

***Appendix 3.6 – Detailed Calculation of
Emissions Associated with Bus,
Minibus and Coach Terminuses***

Emission Inventory for AERMOD Model - Emission Associated with Bus, Minibus and Coach Terminuses

Bus Terminus	Source	Type	X	Y	Release Height	Exit Temperature	Exit Velocity	Stack Diameter	Length of X Side	Length of Y Side	Angle	Szinit	Max. Hourly Emission Rate							
	ID												NO	NO2	RSP					
													(g/s) or (g/m2/s)							
West Kowloon Station Bus Terminus	PTI409	AREAPOLY	835024.5	818670.4	4.0	-	-	-	-	-	-	-	6.514E-05	3.795E-06	1.181E-06					
			835026.5	818670.6	4.0	-	-	-	-	-	-	-				-				
			835024.5	818690.7	4.0	-	-	-	-	-	-	-				-				
			835023.2	818708.7	4.0	-	-	-	-	-	-	-				-				
			835022.5	818735.0	4.0	-	-	-	-	-	-	-				-				
			835022.3	818746.1	4.0	-	-	-	-	-	-	-				-				
			835023.1	818781.2	4.0	-	-	-	-	-	-	-				-				
			835023.8	818806.1	4.0	-	-	-	-	-	-	-				-				
			835023.7	818812.3	4.0	-	-	-	-	-	-	-				-				
			835023.3	818815.3	4.0	-	-	-	-	-	-	-				-				
			835021.4	818815.2	4.0	-	-	-	-	-	-	-				-				
			835021.6	818812.4	4.0	-	-	-	-	-	-	-				-				
			835021.8	818807.5	4.0	-	-	-	-	-	-	-				-				
			835021.4	818795.3	4.0	-	-	-	-	-	-	-				-				
			835020.5	818758.7	4.0	-	-	-	-	-	-	-				-				
	835020.5	818736.5	4.0	-	-	-	-	-	-	-	-									
	PTI410	AREAPOLY	835021.5	818702.1	4.0	-	-	-	-	-	-	-	6.514E-05	3.795E-06	1.181E-06					
			835023.0	818684.3	4.0	-	-	-	-	-	-	-				-				
			834960.3	818791.6	0.0	-	-	-	-	-	-	-				-				
			834962.3	818791.9	0.0	-	-	-	-	-	-	-				-				
			834964.1	818773.9	0.0	-	-	-	-	-	-	-				-				
			834965.0	818752.9	0.0	-	-	-	-	-	-	-				-				
			834965.0	818731.9	0.0	-	-	-	-	-	-	-				-				
			834964.5	818715.5	0.0	-	-	-	-	-	-	-				-				
			834962.5	818715.6	0.0	-	-	-	-	-	-	-				-				
			834963.1	818732.9	0.0	-	-	-	-	-	-	-				-				
			834963.0	818755.1	0.0	-	-	-	-	-	-	-				-				
			834961.9	818775.1	0.0	-	-	-	-	-	-	-				-				
			PTI411	AREAPOLY	834960.3	818791.6	2.0	-	-	-	-	-				-	-	6.514E-05	3.795E-06	1.181E-06
					834962.3	818791.9	2.0	-	-	-	-	-				-	-			
					834964.1	818773.9	2.0	-	-	-	-	-				-	-			
	834965.0	818752.9			2.0	-	-	-	-	-	-	-	-							
	834965.0	818731.9			2.0	-	-	-	-	-	-	-	-							
	834964.5	818715.5			2.0	-	-	-	-	-	-	-	-							
	834962.5	818715.6			2.0	-	-	-	-	-	-	-	-							
	834963.1	818732.9			2.0	-	-	-	-	-	-	-	-							
	PTI412	AREAPOLY	834963.0	818755.1	2.0	-	-	-	-	-	-	-	6.514E-05	3.795E-06	1.181E-06					
			834961.9	818775.1	2.0	-	-	-	-	-	-	-								
			834960.3	818791.6	4.0	-	-	-	-	-	-	-				-				
			834962.3	818791.9	4.0	-	-	-	-	-	-	-				-				
			834964.1	818773.9	4.0	-	-	-	-	-	-	-				-				
			834965.0	818752.9	4.0	-	-	-	-	-	-	-				-				
834965.0			818731.9	4.0	-	-	-	-	-	-	-	-								
834964.5			818715.5	4.0	-	-	-	-	-	-	-	-								
			834962.5	818715.6	4.0	-	-	-	-	-	-									
			834963.1	818732.9	4.0	-	-	-	-	-	-									
			834963.0	818755.1	4.0	-	-	-	-	-	-									
			834961.9	818775.1	4.0	-	-	-	-	-	-									

Routing of Start Emission on Open Road

Bus Terminus	Source ID	Travel Distance outside Bus Terminus (m)	Area (m ²)	% of Flow	Max. Hourly Emission Rate (g/s)		Max. Hourly Emission Rate (g/m ² /s)	
					NO	NO ₂	NO	NO ₂
Kowloon Station Bus Terminus	Total	320	-	100%	5.772E-03	3.811E-04	-	-
	SE101	10	152	100%	1.804E-04	1.191E-05	1.189E-06	7.851E-08
	SE102	10	129	8%	1.443E-05	9.528E-07	1.117E-07	7.375E-09
	SE103	300	3931	8%	4.329E-04	2.859E-05	1.101E-07	7.272E-09
	SE111	100	1495	92%	1.659E-03	1.096E-04	1.110E-06	7.329E-08
	SE112	210	3081	92%	3.485E-03	2.301E-04	1.131E-06	7.468E-08
Kowloon Station Minibus Terminus	Total	180	-	100%	3.682E-04	1.529E-04	-	-
	SE201	10	152	100%	2.046E-05	8.495E-06	1.349E-07	5.600E-08
	SE202	10	129	34%	6.956E-06	2.888E-06	5.384E-08	2.236E-08
	SE203	160	1495	34%	1.113E-04	4.621E-05	7.444E-08	3.091E-08
	SE211	100	2080	66%	1.350E-04	5.607E-05	6.490E-08	2.695E-08
	SE212	46	766	66%	6.211E-05	2.579E-05	8.114E-08	3.369E-08
	SE213	24	410	47%	2.308E-05	9.583E-06	5.635E-08	2.340E-08
	SE221	24	293	19%	9.329E-06	3.874E-06	3.182E-08	1.321E-08
Cross Boundary Coach Terminus	Total	310	-	100%	3.872E-03	4.046E-04	-	-
	SE301	10	152	100%	1.249E-04	1.305E-05	8.234E-07	8.604E-08
	SE302	100	1495	100%	1.249E-03	1.305E-04	8.354E-07	8.730E-08
	SE303	200	2944	100%	2.498E-03	2.610E-04	8.485E-07	8.866E-08
West Kowloon Station Bus Terminus	Total	350	-	100%	2.584E-02	1.781E-03	-	-
	SE401	73	1189	100%	5.389E-03	3.715E-04	4.533E-06	3.125E-07
	SE402	54	887	100%	3.986E-03	2.748E-04	4.493E-06	3.098E-07
	SE403	223	4914	100%	1.646E-02	1.135E-03	3.350E-06	2.309E-07

Kowloon Station Bus Terminus

Starting Emission

Starting Emission Factor (g/trip)																		
NO	7.247E-01	1.305E+00	1.739E+00	2.464E+00	3.044E+00	4.059E+00	5.943E+00	7.393E+00	1.087E+01	1.421E+01	1.594E+01	1.884E+01	2.073E+01	2.174E+01	2.232E+01	2.290E+01	2.319E+01	2.319E+01
NO2	4.700E-02	8.450E-02	1.127E-01	1.596E-01	1.972E-01	2.629E-01	3.850E-01	4.789E-01	7.043E-01	9.203E-01	1.033E+00	1.221E+00	1.343E+00	1.409E+00	1.446E+00	1.484E+00	1.503E+00	1.503E+00
RSP	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FSP	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hour Sitting Time (min)	No. of Cold Starts of Double-Deck Franchised Bus																	
	5	10	20	30	40	50	60	120	180	240	300	360	420	480	540	600	660	720
0000 - 0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200 - 0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300 - 0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500 - 0600	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600 - 0700	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0700 - 0800	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800 - 0900	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900 - 1000	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000 - 1100	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100 - 1200	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200 - 1300	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300 - 1400	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400 - 1500	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500 - 1600	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600 - 1700	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700 - 1800	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800 - 1900	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900 - 2000	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000 - 2100	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100 - 2200	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200 - 2300	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300 - 2400	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Remark:

[1] Number of cold starts were derived based on on-site observations at the PTIs and operators' published schedules, while sitting time were obtained based on on-site observations at PTIs.

Total Starting Emission (g)			
NO	NO2	RSP	FSP
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
3	0	0	0
52	3	0	0
52	3	0	0
52	3	0	0
52	3	0	0
52	3	0	0
52	3	0	0
52	3	0	0
52	3	0	0
52	3	0	0
52	3	0	0
52	3	0	0
52	3	0	0
52	3	0	0
52	3	0	0
9	1	0	0

Kowloon Station Bus Terminus

Running Emission

Average Travelling Distance from Open Road Network to PTI Ingress =	320	m
Average Travelling Distance within PTI =	150	m
Average Travelling Distance from PTI Egress to Open Road Network =	330	m
Average Travelling Speed =	10	km/h

Hour	Frequency	Double-Deck Franchised Bus											
		Running Emission Factor (g/km-vehicle)				Running Emission Within PTI (g)				Running Emission Within Covered Area (g)			
		NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP
0000 - 0100	0	1.138E+01	6.419E-01	3.601E-01	3.313E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0100 - 0200	0	1.138E+01	6.419E-01	3.601E-01	3.313E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0200 - 0300	0	1.138E+01	6.419E-01	3.601E-01	3.313E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0300 - 0400	0	1.138E+01	6.419E-01	3.601E-01	3.313E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0400 - 0500	0	1.138E+01	6.419E-01	3.601E-01	3.313E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0500 - 0600	2	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.414E+00	1.926E-01	1.080E-01	9.939E-02	1.480E+01	8.345E-01	4.681E-01	4.307E-01
0600 - 0700	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
0700 - 0800	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
0800 - 0900	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
0900 - 1000	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
1000 - 1100	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
1100 - 1200	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
1200 - 1300	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
1300 - 1400	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
1400 - 1500	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
1500 - 1600	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
1600 - 1700	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
1700 - 1800	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
1800 - 1900	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
1900 - 2000	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
2000 - 2100	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
2100 - 2200	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
2200 - 2300	30	1.138E+01	6.419E-01	3.601E-01	3.313E-01	5.121E+01	2.889E+00	1.620E+00	1.491E+00	2.219E+02	1.252E+01	7.022E+00	6.460E+00
2300 - 2400	5	1.138E+01	6.419E-01	3.601E-01	3.313E-01	8.536E+00	4.814E-01	2.701E-01	2.485E-01	3.699E+01	2.086E+00	1.170E+00	1.077E+00

Total Hourly Emission

Hour	Emission Within PTI								Emission Within Covered Area								
	Total Emission (g) (Running + Idling + Starting)				Total Emission Rate (g/s)				Total Emission (g) (Running + Starting)				Total Emission Rate (g/s)				
	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	
0000 - 0100	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0100 - 0200	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0200 - 0300	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0300 - 0400	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0400 - 0500	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0500 - 0600	4.528E+00	2.575E-01	1.168E-01	1.081E-01	1.258E-03	7.152E-05	3.243E-05	3.003E-05	1.622E+01	9.288E-01	4.681E-01	4.307E-01	4.507E-03	2.580E-04	1.300E-04	1.196E-04	0.000E+00
0600 - 0700	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
0700 - 0800	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
0800 - 0900	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
0900 - 1000	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
1000 - 1100	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
1100 - 1200	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
1200 - 1300	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
1300 - 1400	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
1400 - 1500	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
1500 - 1600	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
1600 - 1700	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
1700 - 1800	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
1800 - 1900	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
1900 - 2000	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
2000 - 2100	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
2100 - 2200	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
2200 - 2300	6.792E+01	3.862E+00	1.751E+00	1.622E+00	1.887E-02	1.073E-03	4.865E-04	4.505E-04	2.434E+02	1.393E+01	7.022E+00	6.460E+00	6.760E-02	3.870E-03	1.951E-03	1.795E-03	1.795E-03
2300 - 2400	1.132E+01	6.437E-01	2.919E-01	2.703E-01	3.144E-03	1.788E-04	8.108E-05	7.508E-05	4.056E+01	2.322E+00	1.170E+00	1.077E+00	1.127E-02	6.450E-04	3.251E-04	2.991E-04	0.000E+00

