

## 7 Construction Dust Impact Assessment

### 7.1 Introduction

This chapter presents the findings of the assessment of construction dust implications arising from the SCL (TAW-HUH) during the construction phase. All above-ground works areas with potential dust emission activities have been examined. With the implementation of on-site watering, potential environmental impacts associated with construction dust would be controlled to acceptable levels.

### 7.2 Legislation and Standards

For the criteria as regards air quality impact assessment, reference shall be made to the Hong Kong Planning Standards and Guidelines (HKPSG), the Air Pollution Control Ordinance (APCO) (Cap.311), and Annex 4 of the Technical Memorandum on Environmental Impact Assessment Process (TM-EIAO).

The APCO (Cap.311) provides the power for controlling air pollutants from a variety of stationary and mobile sources and encompasses a number of Air Quality Objectives (AQOs). In addition to the APCO, the following overall policy objectives are laid down in Chapter 9 of the Hong Kong Planning Standards and Guidelines (HKPSG) as follows:

- a) Limit the contamination of the air in Hong Kong, through land use planning and through the enforcement of the APCO, to safeguard the health and well-being of the community; and
- b) Ensure that the AQO for 7 common air pollutants are met as soon as possible.

Currently, the AQOs stipulate limits on concentrations for 7 pollutants including sulphur dioxide (SO<sub>2</sub>), Total Suspended Particulates (TSP), Respirable Suspended Particulates (RSP), Nitrogen Dioxide (NO<sub>2</sub>), Carbon Monoxide (CO), photochemical oxidants, and Lead (Pb). The AQOs are listed in the table below.

**Table 7.1:** Hong Kong Air Quality Objectives (HKAQO)

Pollutant	Limits on Concentration, ug/m <sup>3</sup> [1] (ppm in brackets)				
	1-hr [2]	8-hr [3]	24-hr [3]	3-Month [4]	Annual [4]
Sulphur Dioxide	800 (0.3)		350 (0.13)		80 (0.03)
Total Suspended Particulates	500 [7]		260		80
Respirable Suspended Particulates [5]			180		55
Carbon Monoxide	30,000 (26.2)	10,000 (8.7)			
Nitrogen Dioxide	300 (0.16)		150 (0.08)		80 (0.04)
Photochemical Oxidants (as ozone) [6]	240				
Lead				1.5	

Notes:

[1] Measured at 298K and 101.325 kPa.

[2] Not to be exceeded more than three times per year.

[3] Not to be exceeded more than once per year.

[4] Arithmetic mean.

[5] Respirable suspended particulates means suspended particulates in air with a nominal aerodynamic diameter of 10 micrometres or smaller.

[6] Photochemical oxidants are determined by measurement of ozone only.

[7] Not an AQO but is a criterion for evaluating air quality impacts as stated in Annex 4 of TM-EIAO.

The key air emission source from SCL (TAW-HUH) is the dust generated during construction phase at above-ground works areas. In this regard, air pollutant of concern would only include total suspended particulates (TSP) which has been assessed in this

study. The dust emissions generated during grouting, bored tunnelling and drill-and-blast activities would be insignificant.

### 7.3 Ambient Air Quality Condition and Previous Monitoring Levels

Existing Air Sensitive Receivers (ASRs) in the vicinity of the project include various residential developments, educational institution etc (see **Section 7.4**). Key existing air pollution sources that may bear upon the air quality along SCL alignment at construction phase including work sites demarcated for construction and railway works, barging facilities and haul roads located nearby. Details of air pollution emission sources are discussed in **Section 7.6**.

Historical air quality monitoring data from the monitoring stations, namely the Tsuen Wan, Kwai Chung, Sham Shui Po, Kwun Tong, Central/Western and Sha Tin Monitoring stations operated by EPD, have been examined. The latest air quality monitoring data from 2006 to 2010 at these monitoring stations are tabulated in the table below. In order to determine the meaningful background air quality, the latest 5-year annual average would be adopted.

**Table 7.2:** TSP Monitoring Data in 2006-2010

Monitoring Station	Annual TSP Concentration (ug/m <sup>3</sup> )					5-year Average
	2006	2007	2008	2009	2010	
<b>Tai Wai Area</b>						
Sha Tin	61	73	66	60	67	65.4 (82%)
<b>Kowloon Area</b>						
Tsuen Wan	<b>82</b>	79	67	63	63	70.8 (89%)
Kwai Chung	<b>81</b>	<b>85</b>	79	70	71	77.2 (96%)
Sham Shui Po	79	79	<b>81</b>	77	76	78.4 (97%)
Kwun Tong	75	<b>82</b>	72	70	67	73.2 (92%)
Central/Western	78	77	78	73	76	76.4 (96%)
Average:						75.2 (94%)

Note:

% of AQO is provided in the bracket.

Monitoring results exceeded AQO are shown as bolded characters.

According to latest available monitoring data from the Shatin Monitoring Station, the 5-year annual average is 65.4ug/m<sup>3</sup>. For the Kowloon Area, the existing environment of the study area is mainly a densely populated and developed area with a mix of residential, commercial and institutional development. Given the developed nature of the study area and the similarity with the area surrounding EPD's monitoring stations in urban area, including Tsuen Wan, Kwai Chung, Sham Shui Po, Kwun Tong, and Central/Western Monitoring Stations, it is considered reasonable to adopt all the monitoring data from these stations to represent background conditions in the Kowloon Area. As such the background TSP concentration of 75.2ug/m<sup>3</sup> is therefore adopted.

Construction of the project will involve the emission of fugitive dusts and hence TSP has to be assessed for construction phase air quality impact. During the operational phase, only electrified trains would be operated and hence there will not be air quality emission.

### 7.4 Air Sensitive Receivers & Pollution Sources

#### 7.4.1 Air Sensitive Receivers

With reference to EIA Study Brief No. ESB-191/2008 for SCL (TAW-HUH), the study area for air quality impact assessment should generally be defined by a distance of 500m from the proposed alignment. Further, it should be extended to include major emission sources that may have a bearing on the environmental acceptability of the project. The study will also review the air quality impacts on the areas and other sensitive receivers beyond 500m from the alignment, which may be potentially affected by the Project.

In accordance with Annex 12 of the TM-EIAO, Air Sensitive Receivers (ASRs) include domestic premises, hotel, hostel, hospital, clinic, nursery, temporary housing accommodation, school, educational institution, office, factory, shop, shopping centre, place of public worship, library, court of law, sports stadium or performing arts centre. Any other premises or places with which, in terms of duration or number of people affected, has a similar sensitivity to the air pollutants as the aforelisted premises and places would also be considered as a sensitive receiver. Representative ASRs within a distance of 500m from the alignment, temporary work areas, and associated barging facilities have been identified.

These ASRs include both the existing and planned developments. Existing ASRs are identified by means of reviewing topographic maps, aerial photos, land status plans, supplemented by site inspections. They mainly include developed residential buildings with different storey high, educational institution of few storey high and hotels etc.

Planned/committed ASRs are identified by making reference to relevant Outline Zoning Plans (OZP), Outline Development Plans, Layout Plans and other published plans in the vicinity of the alignment, including:

- Draft Sha Tin Outline Zoning Plan (No. S/ST/25);
- Approved Tsim Sha Tsui (KPA 1) Outline Zoning Plan (No. S/K1/26);
- Draft Yau Ma Tei (KPA 2) Outline Zoning Plan (No. S/K2/21);
- Draft Ho Man Tin (KPA 6&7) Outline Zoning Plan (No. S/K7/21);
- Approved Wang Tau Hom & Tung Tau (KPA 8) Outline Zoning Plan (No. S/K8/21)
- Approved Hung Hom (KPA 9) Outline Zoning Plan (No. S/K9/24);
- Approved Ma Tau Kok (KPA 10) Outline Zoning Plan (No. S/K10/20);
- Approved Tsz Wan Shan, Diamond Hill & San Po Kong (KPA 11) Outline Zoning Plan (No. S/K11/25);
- Draft Kai Tak (KPA22) Outline Zoning Plan (No. S/K22/3)

The relevant stakeholders were also approached to obtain latest information on planning application, layout and building height. The major planned uses in the vicinity of the area include:

- Kai Tak Further Development proposed in Agreement No. CE35/2006 (CE) Kai Tak Development Engineering Study cum Design and Construction of Advance Works – Investigation, Design and Construction (Approved EIA Report: EIA-157/2008)

The locations of the representative ASRs for air quality assessment during the construction of the project are illustrated in **Figures 7.1.1 to 7.1.14**, and are summarised in the table below. Detailed information of representative ASRs are presented in **Appendix 7.1**.

**Table 7.3:** Representative ASRs for Air Quality Impact Assessment

ASR ID	Location	Landuse <sup>[1]</sup>	No. of Storey	Approximate separation distance from project site boundary (m)
<b>TAW-1</b>	<b>Carado Garden</b>			
TAW-1-1	Carado Garden Block 6	R	28	230

ASR ID	Location	Landuse <sup>[1]</sup>	No. of Storey	Approximate separation distance from project site boundary (m)
<b>TAW-2 Shatin Heights</b>				
TAW-2-1	Shatin Heights	R	7	150
<b>TAW-3 K K Terrace</b>				
TAW-3-1	K K Terrace	R	3	250
<b>TAW-4 Woodcrest Hill</b>				
TAW-4-1	Woodcrest Hill Block 2&3	R	2	270
<b>TAW-5 Residential Premises along Keng Hau Road</b>				
TAW-5-1	Chan's Garden	R	2	200
TAW-5-2	L Louey	R	2	50
TAW-5-3	Joyville	R	1	110
<b>TAW-6 Hin Keng Estate</b>				
TAW-6-1	Hin Keng Estate - Hin Yiu House	R	34	160
TAW-6-2	Carmel Alison Lam Primary School	E	7	130
TAW-6-3	Hin Keng Estate - Hin Tak House	R	34	110
TAW-6-4	Hin Keng Estate - Hin Yeung House	R	34	140
TAW-6-5	Hin Keng Estate - Hin Yau House	R	35	<10
TAW-6-6	Hin Keng Estate - Hin Kwai House	R	35	<10
TAW-6-7	C.U.H.K.A.A. Thomas Cheung School	E	6	<10
TAW-6-8	Hin Keng Estate - Hin Wan House	R	35	<10
<b>TAW-7 Residential Premises along Tsuen Nam Road</b>				
TAW-7-1	Kam Cheong Building	R	5	900
<b>TAW-8 Grandway Garden</b>				
TAW-8-1	Grandway Garden Block 2	R	24	750
<b>TAW-9 Christian Alliance Cheng Wing Gee College</b>				
TAW-9-1	Christian Alliance Cheng Wing Gee College	E	6	470
<b>TAW-10 Holford Garden</b>				
TAW-10-1	Holford Garden - Fook Siu Court	R	25	660
<b>TAW-11 Man Lai Court</b>				
TAW-11-1	Man Lai Court Tower 1	R	20	1100
<b>TAW-12 Hin Tin Swimming Pool</b>				
TAW-12-1	Hin Tin Swimming Pool	GIC	-	<10
<b>TAW-13 Hin Tin Playground</b>				
TAW-13-1	Football field inside Hin Tin Playground	GIC	-	<10
<b>DIH-1 Tsui Chuk Garden</b>				
DIH-1-1	Tsui Chuk Garden Block 5	R	22	120
<b>DIH-2 Chuk Yuen North Estate</b>				
DIH-2-1	Chuk Yuen North Estate – Pak Yuen House	R	34	280
<b>DIH-3 Chuk Yuen South Estate</b>				
DIH-3-1	Chuk Yuen South Estate – Wah Yuen House	R	18	90
DIH-3-2	Chuk Yuen South Estate – Nga Yuen House	R	18	110
DIH-3-3	Chuk Yuen South Estate – Kwai Yuen House	R	18	90
DIH-3-4	Chuk Yuen South Estate – Chui Yuen House	R	18	50

ASR ID	Location	Landuse <sup>[1]</sup>	No. of Storey	Approximate separation distance from project site boundary (m)
<b>DIH-4 Pang Ching Court</b>				
DIH-4-1	Pang Ching Court	R	34	150
DIH-4-2	Carbo Anglo-Chinese Kindergarten	E	2	70
<b>DIH-5 Residential Premises along Fung Tak Road and Lunk Fung Street</b>				
DIH-5-1	Rainbow Home	R	11	70
DIH-5-2	Residential premises	R	6	70
DIH-5-5	Our Lady's Kindergarten	E	2	60
<b>DIH-6 Wong Tai Sin Fire Station and Quarters</b>				
DIH 6-1	Wong Tai Sin Fire Station and Quarters Block A	R	34	100
<b>DIH-7 Tropicana Gardens</b>				
DIH-7-1	Tropicana Gardens Block 2	R	25	190
DIH-7-2	Tropicana Garden Block 3	R	25	190
<b>DIH-8 Redmption Lutheran Church</b>				
DIH-8-1	Redemption Lutheran Church	W	3	130
<b>DIH-9 Shek On Building</b>				
DIH-9-1	Shek On Building	E + W	5	30
<b>DIH-10 Hong Kong Sheung Hui Nursing Home</b>				
DIH-10-1	Hong Kong Sheung Keung Hui Nursing Home	H	9	30
<b>DIH-11 Lung Poon Court</b>				
DIH-11-1	Lung Poon Court – Lung Wan House	R	34	<10
<b>DIH-12 Galaxia</b>				
DIH-12-1	Galaxia Tower B	R	44	100
DIH-12-2	Galaxia Tower E	R	43	40
<b>DIH-13 Canossa Primary School</b>				
DIH-13-1	Canossa Primary School	E	5	80
<b>DIH-14 Rhythm Garden</b>				
DIH-14-1	Rhythm Garden Block 2	R	22	<10
DIH-14-2	Rhythm Garden Block 5	R	22	<10
DIH-14-3	Rhythm Garden Block 8	R	22	110
DIH-14-4	Canossa Primary School (San Po Kong)	E	6	90
DIH-14-5	Rhythm Garden Block 1	R	22	<10
DIH-14-6	Rhythm Garden Block 3	R	22	<10
<b>DIH-15 Choi Hung Estate</b>				
DIH-15-1	Choi Hung Estate - Kam Wan House	R	20	100
DIH-15-2	Choi Hung Estate - Pik Hoi House	R	20	100
<b>DIH-16 Wong Tai Sin Temple</b>				
DIH-16-1	Wong Tai Sin Temple	W	1	20
<b>DIH-17 Chuk Yuen United Village</b>				
DIH-17-1	Chuk Yuen United Village	R	1-3	60
<b>DIH-18 Upper Wong Tai Sin Estate</b>				

ASR ID	Location	Landuse <sup>[1]</sup>	No. of Storey	Approximate separation distance from project site boundary (m)
DIH-18-1	Upper Wong Tai Sin Estate - Po Sin House	R	34	<10
DIH-18-2	Upper Wong Tai Sin Estate - Tat Sin House	R	34	20
<b>DIH-19 Lung Cheung Government Secondary School</b>				
DIH-19-1	Lung Cheung Government Secondary School	E	5	110
<b>DIH-20 Baptist Rainbow Primary School</b>				
DIH-20-1	Baptist Rainbow Primary School	E	7	60
<b>DIH-21 Tin Wang Court</b>				
DIH-21-1	Tin Wang Court - Wang King House	R	21	30
<b>DIH-22 Price Memorial Catholic Primary School</b>				
DIH-22-1	Price Memorial Catholic Primary School	E	6	40
<b>DIH-23 Tin Ma Court</b>				
DIH-23-1	Tin Ma Court - Chun On House	R	37	50
<b>DIH-24 Shing Wong Temple</b>				
DIH-24-1	Shing Wong Temple	W	1	50
<b>DIH-25 Choi Hung Road Playground</b>				
DIH-25-1	Football Field in Choi Hung Road Playground	GIC	-	80
<b>DIH-26 Hammer Hill Road Leisure Pool</b>				
DIH-26-1	Hammer Hill Road Leisure Pool	GIC	-	270
<b>KAT-1 Kowloon Cognito College</b>				
KAT-1-1	Kowloon Cognito College	E	5	210
<b>TKW-1 Residential Premises along Pak Tai Street</b>				
TKW-1-1	Parc 22	R	11	<10
TKW-1-2	Sanford Mansion	R	14	<10
<b>TKW-2 Skytower</b>				
TKW-2-1	Skytower Tower 5	R	47	<10
TKW-2-2	Skytower Tower 2	R	47	<10
<b>TKW-3 Residential Premises near Prince Edward Road East &amp; Prince Edward Road West</b>				
TKW-3-1	Prince Ritz	R	29	30
TKW-3-2	Prosperity House	R	3	<10
<b>TKW-4 Sung Wong Toi Playground</b>				
TKW-4-1	Basketball Court in Sung Wong Toi Playground	GIC	-	30
<b>TKW-5 Argyle Street Playground</b>				
TKW-5-1	Football Field in Argyle Street Playground	GIC	-	<10
<b>MTW-6 Residential Premises along Ma Tau Chung Road</b>				
MTW-6-1	Fok On Building	R	11	60
MTW-6-2	Hong Kong Society for the Protection of Children	R	4	100
MTW-6-3	Chung Nam Mansion	R	10	100
MTW-6-4	Pok Oi Lau	R	6	130
<b>MTW-7 Ma Tau Wai Estate</b>				

