

Calculation of Idling Emission Factor in Year 2020

Age	First Reg Year	Goods		% of vehicle population having engines of same Euro type	Euro Standard
		HGV(7) % by age	HGV(8) % by age		
1	2020	6.85%	7.10%	41.47%	Euro V or later
2	2019	3.34%	2.31%		
3	2018	6.79%	6.02%		
4	2017	5.29%	5.02%		
5	2016	5.14%	5.21%		
6	2015	5.43%	5.31%		
7	2014	5.08%	6.30%		
8	2013	3.28%	4.48%		
9	2012	5.08%	5.09%	30.19%	Euro IV
10	2011	3.95%	4.93%		
11	2010	4.62%	7.07%		
12	2009	4.23%	4.23%		
13	2008	3.80%	4.09%		
14	2007	5.53%	6.10%		
15	2006	3.20%	3.98%		
16	2005	3.72%	3.40%	21.94%	Euro III
17	2004	4.98%	4.03%		
18	2003	6.10%	3.93%		
19	2002	6.44%	4.47%		
20	2001	3.60%	2.59%	6.06%	Euro II
21	2000	1.25%	1.57%		
22	1999	0.93%	1.24%		
23	1998	0.83%	0.72%		
24	1997	0.36%	0.52%		
25	1996	0.09%	0.14%	0.27%	Euro I
26	1995	0.06%	0.15%		
27	1994	0.04%	0.01%	0.06%	Pre-Euro
28	1993	0.00%	0.00%		
29	1992	0.00%	0.00%		
30	1991	0.00%	0.00%		
31	1990	0.00%	0.00%		
32	1989	0.00%	0.00%		
33	1988	0.00%	0.00%		
34	1987	0.00%	0.00%		
35	1986	0.00%	0.00%		
36	1985	0.00%	0.00%		
37	1984	0.00%	0.00%		
38	1983	0.00%	0.00%		
39	1982	0.00%	0.00%		
40	1981	0.00%	0.00%		
41	1980	0.00%	0.00%		
42	1979	0.00%	0.00%		
43	1978	0.00%	0.00%		
44	1977	0.00%	0.00%		
>44	1976	0.00%	0.00%		
Total		100%	100%	100%	

Euro Emission Standard	Private Car *			Heavy Goods Vehicle *		
	% Population	NOx (g/h)	PM (g/h)	% Population	NOx (g/h)	PM (g/h)
Pre-Euro	-	-	Negligible	0.06	182.50	16.6
Euro I	-	-		0.27	153.25	9.15
Euro II	-	-		6.06	102.00	3.09
Euro III	-	-		21.94	68.75	2.06
Euro IV	-	-		30.19	45.00	1.03
Euro V or later	-	-		41.47	45.00	1.03
Corrected Composite Emission Factor (g/h)					73.77	1.93
Corrected Composite Emission Factor (g/min) *					1.229	0.032

Note:

*Correction factors of Chinal Fuel correction (1.05) and A/C loading factor (1.3), which is extracted from approved EIA for Liantang/Heung Yuen Wai BCP, are applied.

** The idling emission factor of 0.2 g/min for private car as extracted from the "Consultation Paper - A Proposal to Ban Idling Vehicles with Running Engines" is assumed.

First Reg Year	Euro Standard	HGV(7) %	HGV(8) %
1995	Pre-Euro	32.49%	30.31%
	Euro I	67.51%	69.69%
1997	Euro I	20.54%	18.95%
	Euro II	79.46%	81.05%
2001	Euro II	74.82%	84.43%
	Euro III	25.18%	15.57%
2006	Euro III	77.37%	75.94%
	Euro IV	22.63%	24.06%

Source: "2010_Licensed_Vehicle_by_Age_and_Technology_Group" Excel Spreadsheet from EPD website