Kowloon Station Minibus Terminus

Starting Emission

No. of PLB (Diesel) to No. of PLB (LPG) Ratio ^[1] =	1.8
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	Starting Emission Factor (g/trip)																	
NO	3.070E-02	5.540E-02	7.380E-02	1.046E-01	1.291E-01	1.722E-01	2.521E-01	3.136E-01	4.612E-01	6.026E-01	6.763E-01	7.993E-01	8.792E-01	9.222E-01	9.469E-01	9.714E-01	9.837E-01	9.837E-01
NO2	1.200E-02	2.150E-02	2.870E-02	4.060E-02	5.020E-02	6.690E-02	9.800E-02	1.219E-01	1.793E-01	2.343E-01	2.630E-01	3.108E-01	3.419E-01	3.587E-01	3.682E-01	3.778E-01	3.826E-01	3.826E-01
RSP	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FSP	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hour	No. of Cold Starts of Public Light Bus (Diesel)																	
Sitting Time (min)	5	10	20	30	40	50	60	120	180	240	300	360	420	480	540	600	660	720
0000 - 0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200 - 0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300 - 0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500 - 0600	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0
0600 - 0700	0	0	10	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0
0700 - 0800	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0800 - 0900	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900 - 1000	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000 - 1100	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100 - 1200	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200 - 1300	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300 - 1400	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400 - 1500	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500 - 1600	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600 - 1700	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700 - 1800	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800 - 1900	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900 - 2000	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000 - 2100	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100 - 2200	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200 - 2300	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300 - 2400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Remarks:

[1] Population ratio of PLB (Diesel) to PLB (LPG) was extracted from Year 2025 findings of EMFAC-HK.

Total Starting Emission (g)			
NO	NO2	RSP	FSP
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
5	2	0	0
6	2	0	0
1	1	0	0
2	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	1	0	0
1	0	0	0
1	0	0	0
1	0	0	0
0	0	0	0

Kowloon Station Minibus Terminus

Cold Idling Emission

Idling Time =	3	min
Max. Idling Time for Adjusting Starting Emission =	1	min

Hour	Frequency	Public Light Bus (Diesel)								Public Light Bus (Diesel)								
		Cold Idling Emission Factor (g/min)				Cold Idling Emission (g)				Hot Idling Emission Factor (g/min)				Hot Idling Emission (g)				
		NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	
0000 - 0100	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	3.930E-02	7.368E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0100 - 0200	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	3.930E-02	7.368E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0200 - 0300	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	3.930E-02	7.368E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0300 - 0400	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	3.930E-02	7.368E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0400 - 0500	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	3.930E-02	7.368E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0500 - 0600	6	5.053E-02	9.472E-03	4.414E-04	4.414E-04	8.819E-01	1.653E-01	7.704E-03	7.704E-03	0	3.930E-02	7.368E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0600 - 0700	6	5.053E-02	9.472E-03	4.414E-04	4.414E-04	8.819E-01	1.653E-01	7.704E-03	7.704E-03	10	3.930E-02	7.368E-03	4.414E-04	4.414E-04	2.143E-01	1.284E-02	1.284E-02	1.284E-02
0700 - 0800	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	19	3.930E-02	7.368E-03	4.414E-04	4.414E-04	2.286E+00	4.286E-01	2.568E-02	2.568E-02
0800 - 0900	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	21	3.930E-02	7.368E-03	4.414E-04	4.414E-04	2.439E+00	4.572E-01	2.739E-02	2.739E-02
0900 - 1000	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	17	3.930E-02	7.368E-03	4.414E-04	4.414E-04	2.058E+00	3.858E-01	2.311E-02	2.311E-02
1000 - 1100	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	17	3.930E-02	7.368E-03	4.414E-04	4.414E-04	2.058E+00	3.858E-01	2.311E-02	2.311E-02
1100 - 1200	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	17	3.930E-02	7.368E-03	4.414E-04	4.414E-04	2.058E+00	3.858E-01	2.311E-02	2.311E-02
1200 - 1300	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	17	3.930E-02	7.368E-03	4.414E-04	4.414E-04	2.058E+00	3.858E-01	2.311E-02	2.311E-02
1300 - 1400	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	17	3.930E-02	7.368E-03	4.414E-04	4.414E-04	2.058E+00	3.858E-01	2.311E-02	2.311E-02
1400 - 1500	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	17	3.930E-02	7.368E-03	4.414E-04	4.414E-04	2.058E+00	3.858E-01	2.311E-02	2.311E-02
1500 - 1600	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	17	3.930E-02	7.368E-03	4.414E-04	4.414E-04	2.058E+00	3.858E-01	2.311E-02	2.311E-02
1600 - 1700	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	17	3.930E-02	7.368E-03	4.414E-04	4.414E-04	2.058E+00	3.858E-01	2.311E-02	2.311E-02
1700 - 1800	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	17	3.930E-02	7.368E-03	4.414E-04	4.414E-04	2.058E+00	3.858E-01	2.311E-02	2.311E-02
1800 - 1900	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	17	3.930E-02	7.368E-03	4.414E-04	4.414E-04	1.982E+00	3.715E-01	2.226E-02	2.226E-02
1900 - 2000	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	14	3.930E-02	7.368E-03	4.414E-04	4.414E-04	1.601E+00	3.000E-01	1.798E-02	1.798E-02
2000 - 2100	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	14	3.930E-02	7.368E-03	4.414E-04	4.414E-04	1.601E+00	3.000E-01	1.798E-02	1.798E-02
2100 - 2200	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	14	3.930E-02	7.368E-03	4.414E-04	4.414E-04	1.601E+00	3.000E-01	1.798E-02	1.798E-02
2200 - 2300	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	10	3.930E-02	7.368E-03	4.414E-04	4.414E-04	1.143E+00	2.143E-01	1.284E-02	1.284E-02
2300 - 2400	0	5.053E-02	9.472E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	3.930E-02	7.368E-03	4.414E-04	4.414E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Average Distance from Starting Place to PTI Egress =	60	m
Average Spread Distance from PTI Egress to Open Road Network =	460	m
Average Spread Distance outside PTI =	180	m

Hour	Idling Emission (g)				Emission for Adjusting Starting Emission (g)				Adjusted Starting Emission Within PTI (g)				Adjusted Starting Emission Within Covered Area (g)				Adjusted Starting Emission Outside PTI (g)				Starting Emission Rate Outside PTI (g/s)			
	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP
0000 - 0100	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0100 - 0200	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0200 - 0300	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0300 - 0400	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0400 - 0500	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0500 - 0600	8.819E-01	1.653E-01	7.704E-03	7.704E-03	2.940E-01	5.510E-02	2.568E-03	2.568E-03	4.132E-01	1.658E-01	0.000E+00	0.000E+00	3.168E+00	1.271E+00	0.000E+00	0.000E+00	1.240E+00	4.973E-01	0.000E+00	0.000E+00	3.444E-04	1.381E-04	0.000E+00	0.000E+00
0600 - 0700	2.025E+00	3.796E-01	2.054E-02	2.054E-02	6.750E-01	1.265E-01	6.848E-03	6.848E-03	4.419E-01	1.835E-01	0.000E+00	0.000E+00	3.388E+00	1.407E+00	0.000E+00	0.000E+00	1.326E+00	5.505E-01	0.000E+00	0.000E+00	3.682E-04	1.529E-04	0.000E+00	0.000E+00
0700 - 0800	2.286E+00	4.286E-01	2.568E-02	2.568E-02	7.622E-01	1.429E-01	8.560E-03	8.560E-03	5.734E-02	3.546E-02	0.000E+00	0.000E+00	4.396E-01	2.718E-01	0.000E+00	0.000E+00	1.720E-01	1.064E-01	0.000E+00	0.000E+00	4.778E-05	2.955E-05	0.000E+00	0.000E+00
0800 - 0900	2.439E+00	4.572E-01	2.739E-02	2.739E-02	8.130E-01	1.524E-01	9.131E-03	9.131E-03	6.116E-02	3.782E-02	0.000E+00	0.000E+00	4.689E-01	2.900E-01	0.000E+00	0.000E+00	1.835E-01	1.135E-01	0.000E+00	0.000E+00	5.097E-05	3.152E-05	0.000E+00	0.000E+00
0900 - 1000	2.058E+00	3.858E-01	2.311E-02	2.311E-02	6.859E-01	1.286E-01	7.704E-03	7.704E-03	5.161E-02	3.191E-02	0.000E+00	0.000E+00	3.957E-01	2.447E-01	0.000E+00	0.000E+00	1.548E-01	9.574E-02	0.000E+00	0.000E+00	4.301E-05	2.659E-05	0.000E+00	0.000E+00
1000 - 1100	2.058E+00	3.858E-01	2.311E-02	2.311E-02	6.859E-01	1.286E-01	7.704E-03	7.704E-03	5.161E-02	3.191E-02	0.000E+00	0.000E+00	3.957E-01	2.447E-01	0.000E+00	0.000E+00	1.548E-01	9.574E-02	0.000E+00	0.000E+00	4.301E-05	2.659E-05	0.000E+00	0.000E+00
1100 - 1200	2.058E+00	3.858E-01	2.311E-02	2.311E-02	6.859E-01	1.286E-01	7.704E-03	7.704E-03	5.161E-02	3.191E-02	0.000E+00	0.000E+00	3.957E-01	2.447E-01	0.000E+00	0.000E+00	1.548E-01	9.574E-02	0.000E+00	0.000E+00	4.301E-05	2.659E-05	0.000E+00	0.000E+00
1200 - 1300	2.058E+00	3.858E-01	2.311E-02	2.311E-02	6.859E-01	1.286E-01	7.704E-03	7.704E-03	5.161E-02	3.191E-02	0.000E+00	0.000E+00	3.957E-01	2.447E-01	0.000E+00	0.000E+00	1.548E-01	9.574E-02	0.000E+00	0.000E+00	4.301E-05	2.659E-05	0.000E+00	0.000E+00
1300 - 1400	2.058E+00	3.858E-01	2.311E-02	2.311E-02	6.859E-01	1.286E-01	7.704E-03	7.704E-03	5.161E-02	3.191E-02	0.000E+00	0.000E+00	3.957E-01	2.447E-01	0.000E+00	0.000E+00	1.548E-01	9.574E-02	0.000E+00	0.000E+00	4.301E-05	2.659E-05	0.000E+00	0.000E+00
1400 - 1500	2.058E+00	3.858E-01	2.311E-02	2.311E-02	6.859E-01	1.286E-01	7.704E-03	7.704E-03	5.161E-02	3.191E-02	0.000E+00													