ASR ID	Location	Landuse <sup>[1]</sup>	No. of Storey	Approximate separation distance from project site boundary (m)
MTW-7-1	Ma Tau Wai Estate - Geranium House	R	13	200
<b>MTW-8 Horae Place</b>				
MTW-8-1	Horae Place	R	17	210
<b>MTW-9 Majestic Park</b>				
MTW-9-1	Majestic Park	R	17	250
<b>MTW-10 18 Farm Road</b>				
MTW-10-1	18 Farm Road	R	42	200
<b>MTW-11 Farm Road Government Primary School</b>				
MTW-11-1	Farm Road Government Primary School	E	3	190
<b>MTW-12 Residential Premises along Ma Tau Wai Road</b>				
MTW-12-1	Yuet Fai Mansion	R	10	110
MTW-12-2	Delight Court	R	21	<10
MTW-12-3	Lucky Mansion	R	14	<10
MTW-12-4	352-354 Ma Tau Wai Rd	R	8	<10
MTW-12-5	Seng Cheong Building	R	10	<10
MTW-12-6	Great Wall Building	R	11	240
MTW-12-7	197-199 Ma Tau Wai Rd	R	6	200
MTW-12-8	Pak Tai Mansion	R	8	80
MTW-12-9	Residential premises along Hung Kwong Street	R	8	50
MTW-12-10	Lucky Building	R	8	<10
<b>MTW-13 Cheung Chuk Shan Memorial School</b>				
MTW-13-1	Cheung Chuk Shan Memorial School	E	3	<10
<b>MTW-14 Po Leung Kuk Lam Man Chan English Primary School</b>				
MTW-14-1	Po Leung Kuk Lam Man Chan English Primary School	E	3	20
<b>MTW-15 Hung Hom Lutheran Primary School</b>				
MTW-15-1	Hung Hom Lutheran Primary School	E	4	<10
<b>MTW-16 SKH Good Shepherd Primary School</b>				
MTW-16-1	SKH Good Shepherd Primary School	E	5	<10
<b>MTW-17 Residential Premises along Chi Kiang Street, Anhui Street and Kiang His Street</b>				
MTW-17-1	Loyal Mansion	R	14	<10
<b>MTW-18 Cheung Chuk Shan Memorial School</b>				
MTW-18-1	Residential premises along Chi Kiang Street	R	5	<10
<b>MTW-19 Holy Trinity Church</b>				
MTW-19-1	Holy Trinity Church	W	1	100
<b>MTW-20 Ma Tau Wai Road Playground</b>				
MTW-20-1	Football Field in Ma Tau Wai Road Playground	GIC	-	270
<b>MTW-21 To Kwa Wan Market &amp; Government Offices</b>				
MTW-21-1	To Kwa Wan Market & Government Offices	GIC	-	<10

ASR ID	Location	Landuse <sup>[1]</sup>	No. of Storey	Approximate separation distance from project site boundary (m)
<b>MTW-22</b>	<b>Kowloon Animal Management Centre</b>			
MTW-22-1	Kowloon Animal Management Centre	GIC	-	290
<b>HOM-1</b>	<b>Ko Shan Theatre</b>			
HOM-1-1	Ko Shan Theatre	P	3	60
<b>HOM-2</b>	<b>Residential Premises along Ko Shan Road</b>			
HOM-2-1	Faerie Court	R	26	<10
HOM-2-2	Lee Wing Bldg	R	22	20
HOM-2-3	Wing Lam Mansion	R	23	70
HOM-2-4	Tak Lee Court	R	24	140
HOM-2-5	Chat Ma Mansion	R	8	30
<b>HOM-3</b>	<b>Residential Premises along Shun Yung Street</b>			
HOM-3-1	Fook Sing Mansion	R	18	240
HOM-3-2	Marigold Mansion Block A	R	20	280
<b>HOM-4</b>	<b>Residential Premises along Valley Road</b>			
HOM-4-1	Yee Fu Building	R	25	170
<b>HOM-5</b>	<b>271 Chatham Road North</b>			
HOM-5-1	271 Chatham Road North	R	5	110
<b>HUH-1</b>	<b>Residential Premises and Educational Institution along Chatham Road North and Hong Chong Road</b>			
HUH-1-1	Cartas Branchi College of Careers <sup>[2]</sup>	E	8	60
HUH-1-2	Lok Ka House	R	7	20
HUH-1-3	Wing Fung Building	R	8	<10
<b>HUH-2</b>	<b>The Hong Kong Polytechnic University</b>			
HUH-2-1	Hong Kong Polytechnic University - Cheung On Tak Lecture Theatre	E	6	100
<b>HUH-3</b>	<b>Residential Premises along Shun Yung Street</b>			
HUH-3-1	Royal Peninsula Block 2	R	42	140
<b>HUH-4</b>	<b>The Metropolis Residence</b>			
HUH-4-1	The Metropolis Residence Tower 2	R	18	130
<b>HUH-5</b>	<b>Harbour Plaza Metropolis</b>			
HUH-5-1	Harbour Plaza Metropolis	R	11	90
<b>HUH-6</b>	<b>HK Fire Service Headquarters Building</b>			
HUH-6-1	HK Fire Services Headquarters Building	GIC	13	90
<b>HUH-7</b>	<b>Hotel Nikko Hong Kong</b>			
HUH-7-1	Hotel Nikko Hong Kong	R	12	100
<b>HUH-9</b>	<b>Hong Kong Coliseum</b>			
HUH-9-1	Hong Kong Coliseum	P	1	<10
<b>HUH-10</b>	<b>Harbourfront Horizon</b>			
HUH-10-1	Harbourfront Horizon	R	22	240
<b>HUH-11</b>	<b>China Travel Cargo Logistic Centre</b>			
HUH-11-1	China Travel Cargo Logistic Centre	I	-	30

Notes:

[1] R- residential; E - educational; I - Industrial; H - clinic/ home for the aged; W - worship; GIC - government, institution

and community; P – performing arts centres  
[2] The college has been moved to Tseung Kwan O since September 2009 and is now non-occupied.

**Table 7.4:** Planned ASRs

ASR ID	Location	Landuse <sup>[1]</sup>	No. of Storey
<b>TAW-P1</b>	<b>Top Side Residential Development at Tai Wai Maintenance Centre</b>		
TAW-P1	Top Side Residential Development at Tai Wai Maintenance Centre	R	[2]
<b>TAW-P2</b>	<b>Tai Wai Station Development</b>		
TAW-P2	Tai Wai Station Development	R	[2]
<b>DIH-P1</b>	<b>Upper Wong Tai Sin Estate Phase 3</b>		
DIH-P1-1	Upper Wong Tai Sin Estate Phase 3	R	36
<b>KAT-P1</b>	<b>Residential premises near Kai Tak Station</b>		
KAT-P1-1	Residential premises near Kai Tak Station	R	[3]
KAT-P1-2	Residential premises near Kai Tak Station	R	[3]
KAT-P1-3	Residential premises near Kai Tak Station	R	[3]
KAT-P1-4	Residential premises near Kai Tak Station	R	[3]
KAT-P1-5	Residential premises near Kai Tak Station	R	[3]
KAT-P1-6	Residential premises near Kai Tak Station	R	[3]
KAT-P1-7	Residential premises near Kai Tak Station	R	[3]
<b>KAT-P2</b>	<b>Public Housing Development at ex-San Po Kong Flatted Factory</b>		
KAT-P2-1	Public Housing Development at ex-San Po Kong Flatted Factory	R	[2]
<b>TKW-P1</b>	<b>Residential premises near To Kwa Wan Station</b>		
TKW-P1-1	Residential premises near To Kwa Wan Station	R	[2]
<b>HOM-P2</b>	<b>Proposed Dormitory for HKPU</b>		
HOM-P2	Proposed Dormitory for HKPU	R	-

Notes:

[1] R– residential; E – educational; H – clinic/ home for the aged; W – worship; GIC – government, institution and community; P – performing arts centres

[2] To be determined by respective project proponents

[3] Not available from approved EIA Report: EIA-157/2008

#### 7.4.2 Air Pollution Sources

Construction of the project would inevitably generate air pollutants with potential impacts on neighbouring sensitive receivers. These air pollutant emission sources include fugitive dust from various construction activities, including excavation, stockpiling, and cut-and cover section along SCL (TAW-HUH) alignment. Three rock crushing facilities would be operated within Hin Keng, Ma Chai Hang and Shansi Street tunnel. Dust generated would then be enclosed within the tunnel. In addition, these rock crushing facilities are controlled under the *Air Pollution Control (Specified Processes) Regulations*, and the requirement and mitigation measures stipulated in the *Guidance Note on the Best Practicable Means for Mineral Works (Stone Crushing Works) BPM 11/1(95)* should also be followed and implemented. The contractor should also be responsible for applying licence under the regulations as appropriate. Hence, no significant dust impacts from these rock crushing facilities are therefore anticipated.

Apart from the above construction activities, loading and unloading of materials at barging facilities would also generate potential dust impact. Based on the latest construction programme, 2 barging facilities will be needed to support the material transfer. The locations of these barging facilities are listed below:

- Freight Pier at Hung Hom (shared use); and

- Kai Tak Runway

In addition, as only electrified trains would be used during the normal operation of the SCL (TAW-HUH), there are no air quality pollution sources during the operational phase. It should also be noted that this EIA study is assessed based on the design option of Diamond Hill Stabling Sidings (DHS). Details of the design are given in **Section 3**. There would also be no concrete batching plant operating under the SCL (TAW-HUH).

## 7.5 Potential Concurrent Projects

The tentative commencement year for the construction of SCL (TAW-HUH) is 2012, and would take approximately 6 years for completion. All concurrent projects, which may have cumulative environmental impacts during its construction period, have been identified and summarised in the table below. Details of these concurrent projects are given in **Section 7.6.2**.

**Table 7.5:** Key Concurrent Projects for Air Quality Assessment

Key Concurrent Projects	Tentative Construction Programme
Central Kowloon Route	2015 – 2020
Trunk Road T2	2012 – 2016
Kai Tak Development	2009 – 2021
Shatin to Central Link – Mong Kok East to Hung Hom Section (Phase I)	2012 – 2018
Shatin to Central Link – Hung Hom to Admiralty Section (Phase II)	2012 – 2020
Kwun Tong Line Extension	2011 – 2015
Polytechnic University Student Hostel at Ex-Valley Road Site	2009 – 2012
Tsz Wan Shan Pedestrian Link	2013-2015
In-situ Re-provisioning of Shatin Water Treatment Works – South Works	2012 - 2016

There are 3 existing concrete batching plants (CBPs) within the ex-Kai Tak Airport area, including the Yue Xiu CBP, Glorious CBP, and Yau Lee CBP. Based on the latest information provided by relevant government departments, the Yue Xiu CBP, Glorious CBP and the associated sand depot would cease operation before SCL commences construction. The dust emissions from the Yau Lee CBP, on the other hand, have been included in the cumulative impact assessment. In addition, the landlot next to the proposed TKW (as shown in **Appendix 7.5**) could be used for concrete batching plant or sand depot under short-term tenancy. Although the newly identified sites are yet to be confirmed, their potential emissions have been included in this assessment.

## 7.6 Construction Dust Assessment

### 7.6.1 Potential Sources of Dust

A review has been conducted on the construction methodology (see **Section 3** for details) for various works areas along SCL (TAW-HUH) alignment. Construction dust will be potentially generated from mainly the land-based construction works including the following activities:

- Soil excavation;
- Backfilling;
- Temporary storage of spoil on site;
- Construction of portals and cut-&-cover tunnel;
- Temporary storage, handling and transportation of material at tunnel exit sites;

- Construction of infrastructure and utilities; and
- Loading and unloading of excavated materials / fill materials at barging facility.

Since excavation and backfilling activities will involve large quantities of earthworks and silty material handling, it is anticipated that there may be larger dust impact as a result of these activities if appropriate mitigation measures are not implemented. On the other hand, the drill-&-blast activities underneath the Lion Rock and at Ho Man Tin will be undertaken totally underground. At tunnel exit sites, storage of material and associated handling / transportation activities will also be undertaken inside the tunnel. Three rock crushing facilities would be operated within Hin Keng, Ma Chai Hang and Shansi Street tunnel. Dust generated would then be enclosed within the tunnel. In addition, these rock crushing facilities are controlled under the *Air Pollution Control (Specified Processes) Regulations*, and the requirement and mitigation measures stipulated in the *Guidance Note on the Best Practicable Means for Mineral Works (Stone Crushing Works) BPM 11/1(95)* should also be followed and implemented. The contractor should also be responsible for applying licence under the regulations as appropriate. Hence, no significant dust impacts from these rock crushing facilities are therefore anticipated.

Other than construction sites, there are other off-site areas located in Tseung Kwan O, Ma On Shan, Shek Mun, and Pak Tin (see **Section 3**, and illustrated in **Figure 1.2**, and **Figures 3.3.5 to 3.3.9**). However, these off-site work areas, including magazine sites, and storage/office areas do not involve any dusty activities. Hence, fugitive dust generation is not expected throughout the processes and off-site works areas are not included in the quantitative assessment. The barging areas would however generate fugitive dust and hence need to be addressed.

### **7.6.2 Assessment Year**

A review of the tentative construction programme has been conducted to identify the construction period which is deemed to have significant impact on nearby ASRs. Based on the construction programme as shown in **Appendix 7.2**, it is identified that all the dusty construction activities, such as open excavation and tunnel construction, would be taken place during Year 2014, particularly the worksites for KAT and TKW Station, where cumulative impacts from other projects in Kai Tak area are anticipated. For other stations and worksites of the SCL (TAW-HUH), construction activities throughout the whole construction period are generally similar. Hence, Year 2014 is considered appropriate to represent the worst-case scenario and are therefore taken as the assessment year.

### **7.6.3 Emission Inventory**

#### **Dust Emission associated with the Projects**

Fugitive dust impact assessments were carried out based on conservative assumptions of general construction activities which include the following:

- Heavy construction activities including site clearance, ground excavation, construction of the associated facilities, haul road etc;
- Wind erosion of all active open sites, including stockpile and barging area;
- Loading/unloading from trucks at barging facilities and stockpiles;
- All construction activities at work sites and areas that would be undertaken concurrently during the major construction period throughout Year 2014 in order to assess the worst case situation
- Construction working periods of 30 days a month and 12 hours a day from 7:00am to 7:00pm, except Sundays and public holidays.

The prediction of dust emissions is based on typical values and emission factors from United States Environmental Protection Agency (USEPA) Compilation of Air Pollution

Emission Factors (AP-42), 5th Edition. Calculation of dust emission factors is given in **Appendix 7.3**. References of the calculations of dust emission factors for different dust generating activities are listed below. Detailed descriptions are also discussed in the following sections.

**Table 7.6a:** References of Dust Emission Factors for Different Activities

Operating Sites	Activities	Equations and Assumptions	Reference
All construction and excavation sites	Heavy construction activities including land clearance, ground excavation, cut and fill operations, construction of the facilities, haul road, etc	$E = 1.2 \text{ tons/acre/month of activity or } = 2.69 \text{ Mg/hectare/month of activity}$	USEPA AP42, S.13.2.3.3
All construction sites, any stockpile areas, barging area (all open sites)	Wind Erosion	$E = 0.85 \text{ Mg/hectare/yr (24 hour emission)}$	USEPA AP42, S.11.9, Table 11.9.4
Barging facilities and/or any stockpiles	Loading/Unloading at barging facilities and any stockpile	$E = k(0.0016) \frac{\left(\frac{U}{2.2}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} \text{ (kg / megagram)}$ <p>k is particle size multiplier U is average wind speed M is material moisture content</p>	USEPA AP42, S13.2.4

i) *SCL – Tai Wai to Hung Hom Section (SCL (TAW-HUH)) – Heavy Construction Works, Wind Erosion and Stockpile*

Dust emission from construction vehicle movement will generally be limited within the confined worksites area and the emission factor given in AP-42 S.13.2.3.3 has taken this factor into account, as indicated in the approved EIA Study “*Kai Tak Development*” (EIA-157/208). Watering facilities will be provided at every designated vehicular exit point. Haul roads within the work sites would be paved and water spraying would be provided to keep them in wet condition. Since all vehicles will be washed at exit points and vehicle loaded with the dusty materials will be covered entirely by clean impervious sheeting before leaving the construction site, dust nuisance from construction vehicle movement outside the worksites is unlikely to be significant.

