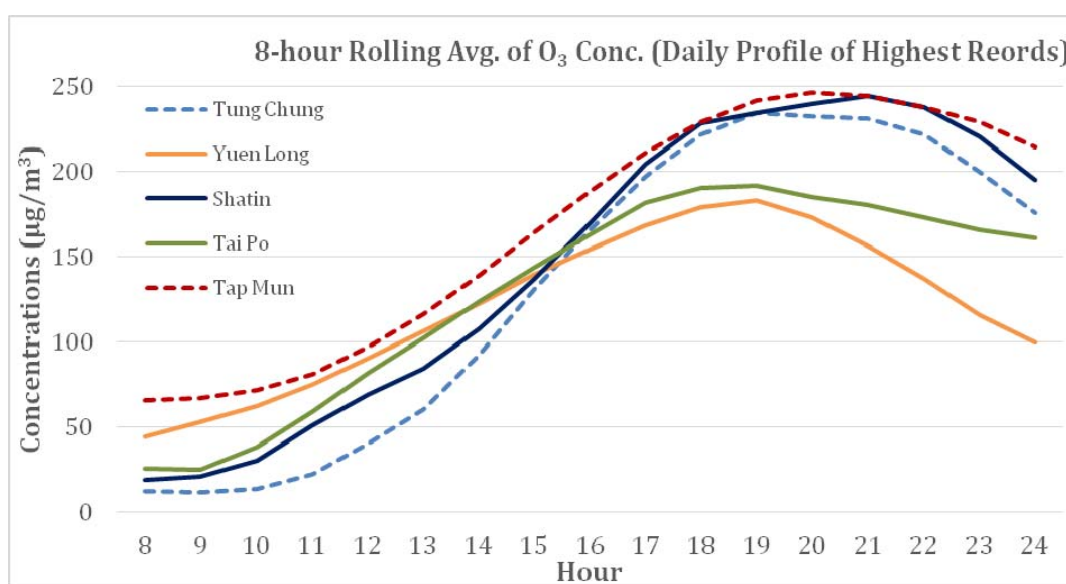
- 1-hour NO₂ : 18 times a year
- 24-hour RSP / 24-hour FSP / 8-hour O₃ : 9 times a year
- 24-hour SO₂ : 3 times a year

[2] Monitoring data of 10-minute SO₂ is not available.

8. As shown in **Table 1**, pollutant concentrations recorded in Tung Chung are generally comparable and not the highest among the four new towns except sulphur dioxide (SO₂) and ozone (O₃). For SO₂, while the recorded monitoring data are highest among the new towns, they are far below the corresponding AQO. As for O₃, it should be noted that ozone is a major constituent of photochemical smog. It is not a pollutant directly emitted from man-made sources but formed by photochemical reactions of primary pollutants such as nitrogen oxides (NO_x) and volatile organic compounds (VOC) under sunlight. As it takes several hours for these photochemical reactions to take place, O₃ recorded in one place could be attributed to VOC and NO_x emission from places afar. In other words, O₃ is a regional air pollutant problem. The fact that the recorded data for Tung Chung are similar to those recorded in Tap Mun (a rural area) could illustrate this point.

9. The daily profiles of highest 8-hour rolling O₃ concentration and 1-hour NO₂ concentrations recorded at all the stations have been compared and presented in the following diagrams:

Figure 1 8-hour Rolling Average of Ozone Concentration



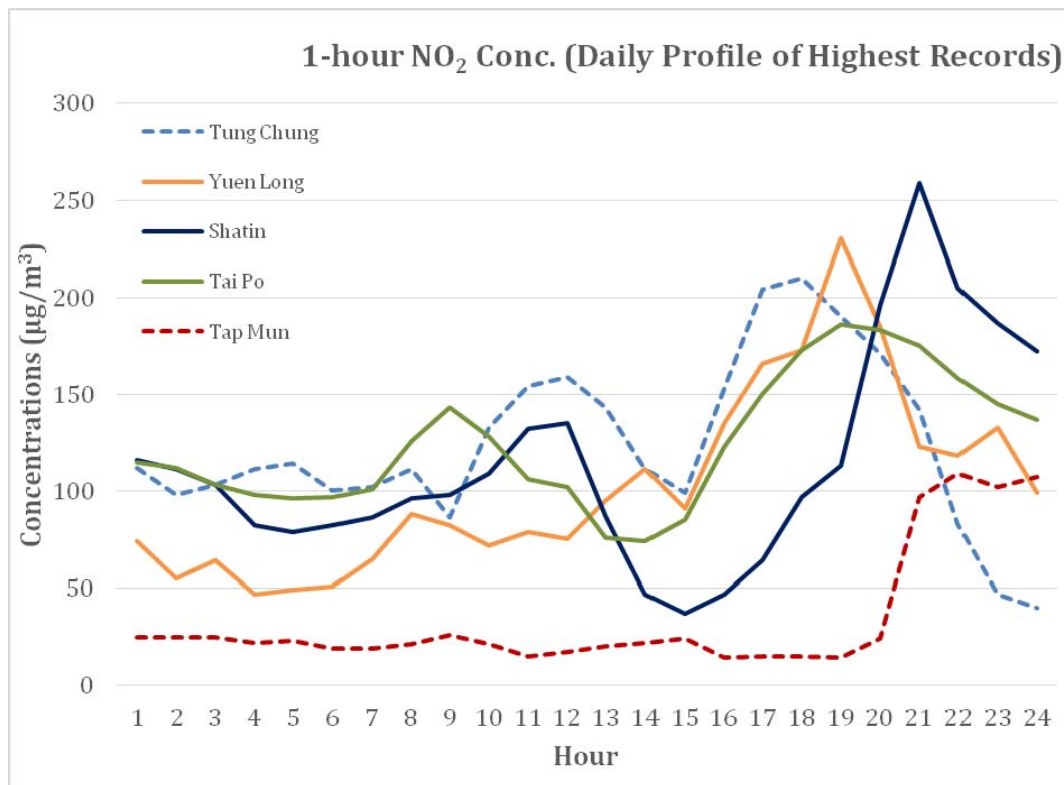
Note:

Highest 8-hour O₃ concentration in Tung Chung (234µg/m³) was recorded on 21.8.2013.

Highest 8-hour O₃ concentration in Yuen Long (183µg/m³) was recorded on 20.10.2013.

Highest 8-hour O₃ concentrations in Shatin (244 µg/m³), Tai Po (191µg/m³) and Tap Mun (246µg/m³) were recorded on 15.4.2013.

Figure 2 1-hour Nitrogen Dioxide Concentration

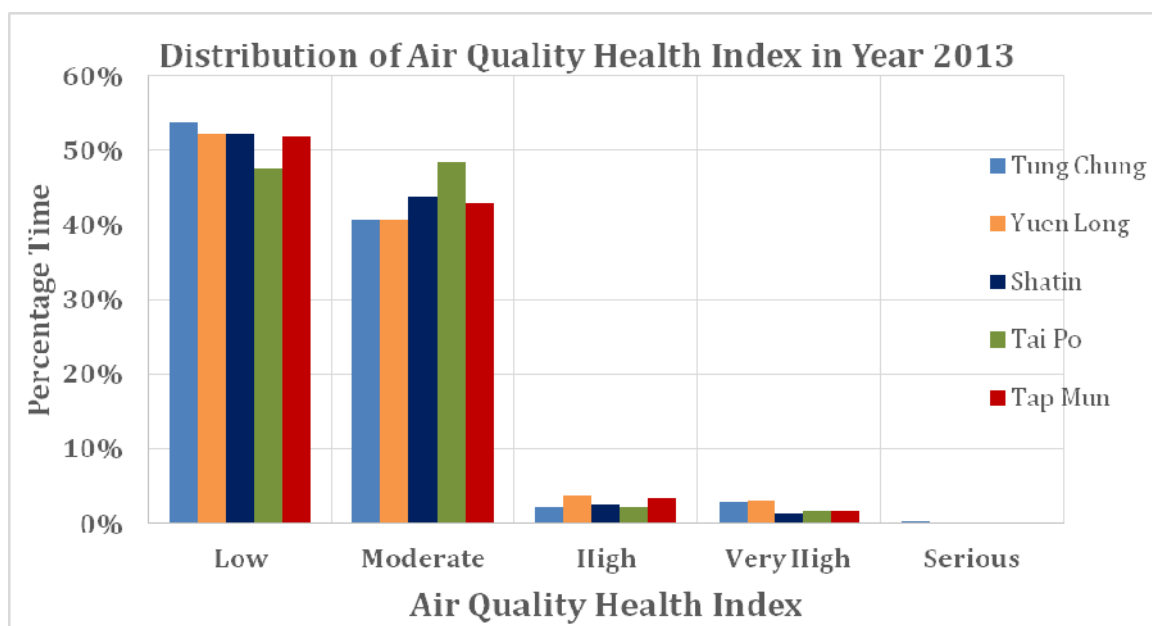


Note:

Highest 1-hour NO₂ concentrations in Tung Chung (210µg/m³), Yuen Long (230µg/m³), Shatin (259µg/m³), Tai Po (186µg/m³) and Tap Mun (109µg/m³) were recorded on 9.12.2013, 22.1.2013, 14.4.2013, 8.3.2013 and 7.1.2013 respectively.

10. The Air Quality Health Index (AQHI) established by EPD serves as a health concern reference. It is calculated based on the cumulative health risk attributable to the 3-hour moving average concentrations of four air pollutants, namely O₃, NO₂, SO₂ and particulate matter (RSP/FSP). A summary of AQHIs in the four new towns and Tap Mun is presented in the diagram below. It can be seen that, AQHIs in Tung Chung are comparable to those in other new towns as well as Tap Mun.

Figure 3 Distribution of Air Quality Health Index in 2013



Note:

When the health risk category is at the Low and Moderate levels, people can continue to enjoy their usual activities. When the category reaches High, children, the elderly and people with heart or respiratory illnesses should reduce outdoor physical exertion. When the category reaches Very High or Serious, the general public should also reduce or avoid outdoor physical exertion.

11. The Government is closely monitoring the air pollution issues throughout Hong Kong including Tung Chung, and has formulated air pollution control strategies to tackle the matters over the territory. A series of measures have been implemented for various emission controls. In addition to reducing emissions from local sources, the Government has been joining hands with Guangdong Province to improve air quality of the Pearl River Delta region.

12. Taking into account the gaseous emissions arising from the concurrent projects in the vicinity, the preliminary air quality assessment for TCNTE reveals that the predicted cumulative air quality impacts on all air sensitive receivers comply with the prevailing AQOs during the operational phase and no adverse impacts are anticipated.

(c) Capacity of MTR Tung Chung Line

Design Capacity

13. All train compartments of the existing MTR railway lines are designed based on the industry standard design adopted at the time of the construction of railway lines and the maximum carrying capacity of train compartments is calculated based on accommodating up to 6 persons (standing) per square metre

(ppsm) on average. The number of train compartments a train comprises and train frequency are determined at the design stage to meet projected passenger demand. Platform length is designed and constructed accordingly to ensure compatible use of the trains. As to the frequency of train services, it is regulated by the signalling system which governs the distance between operating trains to ensure safety, while maximising efficiency. Increased frequency is made possible through provision of additional trains. Train frequency reaches its maximum level when the signalling system permits no more additional train trips. The carrying capacity permitted by this maximum train frequency level is the Design Capacity of a railway line.

14. Specifically, Design Capacity of a railway line refers to the maximum number of passengers that can be carried per hour per direction when all the space within the train compartments is taken up by passengers based on a 6 ppsm passenger density level (and all seats are taken up) and train frequencies are maintained at the maximum level that its signalling system permits. Accordingly, a train is considered full to Design Capacity when each square metre of standing space of all train compartments of a train carries 6 passengers (and all seats are taken up) and train frequencies are operated at the maximum level. All components of the existing MTR network are designed to be able to underpin this Design Capacity, while remaining safe. This covers, for example, the design of railway station structures, platform size, passageways and escalator throughput. In other words, the rail services are operating safely even when running at 6 ppsm passenger density¹. If passenger demand exceeds the Design Capacity, longer queues on platform are expected and more passengers may then need to wait for more than one train before they can board a train. Crowd management measures will be taken to maintain order at the platform and concourse.

Carrying capacity in current operating environment

15. In actual railway operation, several key factors impose limitation on the Design Capacity, making the actual carrying capacity less than Design Capacity.

16. It is not uncommon that train doors may need to be reopened and reclosed due to passengers requiring assistance or objects being caught between

¹ We note that the Design Capacity of railway systems around the world varies, mostly ranging from 4 to 6 ppsm. Yet, very often, these benchmarks cannot be met in practice. For example, metros in Japan have a desirable standard of 3.3 ppsm but currently are achieving an average of 5 ppsm.

doors. Each reopening and reclosing of doors extends the train's dwell time at platform by about 10 seconds. During peak periods on busy lines like Tsuen Wan Line, where train frequency is 2 minutes, every 12 reopening and reclosing of doors within a one-hour period may in effect result in the reduction of one train trip, or reduce the carrying capacity by some 2,500 passengers.