Calculation of Idling Emission Rate at Lok Ma Chau BCP

Daily Traffic Flow

Cross	Vehicle Type	2016	2021	2026	2031	2012	2020	2027	2035
Lok Ma Chau (LMC)	Bus/ Coach	2600	3200	3300	3400	2200	3100	3300	3500
	GV	8100	3500	3000	2600	6200	3600	2900	2300
	CT	8200	3600	3100	2600	6200	3700	3000	2200
	Car	11800	11800	11800	11800	10100	11800	11800	11800
	Total	30700	22100	21200	20400	24700	22200	21000	19800

Calculated Emission Factor

Vehicle Type	NO _x (g/min-veh)
Passenger Car	0.2
Goods vehicle	1.229
Bus/Coach	1.229
Taxi	0.2

Note: refer to Calculation of Idling Emission Factor in Year 2020

AM Peak Factor for Maximum Hourly Traffic Flow

Peak Factor	Year 2020			
	Bus	GV	CT	Car
In-bound	0.064	0.047	0.040	0.039
Out-bound	0.091	0.052	0.055	0.070

Kiosks - Idling Time = 40 s *

Lok Ma Chau BCP	Daily Traffic					Peak Hourly Traffic					NO _x (g/h) - 40s (kiosks)				
	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total
Year 2020 In-bound	1550	1800	1850	5900	11100	99	85	73	232	489	80.82	69.78	60.08	30.94	241.62
Year 2020 Out-bound	1550	1800	1850	5900	11100	141	94	101	413	749	115.45	77.33	82.74	55.08	330.59

Note * The idling time is advised by Arup Traffic Engineer

Unloading Bay - Idling Time = 4 min *

Lok Ma Chau BCP	Daily Traffic **					Peak Hourly Traffic (veh/hr) **					NO _x (g/h) - 4min (unloading bay)				
	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total
Year 2020 In-bound	1550	-	-	-	1550	99	-	-	-	99	484.90	-	-	-	484.90
Year 2020 Out-bound	1550	-	-	-	1550	141	-	-	-	141	692.71	-	-	-	692.71

Note * The idling time is the design parameter, as advised by Arup Traffic Engineer

Note ** only buses and coaches will idle at unloading bay

Loading Bay - Idling Time = 15 min *

Lok Ma Chau BCP	Daily Traffic **					Peak Hourly Traffic (veh/hr) **					NO _x (g/h) - 15min (Loading bay)				
	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total
Year 2020 In-bound	1550	-	-	-	1550	99	-	-	-	99	1818.36	-	-	-	1818.36
Year 2020 Out-bound	1550	-	-	-	1550	141	-	-	-	141	2597.66	-	-	-	2597.66

Note * The idling time is the design parameter, as advised by Arup Traffic Engineer