Kowloon Station Minibus Terminus

Cold Idling Emission

Idling Time =	3	min
Max. Idling Time for Adjusting Starting Emission =	1	min

Hour	Frequency	Public Light Bus (LPG)								Public Light Bus (LPG)								
		Cold Idling Emission Factor (g/min)				Cold Idling Emission (g)				Hot Idling Emission Factor (g/min)				Hot Idling Emission (g)				
		NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	
0000 - 0100	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	8.554E-05	1.604E-05	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0100 - 0200	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	8.554E-05	1.604E-05	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0200 - 0300	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	8.554E-05	1.604E-05	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0300 - 0400	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	8.554E-05	1.604E-05	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0400 - 0500	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	8.554E-05	1.604E-05	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0500 - 0600	3	2.369E-01	4.441E-02	1.006E-03	1.006E-03	2.262E+00	4.240E-01	9.606E-03	9.606E-03	0	8.554E-05	1.604E-05	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0600 - 0700	3	2.369E-01	4.441E-02	1.006E-03	1.006E-03	2.262E+00	4.240E-01	9.606E-03	9.606E-03	5	8.554E-05	1.604E-05	1.006E-03	1.006E-03	1.361E-03	2.552E-04	1.601E-02	1.601E-02
0700 - 0800	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	11	8.554E-05	1.604E-05	1.006E-03	1.006E-03	2.722E-03	5.103E-04	3.202E-02	3.202E-02
0800 - 0900	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	11	8.554E-05	1.604E-05	1.006E-03	1.006E-03	2.904E-03	5.443E-04	3.415E-02	3.415E-02
0900 - 1000	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	10	8.554E-05	1.604E-05	1.006E-03	1.006E-03	2.450E-03	4.593E-04	2.882E-02	2.882E-02
1000 - 1100	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	10	8.554E-05	1.604E-05	1.006E-03	1.006E-03	2.450E-03	4.593E-04	2.882E-02	2.882E-02
1100 - 1200	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	10	8.554E-05	1.604E-05	1.006E-03	1.006E-03	2.450E-03	4.593E-04	2.882E-02	2.882E-02
1200 - 1300	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	10	8.554E-05	1.604E-05	1.006E-03	1.006E-03	2.450E-03	4.593E-04	2.882E-02	2.882E-02
1300 - 1400	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	10	8.554E-05	1.604E-05	1.006E-03	1.006E-03	2.450E-03	4.593E-04	2.882E-02	2.882E-02
1400 - 1500	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	10	8.554E-05	1.604E-05	1.006E-03	1.006E-03	2.450E-03	4.593E-04	2.882E-02	2.882E-02
1500 - 1600	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	10	8.554E-05	1.604E-05	1.006E-03	1.006E-03	2.450E-03	4.593E-04	2.882E-02	2.882E-02
1600 - 1700	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	10	8.554E-05	1.604E-05	1.006E-03	1.006E-03	2.450E-03	4.593E-04	2.882E-02	2.882E-02
1700 - 1800	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	10	8.554E-05	1.604E-05	1.006E-03	1.006E-03	2.450E-03	4.593E-04	2.882E-02	2.882E-02
1800 - 1900	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9	8.554E-05	1.604E-05	1.006E-03	1.006E-03	2.359E-03	4.423E-04	2.775E-02	2.775E-02
1900 - 2000	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7	8.554E-05	1.604E-05	1.006E-03	1.006E-03	1.906E-03	3.572E-04	2.241E-02	2.241E-02
2000 - 2100	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7	8.554E-05	1.604E-05	1.006E-03	1.006E-03	1.906E-03	3.572E-04	2.241E-02	2.241E-02
2100 - 2200	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7	8.554E-05	1.604E-05	1.006E-03	1.006E-03	1.906E-03	3.572E-04	2.241E-02	2.241E-02
2200 - 2300	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5	8.554E-05	1.604E-05	1.006E-03	1.006E-03	1.361E-03	2.552E-04	1.601E-02	1.601E-02
2300 - 2400	0	2.369E-01	4.441E-02	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	8.554E-05	1.604E-05	1.006E-03	1.006E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Average Distance from Starting Place to PTI Egress =	60	m
Average Spread Distance from PTI Egress to Open Road Network =	90	m
Average Spread Distance outside PTI =	0	m

Hour	Idling Emission (g)				Emission for Adjusting Starting Emission (g)				Adjusted Starting Emission Within PTI (g)				Adjusted Starting Emission Within Covered Area (g)				Adjusted Starting Emission Outside PTI (g)				Starting Emission Rate Outside PTI (g/s)			
	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP
0000 - 0100	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0100 - 0200	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0200 - 0300	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0300 - 0400	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0400 - 0500	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0500 - 0600	2.262E+00	4.240E-01	9.606E-03	9.606E-03	7.539E-01	1.413E-01	3.202E-03	3.202E-03	8.581E+00	0.000E+00	0.000E+00	0.000E+00	1.287E+01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0600 - 0700	2.263E+00	4.242E-01	2.562E-02	2.562E-02	7.543E-01	1.414E-01	8.538E-03	8.538E-03	1.697E+01	4.833E-02	0.000E+00	0.000E+00	2.546E+01	7.250E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0700 - 0800	2.722E-03	5.103E-04	3.202E-02	3.202E-02	9.074E-04	1.701E-04	1.067E-02	1.067E-02	1.678E+01	1.018E-01	0.000E+00	0.000E+00	2.517E+01	1.527E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0800 - 0900	2.904E-03	5.443E-04	3.415E-02	3.415E-02	9.679E-04	1.814E-04	1.138E-02	1.138E-02	1.790E+01	1.086E-01	0.000E+00	0.000E+00	2.685E+01	1.628E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0900 - 1000	2.450E-03	4.593E-04	2.882E-02	2.882E-02	8.167E-04	1.531E-04	9.606E-03	9.606E-03	1.510E+01	9.159E-02	0.000E+00	0.000E+00	2.266E+01	1.374E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1000 - 1100	2.450E-03	4.593E-04	2.882E-02	2.882E-02	8.167E-04	1.531E-04	9.606E-03	9.606E-03	1.510E+01	9.159E-02	0.000E+00	0.000E+00	2.266E+01	1.374E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1100 - 1200	2.450E-03	4.593E-04	2.882E-02	2.882E-02	8.167E-04	1.531E-04	9.606E-03	9.606E-03	1.510E+01	9.159E-02	0.000E+00	0.000E+00	2.266E+01	1.374E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1200 - 1300	2.450E-03	4.593E-04	2.882E-02	2.882E-02	8.167E-04	1.531E-04	9.606E-03	9.606E-03	1.510E+01	9.159E-02	0.000E+00	0.000E+00	2.266E+01	1.374E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1300 - 1400	2.450E-03	4.593E-04	2.882E-02	2.882E-02	8.167E-04	1.531E-04	9.606E-03	9.606E-03	1.510E+01	9.159E-02	0.000E+00	0.000E+00	2.266E+01	1.374E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
1400 - 1500	2.450E-03	4.593E-04	2.882E-02	2.882E-02	8.167E-04	1.531E-04	9.606E-03	9.606E-03	1.510E+01	9.159E-02	0.000E+00	0.000E+												

Cross Boundary Coach Terminus

Starting Emission

Starting Emission Factor (g/trip)																		
NO	2.510E-01	4.517E-01	6.024E-01	8.534E-01	1.054E+00	1.406E+00	2.058E+00	2.560E+00	3.765E+00	4.919E+00	5.522E+00	6.526E+00	7.178E+00	7.530E+00	7.730E+00	7.931E+00	8.032E+00	8.032E+00
NO2	2.810E-02	5.060E-02	6.740E-02	9.550E-02	1.180E-01	1.573E-01	2.304E-01	2.865E-01	4.214E-01	5.506E-01	6.180E-01	7.304E-01	8.035E-01	8.428E-01	8.653E-01	8.877E-01	8.990E-01	8.990E-01
RSP	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FSP	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hour Sitting Time (min)	No. of Cold Starts of Non-franchised Bus >15t																	
	5	10	20	30	40	50	60	120	180	240	300	360	420	480	540	600	660	720
0000 - 0100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200 - 0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300 - 0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500 - 0600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0600 - 0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
0700 - 0800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
0800 - 0900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0
0900 - 1000	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000 - 1100	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100 - 1200	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200 - 1300	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300 - 1400	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400 - 1500	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500 - 1600	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600 - 1700	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700 - 1800	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800 - 1900	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900 - 2000	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000 - 2100	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100 - 2200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200 - 2300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300 - 2400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Remarks:

- [1] Because of the outbreak of coronavirus, cross-boundary coach services were suspended at the time this EIA was prepared. The cross-boundary coach patterns were derived based on the operators' published schedules.
- [2] The cross boundary coaches are coaches with around 50 seats (≥15t in weight) based on observation. Non-franchised bus >15t (NFB8) was therefore assumed.

Total Starting Emission (g)			
NO	NO2	RSP	FSP
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
8	1	0	0
15	2	0	0
39	4	0	0
3	0	0	0
3	0	0	0
3	0	0	0
3	0	0	0
3	0	0	0
3	0	0	0
3	0	0	0
3	0	0	0
3	0	0	0
3	0	0	0
2	0	0	0
2	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

West Kowloon Station Bus Terminus

Starting Emission

Starting Emission Factor (g/trip)																		
NO	7.247E-01	1.305E+00	1.739E+00	2.464E+00	3.044E+00	4.059E+00	5.943E+00	7.393E+00	1.087E+01	1.421E+01	1.594E+01	1.884E+01	2.073E+01	2.174E+01	2.232E+01	2.290E+01	2.319E+01	2.319E+01
NO2	4.700E-02	8.450E-02	1.127E-01	1.596E-01	1.972E-01	2.629E-01	3.850E-01	4.789E-01	7.043E-01	9.203E-01	1.033E+00	1.221E+00	1.343E+00	1.409E+00	1.446E+00	1.484E+00	1.503E+00	1.503E+00
RSP	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
FSP	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

Hour	No. of Cold Starts of Double-Deck Franchised Bus																	
	5	10	20	30	40	50	60	120	180	240	300	360	420	480	540	600	660	720
0000 - 0100	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0100 - 0200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0200 - 0300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0300 - 0400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0400 - 0500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0500 - 0600	0	0	4	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
0600 - 0700	0	0	50	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0
0700 - 0800	0	0	57	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
0800 - 0900	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0900 - 1000	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000 - 1100	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100 - 1200	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200 - 1300	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1300 - 1400	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1400 - 1500	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1500 - 1600	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1600 - 1700	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1700 - 1800	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1800 - 1900	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1900 - 2000	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000 - 2100	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2100 - 2200	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2200 - 2300	0	0	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2300 - 2400	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Remark:

[1] Number of cold starts were derived based on on-site observations at the PTIs and operators' published schedules, while sitting time were obtained based on on-site observations at PTIs.

Total Starting Emission (g)			
NO	NO2	RSP	FSP
38	2	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
55	4	0	0
278	18	0	0
147	10	0	0
99	6	0	0
99	6	0	0
99	6	0	0
99	6	0	0
99	6	0	0
99	6	0	0
99	6	0	0
99	6	0	0
99	6	0	0
99	6	0	0
99	6	0	0
104	7	0	0
99	6	0	0
99	6	0	0
99	6	0	0
99	6	0	0
80	5	0	0

West Kowloon Station Bus Terminus

Cold Idling Emission

Idling Time =	2	min
Max. Idling Time for Adjusting Starting Emission =	1	min

Hour	Frequency	Double-Deck Franchised Bus								Frequency	Double-Deck Franchised Bus							
		Cold Idling Emission Factor (g/min)				Cold Idling Emission (g)					Hot Idling Emission Factor (g/min)				Hot Idling Emission (g)			
		NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP		NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP
0000 - 0100	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	22	2.243E-01	1.265E-02	2.180E-03	2.180E-03	9.870E+00	5.567E-01	9.594E-02	9.594E-02
0100 - 0200	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	2.243E-01	1.265E-02	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0200 - 0300	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	2.243E-01	1.265E-02	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0300 - 0400	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	2.243E-01	1.265E-02	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0400 - 0500	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0	2.243E-01	1.265E-02	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0500 - 0600	3	6.756E+00	3.811E-01	2.180E-03	2.180E-03	4.054E+01	2.286E+00	1.308E-02	1.308E-02	4	2.243E-01	1.265E-02	2.180E-03	2.180E-03	1.795E+00	1.012E-01	1.744E-02	1.744E-02
0600 - 0700	12	6.756E+00	3.811E-01	2.180E-03	2.180E-03	1.622E+02	9.146E+00	5.233E-02	5.233E-02	50	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.243E+01	1.265E+00	2.180E-01	2.180E-01
0700 - 0800	3	6.756E+00	3.811E-01	2.180E-03	2.180E-03	4.054E+01	2.286E+00	1.308E-02	1.308E-02	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
0800 - 0900	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
0900 - 1000	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
1000 - 1100	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
1100 - 1200	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
1200 - 1300	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
1300 - 1400	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
1400 - 1500	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
1500 - 1600	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
1600 - 1700	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
1700 - 1800	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	60	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.692E+01	1.518E+00	2.617E-01	2.617E-01
1800 - 1900	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
1900 - 2000	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
2000 - 2100	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
2100 - 2200	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
2200 - 2300	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	57	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.557E+01	1.442E+00	2.486E-01	2.486E-01
2300 - 2400	0	6.756E+00	3.811E-01	2.180E-03	2.180E-03	0.000E+00	0.000E+00	0.000E+00	0.000E+00	46	2.243E-01	1.265E-02	2.180E-03	2.180E-03	2.064E+01	1.164E+00	2.006E-01	2.006E-01