17. It has been observed that over the years, passenger riding habits have changed. Nowadays, they are less willing to board a train that looks crowded even when there is still room available. They prefer waiting for the next train. Besides, there is an increasing number of passengers reading newspapers or using mobile devices such as tablet computers or smart phones during their trips that require more personal space on trains. This in effect reduces the carrying capacity of the train and the rail line as a whole. In actual operation, trains running during the busiest hours on the busiest corridors achieve a passenger density of only around 4 ppsm, and no longer the 6 ppsm in the 1980s and 1990s.

Current Situation

18. According to November 2013 statistics as stated in the LegCo Subcommittee on Matters Relating to Railways Paper No. CB(1)980/13-14(03), the patronage of Tung Chung Line was about 22,400 passengers per hour per direction (pphpd) during the morning peak at the most critical link, i.e. Olympic to Kowloon.

19. The current carrying capacity of the Tung Chung Line during the morning peak is 37,500 pphpd under 6 ppsm or 26,700 pphpd under 4 ppsm, while the maximum carrying capacity is 45,000 pphpd under 6 ppsm or 32,000 pphpd under 4 ppsm as and when the train frequency is maximised with existing infrastructure (see **Table 2**).

Table 2 Tung Chung Line – Existing Carrying Capacity and Maximum Carrying Capacity with Existing Infrastructure

Scenario	Passenger Density Level of 6 ppsm		Passenger Density Level of 4 ppsm		Provisions
	Tsing Yi to Hong Kong	Tung Chung to Tsing Yi	Tsing Yi to Hong Kong	Tung Chung to Tsing Yi	
Existing carrying capacity (pphpd)	37,500	25,000	26,700	17,800	15 trains per hour, of which 10 trains depart from Tung Chung
Maximum carrying capacity with existing infrastructure (pphpd)	45,000	30,000	32,000	21,400	Procurement of additional trains to increase frequency to 18 trains per hour, of which 12 trains depart from Tung Chung

20. Based on November 2013 statistics, the loading along the critical link (Olympic to Kowloon) of Tung Chung Line was 60% under 6 ppsm (i.e. 22,400/37,500) or 84% under 4 ppsm (i.e. 22,400/26,700), while the loading of Sunny Bay to Tsing Yi was 23% under 6 ppsm (i.e. 5,800/25,000) or 33% under 4 ppsm (i.e. 5,800/17,800). The existing loadings of Tung Chung Line are shown in **Table 3**.

Table 3 Loading of the Tung Chung Line in 2013

Existing Population of Tung Chung New Town = about 80,000

Tung Chung Line	Passenger Density Level of 6 ppsm		Passenger Density Level of 4 ppsm	
	Olympic to Kowloon	Sunny Bay to Tsing Yi	Olympic to Kowloon	Sunny Bay to Tsing Yi
Peak Patronage in November 2013 (pphpd) (a)	22,400	5,800	22,400	5,800
Existing Carrying Capacity (pphpd) (b)	37,500	25,000	26,700	17,800
Loading [(a)/(b)]	60%	23%	84%	33%

Situation upon Full Development of TCNTE

21. The Railway Development Strategy 2014 (RDS-2014) announced in September 2014 supported that the Tung Chung West Extension be implemented to tie in with the extension of the Tung Chung New Town and suggested an indicative implementation window² from 2020 to 2024. Subject to the development direction of the Tung Chung New Town and further feasibility study, a Tung Chung East Station may be added to serve the Tung Chung East area if the implementation of the proposed development is confirmed at a later stage. In this regard, the Tung Chung Study has established the technical feasibility of the Tung Chung East Station.