For stockpiling, it is recommended that vehicles will move to the stockpiling areas where C&D materials will be unloaded immediately. The vehicles will then be washed again before leaving the stockpiles in order to minimise generation of dusty materials. Therefore, the major dust generating activities at stockpiling areas will be originated mainly from wind erosion and loading/unloading of materials; and these will be assumed in the fugitive dust modelling.

For the calculation of 1-hr and 24-hr TSP concentration, an active operating area of 30% has been assumed at any one time. However, in order to be conservative, a 100% active area screening test has been undertaken initially for the short term hourly and daily TSP assessment as detailed in the **Section 7.6.3**.

For the calculation of annual TSP construction, the active works area over the entire year would be less than for a typical hour and typical day. On this basis, further information has been obtained from the Project Proponent, and it is confirmed that a 6% active operating area would be a practicable assumption. The active operating area for 1-hr, 24-hr and

annual concentration has been agreed by the Engineer. **Appendix 7.4** presents the justification for the percentage of active areas.

It should be noted that there would still be some minor construction works being conducted during grouting. However, as all grouting works would be carried out in a caution way and fugitive dust generation can be controlled at a minimum level, there would be insignificant fugitive dust impacts from this source.

*ii) Barging Facility*

Regarding the dust emission from the barging facilities adjacent to To Kwa Wan Typhoon Shelter (i.e. Kai Tak Runway), there will be a total of 3 barges at any one time during operation. Good site practices including the following would be implemented:

- All road surfaces within the barging facilities will be paved.
- Dust enclosures will be provided for the loading ramp.
- Vehicles will be required to pass through designated wheels wash facilities.
- Continuous water spray at the loading points.

**Dust Emission associated with Concurrent Projects**

*i) SCL – Mong Kok East to Hung Hom Section and Hung Hom to Admiralty Section*

Three sections in the SCL, the Tai Wai to Hung Hom Section (SCL (TAW-HUH)), Mong Kok East to Hung Hom Section (SCL (MKK-HUH)), and Hung Hom to Admiralty Section (SCL (HUH-ADM)) would have cumulative impacts. SCL (MKK-HUH) will include the realignment work for the existing East Rail Line tracks from south of Mong Kok East to the new HUH, while SCL (HUH-ADM) will include the construction of the section across the harbour from Hung Hom to Admiralty.

According to the current construction programme, construction works and dusty activity at the Freight Pier barging facility associated with the SCL (MKK-HUH) and SCL (HUH-ADM) will be interfacing this Project at Hung Hom Area. **Appendix 7.6** illustrates the possible arrangement in Freight Pier Barging Facility. As such, cumulative dust impact is therefore anticipated. Dust emission details have been obtained from the respective consultant and included in the assessment to account for the cumulative effect.

*ii) Kwun Tong Line Extension (KTE) & associated EPIW*

The KTE project is approximate 3km extension of the existing Kwun Tong Line from Yau Ma Tei Station to a new station at Whampoa and with an interchange with the SCL at the proposed HOM. It is expected to be completed in 2015.

With reference to the approved EIA Study “*Kwun Tong Line Extension*” (AEIAR-154/2010), construction works under KTE Project will likely be interfacing the SCL (TAW-HUH) in Hung Hom and Ho Man Tin areas. Potential dusty activities are generally similar to those associated with this Project. In particular, one rock crushing facility would be located at the worksite in HOM Station and two others would be located at the Freight Pier barging point. Hence, dust emissions are anticipated during unloading activities and the discharge point of the dust extraction systems. As such, cumulative dust impact is therefore anticipated. Dust emission details have been extracted from the approved EIA Study and all the assessment scenarios have been included in the assessment to account for the cumulative effect.

*iii) Kai Tak Development*

Redevelopment plan for the former Kai Tak Airport area is proposed to optimise the development potential of the ex-airport site. It covers a land area of about 328 hectares, including the ex-Kai Tak Airport and existing waterfront area at To Kwa Wan, Kowloon Bay etc. According to the current development plan, the infrastructure works are split into 7 sub-packages, such as Cruise Terminal Development, Trunk Road T2 etc. This development is anticipated to commence in 2009, with completion beyond 2020.

Based on the construction programme presented in LegCo Papers on Kai Tak Development (LC Paper No. CB(1)570/08-09(03)), cumulative construction dust impact is expected during the interaction with major dusty construction works associated with SCL (TAW-HUH), which is expected to be undertaken in Year 2014. For the purpose of cumulative impact assessment, construction works which are located within 500m from the site boundary of this Project and are found to be overlapping with the major construction of SCL (TAW-HUH) during Year 2014 will be included. In addition, dust emission strengths presented in the approved EIA Study "*Kai Tak Development*" (KTD) (AEIAR-130/2009) are adopted where appropriate.

iv) *Central Kowloon Route*

Central Kowloon Route (CKR) is a strategic road linking from Yau Ma Tai area to Kowloon Bay in order to relieve the vehicular traffic loading on the existing urban distributor roads. Based on the latest construction programme, the construction would likely be commenced in early 2015. For the purpose of conservative assessment, the associated construction works are considered to be overlapping with the construction of SCL (TAW-HUH) and the cumulative construction dust impact is therefore taken into account. Latest available information presented in the KTD EIA is adopted where appropriate in the assessment.

v) *Trunk Road T2*

Trunk Road T2 is a dual two-lane trunk road of approximately 3.6 km long connecting the CKR and Tseung Kwan O-Lam Tin Tunnel, and will form a new strategic highway network in order to relieve the existing heavily trafficked road network in the central and eastern Kowloon as well as Tseung Kwan O. However, the alignment of Trunk Road T2 is located at more than 500m from ASRs of SCL (TAW-HUH). No significant cumulative air quality impact is therefore anticipated.

vi) *Polytechnic University Student Hostel at Ex-Valley Road*

A student hostel to accommodate students from the Polytechnic University is proposed at the site bounded by Yan Fung Street to the North, Fat Kwong Street to the East, and Chatham Road North to the South. However, the construction will be completed by Year 2012. Hence, the associated cumulative air quality impact is not anticipated.

vii) *Tsz Wan Shan Pedestrian Link*

Covered walkway as well as lifts/escalators are proposed to connect the Tsz Wan Shan residential to the DIH Station. Based on the current construction programme, the associated construction works would likely interface with the major construction of SCL (TAW-HUH) during Year 2014. Hence, cumulative dust impact is anticipated.

viii) *In-situ Reprovisioning of Shatin Water Treatment Works – South Works*

The Shatin Water Treatment Works (STWTW) was first commissioned since 1964 with an initial rated capacity of 364,000 m<sup>3</sup> per day at the existing South Works. Owing to the aging of plant and equipment which are approaching the end of their service life, renovation or replacement of existing facilities would be required to meet the anticipated future water demands. According to its EIA Study Brief (ESB-220/2011), major works would involve demolition of the existing facilities of the South Works in phases, reprovisioning of the South Works to the proposed output of 550,000 m<sup>3</sup> per day, cut-back of the existing man-made slope, and construction of superstructures. This project is therefore considered as a concurrent project.

Based on the preliminary information available from the EIA Project Profile (PP-430/2011) of this project, the potential dust impact is considered to be insignificant with implementation of good site practice and dust suppression measures in view of the phasing of the works area and small works area. Insurmountable cumulative dust impact is therefore not anticipated.

ix) *Concrete Batching Plants and Sand Depot in ex-Kai Tak Airport area*

As discussed in **Section 7.5**, there are currently 3 existing concrete batching plants (CBPs) within the ex-Kai Tak Airport area, including the Yue Xiu CBP, Glorious CBP, and Yau Lee CBP. Based on the latest information, the Yue Xiu CBP, Glorious CBP and the associated sand depot would cease operation before SCL commences construction. Hence, there would not be cumulative dust impacts from these 2 CBPs at their existing locations. The dust emissions from the Yau Lee CBP, on the other hand, have been included in the cumulative impact assessment.

It was noted at the time of reporting that the site next to TKW (as shown in **Appendix 7.5**) could be allocated for the use of a new concrete batching plant and sand depot under short-term tenancy. However, information on the capacity of these facilities was not available for the assessment. In order to reasonably consider cumulative impacts from the emissions of these potential albeit not yet committed sources, an estimation of the capacity of these facilities was made with reference to general practices of the industry. It was assumed that the production capacity of the concrete batching plant would be 280 m<sup>3</sup> per hour and the total silo capacity would be 1050 tonnes. Dust emissions associated with the plant, including emission from the dust collectors of silos and mixers, and unloading of raw material to ground hopper within the plant and Kai Tak Barging Facility, have therefore been assessed.

However, it should be noted that, the concrete batching plant is controlled under the Specified Process and hence sufficient mitigation measures would be implemented to control the emission of dust. In general, the requirement and mitigation measures stipulated in the *Guidance Note on the Best Practicable Means for Cement Works (Concrete Batching Plant) BPM 3/2(93)* should be followed and implemented. In particular, in order to minimise the overall dust impact on nearby ASRs, the emission concentrations of the dust collector for the cement/PFA silos and mixer would be designed to not more than 30 mg/m<sup>3</sup> and 40 mg/m<sup>3</sup> respectively. For unloading of aggregate from trucks at the concrete batching plant, 3-sided enclosure with top cover and water sprays would be provided to the ground hopper. The enclosure would be designed in such a way that minimise the gap between the enclosure structure and the truck itself, which in turn would prevent dust from escaping the enclosure. With provision of watering spraying system, dust generated from unloading activities would be further suppressed within the enclosure, and hence would achieve an overall dust removal efficiency of 95%. It is understood that the design of the potential new CBP is still subject to change. The Contractor is required to demonstrate that the future design of the concrete batching plant would not cause unacceptable impacts. References of the calculations of dust emission factors for different dust generating activities are listed below.

**Table 7.6b:** References of Dust Emission Factors for Concrete Batching Plant

Operating Sites	Activities	Equations and Assumptions	Reference
Concrete Batching Plant	Dust collector for Cement/PFA Silos	$E = 30 \text{ mg/m}^3$	Design emission concentration
	Dust collector for Mixer	$E = 40 \text{ mg/m}^3$	Design emission concentration
	Loading/Unloading at barging facilities	$E = k(0.0016) \frac{\left(\frac{U}{2.2}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}} (\text{kg / megagram})$ <p>k is particle size multiplier U is average wind speed M is material moisture content</p>	USEPA AP42, S13.2.4
	Unloading of Raw Material at Concrete Batching Plant	$E = 0.0035 \text{ kg per ton of aggregate handled}$	USEPA AP42, S11.12

### 7.6.4 Assessment Methodology

Dust impact assessment was undertaken using the Fugitive Dust Model (FDM) as approved by USEPA and EPD. It is a well-known Gaussian Plume model designed for computing air dispersion model for fugitive dust sources. Modelling parameters including dust emission factors, particles size distributions, surface roughness, etc are referred to in EPD's "Guideline on choice of models and model parameters" and USEPA's AP-42. The density of dust will be assumed to be  $2.5\text{g/m}^3$ . The 5-year mean of the annual averaged TSP concentration will be taken as the background concentration. As mentioned in **Section 7.3**, the TSP background concentrations of  $65.4\mu\text{g/m}^3$  and  $75.2\mu\text{g/m}^3$  are adopted for the Tai Wai and Kowloon Areas for the fugitive dust modelling respectively. A surface roughness of 100 cm is assumed in the model to represent the terrain.

During daytime working hours (7am to 7pm), it is assumed that dust emissions would be generated from all dust generating activities and site erosion. During night-time non-working hours (7pm to 7am of the next day), Sunday and statutory holidays, dust emission source would only be site erosion as construction activities during these hours are ceased.

The worst-case 1-hour, worst-case 24-hour average and annual TSP concentrations were calculated mainly based on real meteorological data (for Year 2008) on wind direction, wind speed, temperature and stability collected from the nearest weather station, the Hong Kong Observatory and Shatin meteorological stations for the construction site in the Kowloon Area and Tai Wai Area respectively. The anemometer height at Hong Kong Observatory and Shatin are 42m and 10m above ground respectively. A summary showing the validity of meteorological data from Year 2004 – 2008 respective to different weather stations is shown in **Table 7.7**.

**Table 7.7:** Summary of Data Validity of Meteorological Data from Year 2004 – 2008

Stations	Data Validity				
	2004	2005	2006	2007	2008
Shatin	86%	85%	88%	92%	92%
Kai Tak	91%	96%	96%	89%	81%
King's Park	89%	92%	87%	90%	92%
HKO	97%	96%	95%	95%	95%
CPH	92%	94%	94%	93%	N/A

Fugitive dust assessment was conducted at 1.5m, 5m, 10m, 15m and 20m above local ground level. A summary of modelling parameters adopted in the assessment are given in the table below:

**Table 7.8:** Modelling Parameters

Parameters	Input	Remark
Particle size distribution	1.25um = 7% 3.75um = 20% 7.5um = 20% 12.5um = 18% 22.5um = 35%	Reference from S13.2.4.3 of USEPA AP-42
Background Concentration	5-year averaged value recorded at Tsuen Wan, Kwai Chung, Sham Shui Po, Kwun Tong, Central/Western, and Shatin Monitoring Stations	Tsuen Wan, Kwai Chung, Sham Shui Po, Kwun Tong, Central/Western Monitoring Stations for Kowloon Area ( $75.2\mu\text{g/m}^3$ ) Shatin Monitoring Station for Tai Wai Area ( $65.4\mu\text{g/m}^3$ )
Modeling mode	Flatted terrain	-

Parameters	Input	Remark
Meteorological data	Data recorded in 2008 at Hong Kong Observatory (HKO) and Shatin Meteorological Station	HKO for Kowloon Area (i.e. DIH to HUH) Shatin for Tai Wai Area (i.e. TAW to HIK)
Anemometer Height	42m for HKO 10m for Tai Wai	-
Surface Roughness	100cm	-
Emission period	General construction activities during daytime working hours (7 am to 7 pm)  Wind erosion during both day-time (7am to 7pm) and night-time (7pm to 7am of the next day)	-
ASR calculating levels	1.5, 5, 10, 15, and 20m	-

In terms of the construction programme, it should be noted that the sequencing of works for each works activity over each works site or area will be determined by the Contractor and is not known at this stage. However, due to the constrained size of the works sites and areas and the tight construction programme constraints, it will be necessary for active construction activities to be undertaken at moving multiple work phases spread across each site. Therefore, it is not feasible to identify the exact locations of individual dust emission sources. As such, for the long term annual predictions, the dust modelling assessment has assumed that the dust emissions would be distributed across the whole area of each site to reasonably represent this mode of working and the dust emission rates have been proportioned to produce the effect of 6% active works site. **Appendices 7.2** and **7.4** present the tentative construction programme and justification for the percentage of active areas respectively.

For the barging point at the Kai Tak Runway, the annual 6% active area is not applicable in this case as the haul road would be continuous in use and hence 100% active area is assumed as the worst-case scenario. It should be noted that, applying 100% emission from the barging point haul road areas represents a very conservative assumption, in that it assumes a continuous use of the haul road by traffic with full capacity throughout the full construction period.

For the short term 1-hour and 24-hour periods, it is assumed that a total works area of 30% on each site would only be active at any one time and again active construction activities to be undertaken at moving multiple work faces spread across each site. Based upon this, works activities and plant would neither cover the whole site area nor be concentrated in certain areas of the site close to ASRs at any time during the construction period. However, notwithstanding that such a scenario would not be expected to occur, in order to be conservative, an initial screening test has been undertaken, namely "Tier 1 Screening Test". The Tier 1 screening test is conservative and has simulated an absolute worst case situation, whereby all the worksites would be active (i.e. 100%).

The purpose of this absolute worst case Tier 1 screening assessment is to highlight those areas where construction dust may accumulate and potentially become an issue. The hot spot areas identified in the Tier 1 assessment have been subsequently assessed by a more focused Tier 2 test, where it is assumed that the projected actual 30% active works areas for the construction site is positioned closest to the potentially worst affected ASRs, while emission from all the other sites remain at 100% as per Tier 1. Thus, the Tier 2 assessment is also very conservative as it assumes that all works activities with the associated plant would be undertaken in the closest proximity to the potentially affected ASRs at the same time, which as noted above would not occur.

