Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr00-01)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	Rate (g/km-) NOx	Emission Rate (g/s) PM	Emission Rate (g/s) NOx
							Hr 00-01 (2015 EIA_19-12-2011.xls)																				
A(I)	73	Lin Cheung Rd (underpass)	Northbound	3	73	220	55%	0%	23%	0%	2%	2%	5%	5%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0496824	0.6993305	0.0002216	0.0031198
B(I)	73	Lin Cheung Rd (underpass)	Northbound	3	272	220	55%	0%	23%	0%	2%	2%	5%	5%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0496824	0.6993305	0.0008258	0.0116244
C(I)	73	Lin Cheung Rd (underpass)	Northbound	3	110	220	55%	0%	23%	0%	2%	2%	5%	5%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0496824	0.6993305	0.0003340	0.0047011
D(I)	73	Lin Cheung Rd (underpass)	Northbound	3	176	220	55%	0%	23%	0%	2%	2%	5%	5%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0496824	0.6993305	0.0005344	0.0075217
E(I)	72	Lin Cheung Rd (underpass)	Southbound	3	155	360	54%	0%	25%	0%	3%	1%	4%	6%	1%	1%	0%	0%	1%	1%	0%	1%	100%	0.0482830	0.6373011	0.0007484	0.0098782
F(I)	72	Lin Cheung Rd (depressed)	Southbound	3	172	360	54%	0%	25%	0%	3%	1%	4%	6%	1%	1%	0%	0%	1%	1%	0%	1%	100%	0.0482830	0.6373011	0.0008305	0.0109616
G (I)	118	Lin Cheung Rd (depressed)	Southbound	3	121	320	53%	2%	22%	0%	3%	2%	5%	5%	2%	2%	2%	0%	2%	2%	0%	2%	100%	0.0487631	0.6663077	0.0005245	0.0071665
H(I)	119	Austin Rd W (depressed)	Eastbound	3	173	580	34%	1%	47%	0%	3%	1%	3%	3%	1%	1%	1%	1%	1%	1%	1%	2%	100%	0.0652961	0.8045268	0.0018199	0.0224240
I(I)	117	Austin Rd W (depressed)	Eastbound	3	194	210	43%	0%	45%	0%	2%	0%	2%	5%	0%	0%	2%	0%	0%	0%	0%	0%	100%	0.0592869	0.6374007	0.0006709	0.0072133
J(I)	116	Austin Rd W (depressed)	Westbound	3	194	180	39%	0%	47%	0%	3%	3%	3%	3%	0%	0%	0%	0%	0%	3%	0%	0%	100%	0.0633205	0.7848856	0.0006142	0.0076134
K(I)	114	Lin Cheung Rd (depressed)	Southbound	3	95	250	54%	0%	32%	0%	4%	0%	2%	4%	2%	2%	0%	0%	0%	0%	0%	0%	100%	0.0446838	0.5005182	0.0002948	0.0033020
L(I)	112	Lin Cheung Rd (depressed)	Northbound	3	95	335	55%	1%	24%	0%	3%	1%	4%	4%	1%	1%	0%	0%	1%	1%	0%	0%	100%	0.0477326	0.6426653	0.0004220	0.0056813
M(I)	84	Lin Cheung Rd	Southbound	3	56	515	53%	1%	25%	0%	3%	2%	4%	5%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0483650	0.6150179	0.0003875	0.0049270
N(I)	77	Lin Cheung Rd	Northbound	3	56	660	55%	1%	23%	0%	3%	2%	5%	4%	2%	2%	1%	0%	2%	2%	0%	1%	100%	0.0498993	0.6726776	0.0005123	0.0069062
O(I)	111	Austin Rd W (depressed)	Eastbound	3	52	415	37%	1%	47%	0%	1%	1%	4%	4%	1%	0%	0%	0%	0%	1%	1%	1%	100%	0.0623527	0.7713100	0.0003738	0.0046236
P(I)	110	Austin Rd W (depressed)	Westbound	3	52	265	34%	2%	47%	0%	2%	2%	4%	4%	0%	0%	0%	0%	0%	2%	2%	2%	100%	0.0649439	0.8635693	0.0002486	0.0033056
W(I)	98	West Kowloon Highway (WKH)	Northbound	2	1970	1230	55%	0%	15%	0%	2%	2%	5%	4%	2%	2%	2%	0%	4%	2%	2%	0%	100%	0.0385908	0.7163193	0.0259749	0.4821426
	A	Internal Rd A	Bothbound	4	404	90	50%	0%	33%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	0%	0%	0%	100%	0.0578006	0.5974885	0.000583786	0.0060346
	B	Internal Rd B	Bothbound	4	361	290	50%	0%	31%	0%	3%	0%	2%	3%	2%	2%	5%	0%	0%	2%	0%	0%	100%	0.0581466	0.5981949	0.0016909	0.0173958
	C	Internal Rd C	Bothbound	4	521	105	48%	0%	29%	0%	5%	0%	0%	5%	0%	0%	14%	0%	0%	0%	0%	0%	100%	0.0643556	0.6709613	0.0009779	0.0101958
X(I)	144	Reprovision of Gascoigne Rd Flyover	Westbound	3	180	1010	35%	0%	11%	1%	7%	4%	11%	11%	1%	1%	1%	0%	0%	10%	4%	0%	100%	0.0680925	1.4250331	0.0034387	0.0719642

Note: (I): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 1 10%

					Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area				
					Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source				
			Portal/ opening ID.	Source T	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
80.935	0.873		A	Area	2.21638E-05	0.000312	--	--	4.5122E-08	6.3514E-07	491.2	1	0.1 x Tunnel Section A
			B	Area	0.000894989	0.0125979	--	--	2.6177E-06	3.6847E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
			CE	Area	0.000121268	0.0016414	--	--	1.9088E-07	2.5836E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
			D1-D7		0.000952224	0.0134035	9.0688E-05	0.00127653	--	--	--		
			D8-D14	Volume			4.5344E-05	0.00063826	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
			F	Area	0.000150402	0.0019852	--	--	5.4199E-07	7.1538E-06	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
			I1-I4		0.004538065	0.056714	0.000756344	0.00945233	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x
			I5-I8	Volume			0.000378172	0.00472617	--	--	--		Tunnel Section F
45.868			JKO1	Area	0.00012415	0.0015077	--	--	8.0476E-08	9.7729E-07	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
			L1-L5		0.000763202	0.0099058	0.00010176	0.00132077	--	--	--		
			L6-L10	Volume			5.08802E-05	0.00066039	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
			M1-M4		0.000449878	0.0059166	7.49797E-05	0.00098609	--	--	--		
			M5-M8	Volume			3.74899E-05	0.00049305	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			N1-N4		0.000449878	0.0059166	7.49797E-05	0.00098609	--	--	--		
			N5-N8	Volume			3.74899E-05	0.00049305	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			P1-P4		0.000896876	0.0110689	0.000149479	0.00184481	--	--	--		
			P5-P8	Volume			7.47397E-05	0.00092241	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
			W1-W8		0.025974853	0.4821426	0.002164571	0.04017855	--	--	--		
			W9-W16	Volume			0.001082286	0.02008927	--	--	--	1	1 x Tunnel W
			701-710		0.003438669	0.0719642	0.000229245	0.00479761	--	--	--	1	
			711-720	Volume			0.000114622	0.00239881	--	--	--	--	1 x Tunnel X
			BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd		BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m	801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m	901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m	904-906	Volume			--	--	--	--	--	1	
		Out of 500m	V1	Point								from 1-4	--
	4.2%		V01	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V02	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V03	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V04	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V05	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V06	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V07	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V08	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V09	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V10	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V11	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**	V12	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V13	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V14	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V15	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V16	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V17	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V18	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V19	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V20	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V21	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V22	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	4.2%		V23	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
100.0%	4.2%		V24	Point	0.000110044	0.000286447	--	--	--	--	--	--	--
	12.5%		V25	Point	0.000502955	0.00160557	--	--	--	--	--	--	--
	12.5%		V26	Point	0.000502955	0.00160557	--	--	--	--	--	--	--
	12.5%		V27	Point	0.000502955	0.00160557	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**	V28	Point	0.000502955	0.00160557	--	--	--	--	--	--	--
	12.5%		V29	Point	0.000502955	0.00160557	--	--	--	--	--	--	--
	12.5%		V30	Point	0.000502955	0.00160557	--	--	--	--	--	--	--
	12.5%		V31	Point	0.000502955	0.00160557	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V32	Point	0.000606647	0.000643426	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**	V33	Point	0.000502955	0.00160557	--	--	--	--	--	--	--
	16.7%		V34	Point	0.000606647	0.000643426	--	--	--	--	--	--	--
	16.7%		V35	Point	0.000606647	0.000643426	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V36	Point	0.000606647	0.000643426	--	--	--	--	--	--	--
	16.7%		V37	Point	0.000606647	0.000643426	--	--	--	--	--	--	--
100.0%	16.7%		V38	Point	0.000606647	0.000643426	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr01-02)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 01-02 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	Rate (g/km-) NOx	Emission Rate (g/s) PM	Emission Rate (g/s) NOx
A(I)	73	Lin Cheung Rd (underpass)	Northbound	3	73	220	55%	0%	23%	0%	2%	2%	5%	5%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0505157	0.7048319	0.0002254	0.0031443
B(I)	73	Lin Cheung Rd (underpass)	Northbound	3	272	220	55%	0%	23%	0%	2%	2%	5%	5%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0505157	0.7048319	0.0008397	0.0117159
C(I)	73	Lin Cheung Rd (underpass)	Northbound	3	110	220	55%	0%	23%	0%	2%	2%	5%	5%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0505157	0.7048319	0.0003396	0.0047380
D(I)	73	Lin Cheung Rd (underpass)	Northbound	3	176	220	55%	0%	23%	0%	2%	2%	5%	5%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0505157	0.7048319	0.0005433	0.0075809
E(I)	72	Lin Cheung Rd (underpass)	Southbound	3	155	165	58%	0%	27%	0%	3%	3%	3%	3%	3%	0%	0%	0%	0%	0%	0%	0%	100%	0.0460986	0.5152278	0.0003275	0.0036603
F(I)	72	Lin Cheung Rd (depressed)	Southbound	3	172	165	58%	0%	27%	0%	3%	3%	3%	3%	3%	0%	0%	0%	0%	0%	0%	0%	100%	0.0460986	0.5152278	0.0003634	0.0040617
G(I)	118	Lin Cheung Rd (depressed)	Southbound	3	121	160	53%	0%	22%	0%	3%	3%	6%	3%	3%	3%	0%	0%	3%	0%	0%	0%	100%	0.0556836	0.7241431	0.0002995	0.0038943
H(I)	119	Austin Rd W (depressed)	Eastbound	3	173	540	32%	1%	50%	0%	2%	1%	4%	3%	1%	1%	1%	0%	1%	1%	1%	2%	100%	0.0691960	0.8406919	0.0017956	0.0218160
I(I)	117	Austin Rd W (depressed)	Eastbound	3	194	160	41%	0%	50%	0%	0%	0%	3%	3%	0%	0%	3%	0%	0%	0%	0%	0%	100%	0.0650772	0.6754243	0.0005611	0.0058237
J(I)	116	Austin Rd W (depressed)	Westbound	3	194	165	36%	0%	48%	0%	3%	3%	3%	3%	0%	0%	0%	0%	0%	3%	0%	0%	100%	0.0673184	0.8343284	0.0005986	0.0074186
K(I)	114	Lin Cheung Rd (depressed)	Southbound	3	95	115	57%	0%	35%	0%	4%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0431771	0.4578362	0.0001310	0.0013894
L(I)	112	Lin Cheung Rd (depressed)	Northbound	3	95	320	55%	2%	23%	0%	3%	2%	5%	5%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0491477	0.6623108	0.0004150	0.0055928
M(I)	84	Lin Cheung Rd	Southbound	3	56	260	54%	0%	25%	0%	2%	2%	4%	6%	2%	2%	0%	0%	0%	2%	0%	0%	100%	0.0501623	0.6723544	0.0002029	0.0027193
N(I)	77	Lin Cheung Rd	Northbound	3	56	650	54%	1%	23%	0%	2%	2%	5%	4%	2%	2%	1%	0%	2%	2%	0%	1%	100%	0.0517101	0.7008231	0.0005228	0.0070861
O(I)	111	Austin Rd W (depressed)	Eastbound	3	52	390	35%	1%	50%	0%	1%	1%	4%	3%	1%	0%	0%	0%	0%	1%	1%	1%	100%	0.0666998	0.8165679	0.0003757	0.0046000
P(I)	110	Austin Rd W (depressed)	Westbound	3	52	230	30%	2%	50%	0%	2%	2%	4%	2%	0%	0%	0%	0%	0%	2%	2%	2%	100%	0.0702114	0.9401687	0.0002333	0.0031234
W(I)	98	West Kowloon Highway (WKH)	Northbound	2	1970	605	56%	0%	16%	0%	2%	2%	6%	4%	2%	2%	2%	0%	4%	2%	2%	0%	100%	0.0289763	0.4977837	0.0095932	0.1648010
	A	Internal Rd A	Bothbound	4	404	45	56%	0%	33%	0%	0%	0%	0%	0%	0%	0%	11%	0%	0%	0%	0%	0%	100%	0.0209315	0.2040836	0.0001057	0.0010306
	B	Internal Rd B	Bothbound	4	361	140	50%	0%	32%	0%	4%	0%	4%	4%	0%	0%	7%	0%	0%	0%	0%	0%	100%	0.0334692	0.3839317	0.0004699	0.0053900
	C	Internal Rd C	Bothbound	4	521	45	56%	0%	33%	0%	0%	0%	0%	0%	0%	0%	11%	0%	0%	0%	0%	0%	100%	0.0209315	0.2040836	0.0001363	0.0013291
X(I)	144	Reprovision of Gascoigne Rd Flyover	Westbound	3	180	675	35%	1%	11%	1%	7%	4%	12%	11%	1%	1%	1%	0%	1%	10%	4%	1%	100%	0.0692447	1.4356069	0.0023370	0.0484517

Note: (I): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 1 10%

					Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon) Emission Rate - Portal/ Opening (g/s)		Volume source - calculated by number of portal/opening involved: Emission Rate - Portal/ Opening (g/s) - Volume source		Area source - calculated by emission rate divided by area: Emission Rate - Portal/ Opening (g/m2-s) - Area source				
			Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
80.935	0.873		A	Area	2.2536E-05	0.0003144	--	--	4.58787E-08	6.40133E-07	491.2	1	0.1 x Tunnel Section A
			B	Area	0.00091	0.012697	--	--	2.6616E-06	3.71366E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
			CE	Area	7.9957E-05	0.0010247	--	--	1.25857E-07	1.61295E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
			D1-D7		0.0009682	0.013509	9.22092E-05	0.00128657	--	--	--		
			D8-D14	Volume			4.61046E-05	0.00064328	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
			F	Area	6.5815E-05	0.0007356	--	--	2.37173E-07	2.65079E-06	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
			I1-I4		0.00339539	0.039922	0.000565898	0.00665366	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel
			I5-I8	Volume			0.000282949	0.00332683	--	--	--		Section F
45.868			JKO1	Area	0.0001087	0.0013213	--	--	7.04609E-08	8.56515E-07	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
			L1-L5		0.00075398	0.0097621	0.000100531	0.00130161	--	--	--		
			L6-L10	Volume			5.02654E-05	0.0006508	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
			M1-M4		0.00036286	0.0049027	6.04771E-05	0.00081712	--	--	--		
			M5-M8	Volume			3.02386E-05	0.00040856	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			N1-N4		0.00036286	0.0049027	6.04771E-05	0.00081712	--	--	--		
			N5-N8	Volume			3.02386E-05	0.00040856	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			P1-P4		0.0007441	0.0092732	0.000124017	0.00154553	--	--	--		
			P5-P8	Volume			6.20083E-05	0.00077276	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
			W1-W8		0.00959317	0.164801	0.000799431	0.01373341	--	--	--		
			W9-W16	Volume			0.000399715	0.00686671	--	--	--	1	1 x Tunnel W
			701-710		0.00233701	0.0484517	0.000155801	0.00323012	--	--	--	1	
			711-720	Volume			7.79003E-05	0.00161506	--	--	--	--	1 x Tunnel X
			BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd		BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m	801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m	901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m	904-906	Volume			--	--	--	--	--	1	
		Out of 500m	V1	Point								from 1-4	--
	4.2%		V01	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V02	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V03	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V04	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V05	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V06	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V07	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V08	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V09	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V10	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V11	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**	V12	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V13	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V14	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V15	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V16	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V17	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V18	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V19	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V20	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V21	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V22	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	4.2%		V23	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
100.0%	4.2%		V24	Point	2.33007E-05	0.000365077	--	--	--	--	--	--	--
	12.5%		V25	Point	0.000121096	0.001656287	--	--	--	--	--	--	--
	12.5%		V26	Point	0.000121096	0.001656287	--	--	--	--	--	--	--
	12.5%		V27	Point	0.000121096	0.001656287	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**	V28	Point	0.000121096	0.001656287	--	--	--	--	--	--	--
	12.5%		V29	Point	0.000121096	0.001656287	--	--	--	--	--	--	--
	12.5%		V30	Point	0.000121096	0.001656287	--	--	--	--	--	--	--
	12.5%		V31	Point	0.000121096	0.001656287	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V32	Point	0.000137184	0.00273415	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**	V33	Point	0.000121096	0.001656287	--	--	--	--	--	--	--
	16.7%		V34	Point	0.000137184	0.00273415	--	--	--	--	--	--	--
	16.7%		V35	Point	0.000137184	0.00273415	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V36	Point	0.000137184	0.00273415	--	--	--	--	--	--	--
	16.7%		V37	Point	0.000137184	0.00273415	--	--	--	--	--	--	--
100.0%	16.7%		V38	Point	0.000137184	0.00273415	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr02-03)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 02-03 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(I)	73	Lin Cheung Rd (underpass)	Northbound	3	73	140	54%	0%	25%	0%	4%	4%	7%	4%	0%	0%	0%	0%	4%	0%	0%	0%	100%	0.0605794	0.7954017	0.0001720	0.0022581
B(I)	73	Lin Cheung Rd (underpass)	Northbound	3	272	140	54%	0%	25%	0%	4%	4%	7%	4%	0%	0%	0%	0%	4%	0%	0%	0%	100%	0.0605794	0.7954017	0.0006408	0.0084136
C(I)	73	Lin Cheung Rd (underpass)	Northbound	3	110	140	54%	0%	25%	0%	4%	4%	7%	4%	0%	0%	0%	0%	4%	0%	0%	0%	100%	0.0605794	0.7954017	0.0002591	0.0034026
D(I)	73	Lin Cheung Rd (underpass)	Northbound	3	176	140	54%	0%	25%	0%	4%	4%	7%	4%	0%	0%	0%	0%	4%	0%	0%	0%	100%	0.0605794	0.7954017	0.0004146	0.0054441
E(I)	72	Lin Cheung Rd (underpass)	Southbound	3	155	150	57%	0%	27%	0%	3%	3%	3%	3%	3%	0%	0%	0%	0%	0%	0%	0%	100%	0.0463731	0.5300357	0.0002995	0.0034231
F(I)	72	Lin Cheung Rd (depressed)	Southbound	3	172	150	57%	0%	27%	0%	3%	3%	3%	3%	3%	0%	0%	0%	0%	0%	0%	0%	100%	0.0463731	0.5300357	0.0003323	0.0037986
G(I)	118	Lin Cheung Rd (depressed)	Southbound	3	121	160	53%	0%	22%	0%	3%	3%	6%	3%	3%	3%	0%	0%	3%	0%	0%	0%	100%	0.0548993	0.7213536	0.0002952	0.0038793
H(I)	119	Austin Rd W (depressed)	Eastbound	3	173	525	30%	1%	52%	0%	1%	2%	4%	2%	1%	1%	0%	0%	1%	1%	2%	2%	100%	0.0703652	0.8947875	0.0017753	0.0225747
I(I)	117	Austin Rd W (depressed)	Eastbound	3	194	145	38%	0%	52%	0%	0%	0%	3%	3%	0%	0%	0%	0%	0%	0%	0%	3%	100%	0.0630333	0.6744421	0.0004925	0.0052700
J(I)	116	Austin Rd W (depressed)	Westbound	3	194	155	35%	0%	52%	0%	0%	0%	3%	3%	0%	0%	0%	0%	0%	0%	3%	3%	100%	0.0639396	0.8099971	0.0005341	0.0067657
K(I)	114	Lin Cheung Rd (depressed)	Southbound	3	95	70	57%	0%	36%	0%	0%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0423543	0.4259204	0.0000782	0.0007868
L(I)	112	Lin Cheung Rd (depressed)	Northbound	3	95	220	52%	0%	25%	0%	2%	2%	5%	5%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0519492	0.7230471	0.0003016	0.0041977
M(I)	84	Lin Cheung Rd	Southbound	3	56	230	54%	0%	24%	0%	2%	2%	4%	4%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0498646	0.6923804	0.0001784	0.0024772
N(I)	77	Lin Cheung Rd	Northbound	3	56	445	52%	1%	24%	0%	2%	2%	6%	3%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0530775	0.7116612	0.0003674	0.0049263
O(I)	111	Austin Rd W (depressed)	Eastbound	3	52	385	31%	1%	52%	0%	1%	1%	4%	3%	1%	0%	0%	0%	1%	1%	1%	1%	100%	0.0700927	0.8864747	0.0003898	0.0049298
P(I)	110	Austin Rd W (depressed)	Westbound	3	52	215	28%	2%	51%	0%	2%	2%	5%	2%	0%	0%	0%	0%	0%	2%	2%	2%	100%	0.0714469	0.9754721	0.0002219	0.0030294
W(I)	98	West Kowloon Highway (WKH)	Northbound	2	1970	595	55%	0%	16%	0%	3%	2%	6%	4%	3%	2%	2%	0%	4%	2%	3%	0%	100%	0.0284991	0.4942631	0.0092792	0.1609307
	A	Internal Rd A	Bothbound	4	404	25	60%	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0034358	0.0119166	0.0000096	0.0000334
	B	Internal Rd B	Bothbound	4	361	80	50%	0%	31%	0%	6%	0%	0%	6%	0%	0%	6%	0%	0%	0%	0%	0%	100%	0.0229911	0.2765887	0.0001844	0.0022189
	C	Internal Rd C	Bothbound	4	521	30	50%	0%	33%	0%	0%	0%	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	100%	0.0276909	0.2783948	0.0001202	0.0012087
X(I)	144	Reprovision of Gascoigne Rd Flyover	Westbound	3	180	680	35%	1%	11%	1%	7%	4%	12%	11%	1%	1%	1%	0%	1%	10%	4%	1%	100%	0.0680948	1.4203867	0.0023152	0.0482931