22. An additional 144,000 population is proposed for TCNTE while the existing Tung Chung New Town could accommodate a planned population of 44,000 on top of the existing population of about 80,000. The total population of Tung Chung New Town after completion of its extension in long term is expected to be about 268,000. According to the employment data and mode of transport analysis including other road-based public transport services, the

² Implementation window refers to the time window when construction is likely to take place and reach completion.

preliminary assessment of Tung Chung Study estimates that the peak patronages of Tung Chung Line would reach 19,500 pphpd (Sunny Bay to Tsing Yi) and 41,700 pphpd (Kowloon to Hong Kong³). Assuming no new infrastructure for the Tung Chung Line can be available in 2036, the maximum carrying capacity of Tung Chung Line along Kowloon to Hong Kong is 45,000 pphpd under 6 ppsm or 32,000 pphpd under 4 ppsm, while the maximum capacity along Sunny Bay to Tsing Yi is 30,000 pphpd under 6 ppsm or 21,400 under 4 ppsm. As a result, the loading of the new critical link (Kowloon to Hong Kong) will be 93% under 6 ppsm or 130% under 4 ppsm. The loading of Sunny Bay to Tsing Yi will be 65% under 6 ppsm or 91% under 4 ppsm.

23. To meet the increase in railway transport demand, the maximum carrying capacity of Tung Chung Line can be enhanced by construction of an overrun tunnel (i.e. the new infrastructure) in future, and upgrading of signalling system of Tung Chung Line by 2026. Upon completion of these two modification works, the maximum carrying capacity along Kowloon to Hong Kong will be increased to 66,000 pphpd under 6 ppsm or 47,000 pphpd under 4 ppsm while that of Sunny Bay to Tsing Yi will be increased to 44,000 pphpd under 6 ppsm or 31,300 pphpd under 4 ppsm. As a result, the loading of Kowloon to Hong Kong will be 63% under 6 ppsm or 89% under 4 ppsm, while the loading of Sunny Bay to Tsing Yi will be 44% under 6 ppsm or 62% under 4 ppsm. The future loadings of Tung Chung Line are estimated in **Table 4**.

³ According to November 2013 statistics, the peak patronage during the morning peak at the section of Olympic to Kowloon was 22,400 pphpd and that at the section of Kowloon to Hong Kong was slightly lower at 22,200 pphpd. Hence, we presented the figures of Olympic to Kowloon in **Table 3**. On the other hand, the assessment results show that in 2036 the estimated peak patronage at the section of Kowloon to Hong Kong at the morning peak would be slightly higher than the estimated peak patronage at the section of Olympic to Kowloon, and therefore we presented the figures of Kowloon to Hong Kong in **Table 4**.

Table 4 Loading of the Tung Chung Line in 2036

Population of Tung Chung New Town upon completion of extension = about 268,000⁴

Tung Chung Line	Passenger Density Level of 6 ppsm		Passenger Density Level of 4 ppsm	
	Kowloon to Hong Kong	Sunny Bay to Tsing Yi	Kowloon to Hong Kong	Sunny Bay to Tsing Yi
Estimated Peak Patronage (pphd) (a)	41,700	19,500	41,700	19,500
Maximum carrying capacity with existing infrastructure (pphd) (b)	45,000	30,000	32,000	21,400
Estimated loading [(a)/(b)]	93%	65%	130%	91%
Maximum carrying capacity (with modification of existing infrastructure) (pphd) (c)	66,000	44,000	47,000	31,300
Estimated loading [(a)/(c)]	63%	44%	89%	62%

⁴ Sum of existing population of about 80,000 and planned population of about 44,000 in the existing Tung Chung New Town plus new population of 144,000 brought by the future new town extension.

24. It is estimated that the TCNTE and other developments in the area would induce an increase of 13,700 pphpd in the morning peak patronage of Tung Chung Line going from Sunny Bay to Tsing Yi in 2036. Apart from the new town extension, there are several other developments being constructed or planned in North Lantau, including the proposed topside development at the Hong Kong Boundary Crossing Facilities (HKBCF) Island of Hong Kong-Zhuhai-Macau Bridge (HZMB), North Commercial District (NCD) on the airport island, Sunny Bay development, etc. The plenty and diversified job opportunities created by the above developments would enable Tung Chung to become a desirable town for living and working. Traffic loading would be relieved as and when more Tung Chung residents work within the district.

25. We will continue to keep close liaison with relevant parties (including the Transport Department and MTRCL) in respect to the capacity and service level of Tung Chung Line when TCNTE is implemented by phases.

(d) Local Employment Problems

26. During the course of the Tung Chung Study, an analysis on the existing population profile and economic characteristics in Tung Chung has been undertaken.