For the concurrent projects, including SCL (TAW-HUH), SCL (MKK-HUH), SCL (HUH-ADM), KTE, the Polytechnic University Student Hostel, and the Tsz Wan Shan Pedestrian Link, similar assumptions have been made for the calculations of the emission factors for short and long-term assessments. For the committed Kai Tai Development (KTD), as mentioned above, the dust emission strength presented in the approved KTD EIA are adopted where appropriate.

### 7.6.5 Assessment Results - Unmitigated Scenario

Cumulative construction dust impacts arisen from the Projects (i.e. SCL (TAW-HUH), SCL (MKK-HUH), SCL (HUH-ADM) and KTE), committed Kai Tai Development, and the Tsz Wan Shan Pedestrian Link have been assessed. Results of cumulative unmitigated 1-hour, 24-hour, and annual TSP impacts at identified ASRs due to the construction activities in the Tai Wai and Kowloon areas are given in **Tables 7.9a-b** and **Tables 7.10a-b** respectively. Results show that exceedances of the relevant Air Quality Objectives (AQOs) are predicted without mitigation and, therefore, mitigation measures are required to reduce dust impacts. **Figures 7.2.0A – 7.2.0F** illustrate the cumulative unmitigated 1-hour, 24-hour, and annual TSP concentrations in Tai Wai Area and Kowloon Area.

**Table 7.9a:** Predicted Unmitigated Cumulative 1-hour and 24-hour TSP Concentrations at Various Heights above Ground in the Tai Wai Area (Including Background Concentration of 65.4µg/m<sup>3</sup>)

ASR ID	Location	1-hour TSP Concentrations at Various Height(µg/m <sup>3</sup> )					24-hour TSP Concentrations at Various Height(µg/m <sup>3</sup> )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
TAW-1-1	Carado Garden Block 6	626	622	523	406	297	147	151	144	135	124
TAW-2-1	Shatin Heights	1121	1063	782	579	445	249	237	191	149	119
TAW-3-1	K K Terrace	939	928	733	522	373	177	172	158	140	123
TAW-4-1	Woodcrest Hill Block 2&3	842	842	690	519	367	193	187	152	129	115
TAW-5-1	Chan's Garden	938	899	674	461	348	271	242	177	133	108
TAW-5-2	L Louey	2393	1859	911	614	447	444	338	225	167	133
TAW-5-3	Joyville	1283	1175	792	466	383	345	279	197	139	116
TAW-6-1	Hin Keng Estate - Hin Yiu House	956	829	596	434	318	185	190	174	156	137
TAW-6-2	Carmel Alison Lam Primary School	954	841	640	431	300	172	176	163	147	130
TAW 6-3	Hin Keng Estate - Hin Tak House	1078	912	651	403	311	179	183	167	148	130
TAW 6-4	Hin Keng Estate - Hin Yeung House	1486	1235	637	393	310	248	210	172	147	125
TAW 6-5	Hin Keng Estate - Hin Yau House	2999	1774	1077	616	476	760	420	241	166	128
TAW 6-6	Hin Keng Estate - Hin Kwai House	3976	1386	752	503	356	893	368	184	150	129
TAW 6-7	C.U.H.K.A.A. Thomas Cheung School	3322	1873	768	487	359	360	262	164	136	119
TAW 6-8	Hin Keng Estate - Hin Wan House	3964	1617	983	610	426	1091	439	225	161	126
TAW-7-1	Kam Cheong Building	385	408	378	340	298	113	117	114	111	107
TAW-8-1	Grandway Garden Block 2	402	422	385	343	301	119	123	119	115	110
TAW-9-1	Christian Alliance Cheng Wing Gee College	739	762	676	569	458	124	128	123	118	113
TAW-10-1	Holford Garden - Fook Siu Court	577	602	547	477	402	105	109	108	105	102
TAW-11-1	Man Lai Court Tower 1	314	336	316	291	263	103	107	105	103	100
TAW-12-1	Hin Tin Swimming Pool	4082	2494	1278	751	551	866	477	276	194	150

ASR ID	Location	1-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )					24-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
TAW-13-1	Football field inside Hin Tin Playground	<b>4166</b>	<b>2007</b>	<b>1061</b>	<b>695</b>	<b>509</b>	<b>956</b>	<b>448</b>	256	181	144
TAW-P1	Top Side Residential Development at Tai Wai Maintenance Centre	<b>2811</b>	<b>2326</b>	<b>1353</b>	<b>762</b>	<b>538</b>	<b>345</b>	<b>317</b>	239	190	153
TAW-P2	Tai Wai Station Development	451	476	436	385	329	126	131	127	122	116

Notes:

Values which exceeded AQO are shown as bolded characters

**Table 7.9b:** Predicted Unmitigated Cumulative Annual TSP Concentrations at Various Heights above Ground in the Tai Wai Area (Including Background Concentration of  $65.4\mu\text{g}/\text{m}^3$ )

ASR ID	Location	Annual TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m
TAW-1-1	Carado Garden Block 6	65.8	65.9	65.8	65.8	65.7
TAW-2-1	Shatin Heights	66.2	66.1	65.9	65.8	65.7
TAW-3-1	K K Terrace	66.3	66.3	66.1	65.9	65.7
TAW-4-1	Woodcrest Hill Block 2&3	66.4	66.4	66.2	66.0	65.8
TAW-5-1	Chan's Garden	67.5	67.4	66.9	66.4	66.1
TAW-5-2	L Louey	72.1	70.6	68.4	67.3	66.6
TAW-5-3	Joyville	69.0	68.6	67.6	66.8	66.3
TAW-6-1	Hin Keng Estate - Hin Yiu House	66.1	66.1	66.0	65.9	65.8
TAW-6-2	Carmel Alison Lam Primary School	66.1	66.1	66.0	65.9	65.8
TAW-6-3	Hin Keng Estate - Hin Tak House	66.4	66.3	66.1	66.0	65.9
TAW-6-4	Hin Keng Estate - Hin Yeung House	67.2	67.1	66.6	66.3	66.0
TAW-6-5	Hin Keng Estate - Hin Yau House	74.1	71.2	68.6	67.3	66.6
TAW-6-6	Hin Keng Estate - Hin Kwai House	77.5	70.5	67.6	66.7	66.2
TAW-6-7	C.U.H.K.A.A. Thomas Cheung School	67.0	66.8	66.3	66.1	65.9
TAW-6-8	Hin Keng Estate - Hin Wan House	75.6	71.4	68.5	67.2	66.5
TAW-7-1	Kam Cheong Building	65.6	65.6	65.6	65.6	65.6
TAW-8-1	Grandway Garden Block 2	65.6	65.6	65.6	65.6	65.6
TAW-9-1	Christian Alliance Cheng Wing Gee College	65.7	65.8	65.7	65.7	65.7
TAW-10-1	Holford Garden - Fook Siu Court	65.6	65.6	65.6	65.6	65.6
TAW-11-1	Man Lai Court Tower 1	65.5	65.5	65.5	65.5	65.5
TAW-12-1	Hin Tin Swimming Pool	73.6	68.3	66.9	66.4	66.1
TAW-13-1	Football field inside Hin Tin Playground	<b>80.3</b>	71.9	68.2	67.0	66.4
TAW-P1	Top Side Residential Development at Tai Wai Maintenance Centre	67.0	66.9	66.5	66.2	66.0
TAW-P2	Tai Wai Station Development	65.6	65.6	65.6	65.6	65.6

Notes:

Values which exceeded AQO are shown as bolded characters

**Table 7.10a:** Predicted Unmitigated Cumulative 1-hour and 24-hour TSP Concentrations at Various Heights above Ground in the Kowloon Area (Including Background Concentration of  $75.2\mu\text{g}/\text{m}^3$ )

ASR ID	Location	1-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )					24-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
DIH-1-1	Tsui Chuk Garden Block 5	<b>1929</b>	<b>1604</b>	<b>853</b>	<b>582</b>	450	<b>518</b>	<b>472</b>	<b>327</b>	233	187
DIH-2-1	Chuk Yuen North Estate - Pak Yuen	<b>832</b>	<b>878</b>	<b>791</b>	<b>683</b>	<b>570</b>	237	247	223	198	176

ASR ID	Location	1-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )					24-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
	House										
DIH-3-1	Chuk Yuen South Estate – Wah Yuen House	1163	1080	926	758	603	363	343	294	252	215
DIH-3-2	Chuk Yuen South Estate – Nga Yuen House	1222	1106	975	812	642	303	296	246	213	189
DIH-3-3	Chuk Yuen South Estate – Kwai Yuen House	1678	1353	787	545	456	518	436	293	237	203
DIH-3-4	Chuk Yuen South Estate – Chui Yuen House	1707	1291	1078	878	679	454	347	242	212	189
DIH-4-1	Pang Ching Court	1300	1090	745	644	539	286	271	249	223	197
DIH-4-2	Carbo Anglo-Chinese Kindergarten	2477	1540	765	629	518	522	451	282	223	197
DIH-5-1	Rainbow Home	1377	1401	1177	911	659	426	334	280	241	203
DIH-5-2	Residential premises	1502	1511	1221	896	607	344	354	308	257	209
DIH-5-5	Our Lady's Kindergarten	1396	1183	1024	829	633	282	286	255	226	197
DIH 6-1	Wong Tai Sin Fire Station and Quarters Block A	1781	1781	1436	1050	709	357	361	308	247	204
DIH-7-1	Tropicana Gardens Block 2	2478	2361	1704	1077	704	562	545	417	295	211
DIH-7-2	Tropicana Garden Block 3	2261	2189	1638	1084	663	497	489	388	286	210
DIH-8-1	Redemption Lutheran Church	3239	2889	1827	1028	752	985	905	619	396	271
DIH-9-1	Shek On Building	5678	3599	1705	1065	758	2317	1436	658	371	260
DIH-10-1	Hong Kong Sheung Keung Hui Nursing Home	4396	2865	1499	976	716	1501	1116	620	347	245
DIH-11-1	Lung Poon Court – Lung Wan House	4194	2434	1292	862	641	1753	804	408	312	259
DIH-12-1	Galaxia Tower B	2871	2534	1613	1033	794	619	599	488	380	299
DIH-12-2	Galaxia Tower E	3390	2345	1548	1025	778	817	645	448	355	285
DIH-13-1	Canossa Primary School	4105	3140	1676	1057	763	1576	1271	696	377	262
DIH-14-1	Rhythm Garden Block 2	3193	2588	1599	1329	1054	1034	647	342	300	269
DIH-14-2	Rhythm Garden Block 5	3157	3051	2296	1629	1238	504	478	360	301	263
DIH-14-3	Rhythm Garden Block 8	2181	2157	1742	1373	1027	457	468	423	368	312
DIH-14-4	Canossa Primary School (San Po Kong)	2243	1925	1273	1057	834	737	651	415	286	264
DIH-14-5	Rhythm Garden Block 1	4404	3138	1583	1191	974	1261	660	326	292	266
DIH-14-6	Rhythm Garden Block 3	2578	2280	1807	1452	1110	864	603	355	305	269
DIH-15-1	Choi Hung Estate - Kam Wan House	2552	2388	1957	1621	1287	277	284	257	240	221
DIH-15-2	Choi Hung Estate - Pik Hoi House	2736	2831	2397	1902	1440	311	321	292	269	244
DIH-16-1	Wong Tai Sin Temple	2068	1328	1146	925	702	473	402	344	292	241
DIH-17-1	Chuk Yuen United Village	1500	1515	1254	953	673	438	447	385	312	243
DIH-18-1	Upper Wong Tai Sin	2164	859	753	649	537	555	311	264	228	195

ASR ID	Location	1-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )					24-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
	Estate - Po Sin House										
DIH-18-2	Upper Wong Tai Sin Estate - Tat Sin House	2309	951	783	666	542	765	318	286	251	216
DIH-19-1	Lung Cheung Government Secondary School	1868	1458	694	613	523	308	286	260	230	201
DIH-20-1	Baptist Rainbow Primary School	2504	1373	745	573	460	854	578	262	227	197
DIH-21-1	Tin Wang Court - Wang King House	3607	1936	907	561	465	1592	800	319	223	191
DIH-22-1	Price Memorial Catholic Primary School	2768	1394	713	511	448	686	459	271	214	191
DIH-23-1	Tin Ma Court - Chun On House	2163	1251	687	500	440	737	458	255	217	189
DIH-24-1	Shing Wong Temple	2586	1533	786	588	501	391	314	271	229	194
DIH-25-1	Football Field in Choi Hung Road Playground	2020	1813	1145	725	580	617	531	376	256	212
DIH-26-1	Hammer Hill Road Leisure Pool	1915	2047	1838	1577	1299	272	284	258	227	208
KAT-1-1	Kowloon Cognito College	1373	1338	1040	796	581	562	550	430	309	230
TKW-1-1	Parc 22	4678	3637	2461	1600	1105	1372	1033	704	485	353
TKW-1-2	Sanford Mansion	3619	3416	2490	1702	1171	1052	934	670	483	358
TKW-2-1	Skytower Tower 5	3136	2625	2059	1660	1283	1119	973	666	478	376
TKW-2-2	Skytower Tower 2	3206	3077	2343	1711	1251	1042	953	676	486	372
TKW-3-1	Prince Ritz	2616	2129	1292	959	663	926	815	514	362	288
TKW-3-2	Prosperity House	3991	2059	1262	977	709	1054	759	525	350	285
TKW-4-1	Basketball Court in Sung Wong Toi Playground	5363	3881	2286	1477	1015	1872	1056	563	399	320
TKW-5-1	Football Field in Argyle Street Playground	3331	2896	1981	1375	973	1194	996	590	406	310
MTW-6-1	Fok On Building	4650	4241	2937	1966	1346	803	746	547	389	288
MTW-6-2	Hong Kong Society for the Protection of Children	4061	3871	2870	1982	1362	644	624	490	367	279
MTW-6-3	Chung Nam Mansion	3401	3257	2432	1673	1188	733	713	566	426	321
MTW-6-4	Pok Oi Lau	3436	3369	2646	1933	1373	601	592	483	374	288
MTW-7-1	Ma Tau Wai Estate - Geranium House	2511	2553	2157	1703	1280	524	533	465	387	314
MTW-8-1	Horae Place	2045	2121	1864	1556	1245	501	513	457	390	325
MTW-9-1	Majestic Park	1901	1986	1770	1504	1228	443	457	414	362	308
MTW-10-1	18 Farm Road	1760	1678	1424	1239	1050	448	443	392	341	296
MTW-11-1	Farm Road Government Primary School	1626	1683	1500	1306	1102	402	414	377	336	293
MTW-12-1	Yuet Fai Mansion	1309	1381	1253	1091	917	373	394	363	325	284
MTW-12-2	Delight Court	2422	1401	1170	1045	906	441	367	343	312	278
MTW-12-3	Lucky Mansion	3392	1353	1106	999	879	973	459	338	304	273
MTW-12-4	352-354 Ma Tau Wai Rd	2735	1289	1059	961	850	874	414	337	301	270
MTW-12-5	Seng Cheong Building	3681	1322	882	803	718	1175	540	324	274	247
MTW-12-6	Great Wall Building	1594	1644	1433	1224	1035	456	465	417	362	310
MTW-12-7	197-199 Ma Tau	1477	1537	1362	1147	943	417	436	396	346	298