Average Distance from Starting Place to PTI Egress =	350	m
Average Spread Distance outside PTI =	350	m

Hour	Idling Emission (g)				Emission for Adjusting Starting Emission (g)				Adjusted Starting Emission Within PTI (g)				Adjusted Starting Emission Outside PTI (g)				Starting Emission Rate Outside PTI (g/s)			
	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP
0000 - 0100	9.870E+00	5.567E-01	9.594E-02	9.594E-02	4.935E+00	2.783E-01	4.797E-02	4.797E-02	1.667E+01	1.101E+00	0.000E+00	0.000E+00	1.667E+01	1.101E+00	0.000E+00	0.000E+00	4.629E-03	3.057E-04	0.000E+00	0.000E+00
0100 - 0200	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0200 - 0300	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0300 - 0400	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0400 - 0500	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0500 - 0600	4.233E+01	2.388E+00	3.053E-02	3.053E-02	2.117E+01	1.194E+00	1.526E-02	1.526E-02	1.681E+01	1.178E+00	0.000E+00	0.000E+00	1.681E+01	1.178E+00	0.000E+00	0.000E+00	4.670E-03	3.272E-04	0.000E+00	0.000E+00
0600 - 0700	1.846E+02	1.041E+01	2.704E-01	2.704E-01	9.229E+01	5.205E+00	1.352E-01	1.352E-01	9.301E+01	6.412E+00	0.000E+00	0.000E+00	9.301E+01	6.412E+00	0.000E+00	0.000E+00	2.584E-02	1.781E-03	0.000E+00	0.000E+00
0700 - 0800	6.611E+01	3.729E+00	2.617E-01	2.617E-01	3.306E+01	1.864E+00	1.308E-01	1.308E-01	5.696E+01	3.829E+00	0.000E+00	0.000E+00	5.696E+01	3.829E+00	0.000E+00	0.000E+00	1.582E-02	1.064E-03	0.000E+00	0.000E+00
0800 - 0900	2.557E+01	1.442E+00	2.486E-01	2.486E-01	1.279E+01	7.211E-01	1.243E-01	1.243E-01	4.318E+01	2.851E+00	0.000E+00	0.000E+00	4.318E+01	2.851E+00	0.000E+00	0.000E+00	1.199E-02	7.920E-04	0.000E+00	0.000E+00
0900 - 1000	2.557E+01	1.442E+00	2.486E-01	2.486E-01	1.279E+01	7.211E-01	1.243E-01	1.243E-01	4.318E+01	2.851E+00	0.000E+00	0.000E+00	4.318E+01	2.851E+00	0.000E+00	0.000E+00	1.199E-02	7.920E-04	0.000E+00	0.000E+00
1000 - 1100	2.557E+01	1.442E+00	2.486E-01	2.486E-01	1.279E+01	7.211E-01	1.243E-01	1.243E-01	4.318E+01	2.851E+00	0.000E+00	0.000E+00	4.318E+01	2.851E+00	0.000E+00	0.000E+00	1.199E-02	7.920E-04	0.000E+00	0.000E+00
1100 - 1200	2.557E+01	1.442E+00	2.486E-01	2.486E-01	1.279E+01	7.211E-01	1.243E-01	1.243E-01	4.318E+01	2.851E+00	0.000E+00	0.000E+00	4.318E+01	2.851E+00	0.000E+00	0.000E+00	1.199E-02	7.920E-04	0.000E+00	0.000E+00
1200 - 1300	2.557E+01	1.442E+00	2.486E-01	2.486E-01	1.279E+01	7.211E-01	1.243E-01	1.243E-01	4.318E+01	2.851E+00	0.000E+00	0.000E+00	4.318E+01	2.851E+00	0.000E+00	0.000E+00	1.199E-02	7.920E-04	0.000E+00	0.000E+00
1300 - 1400	2.557E+01	1.442E+00	2.486E-01	2.486E-01	1.279E+01	7.211E-01	1.243E-01	1.243E-01	4.318E+01	2.851E+00	0.000E+00	0.000E+00	4.318E+01	2.851E+00	0.000E+00	0.000E+00	1.199E-02	7.920E-04	0.000E+00	0.000E+00
1400 - 1500	2.557E+01	1.442E+00	2.486E-01	2.486E-01	1.279E+01	7.211E-01	1.243E-01	1.243E-01	4.318E+01	2.851E+00	0.000E+00	0.000E+00	4.318E+01	2.851E+00	0.000E+00	0.000E+00	1.199E-02	7.920E-04	0.000E+00	0.000E+00
1500 - 1600	2.557E+01	1.442E+00	2.486E-01	2.486E-01	1.279E+01	7.211E-01	1.243E-01	1.243E-01	4.318E+01	2.851E+00	0.000E+00	0.000E+00	4.318E+01	2.851E+00	0.000E+00	0.000E+00	1.199E-02	7.920E-04	0.000E+00	0.000E+00
1600 - 1700	2.557E+01	1.442E+00	2.486E-01	2.486E-01	1.279E+01	7.211E-01	1.243E-01	1.243E-01	4.318E+01	2.851E+00	0.000E+00	0.000E+00	4.318E+01	2.851E+00	0.000E+00	0.000E+00	1.199E-02	7.920E-04	0.000E+00	0.000E+00
1700 - 1800	2.692E+01	1.518E+00	2.617E-01	2.617E-01	1.346E+01	7.591E-01	1.308E-01	1.308E-01												

West Kowloon Station Bus Terminus

Running Emission

Average Travelling Distance within PTI =	500	m
Average Travelling Speed =	10	km/h

Hour	Frequency	Double-Deck Franchised Bus							
		Running Emission Factor (g/km-vehicle)				Running Emission Within PTI (g)			
		NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP
0000 - 0100	22	1.138E+01	6.419E-01	3.601E-01	3.313E-01	1.252E+02	7.061E+00	3.961E+00	3.644E+00
0100 - 0200	0	1.138E+01	6.419E-01	3.601E-01	3.313E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0200 - 0300	0	1.138E+01	6.419E-01	3.601E-01	3.313E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0300 - 0400	0	1.138E+01	6.419E-01	3.601E-01	3.313E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0400 - 0500	0	1.138E+01	6.419E-01	3.601E-01	3.313E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0500 - 0600	7	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.983E+01	2.247E+00	1.260E+00	1.160E+00
0600 - 0700	62	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.528E+02	1.990E+01	1.116E+01	1.027E+01
0700 - 0800	60	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.414E+02	1.926E+01	1.080E+01	9.939E+00
0800 - 0900	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
0900 - 1000	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
1000 - 1100	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
1100 - 1200	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
1200 - 1300	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
1300 - 1400	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
1400 - 1500	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
1500 - 1600	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
1600 - 1700	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
1700 - 1800	60	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.414E+02	1.926E+01	1.080E+01	9.939E+00
1800 - 1900	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
1900 - 2000	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
2000 - 2100	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
2100 - 2200	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
2200 - 2300	57	1.138E+01	6.419E-01	3.601E-01	3.313E-01	3.244E+02	1.829E+01	1.026E+01	9.442E+00
2300 - 2400	46	1.138E+01	6.419E-01	3.601E-01	3.313E-01	2.618E+02	1.476E+01	8.282E+00	7.620E+00

Total Hourly Emission

Hour	Emission Within PTI							
	Total Emission (g) (Running + Idling + Starting)				Total Emission Rate (g/s)			
	NO	NO ₂	RSP	FSP	NO	NO ₂	RSP	FSP
0000 - 0100	1.517E+02	8.718E+00	4.057E+00	3.740E+00	4.215E-02	2.422E-03	1.127E-03	1.039E-03
0100 - 0200	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0200 - 0300	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0300 - 0400	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0400 - 0500	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
0500 - 0600	9.898E+01	5.812E+00	1.291E+00	1.190E+00	2.749E-02	1.614E-03	3.586E-04	3.306E-04
0600 - 0700	6.304E+02	3.672E+01	1.143E+01	1.054E+01	1.751E-01	1.020E-02	3.176E-03	2.928E-03
0700 - 0800	4.645E+02	2.681E+01	1.106E+01	1.020E+01	1.290E-01	7.449E-03	3.074E-03	2.834E-03
0800 - 0900	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
0900 - 1000	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
1000 - 1100	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
1100 - 1200	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
1200 - 1300	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
1300 - 1400	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
1400 - 1500	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
1500 - 1600	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
1600 - 1700	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
1700 - 1800	4.138E+02	2.378E+01	1.106E+01	1.020E+01	1.149E-01	6.605E-03	3.074E-03	2.834E-03
1800 - 1900	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
1900 - 2000	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
2000 - 2100	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
2100 - 2200	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
2200 - 2300	3.931E+02	2.259E+01	1.051E+01	9.691E+00	1.092E-01	6.274E-03	2.920E-03	2.692E-03
2300 - 2400	3.172E+02	1.823E+01	8.483E+00	7.820E+00	8.812E-02	5.064E-03	2.356E-03	2.172E-03

Idling Emission Factor

PLB (Diesel)

NO/NO2 Ratio ^[1] = 5.33 From EMFAC

	Population	Idling Emission Factor				Mass Factor	AC Factor ^[7]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
		%	NOx (g/s) ^{[2][3]}	RSP (g/hr) ^[4]	NOx (g/hr) ^[5]			RSP (g/hr) ^[6]	NOx	NO	NO ₂	RSP & FSP ^[8]	NOx	NO	NO ₂
Euro VI	62%	0.0010	0.02	1.28	0.02	-	1.3	6.000E-02	5.053E-02	9.472E-03	4.414E-04	4.667E-02	3.930E-02	7.368E-03	4.414E-04
Euro V	37%	0.0010	0.02	3.60	0.02	-	1.3	6.000E-02	5.053E-02	9.472E-03	4.414E-04	4.667E-02	3.930E-02	7.368E-03	4.414E-04
Euro IV	0.3%	0.0010	0.16	3.62	0.16	-	1.3	6.000E-02	5.053E-02	9.472E-03	4.414E-04	4.667E-02	3.930E-02	7.368E-03	4.414E-04

PLB (LPG)

NO/NO2 Ratio ^[1] = 5.33 From EMFAC

	Population	Idling Emission Factor				Mass Factor	AC Factor ^[7]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
		%	NOx (g/s) ^[2]	RSP (g/hr) ^[4]	NOx (g/s) ^[9]			RSP (g/hr) ^[10]	NOx	NO	NO ₂	RSP & FSP ^[8]	NOx	NO	NO ₂
Euro V	75%	0.0039	0.02	0.0039	0.02	-	1.3	2.813E-01	2.369E-01	4.441E-02	1.006E-03	1.016E-04	8.554E-05	1.604E-05	1.006E-03
Euro IV	10%	0.0039	0.16	0.0039	0.16	-	1.3	2.813E-01	2.369E-01	4.441E-02	1.006E-03	1.016E-04	8.554E-05	1.604E-05	1.006E-03
Euro III	15%	0.0092	0.10	0.0092	0.10	-	1.3	2.813E-01	2.369E-01	4.441E-02	1.006E-03	1.016E-04	8.554E-05	1.604E-05	1.006E-03

FBDD

NO/NO2 Ratio ^[1] = 17.73 From EMFAC

	Population	Idling Emission Factor				Mass Factor ^[13]	AC Factor ^[7]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
		%	NOx (g/s) ^[2]	RSP (g/hr) ^[4]	NOx (g/hr) ^[11]			RSP (g/hr) ^[12]	NOx	NO	NO ₂	RSP & FSP ^[8]	NOx	NO	NO ₂
Euro VI	26%	0.0225	0.01	1.75	0.01	1.2	1.3	7.138E+00	6.756E+00	3.811E-01	2.180E-03	2.370E-01	2.243E-01	1.265E-02	2.180E-03
Euro V	71%	0.1535	0.10	11.71	0.10	1.2	1.3	7.138E+00	6.756E+00	3.811E-01	2.180E-03	2.370E-01	2.243E-01	1.265E-02	2.180E-03
Euro IV	3%	0.1535	0.20	7.51	0.20	1.2	1.3	7.138E+00	6.756E+00	3.811E-01	2.180E-03	2.370E-01	2.243E-01	1.265E-02	2.180E-03
Euro III	0.4%	0.0737	1.29	42.08	1.29	1.2	1.3	7.138E+00	6.756E+00	3.811E-01	2.180E-03	2.370E-01	2.243E-01	1.265E-02	2.180E-03