Note: (I): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon) Emission Rate - Portal/ Opening (g/s)		Volume source - calculated by number of portal/opening involved Emission Rate - Portal/ Opening (g/s) - Volume source		Area source - calculated by emission rate divided by area Emission Rate - Portal/ Opening (g/m2-s) - Area source				
						Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
						A	Area	1.7198E-05	0.0002258	--	--	3.50119E-08	4.59702E-07	491.2	1	0.1 x Tunnel Section A
80.935	0.873					B	Area	0.00069446	0.0091182	--	--	2.03117E-06	2.66691E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
						CE	Area	6.5976E-05	0.0008153	--	--	1.0385E-07	1.28339E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
						D1-D7		0.00073887	0.0097013	7.03685E-05	0.00092393	--	--	--		
						D8-D14	Volume			3.51843E-05	0.00046197	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
						F	Area	6.0188E-05	0.0006879	--	--	2.16895E-07	2.47907E-06	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
						I1-I4		0.00324898	0.0397117	0.000541497	0.00661861	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel
						I5-I8	Volume			0.000270749	0.0033093	--	--	--		Section F
45.868						JKO1	Area	9.9115E-05	0.0012372	--	--	6.42478E-08	8.01979E-07	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
						L1-L5		0.00063446	0.0084099	8.45945E-05	0.00112132	--	--	--		
						L6-L10	Volume			4.22972E-05	0.00056066	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
						M1-M4		0.00027291	0.0037017	4.54849E-05	0.00061696	--	--	--		
						M5-M8	Volume			2.27425E-05	0.00030848	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
						N1-N4		0.00027291	0.0037017	4.54849E-05	0.00061696	--	--	--		
						N5-N8	Volume			2.27425E-05	0.00030848	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
						P1-P4		0.00064774	0.0082661	0.000107957	0.00137768	--	--	--		
						P5-P8	Volume			5.39787E-05	0.00068884	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
						W1-W8		0.00927924	0.1609307	0.00077327	0.01341089	--	--	--		
						W9-W16	Volume			0.000386635	0.00670545	--	--	--	1	1 x Tunnel W
						701-710		0.00231522	0.0482931	0.000154348	0.00321954	--	--	--	1	
						711-720	Volume			7.71741E-05	0.00160977	--	--	--	--	1 x Tunnel X
						BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd					BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m				801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m				901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m				904-906	Volume			--	--	--	--	--	1	
		Out of 500m				V1	Point								from 1-4	--
	4.2%					V01	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V02	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V03	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V04	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V05	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V06	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V07	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V08	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V09	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V10	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V11	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**				V12	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V13	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V14	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V15	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V16	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V17	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V18	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V19	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V20	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V21	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V22	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	4.2%					V23	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
100.0%	4.2%					V24	Point	6.97314E-06	0.000018782	--	--	--	--	--	--	--
	12.5%					V25	Point	2.00381E-05	5.63628E-05	--	--	--	--	--	--	--
	12.5%					V26	Point	2.00381E-05	5.63628E-05	--	--	--	--	--	--	--
	12.5%					V27	Point	2.00381E-05	5.63628E-05	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**				V28	Point	2.00381E-05	5.63628E-05	--	--	--	--	--	--	--
	12.5%					V29	Point	2.00381E-05	5.63628E-05	--	--	--	--	--	--	--
	12.5%					V30	Point	2.00381E-05	5.63628E-05	--	--	--	--	--	--	--
	12.5%					V31	Point	2.00381E-05	5.63628E-05	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**				V32	Point	3.7737E-05	6.3851E-06	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**				V33	Point	2.00381E-05	5.63628E-05	--	--	--	--	--	--	--
	16.7%					V34	Point	3.7737E-05	6.3851E-06	--	--	--	--	--	--	--
	16.7%					V35	Point	3.7737E-05	6.3851E-06	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**				V36	Point	3.7737E-05	6.3851E-06	--	--	--	--	--	--	--
	16.7%					V37	Point	3.7737E-05	6.3851E-06	--	--	--	--	--	--	--
100.0%	16.7%					V38	Point	3.7737E-05	6.3851E-06	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr03-04)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 03-04 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	Rate (g/km-) NOx	Emission Rate (g/s) PM	Emission Rate (g/s) NOx
A(I)	73	Lin Cheung Rd (underpass)	Northbound	3	73	65	62%	0%	23%	0%	0%	0%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0479932	0.5697163	0.0000633	0.0007509
B(I)	73	Lin Cheung Rd (underpass)	Northbound	3	272	65	62%	0%	23%	0%	0%	0%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0479932	0.5697163	0.0002357	0.0027979
C(I)	73	Lin Cheung Rd (underpass)	Northbound	3	110	65	62%	0%	23%	0%	0%	0%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0479932	0.5697163	0.0000953	0.0011315
D(I)	73	Lin Cheung Rd (underpass)	Northbound	3	176	65	62%	0%	23%	0%	0%	0%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0479932	0.5697163	0.0001525	0.0018104
E(I)	72	Lin Cheung Rd (underpass)	Southbound	3	155	155	55%	0%	26%	0%	3%	3%	3%	3%	3%	0%	0%	0%	3%	0%	0%	0%	100%	0.0505627	0.6413642	0.0003374	0.0042802
F(I)	72	Lin Cheung Rd (depressed)	Southbound	3	172	155	55%	0%	26%	0%	3%	3%	3%	3%	3%	0%	0%	0%	3%	0%	0%	0%	100%	0.0505627	0.6413642	0.0003744	0.0047497
G(I)	118	Lin Cheung Rd (depressed)	Southbound	3	121	165	52%	0%	24%	0%	3%	3%	6%	3%	3%	3%	0%	0%	3%	0%	0%	0%	100%	0.0557436	0.7272588	0.0003091	0.0040333
H(I)	119	Austin Rd W (depressed)	Eastbound	3	173	280	30%	2%	54%	0%	2%	2%	4%	2%	0%	0%	0%	0%	0%	2%	2%	2%	100%	0.0684142	0.8873997	0.0009206	0.0119405
I(I)	117	Austin Rd W (depressed)	Eastbound	3	194	85	41%	0%	53%	0%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0665753	0.7233889	0.0003050	0.0033135
J(I)	116	Austin Rd W (depressed)	Westbound	3	194	80	38%	0%	56%	0%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0704877	0.7674917	0.0003039	0.0033087
K(I)	114	Lin Cheung Rd (depressed)	Southbound	3	95	70	57%	0%	36%	0%	0%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0418036	0.4239600	0.0000772	0.0007831
L(I)	112	Lin Cheung Rd (depressed)	Northbound	3	95	110	55%	0%	27%	0%	5%	0%	5%	5%	0%	0%	0%	0%	5%	0%	0%	0%	100%	0.0541119	0.7232600	0.0001571	0.0020995
M(I)	84	Lin Cheung Rd	Southbound	3	56	230	54%	0%	24%	0%	2%	2%	4%	4%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0494225	0.6908112	0.0001768	0.0024716
N(I)	77	Lin Cheung Rd	Northbound	3	56	225	53%	0%	24%	0%	2%	2%	4%	4%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0504324	0.7057683	0.0001765	0.0024702
O(I)	111	Austin Rd W (depressed)	Eastbound	3	52	200	25%	3%	53%	0%	3%	3%	5%	3%	0%	0%	0%	0%	0%	3%	3%	3%	100%	0.0732941	1.0203390	0.0002117	0.0029476
P(I)	110	Austin Rd W (depressed)	Westbound	3	52	120	42%	0%	50%	0%	0%	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0626441	0.6749339	0.0001086	0.0011699
W(I)	98	West Kowloon Highway (WKH)	Northbound	2	1970	580	55%	0%	16%	0%	3%	2%	6%	3%	3%	2%	2%	0%	4%	2%	3%	0%	100%	0.0285375	0.4986792	0.0090575	0.1582753
	A	Internal Rd A	Bothbound	4	404	15	67%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0038060	0.0132752	0.0000064	0.0000223
	B	Internal Rd B	Bothbound	4	361	70	50%	0%	29%	0%	7%	0%	0%	7%	0%	0%	7%	0%	0%	0%	0%	0%	100%	0.0257603	0.3142500	0.0001808	0.0022059
	C	Internal Rd C	Bothbound	4	521	30	50%	0%	33%	0%	0%	0%	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	100%	0.0276823	0.2788332	0.0001202	0.0012106
X(I)	144	Reprovision of Gascoigne Rd Flyover	Westbound	3	180	685	34%	1%	11%	1%	7%	4%	12%	11%	1%	1%	1%	0%	1%	9%	4%	1%	100%	0.0683126	1.4236252	0.0023397	0.0487592

Note: (I): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

									Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area														
									Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source														
								Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)											
								A	Area	6.3258E-06	7.509E-05	--	--	1.28782E-08	1.52874E-07	491.2	1	0.1 x Tunnel Section A											
80.935	0.873							B	Area	0.00025544	0.0030323	--	--	7.47115E-07	8.86882E-06	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)											
								CE	Area	4.6995E-05	0.0005853	--	--	7.39728E-08	9.21336E-07	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E											
								D1-D7		0.00027177	0.0032262	2.58832E-05	0.00030725	--	--	--													
								D8-D14	Volume			1.29416E-05	0.00015363	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D											
								F	Area	6.7814E-05	0.0008602	--	--	2.44374E-07	3.09977E-06	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F											
								I1-I4		0.0022282	0.0281466	0.000371366	0.00469111	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel											
								I5-I8	Volume			0.000185683	0.00234555	--	--	--		Section F											
45.868								JKO1	Area	5.8203E-05	0.000693	--	--	3.77279E-08	4.49206E-07	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O											
								L1-L5		0.00034086	0.0044589	4.54484E-05	0.00059453	--	--	--													
								L6-L10	Volume			2.27242E-05	0.00029726	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O											
								M1-M4		0.00017667	0.0024709	2.94447E-05	0.00041181	--	--	--													
								M5-M8	Volume			1.47223E-05	0.00020591	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)											
								N1-N4		0.00017667	0.0024709	2.94447E-05	0.00041181	--	--	--													
								N5-N8	Volume			1.47223E-05	0.00020591	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)											
								P1-P4		0.00037621	0.0040392	6.2701E-05	0.0006732	--	--	--													
								P5-P8	Volume			3.13505E-05	0.0003366	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K											
								W1-W8		0.00905748	0.1582753	0.00075479	0.0131896	--	--	--													
								W9-W16	Volume			0.000377395	0.0065948	--	--	--	1	1 x Tunnel W											
								701-710		0.00233971	0.0487592	0.000155981	0.00325061	--	--	--	1												
								711-720	Volume			7.79903E-05	0.00162531	--	--	--	--	1 x Tunnel X											
								BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C											
	% of Serving Rd							BaseC		0	0	0	0					1/3 x Basement roads A,B,C											
			Out of 500m					801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y											
			Out of 500m					901-903				--	--	--	--	--		1 x Tunnel Z											
			Out of 500m					904-906	Volume			--	--	--	--	--	1												
			Out of 500m					V1	Point								from 1-4	--											
		4.2%						V01	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V02	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V03	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V04	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V05	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V06	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V07	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V08	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V09	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V10	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V11	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%	**Road A at B1 Level**					V12	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V13	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V14	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V15	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V16	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V17	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V18	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V19	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V20	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V21	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V22	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		4.2%						V23	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
100.0%		4.2%						V24	Point	1.14033E-07	0.000002481	--	--	--	--	--	--	--											
		12.5%						V25	Point	1.74827E-05	0.000526341	--	--	--	--	--	--	--											
		12.5%						V26	Point	1.74827E-05	0.000526341	--	--	--	--	--	--	--											
		12.5%						V27	Point	1.74827E-05	0.000526341	--	--	--	--	--	--	--											
		12.5%	**Road B at B1 Level**					V28	Point	1.74827E-05	0.000526341	--	--	--	--	--	--	--											
		12.5%						V29	Point	1.74827E-05	0.000526341	--	--	--	--	--	--	--											
		12.5%						V30	Point	1.74827E-05	0.000526341	--	--	--	--	--	--	--											
		12.5%						V31	Point	1.74827E-05	0.000526341	--	--	--	--	--	--	--											
		16.7%	**Road C at B1 Level**					V32	Point	3.28913E-05	0.000903269	--	--	--	--	--	--	--											
100.0%		12.5%	**Road B at B1 Level**					V33	Point	1.74827E-05	0.000526341	--	--	--	--	--	--	--											
		16.7%						V34	Point	3.28913E-05	0.000903269	--	--	--	--	--	--	--											
		16.7%						V35	Point	3.28913E-05	0.000903269	--	--	--	--	--	--	--											
		16.7%	**Road C at B1 Level**					V36	Point	3.28913E-05	0.000903269	--	--	--	--	--	--	--											
		16.7%						V37	Point	3.28913E-05	0.000903269	--	--	--	--	--	--	--											
100.0%		16.7%						V38	Point	3.28913E-05	0.000903269	--	--	--	--	--	--	--											

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr04-05)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 04-05 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-veh) PM	Rate (g/km-veh) NOx	Emission Rate (g/s) PM	Emission Rate (g/s) NOx
A(I)	73	Lin Cheung Rd (underpass)	Northbound	3	73	60	58%	0%	25%	0%	0%	0%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0516956	0.6167208	0.0000629	0.0007503
B(I)	73	Lin Cheung Rd (underpass)	Northbound	3	272	60	58%	0%	25%	0%	0%	0%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0516956	0.6167208	0.0002344	0.0027958
C(I)	73	Lin Cheung Rd (underpass)	Northbound	3	110	60	58%	0%	25%	0%	0%	0%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0516956	0.6167208	0.0000948	0.0011307
D(I)	73	Lin Cheung Rd (underpass)	Northbound	3	176	60	58%	0%	25%	0%	0%	0%	8%	8%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0516956	0.6167208	0.0001516	0.0018090
E(I)	72	Lin Cheung Rd (underpass)	Southbound	3	155	150	53%	0%	27%	0%	3%	3%	3%	3%	3%	0%	0%	0%	3%	0%	0%	0%	100%	0.0521362	0.6631392	0.0003367	0.0042828
F(I)	72	Lin Cheung Rd (depressed)	Southbound	3	172	150	53%	0%	27%	0%	3%	3%	3%	3%	3%	0%	0%	0%	3%	0%	0%	0%	100%	0.0521362	0.6631392	0.0003736	0.0047525
G(I)	118	Lin Cheung Rd (depressed)	Southbound	3	121	170	53%	0%	24%	0%	3%	3%	6%	3%	3%	3%	0%	0%	3%	0%	0%	0%	100%	0.0542497	0.7074156	0.0003100	0.0040421
H(I)	119	Austin Rd W (depressed)	Eastbound	3	173	285	30%	2%	54%	0%	2%	2%	4%	2%	0%	0%	0%	0%	0%	2%	2%	2%	100%	0.0689333	0.8898012	0.0009441	0.0121866
I(I)	117	Austin Rd W (depressed)	Eastbound	3	194	85	41%	0%	53%	0%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0666178	0.7242758	0.0003051	0.0033176
J(I)	116	Austin Rd W (depressed)	Westbound	3	194	75	33%	0%	60%	0%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0749706	0.8184765	0.0003030	0.0033080
K(I)	114	Lin Cheung Rd (depressed)	Southbound	3	95	65	62%	0%	31%	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0375430	0.3821259	0.0000644	0.0006555
L(I)	112	Lin Cheung Rd (depressed)	Northbound	3	95	110	55%	0%	27%	0%	5%	0%	5%	5%	0%	0%	0%	0%	5%	0%	0%	0%	100%	0.0541334	0.7243889	0.0001571	0.0021027
M(I)	84	Lin Cheung Rd	Southbound	3	56	235	53%	0%	26%	0%	2%	2%	4%	4%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0504449	0.6977236	0.0001844	0.0025506
N(I)	77	Lin Cheung Rd	Northbound	3	56	230	52%	0%	24%	0%	2%	2%	7%	4%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0544173	0.7657831	0.0001947	0.0027398
O(I)	111	Austin Rd W (depressed)	Eastbound	3	52	205	24%	2%	54%	0%	2%	2%	5%	2%	0%	0%	0%	0%	0%	2%	2%	2%	100%	0.0738975	1.0202564	0.0002188	0.0030211
P(I)	110	Austin Rd W (depressed)	Westbound	3	52	120	38%	0%	50%	0%	0%	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	4%	100%	0.0627595	0.6889151	0.0001088	0.0011941
W(I)	98	West Kowloon Highway (WKH)	Northbound	2	1970	575	54%	0%	17%	0%	3%	2%	6%	3%	3%	3%	2%	0%	4%	2%	3%	0%	100%	0.0287537	0.5031771	0.0090474	0.1583261
	A	Internal Rd A	Bothbound	4	404	15	67%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0035836	0.0130546	0.0000060	0.0000220
	B	Internal Rd B	Bothbound	4	361	70	50%	0%	29%	0%	7%	0%	0%	7%	0%	0%	7%	0%	0%	0%	0%	0%	100%	0.0246825	0.3051849	0.0001733	0.0021422
	C	Internal Rd C	Bothbound	4	521	30	50%	0%	33%	0%	0%	0%	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	100%	0.0267578	0.2681150	0.0001162	0.0011641
X(I)	144	Reprovision of Gascoigne Rd Flyover	Westbound	3	180	335	34%	0%	12%	1%	7%	4%	12%	10%	1%	1%	1%	0%	0%	9%	4%	0%	100%	0.0695809	1.4081326	0.0011655	0.0235862

Note: (I): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon) Emission Rate - Portal/ Opening (g/s) PM	NOx	Volume source - calculated by number of portal/opening involved Emission Rate - Portal/ Opening (g/s) - Volume source PM	NOx	Area source - calculated by emission rate divided by area Emission Rate - Portal/ Opening (g/m2-s) - Area source PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
				Portal/ opening ID.	Source Type										
80.935	0.873			A	Area		6.2896E-06	7.503E-05	--	--	1.28046E-08	1.52757E-07	491.2	1	0.1 x Tunnel Section A
				B	Area		0.00025398	0.0030299	--	--	7.42846E-07	8.86204E-06	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
				CE	Area		4.6847E-05	0.0005855	--	--	7.37399E-08	9.2155E-07	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
				D1-D7			0.00027022	0.0032237	2.57353E-05	0.00030702	--	--	--		
				D8-D14	Volume				1.28677E-05	0.00015351	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
				F	Area		6.7668E-05	0.0008607	--	--	2.4385E-07	3.10162E-06	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
				I1-I4			0.00225209	0.0284175	0.000375348	0.00473625	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel
				I5-I8	Volume				0.000187674	0.00236813	--	--	--		Section F
45.868				JKO1	Area		5.7721E-05	0.0006893	--	--	3.74153E-08	4.468E-07	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
				L1-L5			0.00034469	0.004503	4.59583E-05	0.00060041	--	--	--		
				L6-L10	Volume				2.29792E-05	0.0003002	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
				M1-M4			0.00018955	0.0026452	3.15914E-05	0.00044086	--	--	--		
				M5-M8	Volume				1.57957E-05	0.00022043	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
				N1-N4			0.00018955	0.0026452	3.15914E-05	0.00044086	--	--	--		
				N5-N8	Volume				1.57957E-05	0.00022043	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
				P1-P4			0.00036588	0.0039641	6.09804E-05	0.00066069	--	--	--		
				P5-P8	Volume				3.04902E-05	0.00033034	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
				W1-W8			0.00904744	0.1583261	0.000753953	0.01319384	--	--	--		
				W9-W16	Volume				0.000376977	0.00659692	--	--	--	1	1 x Tunnel W
				701-710			0.00116548	0.0235862	7.76987E-05	0.00157241	--	--	--	1	
				711-720	Volume				3.88494E-05	0.00078621	--	--	--	--	1 x Tunnel X
				BaseA	Volume		0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd			BaseC			0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m		801-820	Volume				--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m		901-903					--	--	--	--	--		1 x Tunnel Z
		Out of 500m		904-906	Volume				--	--	--	--	--	1	
		Out of 500m		V1	Point									from 1-4	--
	4.2%			V01	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V02	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V03	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V04	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V05	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V06	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V07	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V08	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V09	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V10	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V11	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**		V12	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V13	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V14	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V15	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V16	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V17	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V18	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V19	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V20	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V21	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V22	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	4.2%			V23	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
100.0%	4.2%			V24	Point		1.13313E-07	1.2069E-06	--	--	--	--	--	--	--
	12.5%			V25	Point		1.74806E-05	0.000053608	--	--	--	--	--	--	--
	12.5%			V26	Point		1.74806E-05	0.000053608	--	--	--	--	--	--	--
	12.5%			V27	Point		1.74806E-05	0.000053608	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**		V28	Point		1.74806E-05	0.000053608	--	--	--	--	--	--	--
	12.5%			V29	Point		1.74806E-05	0.000053608	--	--	--	--	--	--	--
	12.5%			V30	Point		1.74806E-05	0.000053608	--	--	--	--	--	--	--
	12.5%			V31	Point		1.74806E-05	0.000053608	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**		V32	Point		3.28913E-05	6.5093E-06	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**		V33	Point		1.74806E-05	0.000053608	--	--	--	--	--	--	--
	16.7%			V34	Point		3.28913E-05	6.5093E-06	--	--	--	--	--	--	--
	16.7%			V35	Point		3.28913E-05	6.5093E-06	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**		V36	Point		3.28913E-05	6.5093E-06	--	--	--	--	--	--	--
	16.7%			V37	Point		3.28913E-05	6.5093E-06	--	--	--	--	--	--	--
100.0%	16.7%			V38	Point		3.28913E-05	6.5093E-06	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr05-06)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 05-06 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(I)	73	Lin Cheung Rd (underpass)	Northbound	3	73	55	64%	0%	27%	0%	0%	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0505620	0.5908035	0.0000564	0.0006589
B(I)	73	Lin Cheung Rd (underpass)	Northbound	3	272	55	64%	0%	27%	0%	0%	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0505620	0.5908035	0.0002101	0.0024551
C(I)	73	Lin Cheung Rd (underpass)	Northbound	3	110	55	64%	0%	27%	0%	0%	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0505620	0.5908035	0.0000850	0.0009929
D(I)	73	Lin Cheung Rd (underpass)	Northbound	3	176	55	64%	0%	27%	0%	0%	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0505620	0.5908035	0.0001360	0.0015886
E(I)	72	Lin Cheung Rd (underpass)	Southbound	3	155	180	50%	0%	25%	0%	3%	3%	6%	6%	3%	3%	0%	0%	3%	0%	0%	0%	100%	0.0561726	0.7227017	0.0004353	0.0056009
F(I)	72	Lin Cheung Rd (depressed)	Southbound	3	172	180	50%	0%	25%	0%	3%	3%	6%	6%	3%	3%	0%	0%	3%	0%	0%	0%	100%	0.0561726	0.7227017	0.0004831	0.0062152
G(I)	118	Lin Cheung Rd (depressed)	Southbound	3	121	170	53%	0%	24%	0%	3%	3%	6%	3%	3%	3%	0%	0%	3%	0%	0%	0%	100%	0.0545082	0.7086117	0.0003115	0.0040489
H(I)	119	Austin Rd W (depressed)	Eastbound	3	173	310	31%	2%	53%	0%	2%	2%	3%	3%	0%	0%	0%	0%	0%	2%	2%	2%	100%	0.0691764	0.8737714	0.0010305	0.0130168
I(I)	117	Austin Rd W (depressed)	Eastbound	3	194	105	38%	0%	48%	0%	0%	0%	5%	5%	0%	0%	5%	0%	0%	0%	0%	0%	100%	0.0690558	0.7441342	0.0003907	0.0042106
J(I)	116	Austin Rd W (depressed)	Westbound	3	194	80	38%	0%	56%	0%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0719927	0.7769829	0.0003104	0.0033497
K(I)	114	Lin Cheung Rd (depressed)	Southbound	3	95	115	57%	0%	30%	0%	4%	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0486082	0.5646611	0.0001475	0.0017136
L(I)	112	Lin Cheung Rd (depressed)	Northbound	3	95	130	54%	0%	23%	0%	4%	0%	4%	4%	4%	4%	0%	0%	4%	0%	0%	0%	100%	0.0485441	0.6462182	0.0001665	0.0022169
M(I)	84	Lin Cheung Rd	Southbound	3	56	260	52%	0%	25%	0%	4%	2%	4%	6%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0507329	0.6991241	0.0002052	0.0028276
N(I)	77	Lin Cheung Rd	Northbound	3	56	235	53%	0%	23%	0%	2%	2%	6%	4%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0536339	0.7514874	0.0001961	0.0027471
O(I)	111	Austin Rd W (depressed)	Eastbound	3	52	215	23%	2%	56%	0%	2%	2%	5%	2%	0%	0%	0%	0%	0%	2%	2%	2%	100%	0.0764010	1.0268706	0.0002373	0.0031890
P(I)	110	Austin Rd W (depressed)	Westbound	3	52	135	37%	0%	52%	0%	0%	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	4%	100%	0.0645363	0.6936273	0.0001258	0.0013526
W(I)	98	West Kowloon Highway (WKH)	Northbound	2	1970	565	53%	0%	17%	0%	3%	2%	6%	4%	3%	3%	2%	0%	4%	2%	3%	0%	100%	0.0292302	0.5125102	0.0090374	0.1584582
	A	Internal Rd A	Bothbound	4	404	45	44%	0%	33%	0%	0%	0%	0%	11%	0%	0%	11%	0%	0%	0%	0%	0%	100%	0.0255041	0.2632714	0.0001288	0.0013295
	B	Internal Rd B	Bothbound	4	361	120	50%	0%	33%	0%	4%	0%	4%	4%	0%	0%	4%	0%	0%	0%	0%	0%	100%	0.0268483	0.3313602	0.0003231	0.0039874
	C	Internal Rd C	Bothbound	4	521	50	50%	0%	30%	0%	0%	0%	0%	10%	0%	0%	10%	0%	0%	0%	0%	0%	100%	0.0234732	0.2388879	0.0001699	0.0017286
X(I)	144	Reprovision of Gascoigne Rd Flyover	Westbound	3	180	340	34%	0%	12%	1%	7%	4%	13%	10%	1%	1%	1%	0%	0%	9%	4%	0%	100%	0.0715742	1.4363010	0.0012168	0.0244171