ASR ID	Location	1-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )					24-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
	Wai Rd										
MTW-12-8	Pak Tai Mansion	1452	1324	1212	1072	918	378	397	368	331	291
MTW-12-9	Residential premises along Hung Kwong Street	2068	1523	1193	1061	916	368	387	360	325	288
MTW-12-10	Lucky Building	2855	1733	926	801	715	817	570	355	295	261
MTW-13-1	Cheung Chuk Shan Memorial School	3550	1547	1159	1041	908	767	398	351	320	285
MTW-14-1	Po Leung Kuk Lam Man Chan English Primary School	2256	1433	1117	1007	885	467	383	347	317	284
MTW-15-1	Hung Hom Lutheran Primary School	3390	1632	1115	1006	884	999	364	340	312	280
MTW-16-1	SKH Good Shepherd Primary School	4104	1420	1075	974	859	1173	415	334	306	276
MTW-17-1	Loyal Mansion	2065	1427	911	806	722	695	524	329	271	242
MTW-18-1	Residential premises along Chi Kiang Street	3554	1175	920	842	753	841	407	282	258	236
MTW-19-1	Holy Trinity Church	3666	3407	2409	1608	1082	1091	887	564	372	296
MTW-20-1	Football Field in Ma Tau Wai Road Playground	2141	2216	1941	1609	1277	480	493	440	377	315
MTW-21-1	To Kwa Wan Market & Government Offices	3551	1152	943	859	765	1193	423	323	292	265
MTW-22-1	Kowloon Animal Management Centre	1682	1744	1533	1282	1027	556	569	494	410	334
HOM-1-1	Ko Shan Theatre	1426	1162	1028	881	747	395	362	315	276	243
HOM-2-1	Faerie Court	2961	1302	1029	836	719	904	451	351	284	244
HOM-2-2	Lee Wing Bldg	3878	1964	1142	888	738	1212	646	372	289	245
HOM-2-3	Wing Lam Mansion	2657	2094	1253	918	751	660	558	380	295	248
HOM-2-4	Tak Lee Court	1879	1780	1310	972	774	432	425	350	289	247
HOM-2-5	Chat Ma Mansion	1856	1552	990	822	724	676	502	349	267	232
HOM-3-1	Fook Sing Mansion	1394	1427	1204	980	799	330	341	307	270	239
HOM-3-2	Marigold Mansion Block A	1152	1219	1092	944	801	274	289	270	248	225
HOM-4-1	Yee Fu Building	1293	1170	958	861	758	248	263	250	239	224
HOM-5-1	271 Chatham Road North	1823	1467	964	869	767	349	315	242	231	215
HUH-1-1	Cartas Branchi College of Careers [2]	2963	1777	932	847	754	778	562	287	229	216
HUH-1-2	Lok Ka House	2759	1194	891	839	763	995	497	244	239	229
HUH-1-3	Wing Fung Building	3178	1412	992	861	777	1077	520	296	253	228
HUH-2-1	Hong Kong Polytechnic University - Cheung On Tak Lecture Theatre	1322	1230	956	798	698	454	430	331	253	217
HUH-3-1	Royal Peninsula Block 2	634	688	649	600	545	234	247	232	215	198
HUH-4-1	The Metropolis Residence Tower 2	775	746	597	559	515	238	238	221	203	187
HUH-5-1	Harbour Plaza Metropolis	573	599	571	538	500	206	210	197	189	179
HUH-6-1	HK Fire Services Headquarters	667	726	680	625	568	230	239	225	208	190

ASR ID	Location	1-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )					24-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
	Building										
HUH-7-1	Hotel Nikko Hong Kong	<b>617</b>	<b>661</b>	<b>612</b>	<b>557</b>	<b>516</b>	216	228	216	201	186
HUH-9-1	Hong Kong Coliseum	Note [3]	Note [3]	<b>565</b>	<b>530</b>	490	Note [3]	Note [3]	210	197	184
HUH-10-1	Harbourfront Horizon	Note [3]	<b>585</b>	<b>560</b>	<b>530</b>	495	Note [3]	201	194	186	178
HUH-11-1	China Travel Cargo Logistic Centre	<b>1207</b>	<b>936</b>	<b>698</b>	<b>652</b>	<b>600</b>	<b>434</b>	<b>337</b>	259	225	196
DIH-P1-1	Upper Wong Tai Sin Estate Phase 3	<b>3463</b>	<b>1092</b>	<b>727</b>	<b>627</b>	<b>520</b>	<b>1370</b>	<b>472</b>	<b>290</b>	244	211
KAT-P1-1	Residential premises near Kai Tak Station	See Note [1]									
KAT-P1-2	Residential premises near Kai Tak Station	See Note [1]									
KAT-P1-3	Residential premises near Kai Tak Station	See Note [2]									
KAT-P1-4	Residential premises near Kai Tak Station	See Note [2]									
KAT-P1-5	Residential premises near Kai Tak Station <sup>[4]</sup>	Note [3]	<b>5586</b>	<b>3272</b>	<b>2067</b>	<b>1352</b>	Note [3]	<b>1102</b>	<b>687</b>	<b>478</b>	<b>354</b>
KAT-P1-6	Residential premises near Kai Tak Station <sup>[4]</sup>	Note [3]	<b>2568</b>	<b>1961</b>	<b>1396</b>	<b>1013</b>	Note [3]	<b>845</b>	<b>647</b>	<b>468</b>	<b>341</b>
KAT-P1-7	Residential premises near Kai Tak Station	See Note [2]									
KAT-P2-1	Public Housing Development at ex-San Po Kong Flatted Factory	<b>1938</b>	<b>1896</b>	<b>1451</b>	<b>1045</b>	<b>812</b>	<b>544</b>	<b>507</b>	<b>379</b>	<b>339</b>	<b>297</b>
TKW-P1-1	Residential premises near To Kwa Wan Station	See Note [2]									
HOM-P2	Proposed Dormitory for HKPU	<b>1157</b>	<b>1138</b>	<b>1037</b>	<b>915</b>	<b>791</b>	253	<b>268</b>	254	237	218

## Notes:

Values which exceeded AQO are shown as bolded characters

[1] The population intake of this project would be after Year 2016 (Referenced from approved Kai Tak Development EIA Report), and hence there are no cumulative construction dust impact from the projects

[2] The premises is located within the works site boundary, hence the population intake would be after the construction of the Project i.e. no impact from the Project

[3] No air sensitive use is observed at such levels –

Hong Kong Coliseum (HUH-9-1): Air sensitive use is on the podium of the HUH station, which is at least 10mAG. First assessment height is therefore considered at 10mAG.

Harbourfront Horizon (HUH-10-1): The first floor of residential units is situated on the podium, which is at least 5m above ground. First assessment height is therefore considered at 5mAG.

Residential premises near Kai Tak Station (KAT-P1-5 / KAT-P1-6): These residential premises are currently occupied for the construction of public rental housing, which would have a 5m height lift lobby on the ground floor. First assessment height is therefore considered at 5mAG

[4] The assessment results are for indication only as there are no air sensitive uses when the Yau Lee CBP is in operation.

**Table 7.10b:** Predicted Unmitigated Cumulative Annual TSP Concentrations at Various Heights above Ground in the Kowloon Area (Including Background Concentration of  $75.2\mu\text{g}/\text{m}^3$ )

ASR ID	Location	Annual TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m
DIH-1-1	Tsui Chuk Garden Block 5	77.5	77.5	77.0	76.7	76.4
DIH 2-1	Chuk Yuen North Estate – Pak	75.9	76.0	75.9	75.8	75.7

ASR ID	Location	Annual TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m
	Yuen House					
DIH-3-1	Chuk Yuen South Estate – Wah Yuen House	77.4	77.4	77.0	76.7	76.4
DIH-3-2	Chuk Yuen South Estate – Nga Yuen House	76.4	76.4	76.2	76.1	76.0
DIH-3-3	Chuk Yuen South Estate – Kwai Yuen House	79.7	79.3	78.2	77.3	76.8
DIH-3-4	Chuk Yuen South Estate – Chui Yuen House	77.0	76.9	76.6	76.3	76.1
DIH-4-1	Pang Ching Court	76.6	76.6	76.4	76.3	76.1
DIH-4-2	Carbo Anglo-Chinese Kindergarten	76.9	76.9	76.5	76.3	76.1
DIH-5-1	Rainbow Home	77.8	77.4	76.8	76.4	76.1
DIH-5-2	Residential premises	76.9	76.8	76.5	76.2	76.0
DIH-5-5	Our Lady's Kindergarten	76.6	76.6	76.4	76.2	76.0
DIH 6-1	Wong Tai Sin Fire Station and Quarters Block A	76.9	76.9	76.7	76.4	76.2
DIH-7-1	Tropicana Gardens Block 2	77.9	77.9	77.5	77.0	76.6
DIH-7-2	Tropicana Garden Block 3	77.5	77.5	77.2	76.8	76.5
DIH-8-1	Redemption Lutheran Church	<b>82.5</b>	<b>82.3</b>	<b>80.7</b>	79.2	78.1
DIH-9-1	Shek On Building	<b>98.7</b>	<b>92.2</b>	<b>84.9</b>	<b>81.1</b>	79.1
DIH-10-1	Hong Kong Sheung Keung Hui Nursing Home	<b>92.7</b>	<b>89.2</b>	<b>84.0</b>	<b>81.0</b>	79.1
DIH-11-1	Lung Poon Court – Lung Wan House	<b>98.1</b>	<b>84.0</b>	78.8	77.2	76.5
DIH-12-1	Galaxia Tower B	79.2	79.0	78.0	77.2	76.6
DIH-12-2	Galaxia Tower E	78.8	78.3	77.3	76.7	76.3
DIH-13-1	Canossa Primary School	<b>89.1</b>	<b>87.6</b>	<b>83.7</b>	<b>80.9</b>	79.1
DIH-14-1	Rhythm Garden Block 2	<b>88.7</b>	79.5	77.2	76.5	76.1
DIH-14-2	Rhythm Garden Block 5	77.6	77.6	77.1	76.6	76.3
DIH-14-3	Rhythm Garden Block 8	78.2	78.1	77.4	76.9	76.5
DIH-14-4	Canossa Primary School (San Po Kong)	<b>81.4</b>	<b>80.5</b>	78.5	77.2	76.5
DIH-14-5	Rhythm Garden Block 1	<b>90.1</b>	79.7	77.2	76.5	76.1
DIH-14-6	Rhythm Garden Block 3	<b>82.0</b>	78.4	77.1	76.5	76.1
DIH-15-1	Choi Hung Estate - Kam Wan House	76.7	76.7	76.4	76.1	76.0
DIH-15-2	Choi Hung Estate - Pik Hoi House	76.5	76.5	76.3	76.2	76.0
DIH-16-1	Wong Tai Sin Temple	<b>81.2</b>	79.2	77.6	76.9	76.6
DIH-17-1	Chuk Yuen United Village	77.8	77.6	77.1	76.8	76.5
DIH-18-1	Upper Wong Tai Sin Estate - Po Sin House	<b>81.4</b>	79.1	77.7	77.1	76.8
DIH-18-2	Upper Wong Tai Sin Estate - Tat Sin House	<b>84.2</b>	78.9	77.5	77.0	76.7
DIH-19-1	Lung Cheung Government Secondary School	77.6	77.7	77.3	76.9	76.7
DIH-20-1	Baptist Rainbow Primary School	<b>81.2</b>	80.0	78.2	77.2	76.7
DIH-21-1	Tin Wang Court - Wang King House	<b>91.9</b>	<b>85.8</b>	<b>80.2</b>	78.0	77.1
DIH-22-1	Price Memorial Catholic Primary School	<b>84.5</b>	<b>82.1</b>	79.0	77.6	76.9
DIH-23-1	Tin Ma Court - Chun On House	<b>82.8</b>	<b>80.9</b>	78.4	77.3	76.8
DIH-24-1	Shing Wong Temple	79.2	78.7	77.7	77.1	76.8
DIH-25-1	Football Field in Choi Hung Road Playground	<b>83.0</b>	<b>82.5</b>	<b>80.5</b>	79.0	77.9
DIH-26-1	Hammer Hill Road Leisure Pool	76.6	76.6	76.5	76.3	76.1
KAT-1-1	Kowloon Cognito College	<b>80.2</b>	<b>80.3</b>	79.6	78.8	78.0
TKW-1-1	Parc 22	<b>87.5</b>	<b>86.3</b>	<b>83.8</b>	<b>82.1</b>	<b>80.9</b>
TKW-1-2	Sanford Mansion	<b>85.5</b>	<b>85.3</b>	<b>83.5</b>	<b>82.0</b>	<b>80.8</b>
TKW-2-1	Skytower Tower 5	<b>86.6</b>	<b>86.3</b>	<b>84.1</b>	<b>82.4</b>	<b>81.1</b>
TKW-2-2	Skytower Tower 2	<b>86.0</b>	<b>85.8</b>	<b>83.8</b>	<b>82.2</b>	<b>80.9</b>
TKW-3-1	Prince Ritz	<b>87.0</b>	<b>87.1</b>	<b>85.5</b>	<b>83.9</b>	<b>82.4</b>

ASR ID	Location	Annual TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m
TKW-3-2	Prosperity House	86.8	86.6	85.0	83.5	82.1
TKW-4-1	Basketball Court in Sung Wong Toi Playground	104.6	97.9	89.4	85.1	82.7
TKW-5-1	Football Field in Argyle Street Playground	95.0	93.1	88.4	85.2	83.0
MTW-6-1	Fok On Building	84.6	84.6	83.1	81.8	80.8
MTW-6-2	Hong Kong Society for the Protection of Children	84.0	84.2	83.0	81.8	80.8
MTW-6-3	Chung Nam Mansion	82.8	83.1	82.3	81.3	80.4
MTW-6-4	Pok Oi Lau	82.3	82.7	81.9	81.1	80.3
MTW-7-1	Ma Tau Wai Estate - Geranium House	81.5	81.9	81.4	80.8	80.2
MTW-8-1	Horae Place	81.8	82.2	81.7	81.0	80.3
MTW-9-1	Majestic Park	81.6	81.8	81.2	80.6	80.1
MTW-10-1	18 Farm Road	81.3	81.7	81.2	80.7	80.1
MTW-11-1	Farm Road Government Primary School	80.9	81.3	80.9	80.4	79.9
MTW-12-1	Yuet Fai Mansion	81.0	81.4	81.0	80.5	79.9
MTW-12-2	Delight Court	81.3	81.3	80.7	80.2	79.7
MTW-12-3	Lucky Mansion	88.9	83.0	80.7	79.9	79.4
MTW-12-4	352-354 Ma Tau Wai Rd	93.5	84.0	80.8	79.8	79.2
MTW-12-5	Seng Cheong Building	92.5	84.3	80.3	79.1	78.5
MTW-12-6	Great Wall Building	81.9	82.1	81.6	81.0	80.4
MTW-12-7	197-199 Ma Tau Wai Rd	81.4	81.8	81.4	80.8	80.2
MTW-12-8	Pak Tai Mansion	81.1	81.5	81.1	80.6	80.0
MTW-12-9	Residential premises along Hung Kwong Street	81.0	81.4	81.0	80.5	79.9
MTW-12-10	Lucky Building	88.0	82.0	79.9	79.2	78.7
MTW-13-1	Cheung Chuk Shan Memorial School	83.2	81.6	80.8	80.3	79.8
MTW-14-1	Po Leung Kuk Lam Man Chan English Primary School	82.5	81.9	80.9	80.3	79.7
MTW-15-1	Hung Hom Lutheran Primary School	86.1	81.8	80.7	80.1	79.6
MTW-16-1	SKH Good Shepherd Primary School	88.3	82.6	80.7	80.0	79.4
MTW-17-1	Loyal Mansion	87.9	83.8	80.2	79.0	78.4
MTW-18-1	Residential premises along Chi Kiang Street	83.1	81.2	79.7	79.0	78.5
MTW-19-1	Holy Trinity Church	92.3	91.3	87.5	84.5	82.4
MTW-20-1	Football Field in Ma Tau Wai Road Playground	81.4	81.8	81.3	80.7	80.1
MTW-21-1	To Kwa Wan Market & Government Offices	89.8	81.7	80.1	79.5	79.0
MTW-22-1	Kowloon Animal Management Centre	86.7	86.9	85.4	83.7	82.2
HOM-1-1	Ko Shan Theatre	81.4	80.6	79.2	78.3	77.8
HOM-2-1	Faerie Court	87.9	81.4	79.1	78.3	77.9
HOM-2-2	Lee Wing Bldg	83.0	80.2	78.6	78.0	77.6
HOM-2-3	Wing Lam Mansion	79.5	79.2	78.4	77.9	77.5
HOM-2-4	Tak Lee Court	78.4	78.5	78.1	77.7	77.4
HOM-2-5	Chat Ma Mansion	82.5	80.8	79.1	78.3	77.8
HOM-3-1	Fook Sing Mansion	77.9	78.1	77.9	77.6	77.4
HOM-3-2	Marigold Mansion Block A	77.6	77.8	77.7	77.6	77.4
HOM-4-1	Yee Fu Building	77.5	77.7	77.7	77.7	77.6
HOM-5-1	271 Chatham Road North	78.0	78.2	78.2	78.3	78.0
HUH-1-1	Cartas Branchi College of Careers [2]	80.6	80.0	78.8	78.2	77.8
HUH-1-2	Lok Ka House	85.0	81.0	78.5	77.8	77.4
HUH-1-3	Wing Fung Building	86.0	81.0	78.3	77.4	77.0
HUH-2-1	Hong Kong Polytechnic University - Cheung On Tak Lecture Theatre	79.9	79.3	78.0	77.2	76.8