Note ** only buses and coaches will idle at loading bay

Emission Rate

Lok Ma Chau BCP*	X1 (m)	Y1 (m)	X2 (m)	Y2 (m)	Length (m)	Traffic ** (veh/hr)	NO _x ** (g/hr)	NO _x (g/m/hr)	NO _x (g/mile/hr)	NO _x *** (g/mile-veh)
Kiosk Out to China (OutBound)	825619.2	841006.6	825633.7	840990.0	22.0	31	13.8	0.63	1005.90	32.216
Kiosk Out to China (OutBound)	825623.8	841010.6	825638.3	840994.0	22.0	31	13.8	0.63	1005.90	32.216
Kiosk Out to China (OutBound)	825628.3	841014.5	825642.8	840997.9	22.0	31	13.8	0.63	1005.90	32.216
Kiosk Out to China (OutBound)	825632.8	841018.5	825647.3	841001.9	22.0	31	13.8	0.63	1005.90	32.216
Kiosk Out to China (OutBound)	825637.3	841022.4	825651.8	841005.8	22.0	31	13.8	0.63	1005.90	32.216
Kiosk Out to China (OutBound)	825641.8	841026.4	825656.3	841009.8	22.0	31	13.8	0.63	1005.90	32.216
Kiosk Out to China (OutBound)	825646.4	841030.3	825660.9	841013.7	22.0	31	13.8	0.63	1005.90	32.216
Kiosk Out to China (OutBound)	825650.9	841034.3	825665.4	841017.7	22.0	31	13.8	0.63	1005.89	32.215
Kiosk Out to China (OutBound)	825655.4	841038.2	825669.9	841021.6	22.0	31	13.8	0.63	1005.89	32.215
Kiosk Out to China (OutBound)	825659.9	841042.2	825674.4	841025.6	22.0	31	13.8	0.63	1005.89	32.216
Kiosk Out to China (OutBound)	825664.4	841046.1	825678.9	841029.5	22.0	31	13.8	0.63	1005.89	32.215
Kiosk Out to China (OutBound)	825669.0	841050.1	825683.4	841033.5	22.0	31	13.8	0.63	1005.89	32.215
Kiosk Out to China (OutBound)	825582.2	841049.3	825596.6	841032.8	21.9	31	13.8	0.63	1010.43	32.361
Kiosk Out to China (OutBound)	825586.7	841053.3	825601.1	841036.7	21.9	31	13.8	0.63	1010.43	32.361
Kiosk Out to China (OutBound)	825591.2	841057.2	825605.7	841040.7	21.9	31	13.8	0.63	1010.43	32.361
Kiosk Out to China (OutBound)	825595.8	841061.1	825610.2	841044.6	21.9	31	13.8	0.63	1010.43	32.361
Kiosk Out to China (OutBound)	825600.3	841065.1	825614.7	841048.6	21.9	31	13.8	0.63	1010.43	32.361
Kiosk Out to China (OutBound)	825604.8	841069.0	825619.2	841052.5	21.9	31	13.8	0.63	1010.43	32.361
Kiosk Out to China (OutBound)	825609.3	841073.0	825623.7	841056.5	21.9	31	13.8	0.63	1010.43	32.361
Kiosk Out to China (OutBound)	825613.8	841076.9	825628.3	841060.4	21.9	31	13.8	0.63	1010.43	32.361
Kiosk Out to China (OutBound)	825618.4	841080.9	825632.8	841064.3	21.9	31	13.8	0.63	1010.43	32.361
Kiosk Out to China (OutBound)	825622.9	841084.8	825637.3	841068.3	21.9	31	13.8	0.63	1010.43	32.361
Kiosk Out to China (OutBound)	825627.4	841088.8	825641.8	841072.2	21.9	31	13.8	0.63	1010.43	32.361
Kiosk Out to China (OutBound)	825631.9	841092.7	825646.3	841076.2	21.9	31	13.8	0.63	1010.43	32.361
Kiosk In to HK (InBound)	825741.9	841191.4	825756.1	841174.9	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825737.3	841187.5	825751.6	841171.0	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825732.8	841183.6	825747.0	841167.0	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825728.2	841179.7	825742.5	841163.1	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825723.7	841175.8	825737.9	841159.2	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825719.1	841171.9	825733.4	841155.3	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825714.6	841168.0	825728.8	841151.4	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825710.1	841164.0	825724.3	841147.5	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825705.5	841160.1	825719.8	841143.6	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825701.0	841156.2	825715.2	841139.7	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825696.4	841152.3	825710.7	841135.7	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825691.9	841148.4	825706.1	841131.8	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825687.3	841144.5	825701.6	841127.9	21.9	19	9.3	0.43	684.29	36.369
Kiosk In to HK (InBound)	825779.2	841148.4	825793.2	841132.1	21.5	19	9.3	0.43	695.07	36.942
Kiosk In to HK (InBound)	825774.6	841144.5	825788.6	841128.2	21.5	19	9.3	0.43	695.07	36.942
Kiosk In to HK (InBound)	825770.1	841140.6	825784.1	841124.3	21.5	19	9.3	0.43	695.07	36.942
Kiosk In to HK (InBound)	825765.5	841136.7	825779.5	841120.4	21.5	19	9.3	0.43	695.08	36.942
Kiosk In to HK (InBound)	825761.0	841132.8	825775.0	841116.5	21.5	19	9.3	0.43	695.07	36.942
Kiosk In to HK (InBound)	825756.4	841128.9	825770.4	841112.6	21.5	19	9.3	0.43	695.07	36.942
Kiosk In to HK (InBound)	825751.9	841125.0	825765.9	841108.7	21.5	19	9.3	0.43	695.07	36.942
Kiosk In to HK (InBound)	825747.3	841121.0	825761.4	841104.7	21.5	19	9.3	0.43	695.07	36.942
Kiosk In to HK (InBound)	825742.8	841117.1	825756.8	841100.8	21.5	19	9.3	0.43	695.07	36.942
Kiosk In to HK (InBound)	825738.2	841113.2	825752.3	841096.9	21.5	19	9.3	0.43	695.07	36.942
Kiosk In to HK (InBound)	825733.7	841109.3	825747.7	841093.0	21.5	19	9.3	0.43	695.07	36.942
Kiosk In to HK (InBound)	825729.1	841105.4	825743.2	841089.1	21.5	19	9.3	0.43	695.07	36.942
Kiosk In to HK (InBound)	825724.6	841101.5	825738.6	841085.2	21.5	19	9.3	0.43	695.07	36.942
Unloading Bay Out to China (OutBound)	825770.5	840966.8	825713.5	841032.5	87.0	141	692.7	7.97	12816.31	90.954
Unloading Bay In to HK (InBound)	825599.1	841209.1	825664.7	841134.3	99.4	99	484.9	4.88	7846.02	79.545
Loading Bay Out to China (OutBound)	825648.5	841119.9	825548.8	841233.0	150.8	141	2597.7	17.22	27709.26	196.646
Loading Bay In to HK (InBound)	825731.1	841047.4	825821.3	840943.3	137.8	99	1818.4	13.20	21238.30	215.319