Note: (I): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon) Emission Rate - Portal/ Opening (g/s)		Volume source - calculated by number of portal/opening involved Emission Rate - Portal/ Opening (g/s) - Volume source		Area source - calculated by emission rate divided by area Emission Rate - Portal/ Opening (g/m2-s) - Area source				
						Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
						A	Area	5.6391E-06	6.589E-05	--	--	1.14802E-08	1.34143E-07	491.2	1	0.1 x Tunnel Section A
80.935	0.873					B	Area	0.00022771	0.0026607	--	--	6.66011E-07	7.78215E-06	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
						CE	Area	5.5347E-05	0.0006981	--	--	8.71188E-08	1.09889E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
						D1-D7		0.00024227	0.0028309	2.30734E-05	0.00026961	--	--	--		
						D8-D14	Volume			1.15367E-05	0.0001348	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
						F	Area	8.7489E-05	0.0011256	--	--	3.15275E-07	4.05624E-06	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
						I1-I4		0.00262193	0.0327373	0.000436988	0.00545621	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel
						I5-I8	Volume			0.000218494	0.00272811	--	--	--		Section F
45.868						JKO1	Area	6.745E-05	0.0008012	--	--	4.37218E-08	5.19372E-07	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
						L1-L5		0.00036597	0.0047199	4.87957E-05	0.00062932	--	--	--		
						L6-L10	Volume			2.43979E-05	0.00031466	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
						M1-M4		0.00020062	0.0027873	3.34373E-05	0.00046456	--	--	--		
						M5-M8	Volume			1.67187E-05	0.00023228	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
						N1-N4		0.00020062	0.0027873	3.34373E-05	0.00046456	--	--	--		
						N5-N8	Volume			1.67187E-05	0.00023228	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
						P1-P4		0.00045231	0.0049701	7.53854E-05	0.00082834	--	--	--		
						P5-P8	Volume			3.76927E-05	0.00041417	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
						W1-W8		0.0090374	0.1584582	0.000753116	0.01320485	--	--	--		
						W9-W16	Volume			0.000376558	0.00660242	--	--	--	1	1 x Tunnel W
						701-710		0.00121676	0.0244171	8.11174E-05	0.00162781	--	--	--	1	
						711-720	Volume			4.05587E-05	0.00008139	--	--	--	--	1 x Tunnel X
						BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd					BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m				801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m				901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m				904-906	Volume			--	--	--	--	--	1	
		Out of 500m				V1	Point								from 1-4	--
	4.2%					V01	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V02	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V03	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V04	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V05	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V06	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V07	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V08	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V09	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V10	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V11	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**				V12	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V13	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V14	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V15	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V16	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V17	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V18	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V19	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V20	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V21	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V22	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	4.2%					V23	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
100.0%	4.2%					V24	Point	1.0662E-07	2.3269E-06	--	--	--	--	--	--	--
	12.5%					V25	Point	1.63719E-05	0.000511601	--	--	--	--	--	--	--
	12.5%					V26	Point	1.63719E-05	0.000511601	--	--	--	--	--	--	--
	12.5%					V27	Point	1.63719E-05	0.000511601	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**				V28	Point	1.63719E-05	0.000511601	--	--	--	--	--	--	--
	12.5%					V29	Point	1.63719E-05	0.000511601	--	--	--	--	--	--	--
	12.5%					V30	Point	1.63719E-05	0.000511601	--	--	--	--	--	--	--
	12.5%					V31	Point	1.63719E-05	0.000511601	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**				V32	Point	3.08025E-05	0.000878644	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**				V33	Point	1.63719E-05	0.000511601	--	--	--	--	--	--	--
	16.7%					V34	Point	3.08025E-05	0.000878644	--	--	--	--	--	--	--
	16.7%					V35	Point	3.08025E-05	0.000878644	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**				V36	Point	3.08025E-05	0.000878644	--	--	--	--	--	--	--
	16.7%					V37	Point	3.08025E-05	0.000878644	--	--	--	--	--	--	--
100.0%	16.7%					V38	Point	3.08025E-05	0.000878644	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr06-07)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 06-07 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(I)	73	Lin Cheung Rd (underpass)	Northbound	3	73	140	50%	0%	21%	0%	4%	4%	7%	4%	4%	4%	0%	0%	4%	0%	0%	0%	100%	0.0577817	0.7820304	0.0001640	0.0022201
B(I)	73	Lin Cheung Rd (underpass)	Northbound	3	272	140	50%	0%	21%	0%	4%	4%	7%	4%	4%	4%	0%	0%	4%	0%	0%	0%	100%	0.0577817	0.7820304	0.0006112	0.0082721
C(I)	73	Lin Cheung Rd (underpass)	Northbound	3	110	140	50%	0%	21%	0%	4%	4%	7%	4%	4%	4%	0%	0%	4%	0%	0%	0%	100%	0.0577817	0.7820304	0.0002472	0.0033454
D(I)	73	Lin Cheung Rd (underpass)	Northbound	3	176	140	50%	0%	21%	0%	4%	4%	7%	4%	4%	4%	0%	0%	4%	0%	0%	0%	100%	0.0577817	0.7820304	0.0003955	0.0053526
E(I)	72	Lin Cheung Rd (underpass)	Southbound	3	155	315	54%	0%	25%	0%	3%	2%	5%	5%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0499593	0.6756948	0.0006776	0.0091641
F(I)	72	Lin Cheung Rd (depressed)	Southbound	3	172	315	54%	0%	25%	0%	3%	2%	5%	5%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0499593	0.6756948	0.0007519	0.0101692
G(I)	118	Lin Cheung Rd (depressed)	Southbound	3	121	350	51%	1%	23%	0%	3%	1%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0524882	0.7349360	0.0006175	0.0086457
H(I)	119	Austin Rd W (depressed)	Eastbound	3	173	330	29%	2%	53%	0%	3%	2%	3%	3%	0%	0%	0%	0%	2%	2%	2%	2%	100%	0.0705795	0.9264065	0.0011193	0.0146913
I(I)	117	Austin Rd W (depressed)	Eastbound	3	194	120	38%	0%	46%	0%	4%	0%	4%	4%	0%	0%	4%	0%	0%	0%	0%	0%	100%	0.0664343	0.7482505	0.0004296	0.0048387
J(I)	116	Austin Rd W (depressed)	Westbound	3	194	80	38%	0%	56%	0%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0705669	0.7694037	0.0003042	0.0033170
K(I)	114	Lin Cheung Rd (depressed)	Southbound	3	95	175	54%	0%	31%	0%	3%	0%	6%	6%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0.0516572	0.6064623	0.0002386	0.0028007
L(I)	112	Lin Cheung Rd (depressed)	Northbound	3	95	260	52%	2%	25%	0%	2%	2%	6%	4%	2%	2%	0%	0%	2%	2%	0%	0%	100%	0.0517319	0.7212572	0.0003549	0.0049486
M(I)	84	Lin Cheung Rd	Southbound	3	56	495	51%	1%	25%	0%	3%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0524585	0.7010816	0.0004039	0.0053983
N(I)	77	Lin Cheung Rd	Northbound	3	56	470	53%	1%	24%	0%	2%	2%	5%	3%	2%	2%	1%	0%	2%	1%	0%	0%	100%	0.0516468	0.6884179	0.0003776	0.0050331
O(I)	111	Austin Rd W (depressed)	Eastbound	3	52	220	25%	2%	55%	0%	2%	2%	5%	2%	0%	0%	0%	0%	0%	2%	2%	2%	100%	0.0733732	0.9965264	0.0002332	0.0031667
P(I)	110	Austin Rd W (depressed)	Westbound	3	52	150	37%	0%	50%	0%	0%	0%	3%	7%	0%	0%	0%	0%	0%	0%	0%	3%	100%	0.0625935	0.6825187	0.0001356	0.0014788
W(I)	98	West Kowloon Highway (WKH)	Northbound	2	1970	1130	51%	0%	17%	0%	2%	2%	6%	4%	3%	2%	2%	0%	5%	2%	3%	0%	100%	0.04207711	0.7901455	0.0260189	0.4885953
	A	Internal Rd A	Bothbound	4	404	60	42%	0%	33%	0%	8%	0%	0%	8%	0%	0%	8%	0%	0%	0%	0%	0%	100%	0.0264368	0.3352253	0.0001780	0.0022572
	B	Internal Rd B	Bothbound	4	361	160	47%	0%	31%	0%	6%	0%	3%	6%	0%	0%	6%	0%	0%	0%	0%	0%	100%	0.0296574	0.3724141	0.0004758	0.0059752
	C	Internal Rd C	Bothbound	4	521	70	43%	0%	29%	0%	7%	0%	0%	7%	0%	0%	14%	0%	0%	0%	0%	0%	100%	0.0323728	0.3857499	0.0003280	0.0039079
X(I)	144	Reprovision of Gascoigne Rd Flyover	Westbound	3	180	695	33%	1%	11%	1%	6%	4%	13%	11%	2%	1%	1%	0%	1%	9%	5%	1%	100%	0.0696672	1.4717029	0.0024209	0.0511417

Note: (I): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon) Emission Rate - Portal/ Opening (g/s)		Volume source - calculated by number of portal/opening involved Emission Rate - Portal/ Opening (g/s) - Volume source		Area source - calculated by emission rate divided by area Emission Rate - Portal/ Opening (g/m2-s) - Area source				
						Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
						A	Area	1.6404E-05	0.000222	--	--	3.33949E-08	4.51974E-07	491.2	1	0.1 x Tunnel Section A
80.935	0.873					B	Area	0.00066239	0.0089649	--	--	1.93737E-06	2.62208E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
						CE	Area	0.00010212	0.0013815	--	--	1.60743E-07	2.17453E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
						D1-D7		0.00070475	0.0095382	6.71187E-05	0.0009084	--	--	--		
						D8-D14	Volume			3.35593E-05	0.0004542	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
						F	Area	0.00013617	0.0018417	--	--	4.90704E-07	6.63672E-06	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
						I1-I4		0.00350502	0.046226	0.00058417	0.00770433	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel
						I5-I8	Volume			0.000292085	0.00385217	--	--	--		Section F
45.868						JKO1	Area	7.4254E-05	0.0008892	--	--	4.81327E-08	5.76412E-07	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
						L1-L5		0.00055076	0.0074321	7.34341E-05	0.00099095	--	--	--		
						L6-L10	Volume			3.6717E-05	0.00049548	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
						M1-M4		0.00039076	0.0052157	6.51271E-05	0.00086929	--	--	--		
						M5-M8	Volume			3.25636E-05	0.00043464	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
						N1-N4		0.00039076	0.0052157	6.51271E-05	0.00086929	--	--	--		
						N5-N8	Volume			3.25636E-05	0.00043464	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
						P1-P4		0.00052835	0.0059153	8.80582E-05	0.00098589	--	--	--		
						P5-P8	Volume			4.40291E-05	0.00049294	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
						W1-W8		0.02601885	0.4885953	0.002168238	0.04071627	--	--	--		
						W9-W16	Volume			0.001084119	0.02035814	--	--	--	1	1 x Tunnel W
						701-710		0.00242094	0.0511417	0.000161396	0.00340945	--	--	--	1	
						711-720	Volume			8.06978E-05	0.00170472	--	--	--	--	1 x Tunnel X
						BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd					BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m				801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m				901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m				904-906	Volume			--	--	--	--	--	1	
		Out of 500m				V1	Point								from 1-4	--
	4.2%					V01	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V02	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V03	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V04	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V05	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V06	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V07	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V08	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V09	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V10	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V11	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**				V12	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V13	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V14	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V15	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V16	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V17	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V18	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V19	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V20	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V21	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V22	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	4.2%					V23	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
100.0%	4.2%					V24	Point	4.63717E-06	3.6108E-06	--	--	--	--	--	--	--
	12.5%					V25	Point	1.33842E-05	1.36562E-05	--	--	--	--	--	--	--
	12.5%					V26	Point	1.33842E-05	1.36562E-05	--	--	--	--	--	--	--
	12.5%					V27	Point	1.33842E-05	1.36562E-05	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**				V28	Point	1.33842E-05	1.36562E-05	--	--	--	--	--	--	--
	12.5%					V29	Point	1.33842E-05	1.36562E-05	--	--	--	--	--	--	--
	12.5%					V30	Point	1.33842E-05	1.36562E-05	--	--	--	--	--	--	--
	12.5%					V31	Point	1.33842E-05	1.36562E-05	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**				V32	Point	2.50953E-05	6.6335E-06	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**				V33	Point	1.33842E-05	1.36562E-05	--	--	--	--	--	--	--
	16.7%					V34	Point	2.50953E-05	6.6335E-06	--	--	--	--	--	--	--
	16.7%					V35	Point	2.50953E-05	6.6335E-06	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**				V36	Point	2.50953E-05	6.6335E-06	--	--	--	--	--	--	--
	16.7%					V37	Point	2.50953E-05	6.6335E-06	--	--	--	--	--	--	--
100.0%	16.7%					V38	Point	2.50953E-05	6.6335E-06	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr07-08)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 07-08 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(I)	73	Lin Cheung Rd (underpass)	Northbound	3	73	200	53%	0%	25%	0%	3%	3%	5%	3%	3%	3%	0%	0%	3%	3%	0%	0%	100%	0.0522638	0.7465336	0.0002120	0.0030276
B(I)	73	Lin Cheung Rd (underpass)	Northbound	3	272	200	53%	0%	25%	0%	3%	3%	5%	3%	3%	3%	0%	0%	3%	3%	0%	0%	100%	0.0522638	0.7465336	0.0007898	0.0112810
C(I)	73	Lin Cheung Rd (underpass)	Northbound	3	110	200	53%	0%	25%	0%	3%	3%	5%	3%	3%	3%	0%	0%	3%	3%	0%	0%	100%	0.0522638	0.7465336	0.0003194	0.0045621
D(I)	73	Lin Cheung Rd (underpass)	Northbound	3	176	200	53%	0%	25%	0%	3%	3%	5%	3%	3%	3%	0%	0%	3%	3%	0%	0%	100%	0.0522638	0.7465336	0.0005110	0.0072994
E(I)	72	Lin Cheung Rd (underpass)	Southbound	3	155	750	51%	1%	25%	0%	3%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0537249	0.7285728	0.0017349	0.0235268
F(I)	72	Lin Cheung Rd (depressed)	Southbound	3	172	750	51%	1%	25%	0%	3%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0537249	0.7285728	0.0019251	0.0261072
G(I)	118	Lin Cheung Rd (depressed)	Southbound	3	121	885	51%	1%	23%	1%	2%	2%	6%	3%	3%	2%	1%	0%	2%	1%	0%	1%	100%	0.0538584	0.7304273	0.0016021	0.0217272
H(I)	119	Austin Rd W (depressed)	Eastbound	3	173	1200	26%	2%	55%	0%	2%	1%	4%	3%	0%	0%	0%	0%	1%	1%	2%	2%	100%	0.0739258	0.9615252	0.0042631	0.0554480
I(I)	117	Austin Rd W (depressed)	Eastbound	3	194	370	31%	1%	49%	0%	3%	1%	4%	3%	1%	0%	1%	0%	1%	1%	1%	1%	100%	0.0698713	0.9077347	0.0013932	0.0180992
J(I)	116	Austin Rd W (depressed)	Westbound	3	194	300	28%	2%	53%	0%	2%	2%	3%	2%	2%	0%	0%	0%	2%	2%	2%	2%	100%	0.0711030	0.9349397	0.0011495	0.0151149
K(I)	114	Lin Cheung Rd (depressed)	Southbound	3	95	385	48%	1%	26%	0%	4%	1%	4%	5%	3%	3%	1%	0%	1%	3%	0%	0%	100%	0.0509615	0.7191707	0.0005178	0.0073066
L(I)	112	Lin Cheung Rd (depressed)	Northbound	3	95	395	51%	1%	25%	0%	3%	1%	5%	5%	3%	3%	0%	0%	3%	1%	0%	0%	100%	0.0521463	0.7122133	0.0005436	0.0074238
M(I)	84	Lin Cheung Rd	Southbound	3	56	1170	51%	1%	24%	0%	3%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	0%	100%	0.0544291	0.7370716	0.0009906	0.0134147
N(I)	77	Lin Cheung Rd	Northbound	3	56	730	51%	1%	25%	0%	2%	2%	5%	4%	3%	2%	1%	0%	2%	1%	0%	1%	100%	0.0525217	0.7087790	0.0005964	0.0080486
O(I)	111	Austin Rd W (depressed)	Eastbound	3	52	870	25%	2%	56%	0%	2%	2%	4%	2%	1%	1%	1%	0%	1%	1%	2%	2%	100%	0.0743549	0.9672051	0.0009344	0.0121545
P(I)	110	Austin Rd W (depressed)	Westbound	3	52	515	27%	2%	52%	0%	2%	1%	4%	3%	1%	1%	1%	0%	1%	1%	2%	2%	100%	0.0714566	0.9254862	0.0005316	0.0068846
W(I)	98	West Kowloon Highway (WKH)	Northbound	2	1970	1690	51%	0%	17%	0%	2%	2%	6%	4%	3%	2%	2%	0%	5%	2%	3%	0%	100%	0.0418336	0.7738511	0.0386880	0.7156618
	A	Internal Rd A	Bothbound	4	404	95	47%	0%	32%	0%	5%	0%	5%	5%	0%	0%	5%	0%	0%	0%	0%	0%	100%	0.0698858	0.7666090	0.0007451	0.0081729
	B	Internal Rd B	Bothbound	4	361	280	45%	0%	29%	0%	5%	2%	4%	5%	2%	2%	5%	0%	0%	2%	0%	0%	100%	0.0654364	0.7131407	0.0018373	0.0200234
	C	Internal Rd C	Bothbound	4	521	115	43%	0%	30%	0%	4%	0%	4%	4%	0%	0%	13%	0%	0%	0%	0%	0%	100%	0.0758679	0.8225340	0.0012627	0.0136895
X(I)	144	Reprovision of Gascoigne Rd Flyover	Westbound	3	180	1385	33%	0%	11%	1%	7%	4%	13%	10%	2%	1%	1%	0%	1%	9%	5%	1%	100%	0.0707786	1.4776670	0.0049014	0.1023284

Note: (I): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon) Emission Rate - Portal/ Opening (g/s)		Volume source - calculated by number of portal/opening involved Emission Rate - Portal/ Opening (g/s) - Volume source		Area source - calculated by emission rate divided by area Emission Rate - Portal/ Opening (g/m2-s) - Area source				
						Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
80.935	0.873					A	Area	2.1196E-05	0.0003028	--	--	4.31512E-08	6.1637E-07	491.2	1	0.1 x Tunnel Section A
						B	Area	0.0008559	0.0122257	--	--	2.50337E-06	3.5758E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
						CE	Area	0.00021789	0.0029869	--	--	3.42969E-07	4.7016E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
						D1-D7		0.00091064	0.0130075	8.67274E-05	0.00123881	--	--	--		
						D8-D14	Volume			4.33637E-05	0.0006194	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
						F	Area	0.00034865	0.0047281	--	--	1.2564E-06	1.7038E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
						I1-I4		0.01078819	0.1430073	0.001798032	0.02383455	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel
						I5-I8	Volume			0.000899016	0.01191728	--	--	--		Section F
45.868						JKO1	Area	0.00025292	0.0033553	--	--	1.63944E-07	2.175E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
						L1-L5		0.00131324	0.0174709	0.000175098	0.00232945	--	--	--		
						L6-L10	Volume			8.7549E-05	0.00116473	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
						M1-M4		0.00079351	0.0107316	0.000132252	0.00178861	--	--	--		
						M5-M8	Volume			6.61259E-05	0.0008943	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
						N1-N4		0.00079351	0.0107316	0.000132252	0.00178861	--	--	--		
						N5-N8	Volume			6.61259E-05	0.0008943	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
						P1-P4		0.00171856	0.0228784	0.000286426	0.00381307	--	--	--		
						P5-P8	Volume			0.000143213	0.00190654	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
						W1-W8		0.03868796	0.7156618	0.003223997	0.05963848	--	--	--		
						W9-W16	Volume			0.001611998	0.02981924	--	--	--	1	1 x Tunnel W
						701-710		0.00490142	0.1023284	0.000326761	0.0068219	--	--	--	1	
						711-720	Volume			0.000163381	0.00341095	--	--	--	--	1 x Tunnel X
						BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd					BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m				801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m				901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m				904-906	Volume			--	--	--	--	--	1	
		Out of 500m				V1	Point								from 1-4	--
	4.2%					V01	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V02	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V03	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V04	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V05	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V06	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V07	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V08	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V09	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V10	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V11	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**				V12	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V13	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V14	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V15	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V16	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V17	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V18	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V19	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V20	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V21	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V22	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	4.2%					V23	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
100.0%	4.2%					V24	Point	4.74E-06	0.000173547	--	--	--	--	--	--	--
	12.5%					V25	Point	2.64764E-05	0.000973648	--	--	--	--	--	--	--
	12.5%					V26	Point	2.64764E-05	0.000973648	--	--	--	--	--	--	--
	12.5%					V27	Point	2.64764E-05	0.000973648	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**				V28	Point	2.64764E-05	0.000973648	--	--	--	--	--	--	--
	12.5%					V29	Point	2.64764E-05	0.000973648	--	--	--	--	--	--	--
	12.5%					V30	Point	2.64764E-05	0.000973648	--	--	--	--	--	--	--
	12.5%					V31	Point	2.64764E-05	0.000973648	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**				V32	Point	4.96322E-05	0.001753378	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**				V33	Point	2.64764E-05	0.000973648	--	--	--	--	--	--	--
	16.7%					V34	Point	4.96322E-05	0.001753378	--	--	--	--	--	--	--
	16.7%					V35	Point	4.96322E-05	0.001753378	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**				V36	Point	4.96322E-05	0.001753378	--	--	--	--	--	--	--
	16.7%					V37	Point	4.96322E-05	0.001753378	--	--	--	--	--	--	--
100.0%	16.7%					V38	Point	4.96322E-05	0.001753378	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr08-09)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 08-09 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	395	51%	1%	24%	0%	3%	3%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0615782	0.8162913	0.0004932	0.0065383
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	395	51%	1%	24%	0%	3%	3%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0615782	0.8162913	0.0018378	0.0243618
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	395	51%	1%	24%	0%	3%	3%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0615782	0.8162913	0.0007432	0.0098522
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	395	51%	1%	24%	0%	3%	3%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0615782	0.8162913	0.0011891	0.0157635
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	1450	51%	1%	25%	0%	2%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	0%	100%	0.0594003	0.7782687	0.0037084	0.0485877
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	1450	51%	1%	25%	0%	2%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	0%	100%	0.0594003	0.7782687	0.0041151	0.0539167
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	1785	51%	1%	24%	0%	2%	2%	6%	3%	3%	2%	1%	0%	3%	1%	0%	0%	100%	0.0602724	0.8033942	0.0036161	0.0482003
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1835	25%	2%	56%	0%	2%	1%	4%	2%	1%	1%	0%	0%	1%	1%	2%	2%	100%	0.0819601	1.0348528	0.0072274	0.0912553
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	540	30%	1%	50%	0%	3%	1%	4%	4%	1%	0%	2%	0%	1%	1%	2%	2%	100%	0.0770380	0.9631668	0.0022418	0.0280282
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	440	27%	1%	55%	0%	2%	1%	3%	2%	1%	0%	0%	0%	1%	1%	2%	2%	100%	0.0782682	0.9971312	0.0018558	0.0236431
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	615	50%	1%	28%	0%	3%	2%	5%	5%	2%	2%	1%	0%	1%	2%	0%	0%	100%	0.0577550	0.7339733	0.0009373	0.0119118
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	790	51%	1%	24%	0%	3%	2%	6%	4%	3%	3%	1%	0%	3%	1%	0%	1%	100%	0.0590094	0.7858119	0.0012302	0.0163820
M(i)	84	Lin Cheung Rd	Southbound	3	56	2285	51%	1%	25%	0%	2%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0599336	0.7887211	0.0021303	0.0280347
N(i)	77	Lin Cheung Rd	Northbound	3	56	1465	51%	1%	24%	0%	2%	2%	6%	3%	3%	2%	1%	0%	2%	1%	0%	0%	100%	0.0597275	0.7912774	0.0013611	0.0180323
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	1330	24%	2%	56%	0%	2%	2%	4%	2%	1%	0%	0%	0%	1%	1%	2%	2%	100%	0.0817627	1.0281964	0.0015708	0.0197528
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	770	25%	2%	54%	0%	2%	1%	5%	3%	1%	1%	1%	0%	1%	1%	2%	3%	100%	0.0806180	1.0179235	0.0008967	0.0113216
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	4410	50%	0%	17%	0%	2%	2%	6%	4%	3%	2%	2%	0%	5%	2%	3%	0%	100%	0.0427722	0.7753253	0.1032201	1.8710538
	A	Internal Rd A	Bothbound	4	404	145	45%	0%	31%	0%	7%	0%	3%	7%	0%	0%	7%	0%	0%	0%	0%	0%	100%	0.0767924	0.8092360	0.0012496	0.0131681
	B	Internal Rd B	Bothbound	4	361	395	44%	0%	29%	1%	5%	1%	4%	6%	1%	1%	5%	0%	0%	1%	0%	0%	100%	0.0760174	0.8557566	0.0030110	0.0338963
	C	Internal Rd C	Bothbound	4	521	170	44%	0%	29%	0%	6%	0%	3%	6%	0%	0%	12%	0%	0%	0%	0%	0%	100%	0.0784901	0.8226245	0.0019311	0.0202388
X(i)	144	Reprovision of Gascoigne Rd Flyover	Westbound	3	180	1750	33%	1%	11%	1%	7%	5%	13%	10%	2%	1%	1%	0%	1%	9%	5%	1%	100%	0.0791232	1.5737864	0.0069233	0.1377063