ASR ID	Location	Annual TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m
HUH-3-1	Royal Peninsula Block 2	77.5	77.5	77.2	76.9	76.7
HUH-4-1	The Metropolis Residence Tower 2	76.9	77.0	76.9	76.7	76.5
HUH-5-1	Harbour Plaza Metropolis	78.0	77.9	77.4	77.0	76.7
HUH-6-1	HK Fire Services Headquarters Building	79.9	79.8	78.9	78.1	77.5
HUH-7-1	Hotel Nikko Hong Kong	78.4	78.4	77.9	77.4	77.0
HUH-9-1	Hong Kong Coliseum	Note [3]	Note [3]	77.1	76.8	76.5
HUH-10-1	Harbourfront Horizon	Note [3]	79.0	77.8	77.1	76.7
HUH-11-1	China Travel Cargo Logistic Centre	79.4	78.4	77.4	76.9	76.6
DIH-P1-1	Upper Wong Tai Sin Estate Phase 3	<b>91.3</b>	<b>81.6</b>	78.2	77.2	76.7
KAT-P1-1	Residential premises near Kai Tak Station	See Note [1]				
KAT-P1-2	Residential premises near Kai Tak Station	See Note [1]				
KAT-P1-3	Residential premises near Kai Tak Station	See Note [2]				
KAT-P1-4	Residential premises near Kai Tak Station	See Note [2]				
KAT-P1-5	Residential premises near Kai Tak Station <sup>[4]</sup>	Note [3]	<b>84.1</b>	79.4	78.0	77.2
KAT-P1-6	Residential premises near Kai Tak Station <sup>[4]</sup>	Note [3]	<b>84.8</b>	<b>83.3</b>	<b>82.0</b>	<b>80.8</b>
KAT-P1-7	Residential premises near Kai Tak Station	See Note [2]				
KAT-P2-1	Public Housing Development at ex-San Po Kong Flatted Factory	79.2	79.1	78.3	77.5	76.9
TKW-P1-1	Residential premises near To Kwa Wan Station	See Note [2]				
HOM-P2	Proposed Dormitory for HKPU	77.5	77.7	77.6	77.6	77.3

## Notes:

Values which exceeded AQO are shown as bolded characters

- [1] The population intake of this project would be after Year 2016 (Referenced from approved Kai Tak Development EIA Report), and hence there are no cumulative construction dust impact from the projects
- [2] The premises is located within the works site boundary, hence the population intake would be after the construction of the Project i.e. no impact from the Project
- [3] No air sensitive use is observed at such levels –
- Hong Kong Coliseum (HUH-9-1): Air sensitive use is on the podium of the HUH station, which is at least 10mAG. First assessment height is therefore considered at 10mAG.
- Harbourfront Horizon (HUH-10-1): The first floor of residential units is situated on the podium, which is at least 5m above ground. First assessment height is therefore considered at 5mAG.
- Residential premises near Kai Tak Station (KAT-P1-5 / KAT-P1-6): These residential premises are currently occupied for the construction of public rental housing, which would have a 5m height lift lobby on the ground floor. First assessment height is therefore considered at 5mAG
- [4] The assessment results are for indication only as there are no air sensitive uses when the Yau Lee CBP is in operation.

### 7.6.6 Recommended Mitigation Measures for Fugitive Dust

In order to reduce the dust emission from the Project and achieve compliances of TSP criteria at ASRs, the following specific mitigation measures are recommended:

- i) Mitigation measures in form of regular watering under a good site practice should be adopted. In accordance with the “Control of Open Fugitive Dust Sources” (USEPA AP-42) as given in **Appendix 7.4**, watering once per hour on exposed worksites and haul road in Kowloon area and once per 1.5 hour at those in Tai Wai area are proposed to achieve dust removal efficiencies of 91.7% and 87.5% respectively. These dust suppression efficiencies are derived based on the average haul road traffic, average evaporation rate and an assumed application intensity of 1.8 L/m<sup>2</sup> for the respective watering frequencies (see **Appendix 7.4**). Any potential dust impact and watering mitigation would be subject to the actual site conditions. For example, a construction activity that produces inherently wet conditions or in cases under rainy weather, the

above water application intensity may not be unreservedly applied. While the above watering frequencies are to be followed, the extent of watering may vary depending on actual site conditions but should be sufficient to maintain an equivalent intensity of no less than 1.8 L/m<sup>2</sup> to achieve the respective dust removal efficiencies. The dust levels would be monitored and managed under an EM&A programme as specified in the EM&A Manual;

- ii) For the unloading of spoil from trucks at barging point, installation of 3-sided screen with top cover and the provision of water sprays at the discharge point would be provided for an assumed 50% dust suppression. This assumption is based upon USEPA AP-42 Control Techniques for Particulate Emissions from Stationary Sources Part 2 which states that watering alone would have 50% dust removal efficiency. This is, however, considered very conservative as the barging point would also be provided with a 3-sided enclosure, which would provide additional dust containment and control which has not been allowed for in this assumption

In addition to the abovementioned, the Contractor is also obliged to follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation. It stipulates the construction dust control requirements for both Notifiable (e.g. site formation) and Regulatory (e.g. road opening) Works to be carried out by the Contractor.

In accordance with the Air Pollution Control (Construction Dust) Regulation, the following dust suppression measures should also be incorporated by the Contractor to control the dust nuisance throughout the construction phase:

- Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;
- Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;
- A stockpile of dusty material should not be extend beyond the pedestrian barriers, fencing or traffic cones;
- The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;
- Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;
- When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;
- The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;
- Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;
- Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;
- Where a scaffolding is erected around the perimeter of a building under construction,

effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;

- Any skip hoist for material transport should be totally enclosed by impervious sheeting;
- Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;
- Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;
- Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and
- Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.

For the barging facilities at Kai Tak Runway, the following good site practices are required:

- All road surfaces within the barging facilities will be paved.
- Dust enclosures will be provided for the loading ramp.
- Vehicles will be required to pass through designated wheel wash facilities.
- Continuous water spray at the loading point.

These requirements should be incorporated into the Contract Specification for the civil work. In addition, an audit and monitoring programme during the construction phase should be implemented by the Contractor to ensure that the construction dust impacts are controlled to within the HKAQO. Detailed requirements for the audit and monitoring programme are given separately in the EM&A manual.

### **7.6.7 Assessment Results - Mitigated Scenario**

#### **Short-term Assessment (Tier 1)**

The maximum 1-hour and 24-hour TSP concentrations based on Tier 1 screening test have been assessed. The following **Tables 7.11 – 7.12** summaries the cumulative 1-hour and 24-hour TSP impact (Tier 1) at identified ASRs in Tai Wai Area and Kowloon Area respectively. The results indicate that, for the majority of ASRs, exceedance of 1-hour and 24-hour TSP criteria are not anticipated even assuming the absolute worst case situation, whereby all the worksites would be active (i.e. 100%). However, for the ASRs at Hin Keng Estate – Hin Kwai House (TAW-6-6) and Hin Wan House (TAW-6-8), Hin Tin Swimming Pool (TAW-12-1), Football field inside Hin Ting Playground (TAW-13-1), Shek On Building (DIH-9-1), Basketball court in Sung Wong Toi Playground (TKW-4-1) and Residential Premises near Kai Tak Station (KAT-P1-5), exceedances of 1-hour and/or 24-hour TSP criteria are predicted. As the Tier 1 assessment is for screening purposes only and would not represent the actual on-site situation, a more focused Tier 2 assessment has been undertaken at the abovementioned ASRs.

In addition, contour of Tier 1 1-hour and 24-hour TSP concentrations are shown in the **Figures 7.2.1 – 7.2.4**. Contours indicate that there are no exceedances at other locations.

**Table 7.11:** Tier 1 Assessment – Predicted Mitigated Cumulative 1-hour and 24-hour TSP Concentrations at Various Heights above Ground in the Tai Wai Area (Including Background Concentration of 65.4µg/m<sup>3</sup>)

ASR ID	Location	1-hour TSP Concentrations at Various Height(µg/m <sup>3</sup> )					24-hour TSP Concentrations at Various Height(µg/m <sup>3</sup> )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
TAW-1-1	Carado Garden Block 6	135	135	123	108	94	76	76	75	74	73
TAW-2-1	Shatin Heights	197	190	155	129	113	91	89	82	76	72
TAW-3-1	K K Terrace	175	173	149	123	104	81	80	78	75	73
TAW-4-1	Woodcrest Hill Block 2&3	162	163	143	122	103	83	82	77	74	72
TAW-5-1	Chan's Garden	174	170	141	115	101	94	90	80	74	71
TAW-5-2	L Louey	356	290	171	134	113	118	102	87	79	74
TAW-5-3	Joyville	218	204	156	115	105	105	95	83	75	72
TAW-6-1	Hin Keng Estate - Hin Yiu House	177	161	132	111	97	80	81	79	77	74
TAW-6-2	Carmel Alison Lam Primary School	176	162	137	111	95	79	79	78	76	74
TAW-6-3	Hin Keng Estate - Hin Tak House	192	171	139	108	96	81	80	78	76	73
TAW-6-4	Hin Keng Estate - Hin Yeung House	243	212	137	106	96	90	85	79	76	73
TAW-6-5	Hin Keng Estate - Hin Yau House	431	279	192	134	117	160	113	89	78	74
TAW-6-6	Hin Keng Estate - Hin Kwai House	<b>554</b>	230	151	120	102	178	105	81	77	74
TAW-6-7	C.U.H.K.A.A. Thomas Cheung School	472	291	153	118	102	104	91	78	75	72
TAW-6-8	Hin Keng Estate - Hin Wan House	<b>553</b>	259	180	133	111	205	116	87	78	73
TAW-7-1	Kam Cheong Building	105	108	104	100	94	71	72	72	71	71
TAW-8-1	Grandway Garden Block 2	107	110	105	100	95	72	73	72	72	71
TAW-9-1	Christian Alliance Cheng Wing Gee College	150	152	142	128	114	73	73	73	72	72
TAW-10-1	Holford Garden - Fook Siu Court	129	132	126	117	107	71	71	71	71	70
TAW-11-1	Man Lai Court Tower 1	96	99	97	94	90	70	71	70	70	70
TAW-12-1	Hin Tin Swimming Pool	<b>567</b>	369	217	151	126	167	117	92	82	76
TAW-13-1	Football field inside Hin Tin Playground	<b>578</b>	308	190	144	121	186	114	89	80	76
TAW-P1	Top Side Residential Development at Tai Wai Maintenance Centre	409	348	226	152	124	100	97	88	82	77
TAW-P2	Tai Wai Station Development	114	117	112	105	98	73	74	73	72	72

Note:

Exceedances are shown as bolded characters.

**Table 7.12:** Tier 1 Assessment – Predicted Mitigated Cumulative 1-hour and 24-hour TSP Concentrations at Various Heights above Ground in the Kowloon Area (Including Background Concentration of 75.2µg/m<sup>3</sup>)

ASR ID	Location	1-hour TSP Concentrations at Various Height(µg/m <sup>3</sup> )					24-hour TSP Concentrations at Various Height(µg/m <sup>3</sup> )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
DIH-1-1	Tsui Chuk Garden	237	211	169	158	150	121	117	103	94	91

ASR ID	Location	1-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )					24-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
	Block 5										
DIH 2-1	Chuk Yuen North Estate – Pak Yuen House	165	171	165	157	149	95	96	94	91	89
DIH-3-1	Chuk Yuen South Estate – Wah Yuen House	217	204	173	161	153	107	104	99	94	91
DIH-3-2	Chuk Yuen South Estate – Nga Yuen House	222	213	181	163	153	101	101	97	93	91
DIH-3-3	Chuk Yuen South Estate – Kwai Yuen House	208	181	170	162	154	115	110	99	95	92
DIH-3-4	Chuk Yuen South Estate – Chui Yuen House	261	217	175	163	154	114	106	97	94	91
DIH-4-1	Pang Ching Court	177	170	165	158	150	95	97	95	92	89
DIH-4-2	Carbo Anglo-Chinese Kindergarten	289	213	158	152	145	120	113	96	92	90
DIH-5-1	Rainbow Home	183	185	175	166	156	107	104	100	96	92
DIH-5-2	Residential premises	196	197	177	168	157	105	107	103	98	93
DIH-5-5	Our Lady's Kindergarten	187	178	172	164	154	100	101	98	95	91
DIH 6-1	Wong Tai Sin Fire Station and Quarters Block A	217	217	188	168	157	105	106	102	97	93
DIH-7-1	Tropicana Gardens Block 2	275	265	210	172	160	124	122	110	101	94
DIH-7-2	Tropicana Garden Block 3	257	251	205	171	159	117	117	107	100	94
DIH-8-1	Redemption Lutheran Church	338	309	221	174	161	162	155	127	106	97
DIH-9-1	Shek On Building	540	368	210	179	166	267	191	124	108	98
DIH-10-1	Hong Kong Sheung Keung Hui Nursing Home	434	307	195	180	166	202	166	122	108	99
DIH-11-1	Lung Poon Court – Lung Wan House	479	339	239	195	174	234	146	117	105	98
DIH-12-1	Galaxia Tower B	375	353	271	216	183	140	139	127	116	107
DIH-12-2	Galaxia Tower E	353	337	265	215	184	144	133	122	112	105
DIH-13-1	Canossa Primary School	410	330	208	178	164	202	176	128	109	99
DIH-14-1	Rhythm Garden Block 2	335	335	289	244	208	166	129	119	113	108
DIH-14-2	Rhythm Garden Block 5	482	437	335	264	211	133	131	120	111	105
DIH-14-3	Rhythm Garden Block 8	386	377	304	243	202	141	141	131	121	113
DIH-14-4	Canossa Primary School (San Po Kong)	268	276	253	224	195	138	130	114	111	107
DIH-14-5	Rhythm Garden Block 1	436	330	282	241	202	186	130	116	112	108
DIH-14-6	Rhythm Garden Block 3	352	358	310	260	216	150	125	120	114	108
DIH-15-1	Choi Hung Estate - Kam Wan House	329	339	299	255	214	105	107	104	101	98
DIH-15-2	Choi Hung Estate - Pik Hoi House	364	373	324	271	224	112	113	109	105	100
DIH-16-1	Wong Tai Sin Temple	242	180	173	165	155	112	108	103	98	93

ASR ID	Location	1-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )					24-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
DIH-17-1	Chuk Yuen United Village	193	195	176	167	157	112	113	106	99	93
DIH-18-1	Upper Wong Tai Sin Estate - Po Sin House	249	178	172	164	155	121	102	99	96	93
DIH-18-2	Upper Wong Tai Sin Estate - Tat Sin House	261	178	172	164	155	141	101	98	95	93
DIH-19-1	Lung Cheung Government Secondary School	224	190	167	159	151	98	100	99	96	94
DIH-20-1	Baptist Rainbow Primary School	277	183	163	156	149	147	121	96	93	91
DIH-21-1	Tin Wang Court - Wang King House	368	230	166	159	151	206	139	104	97	93
DIH-22-1	Price Memorial Catholic Primary School	299	185	168	161	153	134	110	100	96	93
DIH-23-1	Tin Ma Court - Chun On House	248	174	169	162	154	139	112	98	96	93
DIH-24-1	Shing Wong Temple	284	196	163	157	149	107	100	98	96	93
DIH-25-1	Football Field in Choi Hung Road Playground	237	219	201	185	169	129	120	108	102	96
DIH-26-1	Hammer Hill Road Leisure Pool	286	301	277	247	217	101	102	99	97	95
KAT-1-1	Kowloon Cognito College	313	305	248	198	169	150	148	129	113	101
TKW-1-1	Parc 22	489	385	286	213	170	205	177	140	121	110
TKW-1-2	Sanford Mansion	398	366	288	221	175	179	169	140	119	109
TKW-2-1	Skytower Tower 5	347	306	248	214	182	177	166	136	123	111
TKW-2-2	Skytower Tower 2	348	335	273	220	180	174	165	139	120	110
TKW-3-1	Prince Ritz	390	352	260	205	171	188	176	145	125	112
TKW-3-2	Prosperity House	411	384	294	223	177	202	191	159	133	116
TKW-4-1	Basketball Court in Sung Wong Toi Playground	<b>528</b>	405	272	203	165	<b>289</b>	216	154	128	113
TKW-5-1	Football Field in Argyle Street Playground	411	362	264	201	167	221	206	161	131	114
MTW-6-1	Fok On Building	463	430	321	240	187	150	145	127	118	109
MTW-6-2	Hong Kong Society for the Protection of Children	415	400	316	241	189	138	138	127	118	109
MTW-6-3	Chung Nam Mansion	368	357	287	222	177	142	140	126	113	104
MTW-6-4	Pok Oi Lau	364	359	298	238	191	130	129	119	110	104
MTW-7-1	Ma Tau Wai Estate - Geranium House	292	296	262	223	186	122	123	117	109	102
MTW-8-1	Horae Place	250	257	235	208	181	126	128	121	113	104
MTW-9-1	Majestic Park	239	247	228	205	180	118	120	114	108	102
MTW-10-1	18 Farm Road	232	226	204	186	169	121	121	115	109	103
MTW-11-1	Farm Road Government Primary School	219	224	208	190	172	115	117	113	107	102
MTW-12-1	Yuet Fai Mansion	192	199	187	173	158	115	118	114	109	104
MTW-12-2	Delight Court	273	193	183	171	157	112	115	112	108	103
MTW-12-3	Lucky Mansion	359	208	185	174	161	159	119	110	106	102
MTW-12-4	352-354 Ma Tau Wai Rd	363	197	186	175	162	166	116	109	105	101
MTW-12-5	Seng Cheong	425	214	178	168	157	191	128	110	104	101