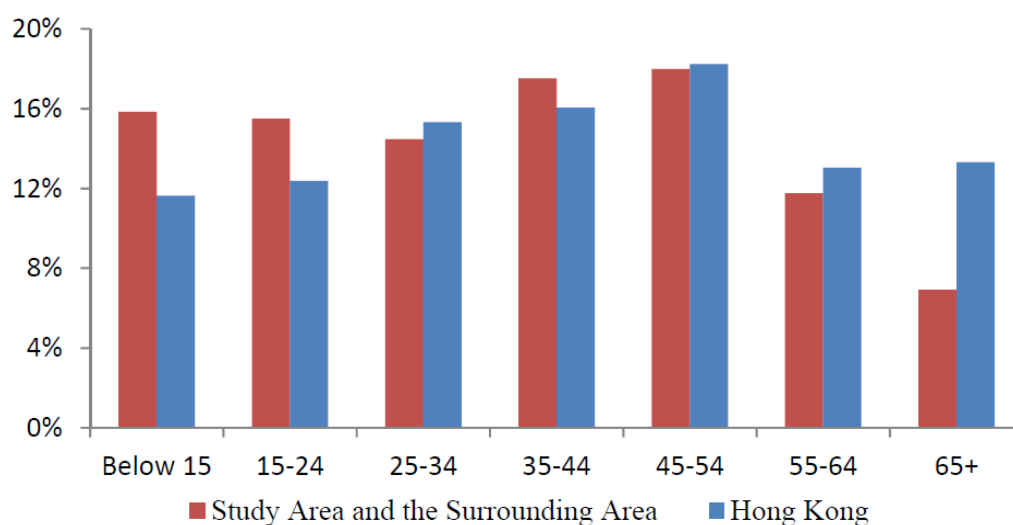
Overview of the Existing Population in Tung Chung

27. According to the 2011 Population Census, the population in Tung Chung and the surrounding area is about 78,000. The existing population of Tung Chung falls mainly within Phases 1 and 2 of the new town development. Reclamation for Phase 3A was completed and developments are on-going. It is anticipated that the population in the existing Tung Chung New Town will increase to about 124,000 when all the planned developments of these three phases are fully implemented/completed. The remaining planned developments include the residential sites in Tung Chung Areas 27, 39, 54, 55 and 56.

28. As shown in **Figure 4**, the population in Tung Chung is relatively young when compared with the figure of Hong Kong in general. The population in the age groups from 15 to 64, which contribute most to the working force, account for 77.23% of the Tung Chung population, while that for Hong Kong is 75.1%. Appropriate educational facilities have been planned and provided in

Tung Chung New Town in accordance with HKPSG. At present, there are 14 kindergartens, 7 primary schools and 7 secondary schools in Tung Chung. No post-secondary or tertiary institution is located in the new town. As shown in **Table 5** for data in 2011, about 26% of the population in Tung Chung have attained post-secondary education and 49% have attained secondary/sixth form. Compared with the average in Hong Kong, which are 27% and 50% respectively, the education attainment of Tung Chung residents is not considered far below the average.

Figure 4 Age Profile of Tung Chung in 2011



Source: Census and Statistics Department, 2011 Population Census

Table 5 Educational Attainment of Population in Tung Chung

Educational Attainment	Tung Chung	Hong Kong
No schooling / Pre-primary	9%	6%
Primary	18%	17%
Secondary / Sixth Form	49%	50%
Post-secondary-Non degree course	9%	9%
Post-secondary-Degree course	17%	18%

Source: Census and Statistics Department, 2011 Population Census

29. In 2011, about 56.97% of the households in Tung Chung were in public rental housing while 7.71% were in subsidised home ownership housing⁵. Only 32.79% of the households were in private housing⁵. Residents living in Yat Tung Estate (about 41,000 people⁵) accounted for the majority population in

⁵ Census and Statistics Department : 2011 Population Census

Tung Chung.

30. About 49.41%⁵ (38,787) of the people living in Tung Chung were working population and the working profile of these working population was shown in **Table 6**. Compared with the average Hong Kong figure, which has a working population of 59.7%⁵, there was an obviously lower percentage of working population in Tung Chung. In addition, only about 9.4%⁵ of the workers (3,657) in Tung Chung worked in the same district, whereas that for whole Hong Kong is 17.6%⁵.