Note * Location of Kiosks and Loading/Unloading Bay are shown in Figure 3.4.

Note ** it is assumed that both the traffic flow and total emission of Nox are evenly distributed to each kiosks

Note ***Emission factor for peak hour is applied on all 24 hours in the CALINE model for conservative assessment.

Calculation of Idling Emission Rate at Lok Ma Chau BCP

Daily Traffic Flow

Cross	Vehicle Type	2016	2021	2026	2031	2012	2020	2027	2035
Lok Ma Chau (LMC)	Bus/ Coach	2600	3200	3300	3400	2200	3100	3300	3500
	GV	8100	3500	3000	2600	6200	3600	2900	2300
	CT	8200	3600	3100	2600	6200	3700	3000	2200
	Car	11800	11800	11800	11800	10100	11800	11800	11800
	Total	30700	22100	21200	20400	24700	22200	21000	19800

Calculated Emission Factor

Vehicle Type	RSP (g/min-veh)
Passenger Car	0
Goods vehicle	0.032
Bus/Coach	0.032
Taxi	0

Note: refer to Calculation of Idling Emission Factor in Year 2020

AM Peak Factor for Maximum Hourly Traffic Flow

Peak Factor	Year 2020			
	Bus	GV	CT	Car
In-bound	0.064	0.047	0.040	0.039
Out-bound	0.091	0.052	0.055	0.070

Kiosks - Idling Time = 40 s *

Lok Ma Chau BCP	Daily Traffic					Peak Hourly Traffic					RSP (g/h) - 40s (kiosks)				
	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total
Year 2020 In-bound	1550	1800	1850	5900	11100	99	85	73	232	489	2.10	1.82	1.56	0.00	5.49
Year 2020 Out-bound	1550	1800	1850	5900	11100	141	94	101	413	749	3.01	2.01	2.15	0.00	7.17

Note * The idling time is advised by Arup Traffic Engineer

Unloading Bay - Idling Time = 4 min *

Lok Ma Chau BCP	Daily Traffic **					Peak Hourly Traffic (veh/hr) **					RSP (g/h) - 4min (unloading bay)				
	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total
Year 2020 In-bound	1550	-	-	-	1550	99	-	-	-	99	12.63	-	-	-	12.63
Year 2020 Out-bound	1550	-	-	-	1550	141	-	-	-	141	18.04	-	-	-	18.04

Note * The idling time is the design parameter, as advised by Arup Traffic Engineer