ASR ID	Location	1-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )					24-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
	Building										
MTW-12-6	Great Wall Building	217	223	204	186	168	122	124	118	111	104
MTW-12-7	197-199 Ma Tau Wai Rd	207	213	197	180	164	118	121	116	110	104
MTW-12-8	Pak Tai Mansion	193	195	185	172	157	115	118	114	109	104
MTW-12-9	Residential premises along Hung Kwong Street	244	199	185	172	158	114	117	113	109	103
MTW-12-10	Lucky Building	314	221	185	174	161	149	127	111	105	100
MTW-13-1	Cheung Chuk Shan Memorial School	382	201	187	174	160	149	115	112	107	103
MTW-14-1	Po Leung Kuk Lam Man Chan English Primary School	278	201	192	179	165	120	114	111	107	102
MTW-15-1	Hung Hom Lutheran Primary School	350	208	189	176	163	162	113	110	106	102
MTW-16-1	SKH Good Shepherd Primary School	429	199	189	177	164	186	113	110	106	102
MTW-17-1	Loyal Mansion	282	197	176	166	155	142	125	111	105	101
MTW-18-1	Residential premises along Chi Kiang Street	383	212	178	168	156	153	113	108	105	101
MTW-19-1	Holy Trinity Church	393	368	283	214	171	216	201	158	131	115
MTW-20-1	Football Field in Ma Tau Wai Road Playground	259	266	242	213	184	120	122	116	109	102
MTW-21-1	To Kwa Wan Market & Government Offices	364	199	188	177	164	180	118	109	105	101
MTW-22-1	Kowloon Animal Management Centre	343	319	262	217	179	174	169	144	127	114
HOM-1-1	Ko Shan Theatre	236	225	210	195	176	120	117	109	104	100
HOM-2-1	Faerie Court	355	229	189	171	156	160	124	113	106	101
HOM-2-2	Lee Wing Bldg	414	262	193	178	162	193	142	116	107	101
HOM-2-3	Wing Lam Mansion	313	268	204	191	173	142	134	116	107	101
HOM-2-4	Tak Lee Court	248	241	214	204	184	121	121	113	106	101
HOM-2-5	Chat Ma Mansion	232	210	182	167	154	134	123	113	106	101
HOM-3-1	Fook Sing Mansion	222	219	220	223	203	111	113	109	104	100
HOM-3-2	Marigold Mansion Block A	207	209	213	240	243	105	108	114	125	126
HOM-4-1	Yee Fu Building	199	197	211	260	308	106	108	112	129	146
HOM-5-1	271 Chatham Road North	237	211	216	288	352	119	120	123	147	169
HUH-1-1	Cartas Branchi College of Careers	341	240	200	281	302	164	144	125	148	157
HUH-1-2	Lok Ka House	407	240	225	308	319	191	139	125	146	151
HUH-1-3	Wing Fung Building	441	266	256	288	274	202	150	140	145	140
HUH-2-1	Hong Kong Polytechnic University - Cheung On Tak Lecture Theatre	324	297	242	204	178	162	154	134	120	111
HUH-3-1	Royal Peninsula Block 2	194	189	165	157	150	119	114	108	104	101
HUH-4-1	The Metropolis Residence Tower 2	225	218	184	154	148	120	118	111	104	99
HUH-5-1	Harbour Plaza Metropolis	214	243	231	157	143	113	114	108	102	97

ASR ID	Location	1-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )					24-hour TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
HUH-6-1	HK Fire Services Headquarters Building	198	200	184	167	155	116	113	109	105	100
HUH-7-1	Hotel Nikko Hong Kong	187	184	172	159	148	107	109	105	102	98
HUH-9-1	Hong Kong Coliseum <sup>[3]</sup>	Note [3]	Note [3]	196	166	145	Note [3]	Note [3]	105	101	97
HUH-10-1	Harbourfront Horizon <sup>[3]</sup>	Note [3]	202	168	143	137	Note [3]	106	102	99	95
HUH-11-1	China Travel Cargo Logistic Centre	325	265	183	169	157	164	139	116	110	104
DIH-P1-1	Upper Wong Tai Sin Estate Phase 3	357	178	171	163	154	184	113	99	95	92
KAT-P1-1	Residential premises near Kai Tak Station	See Note [1]									
KAT-P1-2	Residential premises near Kai Tak Station	See Note [1]									
KAT-P1-3	Residential premises near Kai Tak Station	See Note [2]									
KAT-P1-4	Residential premises near Kai Tak Station	See Note [2]									
KAT-P1-5	Residential premises near Kai Tak Station <sup>[4]</sup>	Note [3]	<b>542</b>	349	248	193	Note [3]	175	139	120	108
KAT-P1-6	Residential premises near Kai Tak Station <sup>[4]</sup>	Note [3]	299	242	207	191	Note [3]	155	133	115	103
KAT-P1-7	Residential premises near Kai Tak Station	See Note [2]									
KAT-P2-1	Public Housing Development at ex-San Po Kong Flatted Factory	336	332	274	223	185	146	139	126	118	111
TKW-P1-1	Residential premises near To Kwa Wan Station	See Note [2]									
HOM-P2	Proposed Dormitory for HKPU	198	206	222	236	235	108	110	116	122	115

**Notes:**

Values which exceeded AQO are shown as bolded characters

[1] The population intake of this project would be after Year 2016 (Referenced from approved Kai Tak Development EIA Report), and hence there are no cumulative construction dust impact from the projects

[2] The premises is located within the works site boundary, hence the population intake would be after the construction of the Project i.e. no impact from the Project

[3] No air sensitive use is observed at such levels –

Hong Kong Coliseum (HUH-9-1): Air sensitive use is on the podium of the HUH station, which is at least 10mAG. First assessment height is therefore considered at 10mAG.

Harbourfront Horizon (HUH-10-1): The first floor of residential units is situated on the podium, which is at least 5m above ground. First assessment height is therefore considered at 5mAG.

Residential premises near Kai Tak Station (KAT-P1-5 / KAT-P1-6): These residential premises are currently occupied for the construction of public rental housing, which would have a 5m height lift lobby on the ground floor. First assessment height is therefore considered at 5mAG

[4] The assessment results are for indication only as there are no air sensitive uses when the Yau Lee CBP is in operation.

**Short-term Assessment (Tier 2)**

A more focused Tier 2 assessment has been conducted such that the projected actual 30% active works areas for the adjacent construction site is positioned closest to the potentially worst affected ASRs, while emission from all the other sites remain at 100% as per Tier

1. As mentioned in **Section 7.6.3**, the Tier 2 assessment is also very conservative and would over predict the dust emissions that would unlikely occur.

The maximum 1-hour and 24-hour TSP concentrations at the ASRs highlighted in Tier 1 have been assessed. The following **Tables 7.13 – 7.14** summaries the cumulative 1-hour and 24-hour TSP impact (Tier 2) at these ASRs in Tai Wai Area and Kowloon Area respectively. Results show that, the cumulative 1-hour and 24-hour TSP concentrations would comply with the respective criteria and as such, adverse short-term construction dust impact is not anticipated.

**Table 7.13:** Tier 2 Assessment – Predicted Mitigated Cumulative 1-hour and 24-hour TSP Concentrations at Various Heights above Ground in the Tai Wai Area (Including Background Concentration of 65.4µg/m<sup>3</sup>)

ASR ID	Location	1-hour TSP Concentrations at Various Height(µg/m <sup>3</sup> )					24-hour TSP Concentrations at Various Height(µg/m <sup>3</sup> )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
TAW 6-6	Hin Keng Estate - Hin Kwai House	468	181	151	120	101	160	91	80	75	73
TAW 6-8	Hin Keng Estate - Hin Wan House	393	230	180	133	110	152	98	86	78	73
TAW-12-1	Hin Tin Swimming Pool	399	241	137	113	97	129	93	80	74	71
TAW-13-1	Football field inside Hin Tin Playground	471	162	119	105	92	169	89	89	74	71

**Table 7.14:** Tier 2 Assessment – Predicted Mitigated Cumulative 1-hour and 24-hour TSP Concentrations at Various Heights above Ground in the Kowloon Area (Including Background Concentration of 75.2µg/m<sup>3</sup>)

ASR ID	Location	1-hour TSP Concentrations at Various Height(µg/m <sup>3</sup> )					24-hour TSP Concentrations at Various Height(µg/m <sup>3</sup> )				
		1.5m	5m	10m	15m	20m	1.5m	5m	10m	15m	20m
DIH-9-1	Shek On Building	454	250	193	179	166	222	148	109	98	92
TKW-4-1	Basketball Court in Sung Wong Toi Playground	492	328	217	180	155	259	185	135	119	108
KAT-P1-5	Residential premises near Kai Tak Station	Note [1]	360	212	168	147	Note [1]	151	118	104	97

Notes:

[1] No air sensitive use is observed at such levels –

Residential premises near Kai Tak Station (KAT-P1-5 / KAT-P1-6): These residential premises are currently occupied for the construction of public rental housing, which would have a 5m height lift lobby on the ground floor. First assessment height is therefore considered at 5mAG

### Long-term Assessment

The maximum predicted annual TSP concentrations at identified ASRs in the study area are given in **Tables 7.15 – 7.16** for Kowloon Area and Tai Wai Area respectively.

**Table 7.15:** Predicted Mitigated Cumulative Annual TSP Concentrations at Various Heights above Ground in the Tai Wai Area (Including Background Concentration of 65.4µg/m<sup>3</sup>)

ASR ID	Location	Annual TSP Concentrations at Various Height(µg/m <sup>3</sup> )				
		1.5m	5m	10m	15m	20m
TAW-1-1	Carado Garden Block 6	65.5	65.5	65.5	65.5	65.4
TAW-2-1	Shatin Heights	65.5	65.5	65.5	65.5	65.4
TAW-3-1	K K Terrace	65.5	65.5	65.5	65.5	65.4
TAW-4-1	Woodcrest Hill Block 2&3	65.6	65.6	65.5	65.5	65.5
TAW-5-1	Chan's Garden	65.7	65.7	65.6	65.5	65.5
TAW-5-2	L Louey	66.4	66.2	65.8	65.7	65.6
TAW-5-3	Joyville	66.0	65.9	65.7	65.6	65.5
TAW-6-1	Hin Keng Estate - Hin Yiu House	65.5	65.5	65.5	65.5	65.5
TAW-6-2	Carmel Alison Lam Primary School	65.5	65.5	65.5	65.5	65.5

ASR ID	Location	Annual TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m
TAW 6-3	Hin Keng Estate - Hin Tak House	65.5	65.5	65.5	65.5	65.5
TAW 6-4	Hin Keng Estate - Hin Yeung House	65.7	65.7	65.6	65.5	65.5
TAW 6-5	Hin Keng Estate - Hin Yau House	66.7	66.2	65.8	65.7	65.6
TAW 6-6	Hin Keng Estate - Hin Kwai House	67.2	66.1	65.7	65.6	65.5
TAW 6-7	C.U.H.K.A.A. Thomas Cheung School	65.6	65.6	65.5	65.5	65.5
TAW 6-8	Hin Keng Estate - Hin Wan House	66.9	66.3	65.8	65.6	65.6
TAW-7-1	Kam Cheong Building	65.4	65.4	65.4	65.4	65.4
TAW-8-1	Grandway Garden Block 2	65.4	65.4	65.4	65.4	65.4
TAW-9-1	Christian Alliance Cheng Wing Gee College	65.4	65.5	65.4	65.4	65.4
TAW-10-1	Holford Garden - Fook Siu Court	65.4	65.4	65.4	65.4	65.4
TAW-11-1	Man Lai Court Tower 1	65.4	65.4	65.4	65.4	65.4
TAW-12-1	Hin Tin Swimming Pool	66.6	65.8	65.6	65.5	65.5
TAW-13-1	Football field inside Hin Tin Playground	67.6	66.3	65.8	65.6	65.5
TAW-P1	Top Side Residential Development at Tai Wai Maintenance Centre	65.6	65.6	65.6	65.5	65.5
TAW-P2	Tai Wai Station Development	65.4	65.4	65.4	65.4	65.4

**Table 7.16:** Predicted Mitigated Cumulative Annual TSP Concentrations at Various Heights above Ground in the Kowloon Area (Including Background Concentration of  $75.2\mu\text{g}/\text{m}^3$ )

ASR ID	Location	Annual TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m
DIH-1-1	Tsui Chuk Garden Block 5	75.5	75.5	75.4	75.4	75.3
DIH 2-1	Chuk Yuen North Estate – Pak Yuen House	75.3	75.3	75.3	75.3	75.3
DIH-3-1	Chuk Yuen South Estate – Wah Yuen House	75.5	75.5	75.4	75.4	75.4
DIH-3-2	Chuk Yuen South Estate – Nga Yuen House	75.4	75.4	75.3	75.3	75.3
DIH-3-3	Chuk Yuen South Estate – Kwai Yuen House	75.7	75.7	75.5	75.4	75.4
DIH-3-4	Chuk Yuen South Estate – Chui Yuen House	75.4	75.4	75.4	75.4	75.3
DIH-4-1	Pang Ching Court	75.4	75.4	75.4	75.3	75.3
DIH-4-2	Carbo Anglo-Chinese Kindergarten	75.4	75.4	75.4	75.3	75.3
DIH-5-1	Rainbow Home	75.5	75.5	75.4	75.4	75.3
DIH-5-2	Residential premises	75.4	75.4	75.4	75.3	75.3
DIH-5-5	Our Lady's Kindergarten	75.4	75.4	75.4	75.3	75.3
DIH 6-1	Wong Tai Sin Fire Station and Quarters Block A	75.4	75.4	75.4	75.4	75.3
DIH-7-1	Tropicana Gardens Block 2	75.5	75.5	75.5	75.4	75.4
DIH-7-2	Tropicana Garden Block 3	75.5	75.5	75.4	75.4	75.4
DIH-8-1	Redemption Lutheran Church	76.0	76.0	75.8	75.7	75.5
DIH-9-1	Shek On Building	77.8	77.0	76.2	75.8	75.6
DIH-10-1	Hong Kong Sheung Keung Hui Nursing Home	77.2	76.8	76.2	75.8	75.6
DIH-11-1	Lung Poon Court – Lung Wan House	77.7	76.1	75.6	75.4	75.4
DIH-12-1	Galaxia Tower B	75.7	75.7	75.5	75.4	75.4
DIH-12-2	Galaxia Tower E	75.7	75.6	75.5	75.4	75.3
DIH-13-1	Canossa Primary School	76.8	76.6	76.1	75.8	75.6
DIH-14-1	Rhythm Garden Block 2	76.7	75.7	75.5	75.4	75.4
DIH-14-2	Rhythm Garden Block 5	75.7	75.7	75.6	75.5	75.4
DIH-14-3	Rhythm Garden Block 8	75.9	75.8	75.7	75.5	75.5
DIH-14-4	Canossa Primary School (San Po)	76.0	75.9	75.6	75.5	75.4