NFB8

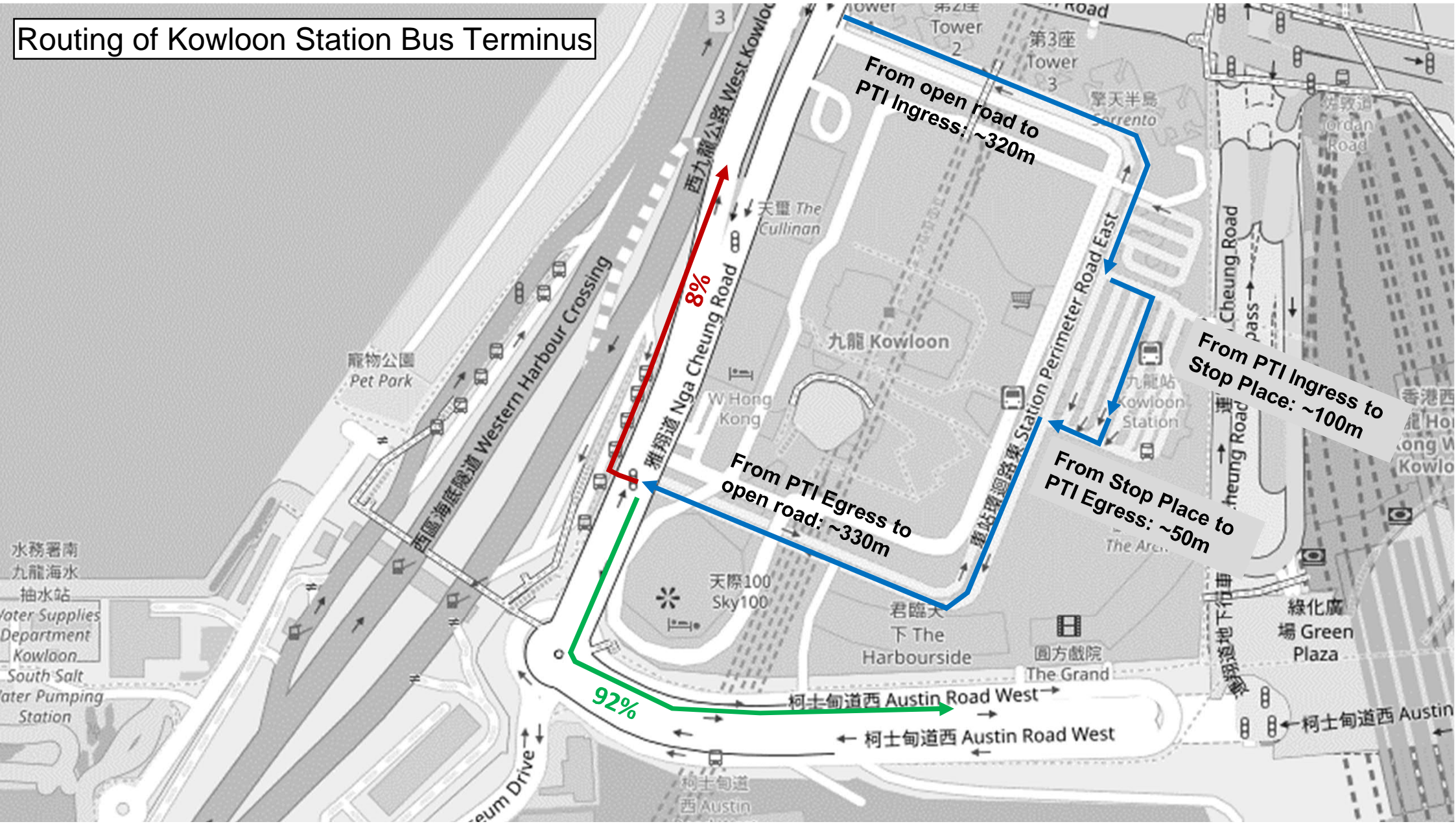
NO/NO2 Ratio ^[1] = 6.92 From EMFAC

	Population	Idling Emission Factor				Mass Factor ^[13]	AC Factor ^[7]	Average Idling Emission Factor (g/min)							
		Cold Idling		Hot Idling				Cold Idling				Hot Idling			
		%	NOx (g/s) ^[2]	RSP (g/hr) ^[4]	NOx (g/hr) ^[11]			RSP (g/hr) ^[12]	NOx	NO	NO ₂	RSP & FSP ^[8]	NOx	NO	NO ₂
Euro VI	51%	0.0077	0.01	1.75	0.01	1.0	1.3	1.643E+00	1.435E+00	2.075E-01	1.252E-03	1.389E-01	1.214E-01	1.755E-02	1.252E-03
Euro V	44%	0.0474	0.10	11.71	0.10	1.0	1.3	1.643E+00	1.435E+00	2.075E-01	1.252E-03	1.389E-01	1.214E-01	1.755E-02	1.252E-03
Euro IV	4%	0.0573	0.20	7.51	0.20	1.0	1.3	1.643E+00	1.435E+00	2.075E-01	1.252E-03	1.389E-01	1.214E-01	1.755E-02	1.252E-03

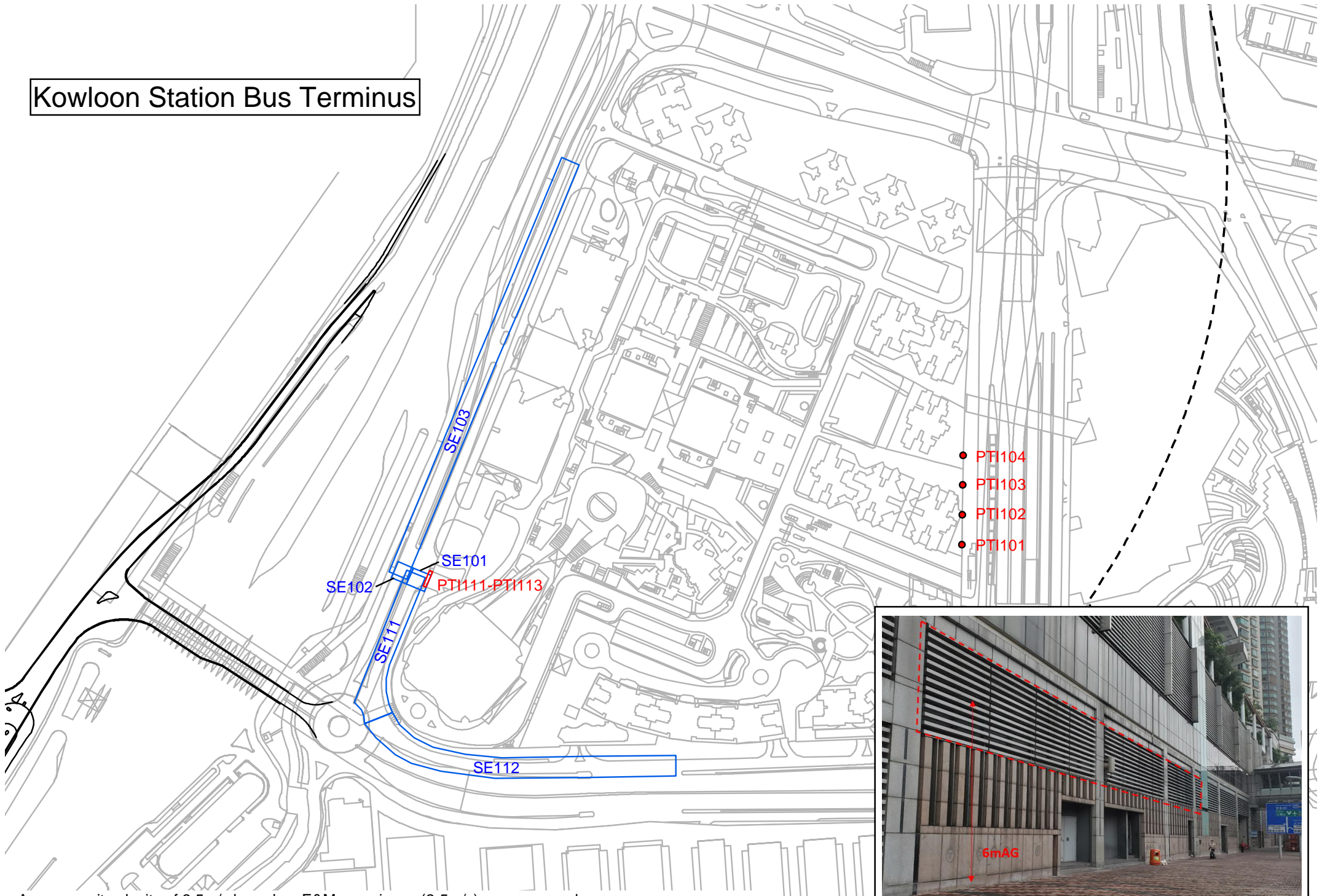
Remarks

- [1] NO/NO2 ratio, at the respective running speed, was calculated based on emission factors extracted from EMFAC-HK.
- [2] NOx cold idling emission factors was referenced to *Calculation of Start Emissions in Air Quality Impact Assessment* published by EPD.
- [3] Due to lack of information, NOx cold idling emission factor for Euro IV to Euro V PLB(Diesel) was referenced to the corresponding hot idling emission factor.
- [4] Due to lack of information, RSP cold idling emission factor was referenced to the corresponding hot idling emission factor.
- [5] Reference made to Table 42 of *Road Tunnels: Vehicle Emissions and Air Demand for Ventilation (VEADV)* published by World Road Association (VEADV).
- [6] Reference made to Table 43 of VEADV.
- [7] Reference made to the approved *Liantang / Heung Yuen Wai Boundary Control Point and Associated Works EIA Report*.
- [8] All RSP emissions were assumed for FSP as a conservative approach.
- [9] Due to lack of information, NOx hot idling emission factor was referenced to the corresponding cold idling emission factor from *Calculation of Start Emissions in Air Quality Impact Assessment* published by EPD.
- [10] Due to lack of information, RSP hot idling emission factor for PLB(LPG) was referenced to hot idling emission factor for PLB(Diesel).
- [11] Reference made to Table 45 of VEADV.
- [12] Reference made to Table 46 of VEADV.
- [13] Reference made to Table 27 of VEADV.