Note ** only buses and coaches will idle at unloading bay

Loading Bay - Idling Time = 15 min *

Lok Ma Chau BCP	Daily Traffic **					Peak Hourly Traffic (veh/hr) **					RSP (g/h) - 15min (Loading bay)				
	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total
Year 2020 In-bound	1550	-	-	-	1550	99	-	-	-	99	47.35	-	-	-	47.35
Year 2020 Out-bound	1550	-	-	-	1550	141	-	-	-	141	67.64	-	-	-	67.64

Note * The idling time is the design parameter, as advised by Arup Traffic Engineer

Note ** only buses and coaches will idle at loading bay

Emission Rate

Lok Ma Chau BCP*	X1 (m)	Y1 (m)	X2 (m)	Y2 (m)	Length (m)	Traffic ** (veh/hr)	RSP ** (g/hr)	RSP (g/m/hr)	RSP (g/mile/hr)	RSP*** (g/mile-veh)
Kiosk Out to China (OutBound)	825619.2	841006.6	825633.7	840990.0	22.0	31	0.3	0.01	21.83	0.699
Kiosk Out to China (OutBound)	825623.8	841010.6	825638.3	840994.0	22.0	31	0.3	0.01	21.83	0.699
Kiosk Out to China (OutBound)	825628.3	841014.5	825642.8	840997.9	22.0	31	0.3	0.01	21.83	0.699
Kiosk Out to China (OutBound)	825632.8	841018.5	825647.3	841001.9	22.0	31	0.3	0.01	21.83	0.699
Kiosk Out to China (OutBound)	825637.3	841022.4	825651.8	841005.8	22.0	31	0.3	0.01	21.83	0.699
Kiosk Out to China (OutBound)	825641.8	841026.4	825656.3	841009.8	22.0	31	0.3	0.01	21.83	0.699
Kiosk Out to China (OutBound)	825646.4	841030.3	825660.9	841013.7	22.0	31	0.3	0.01	21.83	0.699
Kiosk Out to China (OutBound)	825650.9	841034.3	825665.4	841017.7	22.0	31	0.3	0.01	21.83	0.699
Kiosk Out to China (OutBound)	825655.4	841038.2	825669.9	841021.6	22.0	31	0.3	0.01	21.83	0.699
Kiosk Out to China (OutBound)	825659.9	841042.2	825674.4	841025.6	22.0	31	0.3	0.01	21.83	0.699
Kiosk Out to China (OutBound)	825664.4	841046.1	825678.9	841029.5	22.0	31	0.3	0.01	21.83	0.699
Kiosk Out to China (OutBound)	825669.0	841050.1	825683.4	841033.5	22.0	31	0.3	0.01	21.83	0.699
Kiosk Out to China (OutBound)	825582.2	841049.3	825596.6	841032.8	21.9	31	0.3	0.01	21.93	0.702
Kiosk Out to China (OutBound)	825586.7	841053.3	825601.1	841036.7	21.9	31	0.3	0.01	21.93	0.702
Kiosk Out to China (OutBound)	825591.2	841057.2	825605.7	841040.7	21.9	31	0.3	0.01	21.93	0.702
Kiosk Out to China (OutBound)	825595.8	841061.1	825610.2	841044.6	21.9	31	0.3	0.01	21.93	0.702
Kiosk Out to China (OutBound)	825600.3	841065.1	825614.7	841048.6	21.9	31	0.3	0.01	21.93	0.702
Kiosk Out to China (OutBound)	825604.8	841069.0	825619.2	841052.5	21.9	31	0.3	0.01	21.93	0.702
Kiosk Out to China (OutBound)	825609.3	841073.0	825623.7	841056.5	21.9	31	0.3	0.01	21.93	0.702
Kiosk Out to China (OutBound)	825613.8	841076.9	825628.3	841060.4	21.9	31	0.3	0.01	21.93	0.702
Kiosk Out to China (OutBound)	825618.4	841080.9	825632.8	841064.3	21.9	31	0.3	0.01	21.93	0.702
Kiosk Out to China (OutBound)	825622.9	841084.8	825637.3	841068.3	21.9	31	0.3	0.01	21.93	0.702
Kiosk Out to China (OutBound)	825627.4	841088.8	825641.8	841072.2	21.9	31	0.3	0.01	21.93	0.702