ASR ID	Location	Annual TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m
	Kong)					
DIH-14-5	Rhythm Garden Block 1	76.9	75.8	75.5	75.4	75.4
DIH-14-6	Rhythm Garden Block 3	76.1	75.7	75.5	75.4	75.4
DIH-15-1	Choi Hung Estate - Kam Wan House	75.5	75.5	75.4	75.4	75.4
DIH-15-2	Choi Hung Estate - Pik Hoi House	75.5	75.5	75.4	75.4	75.4
DIH-16-1	Wong Tai Sin Temple	75.9	75.7	75.5	75.4	75.4
DIH-17-1	Chuk Yuen United Village	75.5	75.5	75.4	75.4	75.4
DIH-18-1	Upper Wong Tai Sin Estate - Po Sin House	75.9	75.7	75.5	75.4	75.4
DIH-18-2	Upper Wong Tai Sin Estate - Tat Sin House	76.2	75.6	75.5	75.4	75.4
DIH-19-1	Lung Cheung Government Secondary School	75.5	75.5	75.5	75.4	75.4
DIH-20-1	Baptist Rainbow Primary School	75.9	75.7	75.5	75.4	75.4
DIH-21-1	Tin Wang Court - Wang King House	77.1	76.3	75.7	75.5	75.4
DIH-22-1	Price Memorial Catholic Primary School	76.3	76.0	75.6	75.5	75.4
DIH-23-1	Tin Ma Court - Chun On House	76.1	75.9	75.6	75.4	75.4
DIH-24-1	Shing Wong Temple	75.7	75.6	75.5	75.4	75.4
DIH-25-1	Football Field in Choi Hung Road Playground	76.2	76.1	75.9	75.7	75.5
DIH-26-1	Hammer Hill Road Leisure Pool	75.4	75.4	75.4	75.4	75.4
KAT-1-1	Kowloon Cognito College	76.5	76.4	76.3	76.1	75.9
TKW-1-1	Parc 22	77.8	77.7	77.3	77.0	76.7
TKW-1-2	Sanford Mansion	77.5	77.5	77.2	76.9	76.7
TKW-2-1	Skytower Tower 5	77.8	77.9	77.5	77.1	76.8
TKW-2-2	Skytower Tower 2	77.6	77.7	77.3	77.0	76.7
TKW-3-1	Prince Ritz	77.9	77.9	77.6	77.2	76.9
TKW-3-2	Prosperity House	77.8	77.8	77.5	77.2	76.9
TKW-4-1	Basketball Court in Sung Wong Toi Playground	80.0	79.2	78.1	77.5	77.1
TKW-5-1	Football Field in Argyle Street Playground	78.8	78.6	77.9	77.4	77.0
MTW-6-1	Fok On Building	77.4	77.4	77.2	76.9	76.7
MTW-6-2	Hong Kong Society for the Protection of Children	77.3	77.4	77.1	76.9	76.7
MTW-6-3	Chung Nam Mansion	77.0	77.1	76.9	76.7	76.5
MTW-6-4	Pok Oi Lau	76.9	77.0	76.9	76.7	76.5
MTW-7-1	Ma Tau Wai Estate - Geranium House	76.6	76.7	76.6	76.5	76.3
MTW-8-1	Horae Place	76.6	76.7	76.6	76.5	76.3
MTW-9-1	Majestic Park	76.5	76.6	76.5	76.4	76.2
MTW-10-1	18 Farm Road	76.5	76.5	76.5	76.4	76.2
MTW-11-1	Farm Road Government Primary School	76.4	76.5	76.4	76.3	76.2
MTW-12-1	Yuet Fai Mansion	76.4	76.5	76.4	76.3	76.2
MTW-12-2	Delight Court	76.4	76.4	76.3	76.2	76.1
MTW-12-3	Lucky Mansion	77.1	76.5	76.3	76.1	76.0
MTW-12-4	352-354 Ma Tau Wai Rd	77.6	76.6	76.2	76.1	76.0
MTW-12-5	Seng Cheong Building	77.5	76.6	76.2	76.0	75.9
MTW-12-6	Great Wall Building	76.6	76.6	76.5	76.4	76.3
MTW-12-7	197-199 Ma Tau Wai Rd	76.5	76.6	76.5	76.4	76.3
MTW-12-8	Pak Tai Mansion	76.4	76.5	76.4	76.3	76.2
MTW-12-9	Residential premises along Hung Kwong Street	76.4	76.5	76.4	76.3	76.2
MTW-12-10	Lucky Building	77.0	76.4	76.1	76.0	75.9
MTW-13-1	Cheung Chuk Shan Memorial School	76.6	76.4	76.3	76.2	76.1
MTW-14-1	Po Leung Kuk Lam Man Chan English Primary School	76.5	76.5	76.3	76.2	76.1

ASR ID	Location	Annual TSP Concentrations at Various Height( $\mu\text{g}/\text{m}^3$ )				
		1.5m	5m	10m	15m	20m
MTW-15-1	Hung Hom Lutheran Primary School	76.9	76.4	76.3	76.2	76.1
MTW-16-1	SKH Good Shepherd Primary School	77.1	76.5	76.3	76.2	76.1
MTW-17-1	Loyal Mansion	77.1	76.6	76.2	76.0	75.9
MTW-18-1	Residential premises along Chi Kiang Street	76.5	76.3	76.1	76.0	75.9
MTW-19-1	Holy Trinity Church	78.4	78.3	77.8	77.3	76.9
MTW-20-1	Football Field in Ma Tau Wai Road Playground	76.5	76.6	76.5	76.4	76.3
MTW-21-1	To Kwa Wan Market & Government Offices	77.2	76.4	76.2	76.1	76.0
MTW-22-1	Kowloon Animal Management Centre	79.3	79.2	78.5	77.8	77.3
HOM-1-1	Ko Shan Theatre	76.3	76.2	76.0	75.9	75.8
HOM-2-1	Faerie Court	77.0	76.3	76.1	75.9	75.8
HOM-2-2	Lee Wing Bldg	76.5	76.2	76.0	75.9	75.8
HOM-2-3	Wing Lam Mansion	76.1	76.1	76.0	75.9	75.8
HOM-2-4	Tak Lee Court	76.0	76.0	76.0	75.9	75.8
HOM-2-5	Chat Ma Mansion	76.5	76.3	76.1	76.0	75.9
HOM-3-1	Fook Sing Mansion	76.0	76.1	76.1	76.0	75.9
HOM-3-2	Marigold Mansion Block A	76.0	76.1	76.1	76.2	76.1
HOM-4-1	Yee Fu Building	76.0	76.1	76.2	76.3	76.3
HOM-5-1	271 Chatham Road North	76.3	76.3	76.5	76.8	76.7
HUH-1-1	Cartas Branchi College of Careers [2]	76.5	76.5	76.4	76.4	76.4
HUH-1-2	Lok Ka House	76.8	76.4	76.2	76.2	76.1
HUH-1-3	Wing Fung Building	77.1	76.4	76.1	76.0	75.9
HUH-2-1	Hong Kong Polytechnic University - Cheung On Tak Lecture Theatre	76.9	76.6	76.1	75.8	75.7
HUH-3-1	Royal Peninsula Block 2	76.0	76.0	75.8	75.7	75.7
HUH-4-1	The Metropolis Residence Tower 2	75.8	75.8	75.7	75.7	75.6
HUH-5-1	Harbour Plaza Metropolis	76.7	76.5	76.2	76.0	75.8
HUH-6-1	HK Fire Services Headquarters Building	78.1	78.0	77.6	77.1	76.6
HUH-7-1	Hotel Nikko Hong Kong	77.3	77.3	76.9	76.6	76.2
HUH-9-1	Hong Kong Coliseum	Note [3]	Note [3]	76.0	75.8	75.7
HUH-10-1	Harbourfront Horizon	Note [3]	78.0	76.8	76.2	75.9
HUH-11-1	China Travel Cargo Logistic Centre	76.5	76.2	75.9	75.7	75.7
DIH-P1-1	Upper Wong Tai Sin Estate Phase 3	76.9	75.9	75.5	75.4	75.4
KAT-P1-1	Residential premises near Kai Tak Station	See Note [1]				
KAT-P1-2	Residential premises near Kai Tak Station	See Note [1]				
KAT-P1-3	Residential premises near Kai Tak Station	See Note [2]				
KAT-P1-4	Residential premises near Kai Tak Station	See Note [2]				
KAT-P1-5	Residential premises near Kai Tak Station [4]	Note [3]	76.6	76.0	75.8	75.6
KAT-P1-6	Residential premises near Kai Tak Station [4]	Note [3]	78.6	78.6	78.6	78.2
KAT-P1-7	Residential premises near Kai Tak Station	See Note [2]				
KAT-P2-1	Public Housing Development at ex-San Po Kong Flatted Factory	76.3	76.2	75.9	75.7	75.6
TKW-P1-1	Residential premises near To Kwa Wan Station	See Note [2]				
HOM-P2	Proposed Dormitory for HKPU	76.0	76.0	76.1	76.2	76.0

## Notes:

- [1] The population intake of this project would be after Year 2016 (Referenced from approved Kai Tak Development EIA Report), and hence there are no cumulative construction dust impact from the projects
- [2] The premises is located within the works site boundary, hence the population intake would be after the construction of the Project i.e. no impact from the Project
- [3] No air sensitive use is observed at such levels –
- |  |   |
|--|---|
| Hong Kong Coliseum (HUH-9-1):                                    | Air sensitive use is on the podium of the HUH station, which is at least 10mAG. First assessment height is therefore considered at 10mAG.   |
| Harbourfront Horizon (HUH-10-1):                                 | The first floor of residential units is situated on the podium, which is at least 5m above ground. First assessment height is therefore considered at 5mAG.   |
| Residential premises near Kai Tak Station (KAT-P1-5 / KAT-P1-6): | These residential premises are currently occupied for the construction of public rental housing, which would have a 5m height lift lobby on the ground floor. First assessment height is therefore considered at 5mAG |
- [4] The assessment results are for indication only as there are no air sensitive uses when the Yau Lee CBP is in operation.

## **Evaluation of Construction Dust Impact**

### **i) Construction Works in the Tai Wai Area**

According to **Tables 7.11** and **7.15**, all the predicted concentrations of 1-hour (Tier 1), 24-hour (Tier 1), and annual TSP at all identified ASRs would comply with the relevant criteria, except the exceedances of 1-hour and/or 24-hour TSP at Hin Keng Estate – Hin Kwai House (TAW-6-6) and Hin Wan House (TAW-6-8), Hin Tin Swimming Pool (TAW-12-1), and Football field inside Hin Ting Playground (TAW-13-1) under an absolute worst scenario. Subsequent Tier 2 focused test has therefore been conducted and it is shown in **Table 7.13** that there is no exceedance predicted.

Contours have been plotted for 1-hour (Tier 2), and 24-hour (Tier 2) TSP concentrations at 1.5m above ground near the Hin Keng Estate and Hin Tin Playground to illustrate the short-term dust impact during construction stage, as presented in **Figures 7.2.5 – 7.2.8** respectively. Contours of annual TSP concentrations at 1.5m above ground have also been plotted in **Figure 7.2.9**. Results indicate full compliances of the relevant criteria predicted at all area adjacent to the work sites. Hence, adverse construction dust impact is not anticipated in the Tai Wai Area.

### **ii) At-Grade Construction Works in the Kowloon Area**

As shown in **Tables 7.12** and **7.16**, the predicted cumulative 1-hour (Tier 1), 24-hour (Tier 1) and annual TSP concentrations at all the identified ASRs would comply with the relevant criteria, except the exceedance of 1-hour TSP at Shek On Building (DIH-9-1), 1-hour/24-hour/annual TSP at Basketball court in Sung Wong Toi Playground (TKW-4-1) and 1-hour TSP at Residential Premises near Kai Tak Station (KAT-P1-5).

Subsequent Tier 2 focused test has therefore been conducted and it is shown in **Table 7.14** that there is no exceedance of 1-hour and 24-hour TSP predicted. Contours have been plotted for 1-hour (Tier 2), and 24-hour (Tier 2) TSP concentrations at 1.5m and/or 5m above ground near the DIH, TKW and KAT Stations to illustrate the short-term dust impact on these hot spot areas at the worst affected level(s) of ASRs, as presented in **Figures 7.2.10 – 7.2.17** respectively. It is indicated in these figures that there are no air sensitive uses located within the area of exceedance, and hence adverse short-term dust impact is not anticipated in the identified hot spot areas.

Contours of annual TSP concentrations at 1.5m above ground have also been plotted in **Figure 7.2.18** for the Kowloon area. Results indicate full compliances of the relevant criteria predicted at all area adjacent to the work sites, except the annual TSP at the the EMSD workshops near the Kowloon AMC.

The existing EMSD workshop next to the Kowloon AMC is vacant, based on the site visit conducted in January 2011. Although some exceedance is identified at the area of EMSD workshop adjacent to the seawall, this area is occupied as storage room and parking areas under shed only. As no people should be staying there under normal

circumstances, the concerned storage area and parking areas are not considered as air sensitive receivers according to Annex 12 of the EIAO-TM and therefore no adverse short-term and long-term construction dust impacts are anticipated.

**iii) Barging Facility and Potential New Concrete Batching Plant in ex-Kai Tak Airport Area**

Elevated emission sources (i.e. the potential new concrete batching plant) and various dust sources associated with the committed Kai Tai Development in the ex-Kai Tak airport area would have cumulative dust impact with the SCL (TAW-HUH) at different elevations of ASRs. The worst affected height is identified to be at 5m and 10m above ground based on the results presented in **Tables 7.12** and **7.16**. As such, contours of annual TSP at 5m and 10m are also plotted in **Figures 7.2.19 – 7.2.20** for the ex-Kai Tak Airport area to illustrate the impact due to these elevated dust sources. Exceedances of annual TSP are observed at Residential Premises near Kai Tak Station (KAT-P1-5 and KAT-P1-6). However, it should be noted that the exceedances at such elevations are due to the operation of Yau Lee CBP, which is designated for the construction of public housing at the same locations. Hence, once the public housing developments have completed, the operation of Yau Lee CBP would then be ceased. Exceedances of annual TSP after the population intake are therefore not anticipated. **Figures 7.2.21 – 7.2.23** illustrate the cumulative annual TSP concentrations at 1.5, 5m and 10m above ground without the contributions from Yau Lee CBP. It is shown that there are no exceedances of annual TSP at Residential Premises near Kai Tak Station (KAT-P1-5 and KAT-P1-6) when the Yau Lee CBP has ceased its operation.

For the barging facility at Kai Tak Runway, adverse dust impact is not anticipated as there are no ASRs located within 500m from the barging facility.

**iv) Other Supporting Works in the Hung Hom Area – Freight Pier Barging Facility**

Cumulative construction dust impacts arisen from the Projects (i.e. SCL (TAW-HUH), SCL (MKK-HUH), SCL (HUH-ADM) and KTE) in the Hung Hom Area, in particular, area adjacent to Freight Pier, are of major concern as dusty activities, including construction of tracks, tunnel openings, and the barging facility at Freight Pier, will be carried out under different Projects in this area. Notwithstanding numbers of construction activities, sufficient mitigation measures will be provided to minimise dust impacts on nearby ASRs. As shown in **Tables 7.12** and **7.16**, the predicted cumulative 1-hour (Tier 1), 24-hour (Tier 1) and annual TSP concentrations at all the identified ASRs would be well within their respective criteria, particularly the short-term TSP concentrations. Contours of annual TSP concentrations at 5m and 10m above ground are illustrated in **Figures 7.2.24 – 7.2.25**. It is shown in the figures that, no air sensitive uses are identified in the area of exceedance. Adverse dust impact is therefore not anticipated.

**7.6.8 Residual Impacts for Fugitive Dust**

With the implementation of the mitigation measures as stipulated in the Air Pollution Control (Construction Dust) Regulation, dust control measures and good site practices, the predicted 1-hour and 24-hour TSP concentrations on area in the vicinity of the construction sites in Tai Wai area and Kowloon area would comply with the relevant criteria of  $500 \mu\text{g}/\text{m}^3$  and  $260 \mu\text{g}/\text{m}^3$  respectively. For annual TSP concentrations, residual dust impact is expected the EMSD workshops. However, there is no air sensitive use identified in the area of exceedance. As such, adverse residual dust impact is not anticipated.

**7.6.9 Cumulative Impacts at HOM and HUH**

As discussed in **Section 1.2**, the EIA Study Brief has included HOM and HUH. However, during the design development, it is considered that the HOM be better implemented by the

KTE and HUH by the SCL Cross Harbour Section (i.e. SCL (MKK-HUH)). It should be noted that the assessment results presented in **Tables 7.12** and **7.2.16**, and also the contours (see **Figures 7.2.3, 7.2.4, 7.2.18, 7.2.21 and 7.2.22**), have included the emission sources from KTE, SCL (MKK-HUH) and all other concurrent projects. Hence, the cumulative impacts due to HOM and HUH have been assessed. In addition, in assessing the project contribution of the annual TSP, contributions from SCL (TAW-HUH), SCL (MKK-HUH) and KTE have also been included. In other words, cumulative impacts from these 2 stations have all been included.

## **7.7 Conclusion**

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An air quality impact assessment has been conducted for construction of SCL (TAW-HUH). The fugitive dust assessment for the construction has concluded that watering in all works areas once per 1-1.5 hours during working hours (7:00am – 7:00pm) would be required to control the fugitive dust impact.

Potential dust impact would be generated from the soil excavation activities, backfilling, site erosion, storage of spoil on site, and transportation of soil during the construction phase. Quantitative fugitive dust assessments have been conducted.

The results show that, in general, the predicted 1-hour and 24-hour and annual TSP concentrations at identified ASRs would comply with the respective criteria. Hence, it is concluded that there will not be any adverse residual air quality impacts.