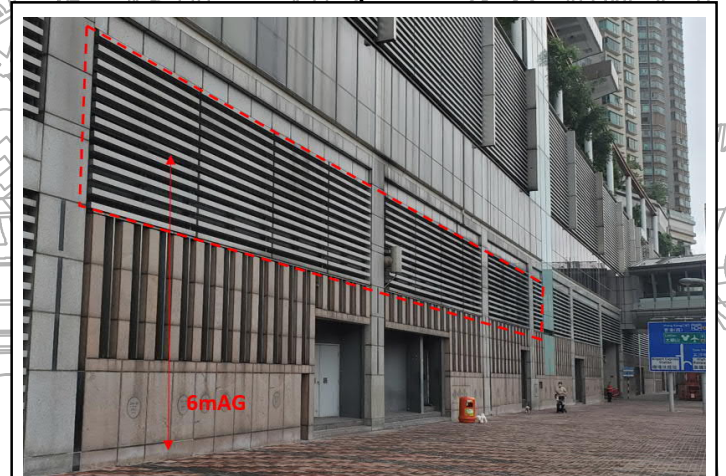
Routing of Kowloon Station Bus Terminus



Kowloon Station Bus Terminus

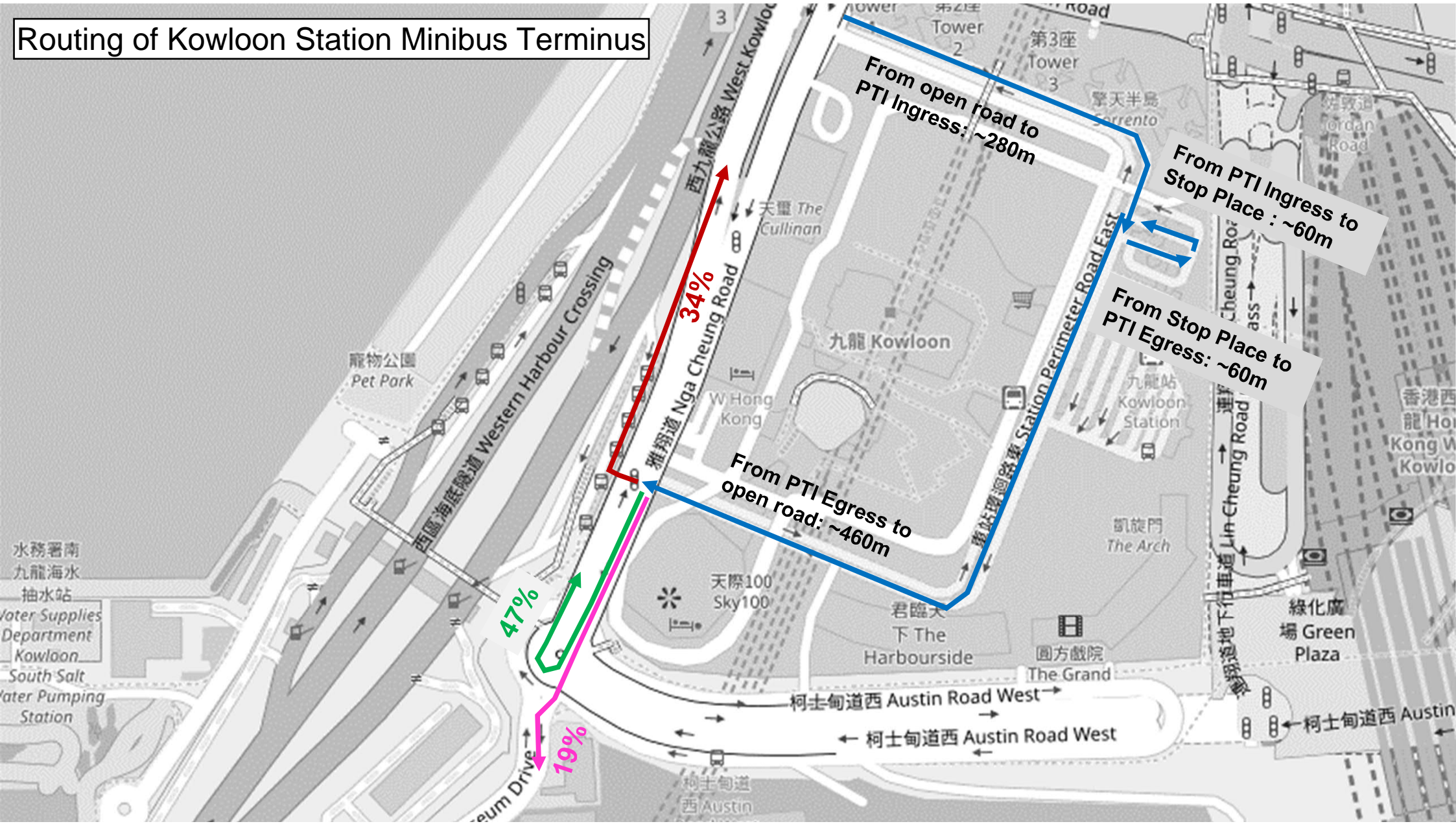


- Average exit velocity of 3.5m/s based on E&M experience (2-5m/s) was assumed.
- Area sources of 2m x width of openings at 0m, 2m and 4m were assumed at the openings of covered area.

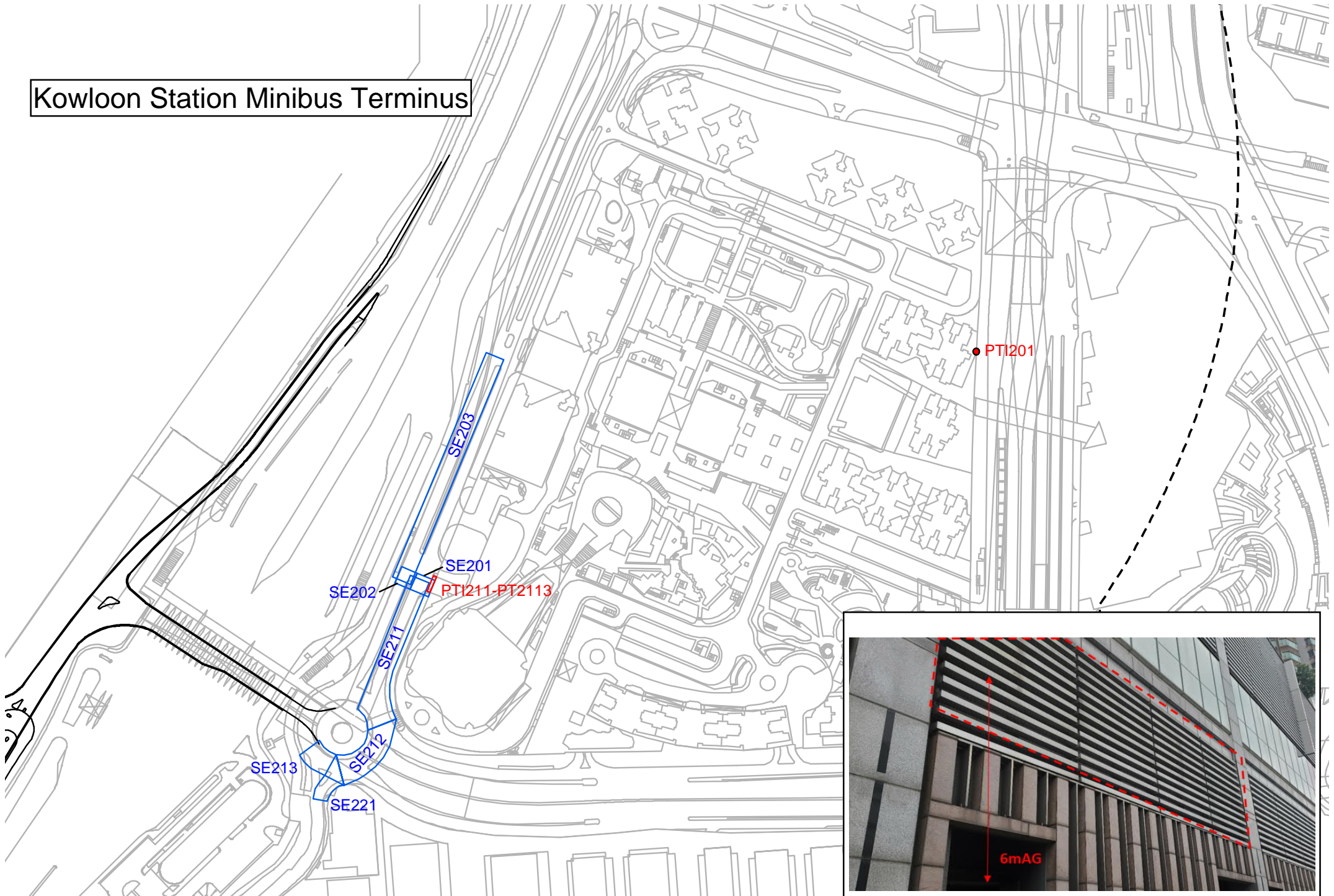


PTI101 - PTI104: POINTHOR Source

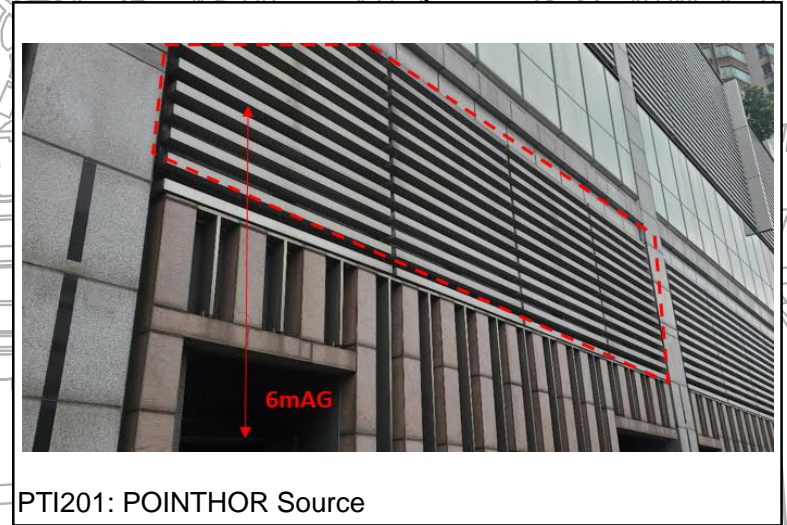
Routing of Kowloon Station Minibus Terminus



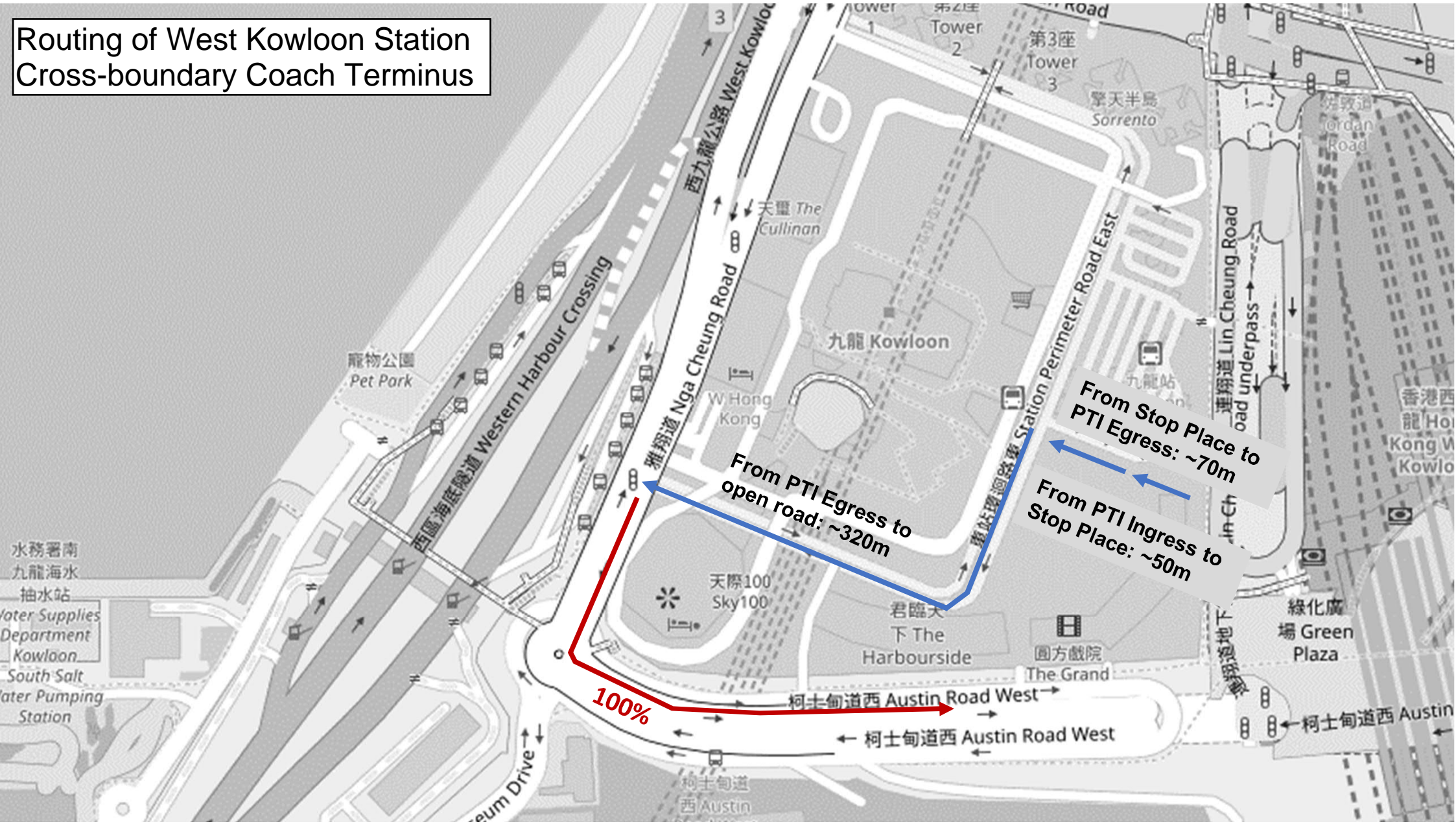
Kowloon Station Minibus Terminus



- Average exit velocity of 3.5m/s based on E&M experience (2-5m/s) was assumed.
- Area sources of 2m x width of openings at 0m, 2m and 4m were assumed at the openings of covered area.