Kiosk Out to China (OutBound)	825631.9	841092.7	825646.3	841076.2	21.9	31	0.3	0.01	21.93	0.702
Kiosk In to HK (InBound)	825741.9	841191.4	825756.1	841174.9	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825737.3	841187.5	825751.6	841171.0	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825732.8	841183.6	825747.0	841167.0	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825728.2	841179.7	825742.5	841163.1	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825723.7	841175.8	825737.9	841159.2	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825719.1	841171.9	825733.4	841155.3	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825714.6	841168.0	825728.8	841151.4	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825710.1	841164.0	825724.3	841147.5	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825705.5	841160.1	825719.8	841143.6	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825701.0	841156.2	825715.2	841139.7	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825696.4	841152.3	825710.7	841135.7	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825691.9	841148.4	825706.1	841131.8	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825687.3	841144.5	825701.6	841127.9	21.9	19	0.2	0.01	15.54	0.826
Kiosk In to HK (InBound)	825779.2	841148.4	825793.2	841132.1	21.5	19	0.2	0.01	15.78	0.839
Kiosk In to HK (InBound)	825774.6	841144.5	825788.6	841128.2	21.5	19	0.2	0.01	15.78	0.839
Kiosk In to HK (InBound)	825770.1	841140.6	825784.1	841124.3	21.5	19	0.2	0.01	15.78	0.839
Kiosk In to HK (InBound)	825765.5	841136.7	825779.5	841120.4	21.5	19	0.2	0.01	15.78	0.839
Kiosk In to HK (InBound)	825761.0	841132.8	825775.0	841116.5	21.5	19	0.2	0.01	15.78	0.839
Kiosk In to HK (InBound)	825756.4	841128.9	825770.4	841112.6	21.5	19	0.2	0.01	15.78	0.839
Kiosk In to HK (InBound)	825751.9	841125.0	825765.9	841108.7	21.5	19	0.2	0.01	15.78	0.839
Kiosk In to HK (InBound)	825747.3	841121.0	825761.4	841104.7	21.5	19	0.2	0.01	15.78	0.839
Kiosk In to HK (InBound)	825742.8	841117.1	825756.8	841100.8	21.5	19	0.2	0.01	15.78	0.839
Kiosk In to HK (InBound)	825738.2	841113.2	825752.3	841096.9	21.5	19	0.2	0.01	15.78	0.839
Kiosk In to HK (InBound)	825733.7	841109.3	825747.7	841093.0	21.5	19	0.2	0.01	15.78	0.839
Kiosk In to HK (InBound)	825729.1	841105.4	825743.2	841089.1	21.5	19	0.2	0.01	15.78	0.839
Kiosk In to HK (InBound)	825724.6	841101.5	825738.6	841085.2	21.5	19	0.2	0.01	15.78	0.839
Unloading Bay Out to China (OutBound)	825770.5	840966.8	825713.5	841032.5	87.0	141	18.0	0.21	333.70	2.368
Unloading Bay In to HK (InBound)	825599.1	841209.1	825664.7	841134.3	99.4	99	12.6	0.13	204.29	2.071
Loading Bay Out to China (OutBound)	825648.5	841119.9	825548.8	841233.0	150.8	141	67.6	0.45	721.48	5.120
Loading Bay In to HK (InBound)	825731.1	841047.4	825821.3	840943.3	137.8	99	47.3	0.34	552.99	5.606