Note: (I): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

									Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area														
									Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source														
								Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)											
								A	Area	4.9322E-05	0.0006538	--	--	1.00412E-07	1.3311E-06	491.2	1	0.1 x Tunnel Section A											
80.935	0.873							B	Area	0.00199167	0.0264019	--	--	5.82529E-06	7.7221E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)											
								CE	Area	0.00047416	0.0062284	--	--	7.46357E-07	9.8039E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E											
								D1-D7		0.00211904	0.0280903	0.000201813	0.00267527	--	--	--													
								D8-D14	Volume			0.000100906	0.00133763	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D											
								F	Area	0.00074527	0.0097646	--	--	2.68565E-06	3.5188E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F											
								I1-I4		0.02046113	0.263788	0.003410189	0.04396467	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel Section F											
								I5-I8	Volume			0.001705094	0.02198234	--	--	--													
45.868								JKO1	Area	0.00042327	0.005364	--	--	2.74368E-07	3.477E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O											
								L1-L5		0.00250752	0.032511	0.000334336	0.0043348	--	--	--													
								L6-L10	Volume			0.000167168	0.0021674	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O											
								M1-M4		0.00174572	0.0230335	0.000290953	0.00383892	--	--	--													
								M5-M8	Volume			0.000145476	0.00191946	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)											
								N1-N4		0.00174572	0.0230335	0.000290953	0.00383892	--	--	--													
								N5-N8	Volume			0.000145476	0.00191946	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)											
								P1-P4		0.00289152	0.0367132	0.00048192	0.00611886	--	--	--													
								P5-P8	Volume			0.00024096	0.00305943	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K											
								W1-W8		0.10322006	1.8710538	0.008601672	0.15592115	--	--	--													
								W9-W16	Volume			0.004300836	0.07796057	--	--	--	1	1 x Tunnel W											
								701-710		0.00692328	0.1377063	0.000461552	0.00918042	--	--	--	1												
								711-720	Volume			0.000230776	0.00459021	--	--	--	--	1 x Tunnel X											
								BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C											
	% of Serving Rd							BaseC		0	0	0	0					1/3 x Basement roads A,B,C											
			Out of 500m					801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y											
			Out of 500m					901-903				--	--	--	--	--		1 x Tunnel Z											
			Out of 500m					904-906	Volume			--	--	--	--	--	1												
			Out of 500m					V1	Point								from 1-4	--											
		4.2%						V01	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V02	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V03	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V04	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V05	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V06	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V07	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V08	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V09	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V10	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V11	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V12	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%	**Road A at B1 Level**					V13	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V14	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V15	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V16	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V17	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V18	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V19	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V20	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V21	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V22	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		4.2%						V23	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
100.0%		4.2%						V24	Point	1.6301E-05	0.000011024	--	--	--	--	--	--	--											
		12.5%						V25	Point	0.00011539	0.000276278	--	--	--	--	--	--	--											
		12.5%						V26	Point	0.00011539	0.000276278	--	--	--	--	--	--	--											
		12.5%						V27	Point	0.00011539	0.000276278	--	--	--	--	--	--	--											
		12.5%	**Road B at B1 Level**					V28	Point	0.00011539	0.000276278	--	--	--	--	--	--	--											
		12.5%						V29	Point	0.00011539	0.000276278	--	--	--	--	--	--	--											
		12.5%						V30	Point	0.00011539	0.000276278	--	--	--	--	--	--	--											
		12.5%						V31	Point	0.00011539	0.000276278	--	--	--	--	--	--	--											
		16.7%	**Road C at B1 Level**					V32	Point	0.000136476	2.38904E-05	--	--	--	--	--	--	--											
100.0%		12.5%	**Road B at B1 Level**					V33	Point	0.00011539	0.000276278	--	--	--	--	--	--	--											
		16.7%						V34	Point	0.000136476	2.38904E-05	--	--	--	--	--	--	--											
		16.7%						V35	Point	0.000136476	2.38904E-05	--	--	--	--	--	--	--											
		16.7%	**Road C at B1 Level**					V36	Point	0.000136476	2.38904E-05	--	--	--	--	--	--	--											
		16.7%						V37	Point	0.000136476	2.38904E-05	--	--	--	--	--	--	--											
100.0%		16.7%						V38	Point	0.000136476	2.38904E-05	--	--	--	--	--	--	--											

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr09-10)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 09-10 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	390	50%	1%	24%	0%	3%	3%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0633104	0.8339853	0.0005007	0.0065954
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	390	50%	1%	24%	0%	3%	3%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0633104	0.8339853	0.0018655	0.0245748
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	390	50%	1%	24%	0%	3%	3%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0633104	0.8339853	0.0007544	0.0099383
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	390	50%	1%	24%	0%	3%	3%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0633104	0.8339853	0.0012071	0.0159013
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	1267	50%	1%	25%	0%	3%	2%	6%	4%	3%	2%	1%	0%	2%	1%	0%	0%	100%	0.0607322	0.7879097	0.0033126	0.0429766
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	1267	50%	1%	25%	0%	3%	2%	6%	4%	3%	2%	1%	0%	2%	1%	0%	0%	100%	0.0607322	0.7879097	0.0036760	0.0476902
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	1440	51%	1%	24%	0%	2%	2%	6%	3%	3%	2%	1%	0%	2%	1%	0%	0%	100%	0.0613399	0.8086658	0.0029689	0.0391394
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1931	24%	2%	56%	0%	2%	1%	4%	3%	1%	1%	0%	0%	1%	1%	2%	2%	100%	0.0828888	1.0378152	0.0076929	0.0963191
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	621	30%	1%	48%	0%	3%	1%	4%	4%	1%	0%	3%	0%	1%	1%	2%	2%	100%	0.0772301	0.9632195	0.0025857	0.0322494
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	456	26%	1%	54%	0%	2%	1%	4%	2%	1%	0%	0%	0%	1%	1%	2%	2%	100%	0.0806516	1.0240913	0.0019798	0.0251395
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	733	48%	1%	28%	0%	4%	1%	4%	6%	1%	1%	1%	0%	1%	1%	0%	0%	100%	0.0588683	0.7375043	0.0011395	0.0142751
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	841	50%	1%	24%	0%	2%	2%	6%	4%	3%	3%	1%	0%	2%	1%	0%	1%	100%	0.0603988	0.7960541	0.0013409	0.0176728
M(i)	84	Lin Cheung Rd	Southbound	3	56	1962	50%	1%	25%	0%	3%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0610897	0.7986311	0.0018641	0.0243697
N(i)	77	Lin Cheung Rd	Northbound	3	56	1521	50%	1%	24%	0%	2%	2%	6%	3%	3%	2%	1%	0%	2%	1%	0%	0%	100%	0.0615777	0.8093372	0.0014572	0.0191525
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	1390	24%	2%	57%	0%	2%	2%	4%	2%	1%	0%	0%	0%	1%	1%	2%	2%	100%	0.0828138	1.0323777	0.0016626	0.0207264
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	833	26%	2%	53%	0%	2%	1%	4%	3%	1%	1%	1%	0%	1%	1%	2%	2%	100%	0.0804964	1.0101696	0.0009691	0.0121617
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	3848	50%	0%	18%	0%	2%	2%	7%	3%	3%	2%	2%	0%	5%	2%	3%	0%	100%	0.0434921	0.7850619	0.0915710	1.6529193
	A	Internal Rd A	Bothbound	4	404	220	43%	1%	29%	1%	5%	1%	3%	7%	1%	1%	7%	0%	0%	1%	0%	0%	100%	0.0751405	0.8474053	0.0018581	0.0209554
	B	Internal Rd B	Bothbound	4	361	581	44%	1%	29%	1%	5%	1%	3%	7%	1%	1%	6%	0%	0%	1%	0%	0%	100%	0.0737964	0.8333810	0.0042978	0.0485345
	C	Internal Rd C	Bothbound	4	521	270	41%	1%	27%	1%	5%	1%	3%	6%	1%	1%	12%	0%	0%	1%	0%	0%	100%	0.0786737	0.8842715	0.0030711	0.0345178
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1755	33%	1%	11%	1%	7%	5%	13%	10%	2%	1%	1%	0%	1%	9%	5%	1%	100%	0.0813648	1.5958796	0.0071398	0.1400384

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.
Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon) Emission Rate - Portal/ Opening (g/s)		Volume source - calculated by number of portal/opening involved Emission Rate - Portal/ Opening (g/s) - Volume source		Area source - calculated by emission rate divided by area Emission Rate - Portal/ Opening (g/m2-s) - Area source				
						Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
						A	Area	5.0068E-05	0.0006595	--	--	1.0193E-07	1.3427E-06	491.2	1	0.1 x Tunnel Section A
80.935	0.873					B	Area	0.00202178	0.0266328	--	--	5.91335E-06	7.7896E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
						CE	Area	0.00043615	0.0056793	--	--	6.86522E-07	8.9395E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
						D1-D7		0.00215107	0.0283359	0.000204864	0.00269866	--	--	--		
						D8-D14	Volume			0.000102432	0.00134933	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
						F	Area	0.00066573	0.0086369	--	--	2.39904E-06	3.1124E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
						I1-I4		0.01996719	0.254527	0.003327865	0.04242117	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel
						I5-I8	Volume			0.001663932	0.02121059	--	--	--		Section F
45.868						JKO1	Area	0.00046224	0.0058142	--	--	2.99629E-07	3.7689E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
						L1-L5		0.00269626	0.0346682	0.000359501	0.00462243	--	--	--		
						L6-L10	Volume			0.000179751	0.00231121	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
						M1-M4		0.00166066	0.0217611	0.000276776	0.00362685	--	--	--		
						M5-M8	Volume			0.000138388	0.00181342	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
						N1-N4		0.00166066	0.0217611	0.000276776	0.00362685	--	--	--		
						N5-N8	Volume			0.000138388	0.00181342	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
						P1-P4		0.00320527	0.040406	0.000534211	0.00673434	--	--	--		
						P5-P8	Volume			0.000267106	0.00336717	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
						W1-W8		0.09157104	1.6529193	0.00763092	0.13774327	--	--	--		
						W9-W16	Volume			0.00381546	0.06887164	--	--	--	1	1 x Tunnel W
						701-710		0.00713976	0.1400384	0.000475984	0.0093359	--	--	--	1	
						711-720	Volume			0.000237992	0.00466795	--	--	--	--	1 x Tunnel X
						BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd					BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m				801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m				901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m				904-906	Volume			--	--	--	--	--	1	
		Out of 500m				V1	Point								from 1-4	--
	4.2%					V01	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V02	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V03	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V04	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V05	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V06	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V07	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V08	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V09	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V10	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V11	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**				V12	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V13	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V14	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V15	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V16	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V17	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V18	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V19	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V20	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V21	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V22	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	4.2%					V23	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
100.0%	4.2%					V24	Point	3.40268E-05	0.000418484	--	--	--	--	--	--	--
	12.5%					V25	Point	0.000196543	0.002777269	--	--	--	--	--	--	--
	12.5%					V26	Point	0.000196543	0.002777269	--	--	--	--	--	--	--
	12.5%					V27	Point	0.000196543	0.002777269	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**				V28	Point	0.000196543	0.002777269	--	--	--	--	--	--	--
	12.5%					V29	Point	0.000196543	0.002777269	--	--	--	--	--	--	--
	12.5%					V30	Point	0.000196543	0.002777269	--	--	--	--	--	--	--
	12.5%					V31	Point	0.000196543	0.002777269	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**				V32	Point	0.000176276	0.003723741	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**				V33	Point	0.000196543	0.002777269	--	--	--	--	--	--	--
	16.7%					V34	Point	0.000176276	0.003723741	--	--	--	--	--	--	--
	16.7%					V35	Point	0.000176276	0.003723741	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**				V36	Point	0.000176276	0.003723741	--	--	--	--	--	--	--
	16.7%					V37	Point	0.000176276	0.003723741	--	--	--	--	--	--	--
100.0%	16.7%					V38	Point	0.000176276	0.003723741	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr10-11)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 10-11 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	Rate (g/km-) NOx	Emission Rate (g/s) PM	Emission Rate (g/s) NOx
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	345	49%	1%	23%	0%	3%	3%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0645434	0.8581711	0.0004515	0.0060036
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	345	49%	1%	23%	0%	3%	3%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0645434	0.8581711	0.0016824	0.0223697
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	345	49%	1%	23%	0%	3%	3%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0645434	0.8581711	0.0006804	0.0090466
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	345	49%	1%	23%	0%	3%	3%	6%	3%	3%	3%	1%	0%	3%	1%	0%	0%	100%	0.0645434	0.8581711	0.0010886	0.0144745
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	930	52%	1%	25%	0%	3%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0616937	0.7813526	0.0024703	0.0312867
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	930	52%	1%	25%	0%	3%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0616937	0.7813526	0.0027413	0.0347181
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	1060	51%	1%	24%	0%	2%	2%	6%	3%	3%	2%	1%	0%	2%	1%	0%	0%	100%	0.0622370	0.8137899	0.0022174	0.0289935
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1810	25%	2%	56%	0%	2%	1%	4%	2%	1%	1%	0%	0%	1%	1%	2%	2%	100%	0.0850490	1.0497999	0.0073976	0.0913122
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	545	30%	1%	50%	0%	3%	1%	4%	4%	1%	0%	2%	0%	1%	1%	2%	2%	100%	0.0794267	0.9790460	0.0023327	0.0287540
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	445	28%	1%	54%	0%	2%	1%	3%	2%	1%	0%	0%	0%	1%	1%	2%	2%	100%	0.0805150	1.0119552	0.0019308	0.0242672
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	515	49%	1%	28%	0%	4%	2%	4%	5%	2%	2%	1%	0%	1%	2%	0%	0%	100%	0.0600222	0.7643079	0.0008157	0.0103872
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	665	51%	2%	24%	0%	3%	2%	5%	4%	2%	2%	1%	0%	2%	2%	0%	1%	100%	0.0597074	0.7874993	0.0010478	0.0138195
M(i)	84	Lin Cheung Rd	Southbound	3	56	1440	51%	1%	25%	0%	3%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0618563	0.8014924	0.0013856	0.0179534
N(i)	77	Lin Cheung Rd	Northbound	3	56	1220	51%	1%	24%	0%	2%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	0%	100%	0.0622262	0.8049898	0.0011809	0.0152769
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	1315	25%	2%	56%	0%	2%	2%	4%	2%	1%	0%	0%	0%	1%	1%	2%	2%	100%	0.0845839	1.0359764	0.0016066	0.0196778
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	770	27%	2%	53%	0%	2%	1%	5%	3%	1%	1%	1%	0%	1%	1%	2%	3%	100%	0.0825755	1.0316647	0.0009184	0.0114744
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	3350	50%	0%	17%	0%	2%	2%	6%	4%	3%	2%	2%	0%	5%	2%	3%	0%	100%	0.0428689	0.7742012	0.0785871	1.4192613
	A	Internal Rd A	Bothbound	4	404	145	45%	0%	31%	0%	7%	0%	3%	7%	0%	0%	7%	0%	0%	0%	0%	0%	100%	0.0779755	0.8155176	0.0012688	0.0132703
	B	Internal Rd B	Bothbound	4	361	420	44%	1%	29%	1%	5%	1%	4%	6%	1%	1%	6%	0%	0%	1%	0%	0%	100%	0.0762069	0.8501824	0.0032096	0.0358068
	C	Internal Rd C	Bothbound	4	521	175	46%	0%	29%	0%	6%	0%	3%	6%	0%	0%	11%	0%	0%	0%	0%	0%	100%	0.0774702	0.8051165	0.0019620	0.0203907
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1735	33%	1%	11%	1%	7%	4%	13%	10%	2%	1%	1%	0%	1%	9%	5%	1%	100%	0.0829591	1.6190358	0.0071967	0.1404514

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.
Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area				
							Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source				
			Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
			A	Area	4.5154E-05	0.0006004	--	--	9.1925E-08	1.2222E-06	491.2	1	0.1 x Tunnel Section A
80.935	0.873		B	Area	0.00182333	0.024243	--	--	5.3329E-06	7.0907E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
			CE	Area	0.00034162	0.0043863	--	--	5.3773E-07	6.9043E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
			D1-D7		0.00193993	0.0257933	0.000184755	0.00245651	--	--	--		
			D8-D14	Volume			9.23775E-05	0.00122825	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
			F	Area	0.00049645	0.0062876	--	--	1.789E-06	2.2658E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
			I1-I4		0.01707945	0.2138322	0.002846574	0.03563871	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x
			I5-I8	Volume			0.001423287	0.01781935	--	--	--		Tunnel Section F
45.868			JKO1	Area	0.00042389	0.0052878	--	--	2.7477E-07	3.4276E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
			L1-L5		0.00236133	0.0300415	0.000314844	0.00400553	--	--	--		
			L6-L10	Volume			0.000157422	0.00200276	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
			M1-M4		0.00128325	0.0166152	0.000213875	0.0027692	--	--	--		
			M5-M8	Volume			0.000106937	0.0013846	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			N1-N4		0.00128325	0.0166152	0.000213875	0.0027692	--	--	--		
			N5-N8	Volume			0.000106937	0.0013846	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			P1-P4		0.00287045	0.0361129	0.000478409	0.00601881	--	--	--		
			P5-P8	Volume			0.000239204	0.00300941	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
			W1-W8		0.07858709	1.4192613	0.006548924	0.11827177	--	--	--		
			W9-W16	Volume			0.003274462	0.05913589	--	--	--	1	1 x Tunnel W
			701-710		0.00719671	0.1404514	0.00047978	0.00936342	--	--	--	1	
			711-720	Volume			0.00023989	0.00468171	--	--	--	--	1 x Tunnel X
			BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd		BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m	801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m	901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m	904-906	Volume			--	--	--	--	--	1	
		Out of 500m	V1	Point								from 1-4	--
	4.2%		V01	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V02	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V03	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V04	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V05	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V06	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V07	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V08	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V09	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V10	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V11	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**	V12	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V13	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V14	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V15	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V16	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V17	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V18	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V19	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V20	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V21	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V22	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	4.2%		V23	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
100.0%	4.2%		V24	Point	5.90937E-05	0.000886429	--	--	--	--	--	--	--
	12.5%		V25	Point	0.000293074	0.004691589	--	--	--	--	--	--	--
	12.5%		V26	Point	0.000293074	0.004691589	--	--	--	--	--	--	--
	12.5%		V27	Point	0.000293074	0.004691589	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**	V28	Point	0.000293074	0.004691589	--	--	--	--	--	--	--
	12.5%		V29	Point	0.000293074	0.004691589	--	--	--	--	--	--	--
	12.5%		V30	Point	0.000293074	0.004691589	--	--	--	--	--	--	--
	12.5%		V31	Point	0.000293074	0.004691589	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V32	Point	0.000322533	0.007142976	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**	V33	Point	0.000293074	0.004691589	--	--	--	--	--	--	--
	16.7%		V34	Point	0.000322533	0.007142976	--	--	--	--	--	--	--
	16.7%		V35	Point	0.000322533	0.007142976	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V36	Point	0.000322533	0.007142976	--	--	--	--	--	--	--
	16.7%		V37	Point	0.000322533	0.007142976	--	--	--	--	--	--	--
100.0%	16.7%		V38	Point	0.000322533	0.007142976	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr11-12)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 11-12 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	275	51%	2%	24%	0%	4%	2%	5%	4%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0611018	0.8091088	0.0003407	0.0045119
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	275	51%	2%	24%	0%	4%	2%	5%	4%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0611018	0.8091088	0.0012696	0.0168115
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	275	51%	2%	24%	0%	4%	2%	5%	4%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0611018	0.8091088	0.0005134	0.0067988
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	275	51%	2%	24%	0%	4%	2%	5%	4%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0611018	0.8091088	0.0008215	0.0108780
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	920	53%	1%	25%	0%	2%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0601559	0.7488618	0.0023828	0.0296632
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	920	53%	1%	25%	0%	2%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0601559	0.7488618	0.0026442	0.0329166
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	1035	52%	1%	23%	0%	2%	2%	6%	3%	2%	2%	1%	0%	2%	1%	0%	0%	100%	0.0612324	0.8042283	0.0021301	0.0279771
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1755	27%	1%	54%	0%	1%	1%	4%	3%	1%	1%	0%	0%	1%	1%	2%	2%	100%	0.0832789	1.0153233	0.0070235	0.0856298
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	540	32%	1%	48%	0%	2%	1%	4%	4%	1%	0%	2%	0%	1%	1%	2%	2%	100%	0.0774667	0.9536412	0.0022543	0.0277510
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	460	30%	1%	52%	0%	2%	1%	3%	2%	1%	0%	0%	0%	1%	1%	2%	2%	100%	0.0780440	0.9792038	0.0019346	0.0242734
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	505	49%	1%	28%	0%	4%	2%	4%	5%	2%	2%	1%	0%	1%	2%	0%	0%	100%	0.0600727	0.7685288	0.0008006	0.0102417
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	515	52%	1%	24%	0%	3%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0588730	0.7436057	0.0008001	0.0101058
M(i)	84	Lin Cheung Rd	Southbound	3	56	1425	51%	1%	25%	0%	3%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0612069	0.7865248	0.0013568	0.0174346
N(i)	77	Lin Cheung Rd	Northbound	3	56	975	51%	1%	24%	1%	3%	2%	6%	4%	3%	2%	1%	0%	2%	2%	0%	1%	100%	0.0609276	0.7945890	0.0009241	0.0120513
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	1275	27%	2%	55%	0%	2%	2%	4%	2%	1%	0%	0%	0%	1%	1%	2%	2%	100%	0.0837884	1.0323506	0.0015431	0.0190125
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	770	29%	2%	51%	0%	2%	1%	5%	3%	1%	1%	1%	0%	1%	1%	2%	2%	100%	0.0811887	1.0158209	0.0009030	0.0112982
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	3415	51%	0%	17%	0%	2%	2%	6%	4%	3%	2%	2%	0%	5%	2%	3%	0%	100%	0.0419960	0.7599111	0.0784806	1.4200943
	A	Internal Rd A	Bothbound	4	404	145	48%	0%	31%	0%	3%	0%	3%	7%	0%	0%	7%	0%	0%	0%	0%	0%	100%	0.0748304	0.7531277	0.0012177	0.0122551
	B	Internal Rd B	Bothbound	4	361	425	46%	1%	29%	0%	5%	1%	2%	6%	1%	1%	6%	0%	0%	1%	0%	0%	100%	0.0716752	0.7917039	0.0030547	0.0337409
	C	Internal Rd C	Bothbound	4	521	175	46%	0%	29%	0%	6%	0%	3%	6%	0%	0%	11%	0%	0%	0%	0%	0%	100%	0.0774702	0.8047795	0.0019620	0.0203822
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1730	34%	1%	11%	1%	7%	4%	13%	11%	2%	1%	1%	0%	1%	9%	5%	1%	100%	0.0822896	1.6221781	0.0071181	0.1403184