Table 6 Type of Occupation of the Existing Working Population in Tung Chung

Occupation	Working Population	Percentage
Managers and administrators	3,778	9.8%
Professionals	2,473	6.5%
Associate professionals	7,194	18.5%
Clerical support workers	5,341	13.8%
Service and sales workers	8,089	20.9%
Craft and related workers	2,789	7.3%
Plant and machine operators and assemblers	1,657	4.0%
Elementary occupations	7,466	19.2%
Skilled agricultural and fishery workers; and Occupations not classifiable	-	0%
Total Working Population	38,787	100%

Source: Census and Statistics Department, 2011 Population Census

31. The median monthly domestic household income in Tung Chung was about \$22,000⁵ in 2011. This was higher than the overall median of Hong Kong which was \$20,500⁵. However, there was a significant difference in household income in different parts of Tung Chung. As shown in **Table 7**, the median monthly domestic household income of Tung Chung North (\$45,330), where most of the private residential developments were located, was more than double of that of Yat Tung Estate North and South. The number of households receiving the Comprehensive Social Security Assistance (CSSA) Scheme in Yat Tung Estate was 14.6%, whereas the average in public rental housings in Hong Kong was 18.3%⁶.

⁶ As at September 2014. Information provided by the Housing Department.

Table 7 Median Monthly Domestic Household Income in Tung Chung in 2011 (\$)

	Yat Tung Estate North	Yat Tung Estate South	Tung Chung South	Tung Chung North	Hong Kong Average
Monthly Income	12,300	18,650	26,600	45,330	20,500

Source: Census and Statistics Department, 2011 Population Census

32. As noted in the public comments received in various stages of the Public Engagement of the Tung Chung Study, there is a manpower mismatch in Tung Chung as there is a relatively high unemployment rate, whereas it is also difficult for employers in the area to employ adequate workers.

Working Opportunities in Tung Chung and the Surrounding Areas

33. In terms of working opportunities, according to the Quarterly Survey of Employment and Vacancies (2013) of the Census and Statistics Department, there were at present 10,630 jobs provided within Tung Chung New Town, in which about 29% were engaged in transportation, storage, postal and courier services, 24% in education, 17% in accommodation and food services, and 16% in import/export, wholesale and retail trades.

34. The surrounding areas near Tung Chung are also providing plenty number of job opportunities. In HKIA, according to the Quarterly Survey of Employment and Vacancies (2013) of the Census and Statistics Department, there are about 52,000 jobs provided within the airport, which 63% are engaged in transportation, storage, postal and courier services and 18% in manufacturing type of jobs. These 52,000 jobs refer to actual number of employees working in HKIA. According to AAHK's latest information, there are at present about 65,000 jobs available in HKIA, with about 12% labour-intensive jobs, 65% technical jobs (which require technical training), 14% professional jobs and 9% managerial jobs⁷. According to information from the Labour and Welfare Bureau (LWB) in 2014, there is a large number of vacancies (4,000 jobs to 5,000 jobs) available in HKIA. These job vacancies include retail, services and aircraft maintenance jobs.

⁷ Information provided by AAHK.

35. According to AAHK, with the development of the 3RS in HKIA, 97,000 jobs will be created in the construction phase, whereas 141,000 direct and 199,000 indirect/induced jobs will be created in 2030. It is expected that a majority of the jobs (about 50%) will be labour-intensive jobs, 40% will be technical jobs and 10% professional and managerial jobs⁷. In addition, NCD and the topside development of the HZMB HKBCF Island under planning will also generate a considerable amount of job opportunities.

36. According to the Quarterly Survey of Employment and Vacancies (2013), there are at present 4,170 employees working in the Hong Kong Disneyland (HKDL) and its hotels. Among the jobs, 70% are engaged in arts, entertainment and creation, while 28.5% are in accommodation and food services⁸. According to the HKDL's annual report 2013, they are currently employing a total of 4,800 full time and 2,600 part time staff, and it is expected that the number of employees will further increase with the opening of a new theme area in 2016 and a new 750-room hotel by early 2017.