Routing of West Kowloon Station Cross-boundary Coach Terminus



水務署南
九龍海水
抽水站
Water Supplies
Department
Kowloon
South Salt
Water Pumping
Station

寵物公園
Pet Park

西區海底隧道 Western Harbour Crossing

西九龍公路 West Kowloon

雅翔道 Nga Cheung Road

九龍 Kowloon

車站環迴路
Station Perimeter Road East

From Stop Place to
PTI Egress: ~70m

From PTI Ingress to
Stop Place: ~50m

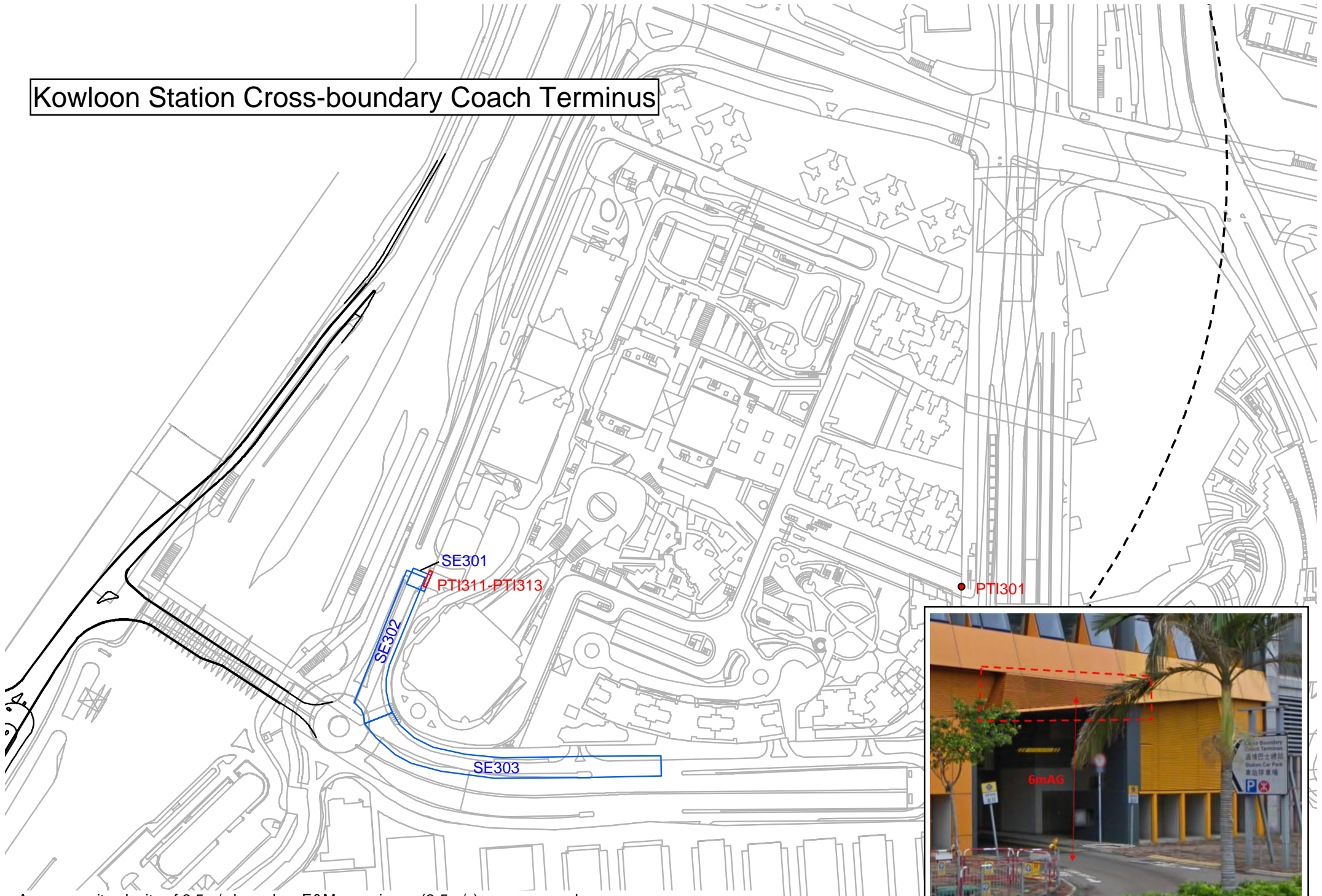
100%

柯士甸道西 Austin Road West

綠化廣
場 Green
Plaza

柯士甸道西 Austin

Kowloon Station Cross-boundary Coach Terminus



- Average exit velocity of 3.5m/s based on E&M experience (2-5m/s) was assumed.
- Area sources of 2m x width of openings at 0m, 2m and 4m were assumed at the openings of covered area.



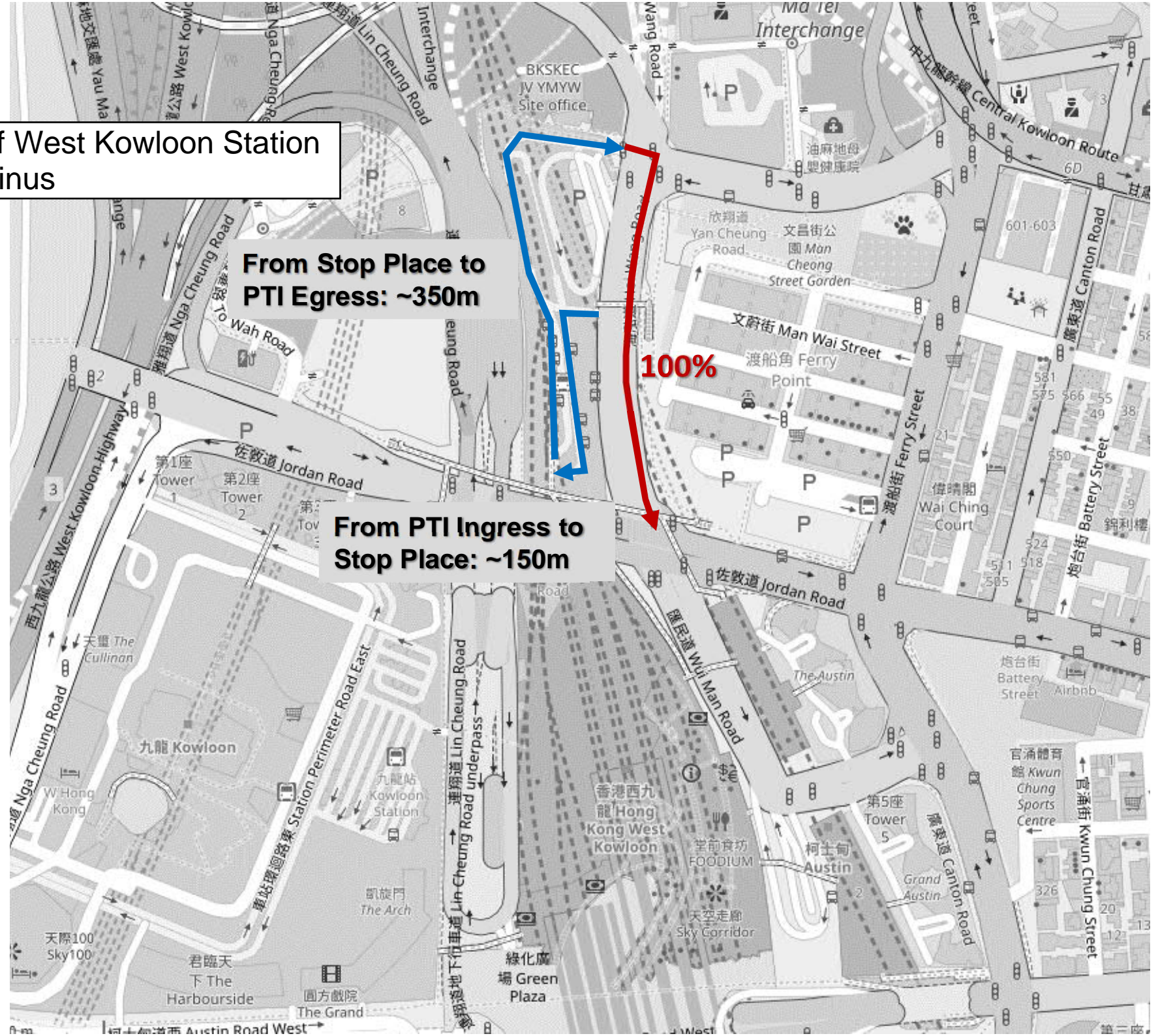
PTI301: POINTHOR Source

Routing of West Kowloon Station Bus Terminus

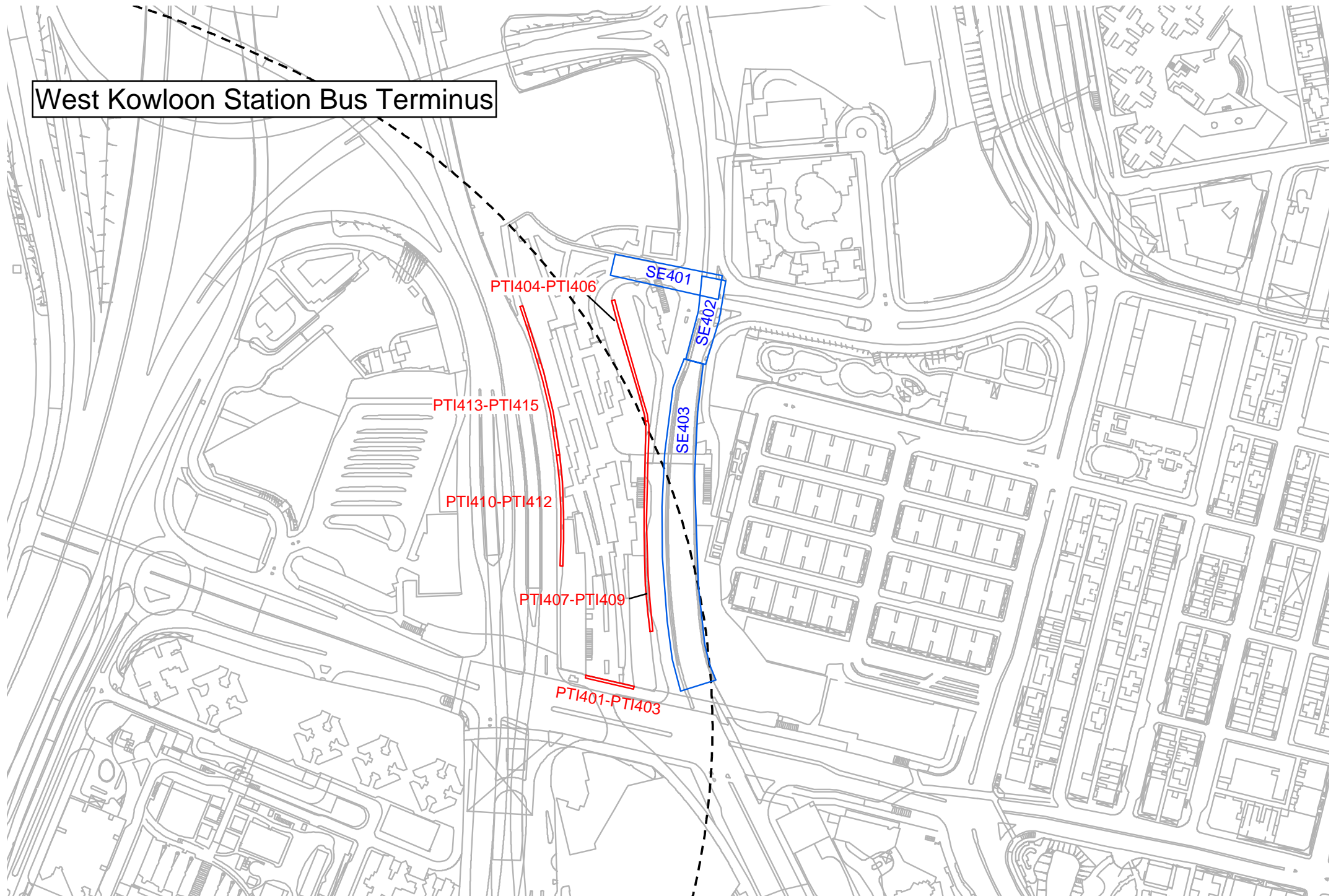
From Stop Place to PTI Egress: ~350m

From PTI Ingress to Stop Place: ~150m

100%



West Kowloon Station Bus Terminus



- Bus terminus with side openings.
- Area sources of 2m x width of openings at 0m, 2m and 4m were assumed along its openings.