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area					
							Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source					
			Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
			A	Area	3.4073E-05	0.0004512	--	--	6.9366E-08	9.1855E-07	491.2	1	0.1 x Tunnel Section A
80.935	0.873		B	Area	0.00137588	0.0182193	--	--	4.0242E-06	5.3289E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
			CE	Area	0.00030966	0.0039115	--	--	4.8742E-07	6.1569E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
			D1-D7		0.00146386	0.0193845	0.000139416	0.00184614	--	--	--		
			D8-D14	Volume			6.97078E-05	0.00092307	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
			F	Area	0.00047887	0.0059614	--	--	1.7257E-06	2.1482E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
			I1-I4		0.01635762	0.2029462	0.002726271	0.03382436	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x
			I5-I8	Volume			0.001363135	0.01691218	--	--	--		Tunnel Section F
45.868			JKO1	Area	0.00041662	0.0052094	--	--	2.7006E-07	3.3768E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
			L1-L5		0.00207903	0.0259578	0.000277204	0.00346104	--	--	--		
			L6-L10	Volume			0.000138602	0.00173052	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
			M1-M4		0.00114041	0.0147429	0.000190068	0.00245716	--	--	--		
			M5-M8	Volume			9.50342E-05	0.00122858	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			N1-N4		0.00114041	0.0147429	0.000190068	0.00245716	--	--	--		
			N5-N8	Volume			9.50342E-05	0.00122858	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			P1-P4		0.00284591	0.0358283	0.000474318	0.00597138	--	--	--		
			P5-P8	Volume			0.000237159	0.00298569	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
			W1-W8		0.07848061	1.4200943	0.006540051	0.1183412	--	--	--		
			W9-W16	Volume			0.003270026	0.0591706	--	--	--	1	1 x Tunnel W
			701-710		0.00711805	0.1403184	0.000474537	0.00935456	--	--	--	1	
			711-720	Volume			0.000237268	0.00467728	--	--	--	--	1 x Tunnel X
			BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd		BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m	801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m	901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m	904-906	Volume			--	--	--	--	--	1	
		Out of 500m	V1	Point								from 1-4	--
	4.2%		V01	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V02	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V03	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V04	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V05	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V06	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V07	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V08	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V09	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V10	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V11	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**	V12	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V13	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V14	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V15	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V16	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V17	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V18	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V19	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V20	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V21	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V22	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	4.2%		V23	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
100.0%	4.2%		V24	Point	3.77952E-05	0.000486673	--	--	--	--	--	--	--
	12.5%		V25	Point	0.000214366	0.0028643	--	--	--	--	--	--	--
	12.5%		V26	Point	0.000214366	0.0028643	--	--	--	--	--	--	--
	12.5%		V27	Point	0.000214366	0.0028643	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**	V28	Point	0.000214366	0.0028643	--	--	--	--	--	--	--
	12.5%		V29	Point	0.000214366	0.0028643	--	--	--	--	--	--	--
	12.5%		V30	Point	0.000214366	0.0028643	--	--	--	--	--	--	--
	12.5%		V31	Point	0.000214366	0.0028643	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V32	Point	0.000176767	0.003762984	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**	V33	Point	0.000214366	0.0028643	--	--	--	--	--	--	--
	16.7%		V34	Point	0.000176767	0.003762984	--	--	--	--	--	--	--
	16.7%		V35	Point	0.000176767	0.003762984	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V36	Point	0.000176767	0.003762984	--	--	--	--	--	--	--
	16.7%		V37	Point	0.000176767	0.003762984	--	--	--	--	--	--	--
100.0%	16.7%		V38	Point	0.000176767	0.003762984	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr12-13)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 12-13 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	285	53%	2%	23%	0%	4%	2%	5%	4%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0576596	0.7650689	0.0003332	0.0044215
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	285	53%	2%	23%	0%	4%	2%	5%	4%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0576596	0.7650689	0.0012416	0.0164745
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	285	53%	2%	23%	0%	4%	2%	5%	4%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0576596	0.7650689	0.0005021	0.0066625
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	285	53%	2%	23%	0%	4%	2%	5%	4%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0576596	0.7650689	0.0008034	0.0106600
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	780	53%	1%	25%	0%	3%	2%	5%	4%	2%	1%	1%	0%	2%	1%	0%	1%	100%	0.0580132	0.7406045	0.0019483	0.0248720
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	780	53%	1%	25%	0%	3%	2%	5%	4%	2%	1%	1%	0%	2%	1%	0%	1%	100%	0.0580132	0.7406045	0.0021620	0.0275999
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	845	52%	1%	23%	1%	2%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0596132	0.7755581	0.0016931	0.0220269
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1435	29%	1%	53%	0%	2%	1%	4%	2%	1%	1%	0%	0%	1%	1%	2%	2%	100%	0.0791070	0.9674296	0.0054552	0.0667137
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	460	34%	1%	47%	0%	2%	1%	4%	3%	1%	0%	2%	0%	1%	1%	1%	1%	100%	0.0765291	0.9268838	0.0018971	0.0229764
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	395	32%	1%	52%	0%	1%	1%	4%	3%	1%	0%	0%	0%	1%	1%	1%	1%	100%	0.0772120	0.9370075	0.0016435	0.0199452
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	385	53%	0%	31%	0%	4%	0%	3%	5%	1%	1%	0%	0%	0%	1%	0%	0%	100%	0.0514347	0.6021694	0.0005226	0.0061179
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	500	52%	1%	24%	0%	3%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0579711	0.7397588	0.0007649	0.0097607
M(i)	84	Lin Cheung Rd	Southbound	3	56	1180	52%	1%	25%	0%	3%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	0%	100%	0.0586124	0.7468071	0.0010759	0.0137081
N(i)	77	Lin Cheung Rd	Northbound	3	56	945	52%	1%	24%	1%	3%	2%	5%	4%	2%	2%	1%	0%	2%	2%	0%	1%	100%	0.0584446	0.7678245	0.0008591	0.0112870
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	1035	29%	1%	53%	0%	2%	1%	4%	2%	1%	0%	0%	0%	0%	1%	2%	2%	100%	0.0784701	0.9769465	0.0011731	0.0146053
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	630	29%	2%	50%	0%	2%	2%	4%	3%	1%	1%	1%	0%	1%	2%	2%	2%	100%	0.0781384	0.9820908	0.0007111	0.0089370
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	2895	53%	0%	16%	0%	2%	2%	6%	4%	3%	2%	2%	0%	5%	2%	3%	0%	100%	0.0407552	0.7391292	0.0645647	1.1709346
	A	Internal Rd A	Bothbound	4	404	125	48%	0%	32%	0%	4%	0%	4%	4%	0%	0%	8%	0%	0%	0%	0%	0%	100%	0.0794227	0.7996937	0.0011141	0.0112179
	B	Internal Rd B	Bothbound	4	361	370	47%	0%	30%	0%	4%	1%	3%	5%	1%	1%	5%	0%	0%	1%	0%	0%	100%	0.0738454	0.8053580	0.0027399	0.0298810
	C	Internal Rd C	Bothbound	4	521	155	45%	0%	29%	0%	3%	0%	3%	6%	0%	0%	13%	0%	0%	0%	0%	0%	100%	0.0814795	0.8214393	0.0018277	0.0184265
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1710	34%	1%	11%	1%	7%	4%	12%	11%	2%	1%	1%	0%	1%	9%	5%	1%	100%	0.0788317	1.5590349	0.0067401	0.1332975

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.
Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area																		
							Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source																		
			Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)																
			A	Area	3.3322E-05	0.0004421	--	--	6.7839E-08	9.0013E-07	491.2	1	0.1 x Tunnel Section A																
80.935	0.873		B	Area	0.00134558	0.0178541	--	--	3.9356E-06	5.222E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)																	
			CE	Area	0.00026463	0.0034134	--	--	4.1655E-07	5.3729E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E																	
			D1-D7		0.00143163	0.0189959	0.000136346	0.00180913	--	--	--																		
			D8-D14	Volume			6.81728E-05	0.00090457	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D																	
			F	Area	0.00039154	0.0049985	--	--	1.411E-06	1.8012E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F																	
			I1-I4		0.0130436	0.1625547	0.002173933	0.02709245	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x																	
			I5-I8	Volume			0.001086967	0.01354623	--	--	--		Tunnel Section F																
45.868			JKO1	Area	0.00032661	0.0039812	--	--	2.1171E-07	2.5807E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O																	
			L1-L5		0.00177451	0.0222187	0.000236601	0.00296249	--	--	--																		
			L6-L10	Volume			0.000118301	0.00148124	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O																	
			M1-M4		0.0009675	0.0124975	0.00016125	0.00208292	--	--	--																		
			M5-M8	Volume			8.0625E-05	0.00104146	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)																	
			N1-N4		0.0009675	0.0124975	0.00016125	0.00208292	--	--	--																		
			N5-N8	Volume			8.0625E-05	0.00104146	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)																	
			P1-P4		0.00223971	0.0273148	0.000373284	0.00455247	--	--	--																		
			P5-P8	Volume			0.000186642	0.00227623	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K																	
			W1-W8		0.06456474	1.1709346	0.005380395	0.09757788	--	--	--																		
			W9-W16	Volume			0.002690197	0.04878894	--	--	--	1	1 x Tunnel W																	
			701-710		0.00674011	0.1332975	0.000449341	0.0088865	--	--	--	1																	
			711-720	Volume			0.00022467	0.00444325	--	--	--	--	1 x Tunnel X																	
			BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C																
	% of Serving Rd		BaseC		0	0	0	0					1/3 x Basement roads A,B,C																
		Out of 500m	801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y																
		Out of 500m	901-903				--	--	--	--	--		1 x Tunnel Z																
		Out of 500m	904-906	Volume			--	--	--	--	--	1																	
		Out of 500m	V1	Point								from 1-4	--																
	4.2%		V01	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V02	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V03	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V04	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V05	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V06	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V07	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V08	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V09	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V10	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V11	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%	**Road A at B1 Level**	V12	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V13	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V14	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V15	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V16	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V17	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V18	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V19	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V20	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V21	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V22	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	4.2%		V23	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
100.0%	4.2%		V24	Point	3.41555E-05	0.00047798	--	--	--	--	--	--	--																
	12.5%		V25	Point	0.000214348	0.003199588	--	--	--	--	--	--	--																
	12.5%		V26	Point	0.000214348	0.003199588	--	--	--	--	--	--	--																
	12.5%		V27	Point	0.000214348	0.003199588	--	--	--	--	--	--	--																
	12.5%	**Road B at B1 Level**	V28	Point	0.000214348	0.003199588	--	--	--	--	--	--	--																
	12.5%		V29	Point	0.000214348	0.003199588	--	--	--	--	--	--	--																
	12.5%		V30	Point	0.000214348	0.003199588	--	--	--	--	--	--	--																
	12.5%		V31	Point	0.000214348	0.003199588	--	--	--	--	--	--	--																
	16.7%	**Road C at B1 Level**	V32	Point	0.000176691	0.004356125	--	--	--	--	--	--	--																
100.0%	12.5%	**Road B at B1 Level**	V33	Point	0.000214348	0.003199588	--	--	--	--	--	--	--																
	16.7%		V34	Point	0.000176691	0.004356125	--	--	--	--	--	--	--																
	16.7%		V35	Point	0.000176691	0.004356125	--	--	--	--	--	--	--																
	16.7%	**Road C at B1 Level**	V36	Point	0.000176691	0.004356125	--	--	--	--	--	--	--																
	16.7%		V37	Point	0.000176691	0.004356125	--	--	--	--	--	--	--																
100.0%	16.7%		V38	Point	0.000176691	0.004356125	--	--	--	--	--	--	--																

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr13-14)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 13-14 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	360	53%	1%	22%	0%	3%	3%	6%	4%	1%	1%	1%	0%	3%	1%	0%	0%	100%	0.0609241	0.8071271	0.0004447	0.0058920
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	360	53%	1%	22%	0%	3%	3%	6%	4%	1%	1%	1%	0%	3%	1%	0%	0%	100%	0.0609241	0.8071271	0.0016571	0.0219539
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	360	53%	1%	22%	0%	3%	3%	6%	4%	1%	1%	1%	0%	3%	1%	0%	0%	100%	0.0609241	0.8071271	0.0006702	0.0088784
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	360	53%	1%	22%	0%	3%	3%	6%	4%	1%	1%	1%	0%	3%	1%	0%	0%	100%	0.0609241	0.8071271	0.0010723	0.0142054
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	775	54%	1%	25%	0%	3%	2%	5%	5%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0568505	0.7138730	0.0018970	0.0238206
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	775	54%	1%	25%	0%	3%	2%	5%	5%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0568505	0.7138730	0.0021050	0.0264331
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	820	53%	1%	23%	1%	2%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0583137	0.7584721	0.0016072	0.0209043
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1390	31%	1%	51%	0%	2%	1%	4%	3%	1%	1%	0%	0%	1%	1%	1%	2%	100%	0.0782250	0.9463830	0.0052252	0.0632158
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	455	35%	1%	46%	0%	2%	1%	4%	3%	1%	0%	2%	0%	0%	1%	1%	1%	100%	0.0740923	0.8743301	0.0018167	0.0214381
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	405	35%	1%	51%	0%	1%	1%	4%	2%	1%	0%	0%	0%	0%	1%	1%	1%	100%	0.0730745	0.8566087	0.0015949	0.0186955
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	370	54%	0%	31%	0%	3%	0%	3%	5%	1%	1%	0%	0%	0%	1%	0%	0%	100%	0.0510914	0.5911051	0.0004989	0.0057715
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	585	53%	1%	24%	0%	3%	2%	5%	4%	2%	2%	1%	0%	2%	2%	0%	1%	100%	0.0570454	0.7441335	0.0008806	0.0114876
M(i)	84	Lin Cheung Rd	Southbound	3	56	1165	53%	1%	24%	0%	3%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	0%	100%	0.0577501	0.7354210	0.0010466	0.0133275
N(i)	77	Lin Cheung Rd	Northbound	3	56	1145	52%	1%	24%	0%	3%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	0%	100%	0.0582785	0.7553242	0.0010380	0.0134532
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	1010	30%	1%	51%	0%	2%	1%	4%	3%	1%	0%	0%	0%	0%	1%	1%	2%	100%	0.0775743	0.9504488	0.0011317	0.0138660
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	610	30%	2%	49%	0%	2%	2%	4%	3%	1%	1%	1%	0%	1%	2%	2%	2%	100%	0.0782372	0.9858330	0.0006894	0.0086863
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	2950	54%	0%	16%	0%	2%	2%	6%	4%	3%	2%	2%	0%	5%	2%	3%	0%	100%	0.0396499	0.7232889	0.0640070	1.1676093
	A	Internal Rd A	Bothbound	4	404	120	50%	0%	29%	0%	4%	0%	4%	4%	0%	0%	8%	0%	0%	0%	0%	0%	100%	0.0772666	0.7840762	0.0010405	0.0105589
	B	Internal Rd B	Bothbound	4	361	355	49%	0%	31%	0%	4%	0%	1%	4%	1%	1%	6%	0%	0%	1%	0%	0%	100%	0.0669630	0.7300637	0.0023838	0.0259893
	C	Internal Rd C	Bothbound	4	521	140	46%	0%	29%	0%	4%	0%	4%	4%	0%	0%	14%	0%	0%	0%	0%	0%	100%	0.0820709	0.8333870	0.0016628	0.0168853
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1690	34%	0%	11%	1%	7%	4%	12%	11%	1%	1%	1%	0%	1%	9%	5%	1%	100%	0.0783125	1.5541132	0.0066174	0.1313226

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon) Emission Rate - Portal/ Opening (g/s)		Volume source - calculated by number of portal/opening involved Emission Rate - Portal/ Opening (g/s) - Volume source		Area source - calculated by emission rate divided by area Emission Rate - Portal/ Opening (g/m2-s) - Area source				
			Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
80.935	0.873		A	Area	4.4475E-05	0.0005892	--	--	9.0543E-08	1.1995E-06	491.2	1	0.1 x Tunnel Section A
			B	Area	0.00179591	0.0237924	--	--	5.2527E-06	6.9589E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
			CE	Area	0.00028287	0.0036163	--	--	4.4525E-07	5.6923E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
			D1-D7		0.00191076	0.0253139	0.000181977	0.00241085	--	--	--		
			D8-D14	Volume			9.09885E-05	0.00120542	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
			F	Area	0.00038123	0.0047872	--	--	1.3738E-06	1.7251E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
			I1-I4		0.0125371	0.1541928	0.002089517	0.0256988	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x
			I5-I8	Volume			0.001044758	0.0128494	--	--	--		Tunnel Section F
45.868			JKO1	Area	0.00031556	0.0037525	--	--	2.0455E-07	2.4324E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
			L1-L5		0.00185663	0.023263	0.00024755	0.00310173	--	--	--		
			L6-L10	Volume			0.000123775	0.00155087	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
			M1-M4		0.00104228	0.0133903	0.000173714	0.00223172	--	--	--		
			M5-M8	Volume			8.68568E-05	0.00111586	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			N1-N4		0.00104228	0.0133903	0.000173714	0.00223172	--	--	--		
			N5-N8	Volume			8.68568E-05	0.00111586	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			P1-P4		0.00216635	0.0259411	0.000361058	0.00432352	--	--	--		
			P5-P8	Volume			0.000180529	0.00216176	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
			W1-W8		0.06400699	1.1676093	0.005333916	0.09730077	--	--	--		
			W9-W16	Volume			0.002666958	0.04865039	--	--	--	1	1 x Tunnel W
			701-710		0.00661741	0.1313226	0.00044116	0.00875484	--	--	--	1	
			711-720	Volume			0.00022058	0.00437742	--	--	--	--	1 x Tunnel X
			BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd		BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m	801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m	901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m	904-906	Volume			--	--	--	--	--	1	
		Out of 500m	V1	Point								from 1-4	--
	4.2%		V01	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V02	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V03	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V04	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V05	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V06	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V07	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V08	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V09	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V10	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V11	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**	V12	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V13	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V14	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V15	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V16	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V17	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V18	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V19	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V20	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V21	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V22	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	4.2%		V23	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
100.0%	4.2%		V24	Point	3.00969E-05	0.000392743	--	--	--	--	--	--	--
	12.5%		V25	Point	0.0001602	0.002361049	--	--	--	--	--	--	--
	12.5%		V26	Point	0.0001602	0.002361049	--	--	--	--	--	--	--
	12.5%		V27	Point	0.0001602	0.002361049	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**	V28	Point	0.0001602	0.002361049	--	--	--	--	--	--	--
	12.5%		V29	Point	0.0001602	0.002361049	--	--	--	--	--	--	--
	12.5%		V30	Point	0.0001602	0.002361049	--	--	--	--	--	--	--
	12.5%		V31	Point	0.0001602	0.002361049	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V32	Point	0.000176584	0.003719772	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**	V33	Point	0.0001602	0.002361049	--	--	--	--	--	--	--
	16.7%		V34	Point	0.000176584	0.003719772	--	--	--	--	--	--	--
	16.7%		V35	Point	0.000176584	0.003719772	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V36	Point	0.000176584	0.003719772	--	--	--	--	--	--	--
	16.7%		V37	Point	0.000176584	0.003719772	--	--	--	--	--	--	--
100.0%	16.7%		V38	Point	0.000176584	0.003719772	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr14-15)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 14-15 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	295	54%	2%	22%	0%	3%	2%	5%	3%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0565555	0.7462009	0.0003383	0.0044637
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	295	54%	2%	22%	0%	3%	2%	5%	3%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0565555	0.7462009	0.0012606	0.0166320
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	295	54%	2%	22%	0%	3%	2%	5%	3%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0565555	0.7462009	0.0005098	0.0067262
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	295	54%	2%	22%	0%	3%	2%	5%	3%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0565555	0.7462009	0.0008157	0.0107619
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	780	54%	1%	24%	0%	3%	2%	4%	4%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0554152	0.6921773	0.0018610	0.0232456
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	780	54%	1%	24%	0%	3%	2%	4%	4%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0554152	0.6921773	0.0020651	0.0257951
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	800	54%	1%	23%	1%	3%	2%	6%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0581145	0.7473609	0.0015626	0.0200957
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1355	33%	1%	49%	0%	2%	1%	4%	3%	1%	1%	0%	0%	0%	1%	1%	2%	100%	0.0766721	0.9119335	0.0049925	0.0593808
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	460	38%	1%	43%	0%	2%	1%	4%	3%	1%	0%	2%	0%	0%	1%	1%	1%	100%	0.0716568	0.8511824	0.0017763	0.0210999
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	420	37%	1%	49%	0%	1%	1%	4%	2%	1%	0%	0%	0%	0%	1%	1%	1%	100%	0.0711288	0.8342022	0.0016099	0.0188808
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	375	53%	0%	32%	0%	3%	0%	3%	5%	1%	1%	0%	0%	0%	1%	0%	0%	100%	0.0522598	0.6013223	0.0005172	0.0059506
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	465	53%	1%	24%	0%	2%	2%	4%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0567673	0.7217782	0.0006966	0.0088568
M(i)	84	Lin Cheung Rd	Southbound	3	56	1160	53%	1%	24%	0%	3%	2%	5%	4%	2%	1%	1%	0%	2%	1%	0%	0%	100%	0.0578989	0.7404508	0.0010448	0.0133610
N(i)	77	Lin Cheung Rd	Northbound	3	56	900	53%	1%	23%	1%	3%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0571771	0.7244815	0.0008005	0.0101427
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	980	32%	2%	49%	0%	2%	2%	4%	3%	1%	1%	1%	0%	1%	2%	2%	2%	100%	0.0766474	0.9501575	0.0010850	0.0134500
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	600	31%	2%	48%	0%	3%	2%	4%	3%	1%	1%	1%	0%	1%	2%	2%	2%	100%	0.0774498	0.9862236	0.0006712	0.0085473
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	3605	55%	0%	15%	0%	2%	2%	5%	4%	3%	2%	2%	0%	4%	2%	3%	0%	100%	0.0386403	0.7079314	0.0762272	1.3965619
	A	Internal Rd A	Bothbound	4	404	120	50%	0%	33%	0%	4%	0%	0%	4%	0%	0%	8%	0%	0%	0%	0%	0%	100%	0.0664429	0.6454924	0.0008948	0.0086926
	B	Internal Rd B	Bothbound	4	361	380	50%	0%	32%	0%	4%	0%	1%	4%	1%	1%	5%	0%	0%	1%	0%	0%	100%	0.0657120	0.7102720	0.0025040	0.0270653
	C	Internal Rd C	Bothbound	4	521	150	47%	0%	30%	0%	3%	0%	3%	3%	0%	0%	13%	0%	0%	0%	0%	0%	100%	0.0805128	0.8122410	0.0017478	0.0176324
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	2010	35%	0%	11%	1%	7%	4%	12%	11%	1%	1%	1%	0%	0%	10%	4%	0%	100%	0.0782075	1.5553465	0.0078599	0.1563123

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

					Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon) Emission Rate - Portal/ Opening (g/s) PM	NOx	Volume source - calculated by number of portal/opening involved Emission Rate - Portal/ Opening (g/s) - Volume source PM	NOx	Area source - calculated by emission rate divided by area Emission Rate - Portal/ Opening (g/m2-s) - Area source PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
			Portal/ opening ID.	Source Type									
80.935	0.873		A	Area	3.3831E-05	0.0004464	--	--	6.8875E-08	9.0874E-07	491.2	1	0.1 x Tunnel Section A
			B	Area	0.00136612	0.0180248	--	--	3.9957E-06	5.272E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
			CE	Area	0.00025697	0.0032596	--	--	4.0449E-07	5.1309E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
			D1-D7		0.00145349	0.0191775	0.000138427	0.00182643	--	--	--		
			D8-D14	Volume			6.92137E-05	0.00091321	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
			F	Area	0.00037401	0.0046716	--	--	1.3478E-06	1.6835E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
			I1-I4		0.01214098	0.1480539	0.002023497	0.02467566	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x
			I5-I8	Volume			0.001011748	0.01233783	--	--	--		Tunnel Section F
45.868			JKO1	Area	0.00031396	0.0037448	--	--	2.0351E-07	2.4275E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
			L1-L5		0.00164974	0.0204402	0.000219965	0.00272536	--	--	--		
			L6-L10	Volume			0.000109983	0.00136268	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
			M1-M4		0.00092262	0.0117519	0.000153769	0.00195865	--	--	--		
			M5-M8	Volume			7.68847E-05	0.00097932	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			N1-N4		0.00092262	0.0117519	0.000153769	0.00195865	--	--	--		
			N5-N8	Volume			7.68847E-05	0.00097932	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			P1-P4		0.00217267	0.0260675	0.000362111	0.00434458	--	--	--		
			P5-P8	Volume			0.000181056	0.00217229	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
			W1-W8		0.07622717	1.3965619	0.006352264	0.11638016	--	--	--		
			W9-W16	Volume			0.003176132	0.05819008	--	--	--	1	1 x Tunnel W
			701-710		0.00785986	0.1563123	0.00052399	0.01042082	--	--	--	1	
			711-720	Volume			0.000261995	0.00521041	--	--	--	--	1 x Tunnel X
			BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd		BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m	801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m	901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m	904-906	Volume			--	--	--	--	--	1	
		Out of 500m	V1	Point								from 1-4	--
	4.2%		V01	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V02	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V03	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V04	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V05	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V06	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V07	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V08	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V09	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V10	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V11	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**	V12	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V13	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V14	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V15	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V16	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V17	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V18	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V19	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V20	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V21	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V22	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	4.2%		V23	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
100.0%	4.2%		V24	Point	2.45928E-05	0.00043129	--	--	--	--	--	--	--
	12.5%		V25	Point	0.000130376	0.001948713	--	--	--	--	--	--	--
	12.5%		V26	Point	0.000130376	0.001948713	--	--	--	--	--	--	--
	12.5%		V27	Point	0.000130376	0.001948713	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**	V28	Point	0.000130376	0.001948713	--	--	--	--	--	--	--
	12.5%		V29	Point	0.000130376	0.001948713	--	--	--	--	--	--	--
	12.5%		V30	Point	0.000130376	0.001948713	--	--	--	--	--	--	--
	12.5%		V31	Point	0.000130376	0.001948713	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V32	Point	0.000139896	0.003287171	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**	V33	Point	0.000130376	0.001948713	--	--	--	--	--	--	--
	16.7%		V34	Point	0.000139896	0.003287171	--	--	--	--	--	--	--
	16.7%		V35	Point	0.000139896	0.003287171	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V36	Point	0.000139896	0.003287171	--	--	--	--	--	--	--
	16.7%		V37	Point	0.000139896	0.003287171	--	--	--	--	--	--	--
100.0%	16.7%		V38	Point	0.000139896	0.003287171	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr15-16)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 15-16 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	380	54%	1%	22%	0%	3%	3%	5%	4%	1%	1%	1%	0%	3%	1%	0%	0%	100%	0.0573462	0.7614727	0.0004419	0.0058676
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	380	54%	1%	22%	0%	3%	3%	5%	4%	1%	1%	1%	0%	3%	1%	0%	0%	100%	0.0573462	0.7614727	0.0016465	0.0218627
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	380	54%	1%	22%	0%	3%	3%	5%	4%	1%	1%	1%	0%	3%	1%	0%	0%	100%	0.0573462	0.7614727	0.0006659	0.0088415
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	380	54%	1%	22%	0%	3%	3%	5%	4%	1%	1%	1%	0%	3%	1%	0%	0%	100%	0.0573462	0.7614727	0.0010654	0.0141465
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	830	54%	1%	25%	1%	3%	2%	5%	4%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0540835	0.6849681	0.0019327	0.0244781
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	830	54%	1%	25%	1%	3%	2%	5%	4%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0540835	0.6849681	0.0021447	0.0271628
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	790	54%	1%	22%	1%	3%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0543783	0.7141916	0.0014439	0.0189638
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1590	35%	1%	47%	0%	2%	1%	4%	3%	1%	1%	1%	0%	0%	1%	1%	2%	100%	0.0714671	0.8621145	0.0054607	0.0658727
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	555	40%	1%	43%	0%	2%	1%	5%	3%	1%	1%	2%	0%	0%	1%	1%	1%	100%	0.0674090	0.7973186	0.0020161	0.0238465
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	540	37%	1%	46%	0%	2%	2%	4%	2%	1%	1%	1%	0%	0%	2%	1%	1%	100%	0.0686524	0.8380420	0.0019978	0.0243870
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	435	55%	1%	32%	0%	2%	0%	2%	3%	1%	1%	0%	0%	0%	1%	0%	0%	100%	0.0474970	0.5464951	0.0005452	0.0062733
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	565	53%	1%	24%	0%	3%	2%	4%	4%	2%	2%	1%	0%	2%	2%	0%	1%	100%	0.0537851	0.7123555	0.0008019	0.0106210
M(i)	84	Lin Cheung Rd	Southbound	3	56	1200	54%	1%	24%	0%	3%	2%	5%	5%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0528983	0.6743640	0.0009874	0.0125881
N(i)	77	Lin Cheung Rd	Northbound	3	56	1110	54%	1%	23%	0%	3%	2%	5%	5%	2%	1%	1%	0%	2%	1%	0%	1%	100%	0.0543687	0.7097451	0.0009388	0.0122549
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	1145	34%	1%	48%	0%	2%	1%	4%	3%	1%	0%	0%	0%	0%	1%	1%	1%	100%	0.0708262	0.8737880	0.0011714	0.0144515
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	725	37%	1%	46%	0%	2%	1%	3%	3%	1%	1%	1%	0%	1%	1%	1%	1%	100%	0.0683133	0.8557825	0.0007154	0.0089619
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	3675	56%	0%	15%	0%	3%	2%	5%	4%	3%	2%	1%	0%	4%	2%	3%	0%	100%	0.0380502	0.7020341	0.0765206	1.4118197
	A	Internal Rd A	Bothbound	4	404	150	53%	0%	33%	0%	3%	0%	0%	3%	0%	0%	7%	0%	0%	0%	0%	0%	100%	0.0643692	0.6051414	0.0010835	0.0101865
	B	Internal Rd B	Bothbound	4	361	490	51%	1%	32%	0%	3%	0%	1%	4%	1%	1%	5%	0%	0%	1%	0%	0%	100%	0.0645078	0.6195304	0.0031697	0.0304413
	C	Internal Rd C	Bothbound	4	521	185	49%	0%	30%	0%	3%	0%	3%	3%	0%	0%	14%	0%	0%	0%	0%	0%	100%	0.0782792	0.7714180	0.0020958	0.0206536
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1995	35%	0%	11%	1%	7%	4%	11%	11%	1%	1%	1%	0%	1%	10%	5%	1%	100%	0.0735129	1.4957627	0.0073329	0.1492023