Working Opportunities in TCNTE

37. In the draft Recommended Outline Development Plan (RODP) formulated under the Tung Chung Study, we have taken into account the existing and planned commercial developments in the areas surrounding Tung Chung, in particular along North Lantau and at HKIA, in proposing the nature and amount of commercial developments in the new town extension. With the understanding that NCD and the HZMB HKBCF Island will likely steer towards retail and hotel developments, we propose to focus the commercial developments in the new town extension area on the provision of a regional office node. It is proposed that 500,000m² office gross floor area (GFA) will be provided in and around the Metro Core Area in Tung Chung East to capitalise on its strategic location. Flexibility is allowed for the establishment of various types of business in the office node including offices related to industrial uses such as offices for research and development, offices for logistics companies, IT and telecommunications industries, convention and exhibition services and training centres which may include those for training programmes in connection with the operation of the airport in the regional office node at the implementation stage and subject to market demand. In addition, 155,000m² GFA for regional retail, 147,000m² for local retail, and 50,000m² for hotel will

⁸ Legislative Council Panel on Manpower Paper on Manpower Projection to 2022 submitted by LWB on 20 May 2014.

be provided. It is expected that about 40,000 jobs will be created from these commercial developments. According to the Number of Employed Persons by Industry and Occupation data (3rd Quarter 2014) from the Census and Statistics Department, for retail, accommodation and food services, about 63.8% of the jobs would be service and sales workers and 10.9% would be elementary occupations, whereas for import/export trade and wholesale, about 32.2% would be clerical support workers and 5.9% would be elementary occupations. Even for financing, insurance, real estate, professional and business services which require professional knowledge, about 17.5% of the jobs would be clerical workers and 24.7% would be elementary occupations.

38. According to the projected manpower requirement in 2022 of LWB, clerical support workers and elementary occupations each account for 13.2% of manpower requirement, while service and sales workers account for 18.6%⁹ (i.e. a total of 45%).

39. From a rough estimates of the 40,000 jobs provided in the TCNTE area, about 45% of the jobs (18,000 jobs) would be for clerical workers, elementary occupations and service sales workers which require no or relatively low skills. Together with the jobs to be provided in the surrounding areas, in particular the HKIA when the 3RS is in place, ample jobs of different sectors would be provided in the area to meet demand from the existing and future population in Tung Chung.

Travelling Cost

40. The public expressed in the Public Engagement of the Tung Chung Study that the transport service for public housing estates particularly for Yat Tung Estate was inadequate and the high travelling cost has discouraged workers to participate in the job market in other districts as well as the areas in North Lantau such as HKIA and HKDL. In this respect, the Transport Department and relevant authorities will from time to time review the situation, and introduce adjustments when necessary.

41. In planning the new town extension, two new railway stations, one at the Tung Chung East and the other at Tung Chung West located in close proximity to the Yat Tung Estate, are proposed to enhance the connectivity by railway service. Comprehensive local road networks, footpaths, cycle track networks are planned to enhance internal connectivity. Public transport interchanges will

be provided near the railway stations and housing estates to facilitate convenient transfer of various transport modes and enhancement of internal circulation.

Provision of Post-Secondary Education Institution

42. In response to the public comments received in the Public Engagement of the Tung Chung Study, as agreed with the Education Bureau, a site of 2.5 ha has been reserved in the draft RODP for post-secondary education institution in Tung Chung East. This can be developed into a technical training institute to provide courses/vocational training for secondary school graduates/youths in Tung Chung to equip them with the necessary skills relating to the future development in Tung Chung as well as the North Lantau area. These skills may include hotel and catering-related services and aviation-related technical training which would be needed in major commercial developments in the area.

(e) Tolls of Tsing Ma Bridge and TM-CLK Link

43. The proposal to abolish the toll for the Lantau Link and exempt the toll for the future TM-CLK Link was discussed at the meeting of Traffic and Transport Sub-committee of the Lantau Development Advisory Committee on 8 January 2015.

44. If the toll for the Lantau Link was abolished and that for the future TM-CLK Link was exempted, the Government would be unable to recover the full costs of providing, operating and maintaining these two major infrastructures, including the capital costs invested, in accordance with the “user-pays” principle. In other words, these would have to be paid by the public purse. Also, the benefit that may be brought by the proposal, e.g. the extent to which the traffic flow would be enhanced, is doubtful. Hence, the Transport and Housing Bureau does not recommend pursuing the proposal further. When reviewing the toll rates for the Lantau Link and setting those for the TM-CLK Link in future, the Government will consider and strike a balance among various factors like the impacts of the tolls on traffic flow and the economy as well as the public affordability and acceptability.

**Development Bureau
Planning Department
Civil Engineering and Development Department
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