Calculation of Start Emissions in Air Quality Impact Assessment

General

For petrol vehicle, including: PC, MC, LGV3/4, PV4 & MC, all the start emissions are instantly released at the time when the engine starts. For LPG vehicle, including: Taxi, PLB & PV5 and diesel vehicle with Selective Catalytic Reduction Device (SCR), the “adjusted” start emissions are released over a longer period (e.g., 150m for LPG vehicle and 700m for diesel vehicle with SCR) after the engine starts. For details, please refer to Table 1.

Table 1 Spread Distance of Adjusted Start Emission

Vehicle Class	Fuel Type	Spread Distance of Adjusted Start Emission, Ds, (m) *
Any (with SCR)	Diesel	700
TAXI	LPG	150
PLB	LPG	150
PV5	LPG	150
PC	Petrol	0
LGV3/4	Petrol	0
PV4	Petrol	0
MC	Petrol	0

Remark (*) – the spread distance should count starting from the location where the engine starts.

Adjustment for Start Emissions

For LPG and diesel vehicle (with SCR), with idling at the beginning of the trip, please deduct the idling emission and spread out the adjusted start emissions evenly over the distance provided.

The idling emission part will be assumed to emit right on the spot. In case when the idling at the start is longer than K mins (e.g., 1 mins for FB with SCR; and 0.5 min for Taxi), only K mins of the idling will be used to adjust the start emission.

Details of K for different classes are shown in Table 2.

Table 2 Maximum Duration for adjusting start emission, "K"

Vehicle Class	Fuel Type	Maximum Duration for adjusting start emission, "K", (minutes)
Any (with SCR)	Diesel	1
TAXI	LPG	0.5
PLB	LPG	1
PV5	LPG	1
PC	Petrol	0
LGV3/4	Petrol	0
PV4	Petrol	0
MC	Petrol	0

For details, please refer to the following equations:

(1) [idling emission] = [idling EF] x [Actual Idling Duration at Start]

(2) [idling emission for the purpose of start emission adjustment] = [idling rate] x minimum(K, [Actual Idling duration at start])

(3) [Adjusted Start Emission] = maximum(0, [Start Emission] - [idling emission for the purpose of start emission adjustment])

and geographically,

(4) [adjusted start emission] ==> spread over Ds

(5) [idling emission] ==> emitted right at the spot

Idling Emission

As regards idling emissions, if spread distance, Ds, is larger than zero and soak time (duration of engine off prior to engine ignition) is longer than or equal to 4 hours for petrol/LPG vehicles or 1 hour for diesel SCR vehicles,

(6) [idling EF] = [cold idling EF]

Table of Cold Idling Emission Factors, which are based on local measurement data, is in **Annex A**.

otherwise,

(7) [idling EF] = warm/hot idling rate.

Currently there is no local measurement data for warm/hot idling rate. Project proponent is advised to use data adopted by recognized international organizations. The source of reference of the adopted warm/hot idling emission factors should be provided.

Please note that according to the operation procedures specified in EPD's Practice Note for Professional Persons, **Control of Air Pollution in Semi-Confined Public Transport Interchanges Control of Air Pollution, ProPECC PN 1/98**, the operator of PTI shall instruct all drivers using the PTI to switch off the vehicle engines while waiting to minimize idling emissions. Hence, idling activities within PTI should be very small, if any, under normal circumstances. For details, please refer to:

https://www.epd.gov.hk/epd/sites/default/files/epd/english/resources/pub/publications/files/pn98_1.pdf. For other type of parking sites, if idling activities are involved, please refer to the approach detailed in this note to estimate idling emissions and adjust start emissions accordingly.

As for running exhaust emission, it should be included in the "start-distance" of the above.

Cold Idling EF Averaging Among Technology Groups (Tech Groups)

Note also that the cold idling EF provided is by Tech Groups in **Annex A** while the start EFs in EMFAC-HK output (e.g. emfac mode) are trip-weighted-average (among Tech Groups), users are advised to calculate the trip-weighted-average among Tech Groups of the cold idling EF when applying the above methodology as an estimation.

Start Emission Factor for Diesel Vehicle with SCR

For diesel vehicle with SCR, the above calculation will be a bit more complicated because not all vehicles have SCR and the start emission factor (EF) shown in the EMFAC-HK emfac mode output is a weighted average, which could be a lot smaller than the actual start EF of a SCR vehicle.

To spread the adjusted start emission correctly for these vehicles, please use the SCR-start-EF for the calculation and take only the fraction of SCR vehicles activities into account for start emission.

In order to allocate the amount of activity to diesel SCR vehicles and derive their EFs for different years, **Annex B** which contains information on the % SCR vehicles by technology groups is required. By using this information, one may obtain the % of SCR vehicles in each class for any assessment year (with help of EMFAC-HK's detail burden output, i.e. bdn file).

For example, the default EMFAC-HK (territory-wide average) result for the year 2024 is appended in **Annex C** for reference. The SCR % in each class can help allocating the right amount of activities. Also, to obtain the SCR-start EF for a class, one may divide the weighted average start EF for diesel vehicles of that class (i.e. "DSL" column of each class in emfac mode output) by the % of SCR among diesel vehicles. More specifically, for each class,

(8) [Number of trips of SCR vehicles] = [Number of trips of total non-electric Vehicles] x [% of SCR among total non-electric Vehicles]

(9) [Start EF of SCR Vehicles] = [Start EF of Diesel Vehicles] / [% of SCR Vehicles among Diesel Vehicles]

General remark: The above methodology and parameters are subject to review when more local data are available.

Annex A Cold Idling Emission Factors

Cold[#] Idling Emission Factors

#Cold here means soak time greater than or equal to 4 hours for petrol/LPG vehicles or 1 hour for diesel SCR vehicles.

Class	Fuel Type	Pollutant	Emission Standard	Cold# Idling Emission Factor (g/s)
Taxi	LPG	NOx	Euro 2/3	0.0057
Taxi	LPG	NOx	Euro 4	0.0035
Taxi	LPG	NOx	Euro 5	0.0028
Taxi	LPG	NOx	Euro 6	0.0028
PLB	LPG	NOx	Euro III	0.0092
PLB	LPG	NOx	Euro IV	0.0039
PLB	LPG	NOx	Euro V	0.0039
PLB	LPG	NOx	Euro VI	0.0039
Taxi	LPG	THC	Euro 2/3	0.0187
Taxi	LPG	THC	Euro 4	0.0114
Taxi	LPG	THC	Euro 5	0.012
Taxi	LPG	THC	Euro 6	0.012
PLB	LPG	THC	Euro III	0.1073
PLB	LPG	THC	Euro IV	0.0752
PLB	LPG	THC	Euro V	0.0752
PLB	LPG	THC	Euro VI	0.0752
Taxi	LPG	CO	Euro 2/3	0.0187
Taxi	LPG	CO	Euro 4	0.0114
Taxi	LPG	CO	Euro 5	0.012
Taxi	LPG	CO	Euro 6	0.012
PLB	LPG	CO	Euro III	0.1073
PLB	LPG	CO	Euro IV	0.0752
PLB	LPG	CO	Euro V	0.0752
PLB	LPG	CO	Euro VI	0.0752
FBDD	Diesel	NOx	Euro II DPF & SCR	0.0737
FBDD	Diesel	NOx	Euro III DPF & SCR	0.0737
FBDD	Diesel	NOx	Euro IV	0.1535
FBDD	Diesel	NOx	Euro V	0.1535
FBDD	Diesel	NOx	Euro VI	0.0225
HGV8	Diesel	NOx	Euro IV - SCR	0.0144
HGV8	Diesel	NOx	Euro V - SCR	0.023
HGV8	Diesel	NOx	Euro VI	0.0037
NFB8	Diesel	NOx	Euro IV - SCR	0.0573
NFB8	Diesel	NOx	Euro V - SCR	0.0474
NFB8	Diesel	NOx	Euro VI	0.0077
FBSD	Diesel	NOx	Euro IV	0.0573
FBSD	Diesel	NOx	Euro V	0.0474
FBSD	Diesel	NOx	Euro VI	0.0077
HGV7	Diesel	NOx	Euro V - SCR	0.0059
HGV7	Diesel	NOx	Euro V - DPF & SCR	0.0059
HGV7	Diesel	NOx	Euro VI	0.0059
NFB7	Diesel	NOx	Euro IV - SCR	0.0573
NFB7	Diesel	NOx	Euro VI	0.0077
LGV6	Diesel	NOx	Euro V - DPF & SCR	0.0028

Class	Fuel Type	Pollutant	Emission Standard	Cold# Idling Emission Factor (g/s)
LGV6	Diesel	NOx	Euro VI	0.001
NFB6	Diesel	NOx	Euro VI	0.001
PLB	Diesel	NOx	Euro VI	0.001
PV5	Diesel	NOx	Euro VI	0.001

Annex B Tech Groups Assumed to be equipped with Selective Catalytic Reduction (SCR) in EMFAC-HK V4.2

Vehicle Class	Fuel Type	Emission Standard	Tech Group Index	% of SCR in Tech Group
FBDD	Diesel	Euro II DPF & SCR Retrofitted	228	100%
FBDD	Diesel	Euro III DPF & SCR Retrofitted	229	100%
FBDD	Diesel	Euro IV	224	100%
FBDD	Diesel	Euro V	226	100%
FBDD	Diesel	Euro VI	215	100%
HGV8	Diesel	Euro IV - SCR	164	100%
HGV8	Diesel	Euro V - SCR	166	100%
HGV8	Diesel	Euro VI	162	100%
NFB8	Diesel	Euro IV - SCR	64	100%
NFB8	Diesel	Euro V - SCR	66	100%
NFB8	Diesel	Euro VI	62	100%
FBSD	Diesel	Euro V	116	56%
FBSD	Diesel	Euro VI	118	100%
HGV7	Diesel	Euro V - SCR	137	100%
HGV7	Diesel	Euro V - DPF & SCR	138	100%
HGV7	Diesel	Euro VI	135	100%
NFB7	Diesel	Euro IV - SCR	93	100%
NFB7	Diesel	Euro VI	105	100%
LGV6	Diesel	Euro V - DPF & SCR	139	100%
LGV6	Diesel	Euro VI	134	100%
NFB6	Diesel	Euro VI	104	100%
PLB	Diesel	Euro VI	194	100%
PV5	Diesel	Euro VI	204	100%

Remarks: 56% of SCR for Euro V FBSD will remain the same regardless of the assessment year

Annex C EMFAC-HK V4.2 Default (Territory-wide average) % of SCR vehicles by Vehicle Class in CY2024

Class	% of SCR among total non-electric Vehicles	% of SCR Vehicles among Diesel Vehicles
FBDD	98%	98%
FBSD	46%	46%
HGV7	56%	56%
HGV8	61%	61%
LGV3	0%	0%
LGV4	0%	0%
LGV6	56%	56%
MC	0%	N.A.
NFB6	34%	34%
NFB7	48%	48%
NFB8	69%	69%
PC	0%	0%
PLB	35%	58%
PV4	0%	0%
PV5	31%	39%
TAXI	0%	N.A.