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.
Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

					Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon) Emission Rate - Portal/ Opening (g/s)		Volume source - calculated by number of portal/opening involved Emission Rate - Portal/ Opening (g/s) - Volume source		Area source - calculated by emission rate divided by area Emission Rate - Portal/ Opening (g/m2-s) - Area source				
			Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
80.935	0.873		A	Area	4.4188E-05	0.0005868	--	--	8.99601E-08	1.1945E-06	491.2	1	0.1 x Tunnel Section A
			B	Area	0.00178435	0.0236936	--	--	5.21893E-06	6.93E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
			CE	Area	0.00028584	0.003677	--	--	4.49929E-07	5.7878E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
			D1-D7		0.00189846	0.0252088	0.000180806	0.00240084	--	--	--		
			D8-D14	Volume			9.0403E-05	0.00120042	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
			F	Area	0.00038842	0.0049193	--	--	1.3997E-06	1.7727E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
			I1-I4		0.01289337	0.1587774	0.002148895	0.0264629	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel
			I5-I8	Volume			0.001074447	0.01323145	--	--	--		Section F
45.868			JKO1	Area	0.00036381	0.0044234	--	--	2.35825E-07	2.8673E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
			L1-L5		0.00188708	0.0239525	0.00025161	0.00319367	--	--	--		
			L6-L10	Volume			0.000125805	0.00159684	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
			M1-M4		0.0009631	0.0124215	0.000160517	0.00207025	--	--	--		
			M5-M8	Volume			8.02583E-05	0.00103513	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			N1-N4		0.0009631	0.0124215	0.000160517	0.00207025	--	--	--		
			N5-N8	Volume			8.02583E-05	0.00103513	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			P1-P4		0.00250388	0.0304982	0.000417314	0.00508303	--	--	--		
			P5-P8	Volume			0.000208657	0.00254152	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
			W1-W8		0.07652058	1.4118197	0.006376715	0.11765165	--	--	--		
			W9-W16	Volume			0.003188358	0.05882582	--	--	--	1	1 x Tunnel W
			701-710		0.00733291	0.1492023	0.000488861	0.00994682	--	--	--	1	
			711-720	Volume			0.00024443	0.00497341	--	--	--	--	1 x Tunnel X
			BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd		BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m	801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m	901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m	904-906	Volume			--	--	--	--	--	1	
		Out of 500m	V1	Point								from 1-4	--
	4.2%		V01	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V02	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V03	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V04	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V05	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V06	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V07	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V08	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V09	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V10	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V11	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**	V12	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V13	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V14	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V15	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V16	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V17	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V18	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V19	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V20	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V21	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V22	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	4.2%		V23	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
100.0%	4.2%		V24	Point	2.43289E-05	0.000378167	--	--	--	--	--	--	--
	12.5%		V25	Point	0.000129032	0.001719693	--	--	--	--	--	--	--
	12.5%		V26	Point	0.000129032	0.001719693	--	--	--	--	--	--	--
	12.5%		V27	Point	0.000129032	0.001719693	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**	V28	Point	0.000129032	0.001719693	--	--	--	--	--	--	--
	12.5%		V29	Point	0.000129032	0.001719693	--	--	--	--	--	--	--
	12.5%		V30	Point	0.000129032	0.001719693	--	--	--	--	--	--	--
	12.5%		V31	Point	0.000129032	0.001719693	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V32	Point	0.000136698	0.002837319	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**	V33	Point	0.000129032	0.001719693	--	--	--	--	--	--	--
	16.7%		V34	Point	0.000136698	0.002837319	--	--	--	--	--	--	--
	16.7%		V35	Point	0.000136698	0.002837319	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V36	Point	0.000136698	0.002837319	--	--	--	--	--	--	--
	16.7%		V37	Point	0.000136698	0.002837319	--	--	--	--	--	--	--
100.0%	16.7%		V38	Point	0.000136698	0.002837319	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr16-17)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	Rate (g/km-) NOx	Emission Rate (g/s) PM	Emission Rate (g/s) NOx
							Hr 16-17 (2015 EIA_19-12-2011.xls)																				
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	465	55%	1%	22%	0%	3%	2%	4%	4%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0528579	0.7315990	0.0004984	0.0068984
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	465	55%	1%	22%	0%	3%	2%	4%	4%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0528579	0.7315990	0.0018571	0.0257035
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	465	55%	1%	22%	0%	3%	2%	4%	4%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0528579	0.7315990	0.0007510	0.0103948
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	465	55%	1%	22%	0%	3%	2%	4%	4%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0528579	0.7315990	0.0012016	0.0166317
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	830	55%	1%	25%	1%	3%	2%	4%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0512079	0.6442780	0.0018300	0.0230240
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	830	55%	1%	25%	1%	3%	2%	4%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0512079	0.6442780	0.0020307	0.0255492
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	770	55%	1%	22%	1%	3%	2%	5%	5%	1%	1%	1%	0%	2%	1%	0%	1%	100%	0.0547105	0.7219922	0.0014159	0.0186856
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1550	37%	1%	45%	0%	2%	1%	4%	3%	1%	1%	1%	0%	0%	1%	1%	1%	100%	0.0683544	0.8298467	0.0050914	0.0618121
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	560	42%	1%	42%	0%	2%	1%	4%	3%	1%	1%	3%	0%	0%	1%	0%	1%	100%	0.0643561	0.7204033	0.0019421	0.0217402
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	565	38%	1%	44%	0%	2%	2%	4%	3%	1%	1%	1%	0%	0%	2%	1%	1%	100%	0.0687491	0.8440201	0.0020932	0.0256981
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	435	56%	1%	32%	0%	2%	0%	1%	3%	1%	1%	0%	0%	0%	1%	0%	0%	100%	0.0445865	0.5067865	0.0005118	0.0058175
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	625	55%	1%	23%	0%	2%	2%	4%	5%	2%	2%	1%	0%	2%	2%	0%	1%	100%	0.0511925	0.6699317	0.0008443	0.0110492
M(i)	84	Lin Cheung Rd	Southbound	3	56	1205	54%	1%	24%	0%	3%	2%	5%	5%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0526449	0.6725773	0.0009868	0.0126071
N(i)	77	Lin Cheung Rd	Northbound	3	56	1275	55%	1%	23%	0%	3%	2%	5%	5%	2%	1%	1%	0%	2%	2%	0%	1%	100%	0.0526252	0.6916548	0.0010437	0.0137178
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	1110	36%	1%	45%	0%	2%	1%	4%	3%	1%	0%	0%	0%	0%	1%	1%	1%	100%	0.0691092	0.8453666	0.0011081	0.0135540
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	700	39%	1%	44%	0%	2%	1%	4%	3%	1%	1%	1%	0%	1%	1%	1%	1%	100%	0.0674112	0.8219587	0.0006816	0.0083109
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	3750	57%	0%	14%	0%	3%	2%	5%	4%	2%	2%	1%	0%	4%	2%	3%	0%	100%	0.0372037	0.6879538	0.0763452	1.4117385
	A	Internal Rd A	Bothbound	4	404	160	53%	0%	31%	0%	3%	0%	0%	3%	0%	0%	9%	0%	0%	0%	0%	0%	100%	0.0647564	0.6138301	0.0011627	0.0110217
	B	Internal Rd B	Bothbound	4	361	520	52%	1%	32%	0%	3%	0%	1%	4%	1%	1%	5%	0%	0%	1%	0%	0%	100%	0.0631558	0.6046906	0.0032932	0.0315313
	C	Internal Rd C	Bothbound	4	521	185	51%	0%	30%	0%	3%	0%	0%	3%	0%	0%	14%	0%	0%	0%	0%	0%	100%	0.0677803	0.6474969	0.0018147	0.0173358
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1970	36%	0%	11%	1%	7%	4%	11%	11%	1%	1%	1%	0%	1%	10%	4%	1%	100%	0.0721865	1.4805792	0.0071104	0.1458371

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.
Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

									Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area															
									Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source															
							Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)											
							A	Area	4.9841E-05	0.0006898	--	--	1.01467E-07	1.40439E-06	491.2	1	0.1 x Tunnel Section A											
80.935	0.873						B	Area	0.00201259	0.027856	--	--	5.88649E-06	8.14742E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)											
							CE	Area	0.0002874	0.0037475	--	--	4.52391E-07	5.89876E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E											
							D1-D7		0.0021413	0.0296374	0.000203933	0.00282261	--	--	--													
							D8-D14	Volume			0.000101967	0.00141131	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D											
							F	Area	0.00036776	0.0046271	--	--	1.32528E-06	1.66742E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F											
							I1-I4		0.01221	0.1493314	0.002035001	0.02488857	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel											
							I5-I8	Volume			0.0010175	0.01244429	--	--	--		Section F											
45.868							JKO1	Area	0.00036414	0.0044255	--	--	2.36043E-07	2.86868E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O											
							L1-L5		0.00191475	0.0241632	0.0002553	0.00322175	--	--	--													
							L6-L10	Volume			0.00012765	0.00161088	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O											
							M1-M4		0.00101527	0.0131625	0.000169211	0.00219374	--	--	--													
							M5-M8	Volume			8.46055E-05	0.00109687	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)											
							N1-N4		0.00101527	0.0131625	0.000169211	0.00219374	--	--	--													
							N5-N8	Volume			8.46055E-05	0.00109687	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)											
							P1-P4		0.00250951	0.0303911	0.000418252	0.00506519	--	--	--													
							P5-P8	Volume			0.000209126	0.00253259	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K											
							W1-W8		0.07634518	1.4117385	0.006362098	0.11764488	--	--	--													
							W9-W16	Volume			0.003181049	0.05882244	--	--	--	1	1 x Tunnel W											
							701-710		0.00711037	0.1458371	0.000474024	0.00972247	--	--	--	1												
							711-720	Volume			0.000237012	0.00486124	--	--	--	--	1 x Tunnel X											
							BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C											
	% of Serving Rd						BaseC		0	0	0	0					1/3 x Basement roads A,B,C											
		Out of 500m					801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y											
		Out of 500m					901-903				--	--	--	--	--		1 x Tunnel Z											
		Out of 500m					904-906	Volume			--	--	--	--	--	1												
		Out of 500m					V1	Point								from 1-4	--											
	4.2%						V01	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V02	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V03	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V04	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V05	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V06	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V07	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V08	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V09	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V10	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V11	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%	**Road A at B1 Level**					V12	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V13	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V14	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V15	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V16	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V17	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V18	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V19	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V20	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V21	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V22	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	4.2%						V23	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
100.0%	4.2%						V24	Point	3.04392E-05	6.22975E-05	--	--	--	--	--	--	--											
	12.5%						V25	Point	0.000176086	0.000542925	--	--	--	--	--	--	--											
	12.5%						V26	Point	0.000176086	0.000542925	--	--	--	--	--	--	--											
	12.5%						V27	Point	0.000176086	0.000542925	--	--	--	--	--	--	--											
	12.5%	**Road B at B1 Level**					V28	Point	0.000176086	0.000542925	--	--	--	--	--	--	--											
	12.5%						V29	Point	0.000176086	0.000542925	--	--	--	--	--	--	--											
	12.5%						V30	Point	0.000176086	0.000542925	--	--	--	--	--	--	--											
	12.5%						V31	Point	0.000176086	0.000542925	--	--	--	--	--	--	--											
	16.7%	**Road C at B1 Level**					V32	Point	0.000202862	0.000220716	--	--	--	--	--	--	--											
100.0%	12.5%	**Road B at B1 Level**					V33	Point	0.000176086	0.000542925	--	--	--	--	--	--	--											
	16.7%						V34	Point	0.000202862	0.000220716	--	--	--	--	--	--	--											
	16.7%						V35	Point	0.000202862	0.000220716	--	--	--	--	--	--	--											
	16.7%	**Road C at B1 Level**					V36	Point	0.000202862	0.000220716	--	--	--	--	--	--	--											
	16.7%						V37	Point	0.000202862	0.000220716	--	--	--	--	--	--	--											
100.0%	16.7%						V38	Point	0.000202862	0.000220716	--	--	--	--	--	--	--											

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr17-18)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 17-18 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	560	55%	1%	21%	0%	4%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0520992	0.7077591	0.0005916	0.0080370
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	560	55%	1%	21%	0%	4%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0520992	0.7077591	0.0022044	0.0299461
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	560	55%	1%	21%	0%	4%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0520992	0.7077591	0.0008915	0.0121105
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	560	55%	1%	21%	0%	4%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0520992	0.7077591	0.0014264	0.0193769
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	885	55%	1%	25%	1%	3%	2%	3%	5%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0499579	0.6275215	0.0019036	0.0239112
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	885	55%	1%	25%	1%	3%	2%	3%	5%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0499579	0.6275215	0.0021124	0.0265337
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	755	55%	1%	21%	1%	3%	2%	5%	5%	1%	1%	1%	0%	2%	1%	0%	1%	100%	0.0523968	0.7002814	0.0013296	0.0177706
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1545	40%	1%	43%	0%	2%	1%	4%	3%	1%	1%	1%	0%	0%	1%	1%	1%	100%	0.0648776	0.7765608	0.0048169	0.0576564
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	605	44%	1%	40%	0%	2%	1%	3%	2%	2%	2%	2%	0%	0%	1%	0%	1%	100%	0.0607238	0.6815909	0.0019798	0.0222218
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	595	40%	1%	43%	0%	2%	2%	4%	3%	1%	1%	1%	0%	0%	2%	1%	1%	100%	0.0659292	0.8098015	0.0021139	0.0259654
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	515	57%	1%	33%	0%	2%	0%	1%	3%	1%	1%	0%	0%	0%	1%	0%	0%	100%	0.0439201	0.4884518	0.0005969	0.0066382
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	695	56%	1%	24%	0%	3%	1%	4%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0516102	0.6706074	0.0009465	0.0122991
M(i)	84	Lin Cheung Rd	Southbound	3	56	1245	55%	1%	24%	0%	3%	1%	4%	5%	2%	1%	1%	0%	1%	2%	0%	1%	100%	0.0503740	0.6567166	0.0009756	0.0127184
N(i)	77	Lin Cheung Rd	Northbound	3	56	1455	56%	1%	22%	0%	3%	1%	4%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0508806	0.6651325	0.0011516	0.0150542
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	1100	40%	1%	43%	0%	2%	1%	4%	3%	1%	0%	0%	0%	0%	1%	1%	1%	100%	0.0665564	0.8214335	0.0010575	0.0130517
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	720	42%	1%	42%	0%	2%	1%	3%	3%	1%	1%	1%	0%	1%	1%	1%	1%	100%	0.0645483	0.7895303	0.0006713	0.0082111
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	4445	57%	0%	14%	0%	3%	2%	5%	4%	2%	2%	1%	0%	4%	2%	3%	0%	100%	0.0370708	0.6864675	0.0901712	1.6697655
	A	Internal Rd A	Bothbound	4	404	200	53%	0%	33%	0%	3%	0%	0%	3%	3%	0%	8%	0%	0%	0%	0%	0%	100%	0.0621278	0.5793992	0.0013944	0.0130043
	B	Internal Rd B	Bothbound	4	361	665	53%	1%	32%	0%	2%	0%	1%	3%	2%	2%	5%	0%	0%	1%	0%	0%	100%	0.0613442	0.5820719	0.0040907	0.0388153
	C	Internal Rd C	Bothbound	4	521	235	49%	0%	30%	0%	2%	0%	0%	2%	2%	2%	13%	0%	0%	0%	0%	0%	100%	0.0658902	0.6300993	0.0022409	0.0214295
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1960	36%	0%	11%	1%	8%	4%	10%	12%	1%	1%	1%	0%	1%	10%	4%	0%	100%	0.0709122	1.4825851	0.0069494	0.1452933

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.
Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area																		
							Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source																		
			Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)																
			A	Area	5.9162E-05	0.0008037	--	--	1.2044E-07	1.6362E-06	491.2	1	0.1 x Tunnel Section A																
80.935	0.873		B	Area	0.00238898	0.0324539	--	--	6.9874E-06	9.4922E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)																	
			CE	Area	0.00031429	0.0040747	--	--	4.9472E-07	6.4139E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E																	
			D1-D7		0.00254175	0.0345293	0.000242072	0.00328851	--	--	--																		
			D8-D14	Volume			0.000121036	0.00164425	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D																	
			F	Area	0.00038256	0.0048054	--	--	1.3786E-06	1.7317E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F																	
			I1-I4		0.01201459	0.1462902	0.002002432	0.0243817	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x																	
			I5-I8	Volume			0.001001216	0.01219085	--	--	--		Tunnel Section F																
45.868			JKO1	Area	0.00036848	0.0044726	--	--	2.3885E-07	2.8992E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O																	
			L1-L5		0.00199325	0.0251905	0.000265766	0.00335873	--	--	--																		
			L6-L10	Volume			0.000132883	0.00167937	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O																	
			M1-M4		0.00106359	0.0138863	0.000177265	0.00231438	--	--	--																		
			M5-M8	Volume			8.86323E-05	0.00115719	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)																	
			N1-N4		0.00106359	0.0138863	0.000177265	0.00231438	--	--	--																		
			N5-N8	Volume			8.86323E-05	0.00115719	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)																	
			P1-P4		0.00257923	0.0311094	0.000429872	0.0051849	--	--	--																		
			P5-P8	Volume			0.000214936	0.00259245	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K																	
			W1-W8		0.09017119	1.6697655	0.007514265	0.13914713	--	--	--																		
			W9-W16	Volume			0.003757133	0.06957356	--	--	--	1	1 x Tunnel W																	
			701-710		0.00694939	0.1452933	0.000463293	0.00968622	--	--	--	1																	
			711-720	Volume			0.000231646	0.00484311	--	--	--	--	1 x Tunnel X																	
			BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C																
	% of Serving Rd		BaseC		0	0	0	0					1/3 x Basement roads A,B,C																
		Out of 500m	801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y																
		Out of 500m	901-903				--	--	--	--	--		1 x Tunnel Z																
		Out of 500m	904-906	Volume			--	--	--	--	--	1																	
		Out of 500m	V1	Point								from 1-4	--																
	4.2%		V01	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V02	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V03	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V04	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V05	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V06	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V07	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V08	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V09	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V10	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V11	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%	**Road A at B1 Level**	V12	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V13	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V14	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V15	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V16	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V17	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V18	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V19	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V20	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V21	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V22	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	4.2%		V23	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
100.0%	4.2%		V24	Point	2.99465E-05	0.000381204	--	--	--	--	--	--	--																
	12.5%		V25	Point	0.000163029	0.002155855	--	--	--	--	--	--	--																
	12.5%		V26	Point	0.000163029	0.002155855	--	--	--	--	--	--	--																
	12.5%		V27	Point	0.000163029	0.002155855	--	--	--	--	--	--	--																
	12.5%	**Road B at B1 Level**	V28	Point	0.000163029	0.002155855	--	--	--	--	--	--	--																
	12.5%		V29	Point	0.000163029	0.002155855	--	--	--	--	--	--	--																
	12.5%		V30	Point	0.000163029	0.002155855	--	--	--	--	--	--	--																
	12.5%		V31	Point	0.000163029	0.002155855	--	--	--	--	--	--	--																
	16.7%	**Road C at B1 Level**	V32	Point	0.000197543	0.003671271	--	--	--	--	--	--	--																
100.0%	12.5%	**Road B at B1 Level**	V33	Point	0.000163029	0.002155855	--	--	--	--	--	--	--																
	16.7%		V34	Point	0.000197543	0.003671271	--	--	--	--	--	--	--																
	16.7%		V35	Point	0.000197543	0.003671271	--	--	--	--	--	--	--																
	16.7%	**Road C at B1 Level**	V36	Point	0.000197543	0.003671271	--	--	--	--	--	--	--																
	16.7%		V37	Point	0.000197543	0.003671271	--	--	--	--	--	--	--																
100.0%	16.7%		V38	Point	0.000197543	0.003671271	--	--	--	--	--	--	--																

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr18-19)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	Rate (g/km-) NOx	Emission Rate (g/s) PM	Emission Rate (g/s) NOx
							Hr 18-19 (2015 EIA_19-12-2011.xls)																				
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	570	56%	1%	21%	0%	4%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0496055	0.6820726	0.0005734	0.0078836
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	570	56%	1%	21%	0%	4%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0496055	0.6820726	0.0021363	0.0293746
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	570	56%	1%	21%	0%	4%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0496055	0.6820726	0.0008640	0.0118794
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	570	56%	1%	21%	0%	4%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0496055	0.6820726	0.0013823	0.0190071
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	1236	56%	1%	26%	1%	3%	1%	3%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0468091	0.5875768	0.0024904	0.0312616
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	1236	56%	1%	26%	1%	3%	1%	3%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0468091	0.5875768	0.0027636	0.0346903
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	875	56%	1%	21%	1%	3%	2%	5%	5%	1%	1%	1%	0%	2%	1%	0%	1%	100%	0.0496487	0.6620051	0.0014602	0.0194694
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1721	44%	1%	40%	0%	2%	1%	4%	3%	1%	1%	1%	0%	0%	1%	0%	1%	100%	0.0591274	0.7104379	0.0048887	0.0587399
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	846	47%	1%	36%	0%	2%	1%	3%	3%	1%	1%	4%	0%	0%	1%	0%	1%	100%	0.0556293	0.6396407	0.0025347	0.0291452
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	683	43%	1%	40%	0%	2%	1%	4%	3%	1%	1%	1%	0%	0%	2%	1%	1%	100%	0.0604604	0.7523253	0.0022251	0.0276869
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	995	57%	1%	33%	0%	2%	0%	1%	3%	1%	1%	0%	0%	0%	1%	0%	0%	100%	0.0425329	0.4772902	0.0011165	0.0125294
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	765	56%	1%	24%	0%	3%	1%	3%	5%	1%	1%	1%	0%	1%	2%	0%	1%	100%	0.0477773	0.6288342	0.0009643	0.0126922
M(i)	84	Lin Cheung Rd	Southbound	3	56	1679	56%	1%	25%	0%	3%	1%	3%	4%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0474645	0.6037038	0.0012397	0.0157680
N(i)	77	Lin Cheung Rd	Northbound	3	56	1515	56%	1%	23%	0%	3%	1%	4%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0483216	0.6398122	0.0011387	0.0150768
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	1217	43%	1%	40%	0%	2%	1%	4%	3%	1%	1%	1%	0%	0%	1%	0%	1%	100%	0.0601149	0.7401315	0.0010568	0.0130111
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	876	46%	1%	39%	0%	2%	1%	3%	3%	1%	1%	1%	0%	1%	2%	1%	1%	100%	0.0574011	0.7130727	0.0007265	0.0090253
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	5254	58%	0%	14%	0%	3%	2%	5%	4%	2%	2%	1%	0%	4%	2%	3%	0%	100%	0.0358958	0.6697217	0.1032028	1.9254927
	A	Internal Rd A	Bothbound	4	404	413	52%	1%	31%	0%	2%	0%	1%	2%	1%	1%	8%	0%	0%	1%	0%	0%	100%	0.0581174	0.5635673	0.0026908	0.0260927
	B	Internal Rd B	Bothbound	4	361	1334	54%	1%	32%	0%	2%	0%	1%	2%	1%	1%	5%	0%	0%	1%	0%	0%	100%	0.0557299	0.5369585	0.0074567	0.0718451
	C	Internal Rd C	Bothbound	4	521	472	49%	1%	29%	0%	2%	0%	1%	2%	1%	1%	13%	0%	0%	1%	0%	0%	100%	0.0627900	0.6156462	0.0042923	0.0420856
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1940	37%	0%	11%	1%	8%	3%	10%	12%	1%	1%	1%	0%	1%	11%	4%	0%	100%	0.0671615	1.4267399	0.0065147	0.1383938

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.
Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

						Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area				
						Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source				
			Portal/ opening ID.	Source Type		PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
			A	Area		5.7336E-05	0.0007884	--	--	1.16726E-07	1.605E-06	491.2	1	0.1 x Tunnel Section A
80.935	0.873		B	Area		0.00231525	0.0318345	--	--	6.77171E-06	9.3111E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
			CE	Area		0.00036915	0.0047776	--	--	5.81068E-07	7.5203E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
			D1-D7			0.00246331	0.0338704	0.000234601	0.00322575	--	--	--		
			D8-D14	Volume				0.0001173	0.00161287	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
			F	Area		0.0005005	0.0062826	--	--	1.8036E-06	2.264E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
			I1-I4			0.01390586	0.1701016	0.002317643	0.02835026	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel
			I5-I8	Volume				0.001158821	0.01417513	--	--	--		Section F
45.868			JKO1	Area		0.00042421	0.0051473	--	--	2.74976E-07	3.3366E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
			L1-L5			0.00203462	0.0259328	0.000271283	0.0034577	--	--	--		
			L6-L10	Volume				0.000135641	0.00172885	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
			M1-M4			0.00118919	0.0154224	0.000198199	0.0025704	--	--	--		
			M5-M8	Volume				9.90994E-05	0.0012852	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			N1-N4			0.00118919	0.0154224	0.000198199	0.0025704	--	--	--		
			N5-N8	Volume				9.90994E-05	0.0012852	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			P1-P4			0.00311266	0.037661	0.000518777	0.00627683	--	--	--		
			P5-P8	Volume				0.000259388	0.00313841	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
			W1-W8			0.10320284	1.9254927	0.008600237	0.16045773	--	--	--		
			W9-W16	Volume				0.004300118	0.08022886	--	--	--	1	1 x Tunnel W
			701-710			0.00651466	0.1383938	0.000434311	0.00922625	--	--	--	1	
			711-720	Volume				0.000217155	0.00461313	--	--	--	--	1 x Tunnel X
			BaseA	Volume		0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd		BaseC			0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m	801-820	Volume				--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m	901-903					--	--	--	--	--		1 x Tunnel Z
		Out of 500m	904-906	Volume				--	--	--	--	--	1	
		Out of 500m	V1	Point									from 1-4	--
	4.2%		V01	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V02	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V03	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V04	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V05	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V06	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V07	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V08	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V09	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V10	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V11	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**	V12	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V13	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V14	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V15	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V16	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V17	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V18	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V19	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V20	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V21	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V22	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	4.2%		V23	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
100.0%	4.2%		V24	Point		4.19028E-05	2.25968E-05	--	--	--	--	--	--	--
	12.5%		V25	Point		0.000196774	0.000166854	--	--	--	--	--	--	--
	12.5%		V26	Point		0.000196774	0.000166854	--	--	--	--	--	--	--
	12.5%		V27	Point		0.000196774	0.000166854	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**	V28	Point		0.000196774	0.000166854	--	--	--	--	--	--	--
	12.5%		V29	Point		0.000196774	0.000166854	--	--	--	--	--	--	--
	12.5%		V30	Point		0.000196774	0.000166854	--	--	--	--	--	--	--
	12.5%		V31	Point		0.000196774	0.000166854	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V32	Point		0.000231853	7.35606E-05	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**	V33	Point		0.000196774	0.000166854	--	--	--	--	--	--	--
	16.7%		V34	Point		0.000231853	7.35606E-05	--	--	--	--	--	--	--
	16.7%		V35	Point		0.000231853	7.35606E-05	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V36	Point		0.000231853	7.35606E-05	--	--	--	--	--	--	--
	16.7%		V37	Point		0.000231853	7.35606E-05	--	--	--	--	--	--	--
100.0%	16.7%		V38	Point		0.000231853	7.35606E-05	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr19-20)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 19-20 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	485	56%	1%	21%	0%	3%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0502823	0.7003684	0.0004945	0.0068879
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	485	56%	1%	21%	0%	3%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0502823	0.7003684	0.0018426	0.0256646
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	485	56%	1%	21%	0%	3%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0502823	0.7003684	0.0007452	0.0103791
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	485	56%	1%	21%	0%	3%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0502823	0.7003684	0.0011922	0.0166065
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	1200	56%	1%	25%	0%	3%	1%	3%	5%	1%	1%	0%	0%	1%	1%	0%	1%	100%	0.0478588	0.6025156	0.0024727	0.0311300
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	1200	56%	1%	25%	0%	3%	1%	3%	5%	1%	1%	0%	0%	1%	1%	0%	1%	100%	0.0478588	0.6025156	0.0027439	0.0345442
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	885	56%	1%	21%	1%	3%	2%	5%	5%	1%	1%	1%	0%	2%	1%	0%	1%	100%	0.0503235	0.6636323	0.0014969	0.0197403
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1715	43%	1%	41%	0%	2%	1%	4%	3%	1%	1%	1%	0%	0%	1%	0%	1%	100%	0.0614267	0.7330131	0.0050625	0.0604115
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	820	46%	1%	37%	0%	2%	1%	3%	2%	1%	1%	4%	0%	0%	1%	0%	1%	100%	0.0577772	0.6669250	0.0025531	0.0294707
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	660	42%	1%	42%	0%	2%	2%	4%	3%	1%	1%	1%	0%	0%	2%	1%	1%	100%	0.0627720	0.7696839	0.0022326	0.0273751
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	940	56%	1%	33%	1%	2%	0%	1%	3%	1%	1%	1%	0%	0%	1%	0%	1%	100%	0.0430880	0.4827719	0.0010688	0.0119754
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	680	57%	1%	24%	0%	3%	1%	4%	4%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0492974	0.6426295	0.0008846	0.0115316
M(i)	84	Lin Cheung Rd	Southbound	3	56	1645	56%	1%	25%	0%	3%	1%	4%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0485063	0.6137079	0.0012412	0.0157041
N(i)	77	Lin Cheung Rd	Northbound	3	56	1330	56%	1%	23%	0%	3%	2%	4%	5%	1%	1%	1%	0%	2%	1%	0%	1%	100%	0.0499872	0.6486935	0.0010342	0.0134207
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	1210	42%	1%	41%	0%	2%	1%	4%	3%	1%	1%	0%	0%	0%	2%	0%	1%	100%	0.0622059	0.7618645	0.0010872	0.0133157
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	855	44%	1%	40%	0%	2%	1%	3%	3%	1%	1%	1%	0%	1%	2%	1%	1%	100%	0.0589502	0.7315103	0.0007280	0.0090342
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	3925	57%	0%	14%	0%	3%	2%	5%	4%	2%	2%	1%	0%	4%	2%	3%	0%	100%	0.0361429	0.6738437	0.0776295	1.4473133
	A	Internal Rd A	Bothbound	4	404	395	51%	1%	30%	0%	3%	0%	1%	3%	1%	1%	8%	0%	0%	1%	0%	0%	100%	0.0600730	0.5956117	0.0026629	0.0264021
	B	Internal Rd B	Bothbound	4	361	1245	53%	1%	31%	0%	2%	0%	1%	3%	1%	1%	5%	0%	0%	1%	0%	0%	100%	0.0569091	0.5522304	0.0071049	0.0689437
	C	Internal Rd C	Bothbound	4	521	450	48%	1%	29%	0%	2%	0%	1%	2%	1%	1%	13%	0%	0%	1%	0%	0%	100%	0.0648000	0.6446818	0.0042201	0.0419849
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1945	37%	0%	11%	1%	8%	3%	10%	12%	1%	1%	1%	0%	1%	11%	4%	0%	100%	0.0685603	1.4367500	0.0066675	0.1397239

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.
Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area				
							Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source				
			Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
80.935	0.873		A	Area	4.9451E-05	0.0006888	--	--	1.00674E-07	1.4023E-06	491.2	1	0.1 x Tunnel Section A
			B	Area	0.00199687	0.0278139	--	--	5.84051E-06	8.1351E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
			CE	Area	0.00035086	0.0045559	--	--	5.52277E-07	7.1712E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
			D1-D7		0.00212457	0.0295926	0.00020234	0.00281834	--	--	--		
			D8-D14	Volume			0.00010117	0.00140917	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
			F	Area	0.00049693	0.0062561	--	--	1.79075E-06	2.2545E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
			I1-I4		0.01410639	0.1721581	0.002351066	0.02869301	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel
			I5-I8	Volume			0.001175533	0.0143465	--	--	--		Section F
45.868			JKO1	Area	0.0004239	0.005099	--	--	2.74778E-07	3.3052E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
			L1-L5		0.00197352	0.0248748	0.000263136	0.00331664	--	--	--		
			L6-L10	Volume			0.000131568	0.00165832	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
			M1-M4		0.0011377	0.0145624	0.000189617	0.00242707	--	--	--		
			M5-M8	Volume			9.48084E-05	0.00121354	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			N1-N4		0.0011377	0.0145624	0.000189617	0.00242707	--	--	--		
			N5-N8	Volume			9.48084E-05	0.00121354	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
			P1-P4		0.00308239	0.0370277	0.000513732	0.00617128	--	--	--		
			P5-P8	Volume			0.000256866	0.00308564	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
			W1-W8		0.0776295	1.4473133	0.006469125	0.12060944	--	--	--		
			W9-W16	Volume			0.003234563	0.06030472	--	--	--	1	1 x Tunnel W
			701-710		0.00666749	0.1397239	0.000444499	0.00931493	--	--	--	1	
			711-720	Volume			0.00022225	0.00465746	--	--	--	--	1 x Tunnel X
			BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd		BaseC		0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m	801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m	901-903				--	--	--	--	--		1 x Tunnel Z
		Out of 500m	904-906	Volume			--	--	--	--	--	1	
		Out of 500m	V1	Point								from 1-4	--
	4.2%		V01	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V02	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V03	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V04	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V05	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V06	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V07	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V08	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V09	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V10	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V11	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**	V12	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V13	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V14	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V15	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V16	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V17	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V18	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V19	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V20	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V21	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V22	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	4.2%		V23	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
100.0%	4.2%		V24	Point	0.000100396	0.001298775	--	--	--	--	--	--	--
	12.5%		V25	Point	0.000456982	0.006703768	--	--	--	--	--	--	--
	12.5%		V26	Point	0.000456982	0.006703768	--	--	--	--	--	--	--
	12.5%		V27	Point	0.000456982	0.006703768	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**	V28	Point	0.000456982	0.006703768	--	--	--	--	--	--	--
	12.5%		V29	Point	0.000456982	0.006703768	--	--	--	--	--	--	--
	12.5%		V30	Point	0.000456982	0.006703768	--	--	--	--	--	--	--
	12.5%		V31	Point	0.000456982	0.006703768	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V32	Point	0.00058036	0.011154446	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**	V33	Point	0.000456982	0.006703768	--	--	--	--	--	--	--
	16.7%		V34	Point	0.00058036	0.011154446	--	--	--	--	--	--	--
	16.7%		V35	Point	0.00058036	0.011154446	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**	V36	Point	0.00058036	0.011154446	--	--	--	--	--	--	--
	16.7%		V37	Point	0.00058036	0.011154446	--	--	--	--	--	--	--
100.0%	16.7%		V38	Point	0.00058036	0.011154446	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr20-21)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 20-21 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	480	55%	1%	21%	0%	3%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0492388	0.6903571	0.0004793	0.0067195
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	480	55%	1%	21%	0%	3%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0492388	0.6903571	0.0017857	0.0250370
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	480	55%	1%	21%	0%	3%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0492388	0.6903571	0.0007222	0.0101252
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	480	55%	1%	21%	0%	3%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0492388	0.6903571	0.0011555	0.0162004
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	870	55%	1%	26%	1%	3%	1%	3%	5%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0469117	0.5851055	0.0017572	0.0219171
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	870	55%	1%	26%	1%	3%	1%	3%	5%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0469117	0.5851055	0.0019500	0.0243209
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	605	55%	1%	21%	1%	3%	2%	5%	5%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0501420	0.6557889	0.0010196	0.0133353
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1460	41%	1%	42%	0%	2%	1%	4%	3%	1%	1%	1%	0%	0%	1%	1%	1%	100%	0.0607109	0.7422824	0.0042595	0.0520794
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	685	45%	1%	37%	0%	2%	1%	3%	3%	1%	1%	4%	0%	0%	1%	0%	1%	100%	0.0568298	0.6698658	0.0020978	0.0247274
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	550	41%	1%	41%	0%	3%	2%	4%	3%	1%	1%	1%	0%	0%	2%	1%	1%	100%	0.0609875	0.7754440	0.0018076	0.0229833
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	780	56%	1%	33%	0%	3%	0%	1%	3%	1%	1%	1%	0%	0%	1%	0%	0%	100%	0.0426175	0.4930644	0.0008772	0.0101489
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	665	56%	1%	24%	0%	3%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0481184	0.6344135	0.0008444	0.0111331
M(i)	84	Lin Cheung Rd	Southbound	3	56	1190	55%	1%	26%	0%	3%	1%	4%	5%	1%	1%	0%	0%	1%	1%	0%	0%	100%	0.0479822	0.6108485	0.0008882	0.0113075
N(i)	77	Lin Cheung Rd	Northbound	3	56	1310	56%	1%	23%	0%	3%	2%	4%	5%	1%	1%	1%	0%	2%	2%	0%	1%	100%	0.0487183	0.6486390	0.0009928	0.0132178
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	1030	40%	1%	42%	0%	2%	1%	4%	3%	1%	1%	0%	0%	0%	1%	0%	1%	100%	0.0619970	0.7620894	0.0009224	0.0113382
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	735	42%	1%	40%	0%	2%	1%	3%	3%	1%	1%	1%	0%	1%	2%	1%	1%	100%	0.0585599	0.7486427	0.0006217	0.0079481
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	2610	57%	0%	15%	0%	3%	2%	5%	4%	2%	2%	1%	0%	4%	2%	3%	0%	100%	0.0369965	0.6826700	0.0528402	0.9750235
	A	Internal Rd A	Bothbound	4	404	330	50%	0%	30%	0%	3%	0%	2%	3%	2%	2%	8%	0%	0%	2%	0%	0%	100%	0.0595891	0.5997664	0.0022068	0.0222113
	B	Internal Rd B	Bothbound	4	361	1025	52%	0%	31%	0%	2%	0%	1%	3%	1%	1%	5%	0%	0%	1%	0%	0%	100%	0.0558642	0.5530949	0.0057420	0.0568497
	C	Internal Rd C	Bothbound	4	521	380	47%	0%	29%	0%	3%	0%	1%	3%	1%	1%	13%	0%	0%	1%	0%	0%	100%	0.0640389	0.6446391	0.0035218	0.0354516
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1305	36%	0%	11%	1%	8%	3%	11%	11%	1%	1%	1%	0%	0%	10%	4%	0%	100%	0.0675345	1.4193601	0.0044066	0.0926132

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.
Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area																		
							Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source																		
			Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)																
			A	Area	4.7926E-05	0.0006719	--	--	9.7569E-08	1.368E-06	491.2	1	0.1 x Tunnel Section A																
80.935	0.873		B	Area	0.00193527	0.0271336	--	--	5.6603E-06	7.9361E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)																	
			CE	Area	0.00027612	0.0035993	--	--	4.3463E-07	5.6655E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E																	
			D1-D7		0.00205903	0.0288688	0.000196098	0.00274941	--	--	--																		
			D8-D14	Volume			9.80492E-05	0.00137471	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D																	
			F	Area	0.00035315	0.0044046	--	--	1.2726E-06	1.5873E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F																	
			I1-I4		0.01099356	0.1350821	0.00183226	0.02251369	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x																	
			I5-I8	Volume			0.00091613	0.01125684	--	--	--		Tunnel Section F																	
45.868			JKO1	Area	0.00034844	0.004305	--	--	2.2586E-07	2.7905E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O																	
			L1-L5		0.00174954	0.0224242	0.000233272	0.00298989	--	--	--																		
			L6-L10	Volume			0.000116636	0.00149495	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O																	
			M1-M4		0.00094049	0.0122627	0.000156748	0.00204378	--	--	--																		
			M5-M8	Volume			7.8374E-05	0.00102189	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)																	
			N1-N4		0.00094049	0.0122627	0.000156748	0.00204378	--	--	--																		
			N5-N8	Volume			7.8374E-05	0.00102189	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)																	
			P1-P4		0.00253707	0.0315239	0.000422845	0.00525399	--	--	--																		
			P5-P8	Volume			0.000211423	0.00262699	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K																	
			W1-W8		0.05284022	0.9750235	0.004403352	0.08125196	--	--	--																		
			W9-W16	Volume			0.002201676	0.04062598	--	--	--	1	1 x Tunnel W																	
			701-710		0.00440663	0.0926132	0.000293775	0.00617422	--	--	--	1																	
			711-720	Volume			0.000146888	0.00308711	--	--	--	--	1 x Tunnel X																	
			BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C																	
	% of Serving Rd		BaseC		0	0	0	0					1/3 x Basement roads A,B,C																	
		Out of 500m	801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y																	
		Out of 500m	901-903				--	--	--	--	--		1 x Tunnel Z																	
		Out of 500m	904-906	Volume			--	--	--	--	--	1																		
		Out of 500m	V1	Point								from 1-4	--																	
	4.2%		V01	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V02	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V03	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V04	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V05	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V06	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V07	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V08	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V09	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V10	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V11	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%	**Road A at B1 Level**	V12	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V13	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V14	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V15	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V16	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V17	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V18	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V19	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V20	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V21	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V22	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	4.2%		V23	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
100.0%	4.2%		V24	Point	9.44972E-05	0.000148021	--	--	--	--	--	--	--																	
	12.5%		V25	Point	0.000430574	0.000668928	--	--	--	--	--	--	--																	
	12.5%		V26	Point	0.000430574	0.000668928	--	--	--	--	--	--	--																	
	12.5%		V27	Point	0.000430574	0.000668928	--	--	--	--	--	--	--																	
	12.5%	**Road B at B1 Level**	V28	Point	0.000430574	0.000668928	--	--	--	--	--	--	--																	
	12.5%		V29	Point	0.000430574	0.000668928	--	--	--	--	--	--	--																	
	12.5%		V30	Point	0.000430574	0.000668928	--	--	--	--	--	--	--																	
	12.5%		V31	Point	0.000430574	0.000668928	--	--	--	--	--	--	--																	
	16.7%	**Road C at B1 Level**	V32	Point	0.000534507	0.000174942	--	--	--	--	--	--	--																	
100.0%	12.5%	**Road B at B1 Level**	V33	Point	0.000430574	0.000668928	--	--	--	--	--	--	--																	
	16.7%		V34	Point	0.000534507	0.000174942	--	--	--	--	--	--	--																	
	16.7%		V35	Point	0.000534507	0.000174942	--	--	--	--	--	--	--																	
	16.7%	**Road C at B1 Level**	V36	Point	0.000534507	0.000174942	--	--	--	--	--	--	--																	
	16.7%		V37	Point	0.000534507	0.000174942	--	--	--	--	--	--	--																	
100.0%	16.7%		V38	Point	0.000534507	0.000174942	--	--	--	--	--	--	--																	

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr21-22)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	Hr 21-22 (2015 EIA_19-12-2011.xls) PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	NOx	Emission Rate (g/s) PM	NOx
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	395	54%	1%	22%	0%	4%	1%	5%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0495271	0.6613399	0.0003967	0.0052971
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	395	54%	1%	22%	0%	4%	1%	5%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0495271	0.6613399	0.0014781	0.0197373
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	395	54%	1%	22%	0%	4%	1%	5%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0495271	0.6613399	0.0005978	0.0079820
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	395	54%	1%	22%	0%	4%	1%	5%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0495271	0.6613399	0.0009564	0.0127712
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	800	54%	1%	25%	1%	3%	1%	4%	5%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0483743	0.6206549	0.0016662	0.0213781
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	800	54%	1%	25%	1%	3%	1%	4%	5%	2%	1%	1%	0%	1%	1%	0%	1%	100%	0.0483743	0.6206549	0.0018490	0.0237228
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	615	54%	1%	22%	1%	3%	2%	5%	5%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0500778	0.6529855	0.0010352	0.0134978
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1425	39%	1%	44%	0%	2%	1%	4%	3%	1%	1%	1%	0%	0%	1%	1%	1%	100%	0.0634006	0.7797831	0.0043416	0.0533989
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	615	43%	1%	38%	0%	2%	1%	3%	3%	2%	2%	3%	0%	0%	2%	0%	1%	100%	0.0582167	0.6901509	0.0019294	0.0228728
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	520	39%	1%	42%	0%	2%	2%	4%	3%	1%	1%	1%	0%	0%	2%	1%	1%	100%	0.0626818	0.7947262	0.0017565	0.0222700
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	610	56%	1%	33%	0%	2%	0%	1%	3%	2%	1%	1%	0%	0%	1%	0%	0%	100%	0.0430555	0.4812512	0.0006931	0.0077468
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	560	55%	1%	24%	0%	4%	2%	4%	4%	1%	1%	1%	0%	2%	1%	0%	1%	100%	0.0489774	0.6332590	0.0007238	0.0093582
M(i)	84	Lin Cheung Rd	Southbound	3	56	1105	55%	0%	25%	0%	3%	1%	4%	5%	2%	1%	0%	0%	1%	1%	0%	0%	100%	0.0484311	0.6239763	0.0008325	0.0107255
N(i)	77	Lin Cheung Rd	Northbound	3	56	1110	55%	1%	23%	0%	3%	1%	5%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0490589	0.6478005	0.0008476	0.0111854
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	995	38%	1%	44%	0%	2%	2%	4%	3%	1%	1%	1%	0%	1%	2%	1%	1%	100%	0.0645568	0.8122395	0.0009278	0.0116737
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	670	41%	1%	43%	0%	2%	1%	3%	3%	1%	1%	1%	0%	1%	1%	1%	1%	100%	0.0613165	0.7636452	0.0005934	0.0073904
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	1945	57%	0%	15%	0%	3%	2%	5%	4%	2%	2%	1%	0%	4%	2%	3%	0%	100%	0.0367751	0.6881129	0.0391414	0.7323911
	A	Internal Rd A	Bothbound	4	404	265	49%	0%	30%	0%	2%	0%	2%	4%	2%	2%	8%	0%	0%	2%	0%	0%	100%	0.0596881	0.5987876	0.0017751	0.0178073
	B	Internal Rd B	Bothbound	4	361	805	52%	1%	31%	1%	2%	1%	1%	3%	1%	1%	5%	0%	0%	1%	0%	0%	100%	0.0566389	0.5663097	0.0045721	0.0457146
	C	Internal Rd C	Bothbound	4	521	305	46%	0%	28%	0%	3%	0%	2%	3%	2%	2%	13%	0%	0%	2%	0%	0%	100%	0.0644741	0.6619991	0.0028459	0.0292208
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1305	36%	0%	11%	1%	8%	3%	11%	11%	1%	1%	1%	0%	0%	10%	4%	0%	100%	0.0670910	1.4145508	0.0043777	0.0922994

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

							Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon) Emission Rate - Portal/ Opening (g/s) PM	NOx	Volume source - calculated by number of portal/opening involved Emission Rate - Portal/ Opening (g/s) - Volume source PM	NOx	Area source - calculated by emission rate divided by area Emission Rate - Portal/ Opening (g/m2-s) - Area source PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)
				Portal/ opening ID.	Source Type										
80.935	0.873			A	Area		3.967E-05	0.0005297	--	--	8.0761E-08	1.0784E-06	491.2	1	0.1 x Tunnel Section A
				B	Area		0.00160189	0.0213902	--	--	4.6853E-06	6.2563E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)
				CE	Area		0.00024972	0.0032475	--	--	3.9308E-07	5.1117E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E
				D1-D7			0.00170433	0.0227581	0.000162318	0.00216744	--	--	--		
				D8-D14	Volume				8.11588E-05	0.00108372	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D
				F	Area		0.00033486	0.0042963	--	--	1.2067E-06	1.5482E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F
				I1-I4			0.01073424	0.1335132	0.001789039	0.02225219	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x
				I5-I8	Volume				0.00089452	0.0111261	--	--	--		Tunnel Section F
45.868				JKO1	Area		0.00032804	0.0040606	--	--	2.1264E-07	2.6321E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O
				L1-L5			0.0016209	0.0206824	0.000216121	0.00275765	--	--	--		
				L6-L10	Volume				0.00010806	0.00137883	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O
				M1-M4			0.00084004	0.0109554	0.000140006	0.0018259	--	--	--		
				M5-M8	Volume				7.00032E-05	0.00091295	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
				N1-N4			0.00084004	0.0109554	0.000140006	0.0018259	--	--	--		
				N5-N8	Volume				7.00032E-05	0.00091295	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)
				P1-P4			0.00233128	0.0286191	0.000388547	0.00476985	--	--	--		
				P5-P8	Volume				0.000194274	0.00238492	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K
				W1-W8			0.03914144	0.7323911	0.003261787	0.06103259	--	--	--		
				W9-W16	Volume				0.001630894	0.03051629	--	--	--	1	1 x Tunnel W
				701-710			0.00437769	0.0922994	0.000291846	0.0061533	--	--	--	1	
				711-720	Volume				0.000145923	0.00307665	--	--	--	--	1 x Tunnel X
				BaseA	Volume		0	0	0	0					1/3 x Basement roads A,B,C
	% of Serving Rd			BaseC			0	0	0	0					1/3 x Basement roads A,B,C
		Out of 500m		801-820	Volume				--	--	--	--	--	1	1 x Tunnel Y
		Out of 500m		901-903					--	--	--	--	--		1 x Tunnel Z
		Out of 500m		904-906	Volume				--	--	--	--	--	1	
		Out of 500m		V1	Point									from 1-4	--
	4.2%			V01	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V02	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V03	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V04	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V05	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V06	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V07	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V08	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V09	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V10	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V11	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%	**Road A at B1 Level**		V12	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V13	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V14	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V15	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V16	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V17	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V18	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V19	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V20	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V21	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V22	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	4.2%			V23	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
100.0%	4.2%			V24	Point		7.4344E-05	0.001000247	--	--	--	--	--	--	--
	12.5%			V25	Point		0.000323349	0.004738699	--	--	--	--	--	--	--
	12.5%			V26	Point		0.000323349	0.004738699	--	--	--	--	--	--	--
	12.5%			V27	Point		0.000323349	0.004738699	--	--	--	--	--	--	--
	12.5%	**Road B at B1 Level**		V28	Point		0.000323349	0.004738699	--	--	--	--	--	--	--
	12.5%			V29	Point		0.000323349	0.004738699	--	--	--	--	--	--	--
	12.5%			V30	Point		0.000323349	0.004738699	--	--	--	--	--	--	--
	12.5%			V31	Point		0.000323349	0.004738699	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**		V32	Point		0.000410064	0.007939188	--	--	--	--	--	--	--
100.0%	12.5%	**Road B at B1 Level**		V33	Point		0.000323349	0.004738699	--	--	--	--	--	--	--
	16.7%			V34	Point		0.000410064	0.007939188	--	--	--	--	--	--	--
	16.7%			V35	Point		0.000410064	0.007939188	--	--	--	--	--	--	--
	16.7%	**Road C at B1 Level**		V36	Point		0.000410064	0.007939188	--	--	--	--	--	--	--
	16.7%			V37	Point		0.000410064	0.007939188	--	--	--	--	--	--	--
100.0%	16.7%			V38	Point		0.000410064	0.007939188	--	--	--	--	--	--	--

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr22-23)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	Rate (g/km-) NOx	Emission Rate (g/s) PM	Emission Rate (g/s) NOx
							Hr 22-23 (2015 EIA_19-12-2011.xls)																				
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	310	55%	2%	21%	0%	3%	2%	5%	5%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0492587	0.6691796	0.0003096	0.0042065
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	310	55%	2%	21%	0%	3%	2%	5%	5%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0492587	0.6691796	0.0011537	0.0156737
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	310	55%	2%	21%	0%	3%	2%	5%	5%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0492587	0.6691796	0.0004666	0.0063386
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	310	55%	2%	21%	0%	3%	2%	5%	5%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0492587	0.6691796	0.0007465	0.0101418
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	635	54%	1%	26%	0%	2%	2%	4%	5%	2%	2%	1%	0%	1%	2%	0%	1%	100%	0.0487664	0.6266663	0.0013333	0.0171332
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	635	54%	1%	26%	0%	2%	2%	4%	5%	2%	2%	1%	0%	1%	2%	0%	1%	100%	0.0487664	0.6266663	0.0014795	0.0190124
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	470	54%	1%	21%	0%	3%	2%	5%	4%	2%	1%	1%	0%	2%	1%	0%	1%	100%	0.0510168	0.6828704	0.0008059	0.0107875
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1165	38%	1%	45%	0%	2%	1%	4%	3%	1%	1%	0%	0%	0%	2%	1%	1%	100%	0.0636287	0.7967078	0.0035622	0.0446035
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	505	43%	1%	39%	0%	2%	1%	3%	3%	2%	1%	3%	0%	0%	2%	0%	1%	100%	0.0575308	0.6925470	0.0015656	0.0188469
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	400	40%	1%	44%	0%	1%	1%	4%	4%	1%	0%	0%	0%	0%	1%	1%	1%	100%	0.0610630	0.7568098	0.0013162	0.0163135
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	530	56%	1%	33%	0%	3%	0%	1%	4%	1%	1%	0%	0%	0%	1%	0%	0%	100%	0.0430143	0.4903561	0.0006016	0.0068582
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	475	55%	1%	24%	0%	3%	1%	4%	4%	1%	1%	1%	0%	2%	1%	0%	1%	100%	0.0494828	0.6507630	0.0006203	0.0081571
M(i)	84	Lin Cheung Rd	Southbound	3	56	875	54%	1%	25%	0%	3%	1%	4%	5%	2%	2%	1%	0%	1%	2%	0%	1%	100%	0.0486023	0.6435512	0.0006615	0.0087594
N(i)	77	Lin Cheung Rd	Northbound	3	56	900	55%	1%	23%	1%	3%	2%	4%	4%	2%	1%	1%	0%	2%	1%	0%	1%	100%	0.0493064	0.6457332	0.0006903	0.0090403
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	820	37%	1%	46%	0%	2%	1%	4%	3%	1%	1%	1%	0%	1%	1%	1%	1%	100%	0.0646449	0.8075419	0.0007657	0.0095649
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	560	41%	1%	43%	0%	2%	1%	4%	3%	1%	1%	1%	0%	1%	1%	1%	1%	100%	0.0616312	0.7540663	0.0004985	0.0060996
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	1910	56%	0%	15%	0%	3%	2%	5%	4%	2%	2%	2%	0%	4%	2%	3%	0%	100%	0.0374372	0.6961528	0.0391291	0.7276151
	A	Internal Rd A	Bothbound	4	404	215	51%	0%	30%	0%	2%	0%	2%	5%	2%	0%	7%	0%	0%	0%	0%	0%	100%	0.0595058	0.6029564	0.0014357	0.0145480
	B	Internal Rd B	Bothbound	4	361	695	50%	1%	31%	1%	3%	1%	1%	4%	1%	1%	5%	0%	0%	1%	0%	0%	100%	0.0568376	0.5805609	0.0039612	0.0404611
	C	Internal Rd C	Bothbound	4	521	265	45%	0%	28%	0%	2%	0%	2%	4%	2%	2%	13%	0%	0%	2%	0%	0%	100%	0.0640386	0.6544266	0.0024560	0.0250982
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1645	36%	0%	11%	1%	7%	4%	11%	12%	1%	1%	1%	0%	1%	10%	5%	0%	100%	0.0672703	1.4205139	0.0055330	0.1168373

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.
Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 2 10%

									Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area															
									Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source															
							Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)											
							A	Area	3.0965E-05	0.0004207	--	--	6.30386E-08	8.5638E-07	491.2	1	0.1 x Tunnel Section A											
80.935	0.873						B	Area	0.00125037	0.0169862	--	--	3.65712E-06	4.96819E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)											
							CE	Area	0.00019819	0.0025945	--	--	3.11969E-07	4.08392E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E											
							D1-D7		0.00133033	0.0180725	0.000126698	0.00172119	--	--	--													
							D8-D14	Volume			6.3349E-05	0.0008606	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D											
							F	Area	0.00026795	0.0034432	--	--	9.65578E-07	1.2408E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F											
							I1-I4		0.00869141	0.1094582	0.001448569	0.01824303	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel											
							I5-I8	Volume			0.000724284	0.00912152	--	--	--		Section F											
45.868							JKO1	Area	0.00025993	0.0031776	--	--	1.68491E-07	2.05979E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O											
							L1-L5		0.00133181	0.017018	0.000177575	0.00226907	--	--	--													
							L6-L10	Volume			8.87875E-05	0.00113454	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O											
							M1-M4		0.00067591	0.0088999	0.000112652	0.00148331	--	--	--													
							M5-M8	Volume			5.63259E-05	0.00074165	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)											
							N1-N4		0.00067591	0.0088999	0.000112652	0.00148331	--	--	--													
							N5-N8	Volume			5.63259E-05	0.00074165	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)											
							P1-P4		0.00186448	0.0225662	0.000310747	0.00376103	--	--	--													
							P5-P8	Volume			0.000155373	0.00188052	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K											
							W1-W8		0.03912912	0.7276151	0.00326076	0.06063459	--	--	--													
							W9-W16	Volume			0.00163038	0.03031729	--	--	--	1	1 x Tunnel W											
							701-710		0.00553298	0.1168373	0.000368866	0.00778915	--	--	--	1												
							711-720	Volume			0.000184433	0.00389458	--	--	--	--	1 x Tunnel X											
							BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C											
	% of Serving Rd						BaseC		0	0	0	0					1/3 x Basement roads A,B,C											
		Out of 500m					801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y											
		Out of 500m					901-903				--	--	--	--	--		1 x Tunnel Z											
		Out of 500m					904-906	Volume			--	--	--	--	--	1												
		Out of 500m					V1	Point								from 1-4	--											
	4.2%						V01	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V02	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V03	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V04	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V05	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V06	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V07	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V08	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V09	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V10	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V11	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%	**Road A at B1 Level**					V12	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V13	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V14	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V15	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V16	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V17	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V18	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V19	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V20	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V21	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V22	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	4.2%						V23	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
100.0%	4.2%						V24	Point	6.00793E-05	5.88873E-05	--	--	--	--	--	--	--											
	12.5%						V25	Point	0.000293912	0.000394444	--	--	--	--	--	--	--											
	12.5%						V26	Point	0.000293912	0.000394444	--	--	--	--	--	--	--											
	12.5%						V27	Point	0.000293912	0.000394444	--	--	--	--	--	--	--											
	12.5%	**Road B at B1 Level**					V28	Point	0.000293912	0.000394444	--	--	--	--	--	--	--											
	12.5%						V29	Point	0.000293912	0.000394444	--	--	--	--	--	--	--											
	12.5%						V30	Point	0.000293912	0.000394444	--	--	--	--	--	--	--											
	12.5%						V31	Point	0.000293912	0.000394444	--	--	--	--	--	--	--											
	16.7%	**Road C at B1 Level**					V32	Point	0.000357247	9.91055E-05	--	--	--	--	--	--	--											
100.0%	12.5%	**Road B at B1 Level**					V33	Point	0.000293912	0.000394444	--	--	--	--	--	--	--											
	16.7%						V34	Point	0.000357247	9.91055E-05	--	--	--	--	--	--	--											
	16.7%						V35	Point	0.000357247	9.91055E-05	--	--	--	--	--	--	--											
	16.7%	**Road C at B1 Level**					V36	Point	0.000357247	9.91055E-05	--	--	--	--	--	--	--											
	16.7%						V37	Point	0.000357247	9.91055E-05	--	--	--	--	--	--	--											
100.0%	16.7%						V38	Point	0.000357247	9.91055E-05	--	--	--	--	--	--	--											

Appendix 3.19 - Emission Rates of Portal, Top Openings and Ventilation Exhaust (Hr23-00)

Remarks (Tunnel name - Portal & top opening of underpass in EIA of Rd Works in WK)	WKCD section no.	Road name	Bound	Road Type	Length (m)	Total (veh/hr)	PC	taxi	LGV3	LGV4	LGV6	HGV7	HGV8	PLB	PV4	PV5	NFB6	NFB7	NFB8	FBSD	FBDD	MC	Total	Rate (g/km-) PM	Rate (g/km-) NOx	Emission Rate (g/s) PM	Emission Rate (g/s) NOx
							Hr 23-00 (2015 EIA_19-12-2011.xls)																				
A(i)	73	Lin Cheung Rd (underpass)	Northbound	3	73	305	54%	2%	21%	0%	3%	2%	5%	5%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0492048	0.6751294	0.0003043	0.0041755
B(i)	73	Lin Cheung Rd (underpass)	Northbound	3	272	305	54%	2%	21%	0%	3%	2%	5%	5%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0492048	0.6751294	0.0011339	0.0155580
C(i)	73	Lin Cheung Rd (underpass)	Northbound	3	110	305	54%	2%	21%	0%	3%	2%	5%	5%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0492048	0.6751294	0.0004586	0.0062918
D(i)	73	Lin Cheung Rd (underpass)	Northbound	3	176	305	54%	2%	21%	0%	3%	2%	5%	5%	2%	2%	2%	0%	2%	2%	0%	0%	100%	0.0492048	0.6751294	0.0007337	0.0100669
E(i)	72	Lin Cheung Rd (underpass)	Southbound	3	155	750	54%	1%	27%	0%	3%	1%	3%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0471397	0.5970115	0.0015222	0.0192785
F(i)	72	Lin Cheung Rd (depressed)	Southbound	3	172	750	54%	1%	27%	0%	3%	1%	3%	5%	1%	1%	1%	0%	1%	1%	0%	1%	100%	0.0471397	0.5970115	0.0016892	0.0213929
G(i)	118	Lin Cheung Rd (depressed)	Southbound	3	121	480	53%	1%	22%	0%	3%	2%	5%	4%	2%	2%	1%	0%	2%	1%	0%	1%	100%	0.0505697	0.6809521	0.0008159	0.0109860
H(i)	119	Austin Rd W (depressed)	Eastbound	3	173	1070	40%	1%	43%	0%	2%	1%	3%	3%	1%	1%	0%	0%	0%	1%	1%	1%	100%	0.0599538	0.7536973	0.0030828	0.0387547
I(i)	117	Austin Rd W (depressed)	Eastbound	3	194	580	44%	1%	36%	0%	3%	1%	3%	3%	2%	1%	4%	0%	0%	2%	0%	1%	100%	0.0553724	0.6675265	0.0017307	0.0208639
J(i)	116	Austin Rd W (depressed)	Westbound	3	194	365	41%	1%	42%	0%	3%	1%	3%	3%	1%	0%	0%	0%	0%	1%	1%	1%	100%	0.0571688	0.7323272	0.0011245	0.0144045
K(i)	114	Lin Cheung Rd (depressed)	Southbound	3	95	835	53%	1%	32%	1%	3%	1%	1%	4%	1%	1%	1%	0%	0%	1%	0%	0%	100%	0.0446983	0.5286274	0.0009849	0.0116482
L(i)	112	Lin Cheung Rd (depressed)	Northbound	3	95	535	55%	1%	25%	0%	3%	1%	5%	4%	1%	1%	1%	0%	2%	1%	0%	1%	100%	0.0493132	0.6427299	0.0006962	0.0090741
M(i)	84	Lin Cheung Rd	Southbound	3	56	1030	54%	1%	27%	0%	3%	1%	3%	4%	1%	1%	0%	0%	1%	1%	0%	0%	100%	0.0468815	0.6104397	0.0007511	0.0097806
N(i)	77	Lin Cheung Rd	Northbound	3	56	970	55%	1%	24%	1%	3%	2%	5%	4%	2%	1%	1%	0%	2%	1%	0%	1%	100%	0.0500771	0.6558212	0.0007556	0.0098956
O(i)	111	Austin Rd W (depressed)	Eastbound	3	52	770	37%	1%	43%	0%	3%	1%	4%	3%	1%	1%	1%	0%	1%	2%	1%	1%	100%	0.0625509	0.8069460	0.0006957	0.0089750
P(i)	110	Austin Rd W (depressed)	Westbound	3	52	565	39%	1%	41%	0%	3%	1%	4%	4%	2%	2%	1%	0%	1%	2%	1%	1%	100%	0.0603179	0.7869370	0.0004923	0.0064223
W(i)	98	West Kowloon Highway (WKH)	Northbound	2	1970	1345	55%	0%	17%	0%	3%	1%	5%	4%	2%	2%	1%	0%	4%	2%	3%	0%	100%	0.0373846	0.7031619	0.0275156	0.5175369
	A	Internal Rd A	Bothbound	4	404	350	50%	0%	30%	0%	3%	0%	1%	4%	1%	1%	7%	0%	0%	1%	0%	0%	100%	0.0571689	0.5821309	0.0022455	0.0228648
	B	Internal Rd B	Bothbound	4	361	1065	51%	0%	31%	0%	3%	0%	1%	4%	1%	1%	5%	0%	0%	1%	0%	0%	100%	0.0561973	0.5721757	0.0060016	0.0611060
	C	Internal Rd C	Bothbound	4	521	405	47%	0%	30%	0%	2%	0%	1%	4%	1%	1%	12%	0%	0%	1%	0%	0%	100%	0.0622072	0.6321350	0.0036461	0.0370510
X(i)	144	Reprovision of Gascoigne Rd Flyove	Westbound	3	180	1325	35%	0%	11%	1%	7%	4%	11%	11%	2%	1%	1%	0%	0%	10%	5%	0%	100%	0.0665828	1.4065810	0.0044111	0.0931860

Note: (i): Tunnel name is based on Portal & top opening of underpass in EIA of Road Works in West Kowloon.

Note: Emission rate is calculated by emission factor provided by Vehicular Emission Control Section of EPD provided the vehicle fleet average emission factors for pollutants mulitplied by traffic flow of each roads.

Scenario 1 10%

									Calculated by the formula shown (extracted from the approved EIA of Road Works at West Kowloon)		Volume source - calculated by number of portal/opening involved		Area source - calculated by emission rate divided by area																		
									Emission Rate - Portal/ Opening (g/s)		Emission Rate - Portal/ Opening (g/s) - Volume source		Emission Rate - Portal/ Opening (g/m2-s) - Area source																		
							Portal/ opening ID.	Source Type	PM	NOx	PM	NOx	PM	NOx	(Area)	Formula from Scenario	Emission calculation formula (Extracted from the approved EIA of Road Works at West Kowloon)														
							A	Area	3.0432E-05	0.0004175	--	--	6.1954E-08	8.50059E-07	491.2	1	0.1 x Tunnel Section A														
80.935	0.873						B	Area	0.00122885	0.0168609	--	--	3.59419E-06	4.93152E-05	341.9	1	2/3 x (0.9 x Tunnel Section A + 1 x Tunnel Section B) + 1/3 x (30.935 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)														
							CE	Area	0.00021597	0.0028025	--	--	3.39951E-07	4.41136E-06	635.3	1	0.1 x Tunnel Section C + 0.1 x (1/3 x (19.065 / 50) x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 0.1 x Tunnel Section E														
							D1-D7		0.00130744	0.0179391	0.000124518	0.00170849	--	--	--																
							D8-D14	Volume			6.2259E-05	0.00085424	--	--	--	1	0.9 x Tunnel Section C + 0.9 x (1/3 x (19.065 / 50 x (0.9 x Tunnel Section A + 1 x Tunnel Section B)) + 1 x Tunnel Section D														
							F	Area	0.00030592	0.0038744	--	--	1.1024E-06	1.39616E-05	277.5	1	0.1 x 0.9 x Tunnel Section E + 0.1 x Tunnel Section F														
							I1-I4		0.00875841	0.110174	0.001459736	0.01836234	--	--	--	1	1 x Tunnel Section I + 1 x Tunnel Section G + 1 x Tunnel Section H + 0.14 x Tunnel Section K + 0.9 x 0.38 x Tunnel Section O + 0.9 x 0.9 x Tunnel Section E + 0.9 x Tunnel														
							I5-I8	Volume			0.000729868	0.00918117	--	--	--		Section F														
45.868							JKO1	Area	0.00026672	0.0033397	--	--	1.72892E-07	2.16484E-06	1542.7	1	0.1 x Tunnel Section J + 0.1 x (1 - 0.14) x Tunnel Section K + 0.1 x Tunnel Section O														
							L1-L5		0.0013273	0.0171935	0.000176973	0.00229247	--	--	--																
							L6-L10	Volume			8.84865E-05	0.00114624	--	--	--	1	1 x Tunnel Section L + 0.9 x 0.24 x Tunnel Section J + 0.9 x 0.62 x Tunnel Section O														
							M1-M4		0.00075338	0.0098381	0.000125563	0.00163968	--	--	--																
							M5-M8	Volume			6.27814E-05	0.00081984	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)														
							N1-N4		0.00075338	0.0098381	0.000125563	0.00163968	--	--	--																
							N5-N8	Volume			6.27814E-05	0.00081984	--	--	--	1	0.5 x (Tunnel Section M + Tunnel Section N)														
							P1-P4		0.00202373	0.0252906	0.000337288	0.0042151	--	--	--																
							P5-P8	Volume			0.000168644	0.00210755	--	--	--	1	1 x Tunnel Section P + 0.9 x 0.76 x Tunnel Section J + 0.9 x 0.86 x Tunnel Section K														
							W1-W8		0.02751559	0.5175369	0.002292966	0.04312808	--	--	--																
							W9-W16	Volume			0.001146483	0.02156404	--	--	--	1	1 x Tunnel W														
							701-710		0.00441111	0.093186	0.000294074	0.0062124	--	--	--	1															
							711-720	Volume			0.000147037	0.0031062	--	--	--	--	1 x Tunnel X														
							BaseA	Volume	0	0	0	0					1/3 x Basement roads A,B,C														
	% of Serving Rd						BaseC		0	0	0	0					1/3 x Basement roads A,B,C														
		Out of 500m					801-820	Volume			--	--	--	--	--	1	1 x Tunnel Y														
		Out of 500m					901-903				--	--	--	--	--		1 x Tunnel Z														
		Out of 500m					904-906	Volume			--	--	--	--	--	1															
		Out of 500m					V1	Point								from 1-4	--														
	4.2%						V01	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V02	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V03	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V04	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V05	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V06	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V07	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V08	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V09	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V10	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V11	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%	**Road A at B1 Level**					V12	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V13	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V14	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V15	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V16	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V17	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V18	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V19	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V20	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V21	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V22	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	4.2%						V23	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
100.0%	4.2%						V24	Point	6.25541E-05	0.000821831	--	--	--	--	--	--	--														
	12.5%						V25	Point	0.000281061	0.004179589	--	--	--	--	--	--	--														
	12.5%						V26	Point	0.000281061	0.004179589	--	--	--	--	--	--	--														
	12.5%						V27	Point	0.000281061	0.004179589	--	--	--	--	--	--	--														
	12.5%	**Road B at B1 Level**					V28	Point	0.000281061	0.004179589	--	--	--	--	--	--	--														
	12.5%						V29	Point	0.000281061	0.004179589	--	--	--	--	--	--	--														
	12.5%						V30	Point	0.000281061	0.004179589	--	--	--	--	--	--	--														
	12.5%						V31	Point	0.000281061	0.004179589	--	--	--	--	--	--	--														
	16.7%	**Road C at B1 Level**					V32	Point	0.000336685	0.006165514	--	--	--	--	--	--	--														
100.0%	12.5%	**Road B at B1 Level**					V33	Point	0.000281061	0.004179589	--	--	--	--	--	--	--														
	16.7%						V34	Point	0.000336685	0.006165514	--	--	--	--	--	--	--														
	16.7%						V35	Point	0.000336685	0.006165514	--	--	--	--	--	--	--														
	16.7%	**Road C at B1 Level**					V36	Point	0.000336685	0.006165514	--	--	--	--	--	--	--														
	16.7%						V37	Point	0.000336685	0.006165514	--	--	--	--	--	--	--														
100.0%	16.7%						V38	Point	0.000336685	0.006165514	--	--	--	--	--	--	--														