Note * Location of Kiosks and Loading/Unloading Bay are shown in Figure 3.4.

Note ** it is assumed that both the traffic flow and total emission of Nox are evenly distributed to each kiosks

Note ***Emission factor for peak hour is applied on all 24 hours in the CALINE model for conservative assessment.

Calculation of Idling Emission Factor in Year 2027

Age	First Reg Year	Goods		% of vehicle population having engines of same Euro type	Euro Standard
		HGV(7) % by age	HGV(8) % by age		
1	2027	6.85%	7.10%	74.42%	Euro V or later
2	2026	3.34%	2.31%		
3	2025	6.79%	6.02%		
4	2024	5.29%	5.02%		
5	2023	5.14%	5.21%		
6	2022	5.43%	5.31%		
7	2021	5.08%	6.30%		
8	2020	3.28%	4.48%		
9	2019	5.08%	5.09%		
10	2018	3.95%	4.93%		
11	2017	4.62%	7.07%		
12	2016	4.23%	4.23%		
13	2015	3.80%	4.09%		
14	2014	5.53%	6.10%		
15	2013	3.20%	3.98%		
16	2012	3.72%	3.40%	23.29%	Euro IV
17	2011	4.98%	4.03%		
18	2010	6.10%	3.93%		
19	2009	6.44%	4.47%		
20	2008	3.60%	2.59%		
21	2007	1.25%	1.57%	2.27%	Euro III
22	2006	0.93%	1.24%		
23	2005	0.83%	0.72%		
24	2004	0.36%	0.52%		
25	2003	0.09%	0.14%		
26	2002	0.06%	0.15%	0.02%	Euro II
27	2001	0.04%	0.01%		
28	2000	0.00%	0.00%		
29	1999	0.00%	0.00%		
30	1998	0.00%	0.00%		
31	1997	0.00%	0.00%	0.00%	Euro I
32	1996	0.00%	0.00%		
33	1995	0.00%	0.00%		
34	1994	0.00%	0.00%		
35	1993	0.00%	0.00%		
36	1992	0.00%	0.00%	0.00%	Pre-Euro
37	1991	0.00%	0.00%		
38	1990	0.00%	0.00%		
39	1989	0.00%	0.00%		
40	1988	0.00%	0.00%		
41	1987	0.00%	0.00%		
42	1986	0.00%	0.00%		
43	1985	0.00%	0.00%		
44	1984	0.00%	0.00%		
>44	1983	0.00%	0.00%		
Total		100%	100%	100%	

Euro Emission Standard	Private Car *			Heavy Goods Vehicle *		
	% Population	NOx (g/h)	PM (g/h)	% Population	NOx (g/h)	PM (g/h)
Pre-Euro	-	-	Negligible	0.00	182.50	16.6
Euro I	-	-		0.00	153.25	9.15
Euro II	-	-		0.02	102.00	3.09
Euro III	-	-		2.27	68.75	2.06
Euro IV	-	-		23.29	45.00	1.03
Euro V	-	-		74.42	45.00	1.03
Corrected Composite Emission Factor (g/h)						
		-	Negligible		62.18	1.44
Corrected Composite Emission Factor (g/min) *						
		0.2**	Negligible		1.036	0.024

Note:

*Correction factors of Chinal Fuel correction (1.05) and A/C loading factor (1.3), which is extracted from approved EIA for Liantang/Heung Yuen Wai BCP, are applied.

** The idling emission factor of 0.2 g/min for private car as extracted from the "Consultation Paper - A Proposal to Ban Idling Vehicles with Running Engines" is assumed.

First Reg Year	Euro Standard	HGV(7) %	HGV(8) %
1995	Pre-Euro	32.49%	30.31%
	Euro I	67.51%	69.69%
1997	Euro I	20.54%	18.95%
	Euro II	79.46%	81.05%
2001	Euro II	74.82%	84.43%
	Euro III	25.18%	15.57%
2006	Euro III	77.37%	75.94%
	Euro IV	22.63%	24.06%

Source: "2010_Licensed_Vehicle_by_Age_and_Technology_Group" Excel Spreadsheet from EPD website

Calculation of Idling Emission Rate at Lok Ma Chau BCP

Daily Traffic Flow

Cross	Vehicle Type	2016	2021	2026	2031	2012	2020	2027	2035
Lok Ma Chau (LMC)	Bus/ Coach	2600	3200	3300	3400	2200	3100	3300	3500
	GV	8100	3500	3000	2600	6200	3600	2900	2300
	CT	8200	3600	3100	2600	6200	3700	3000	2200
	Car	11800	11800	11800	11800	10100	11800	11800	11800
	Total	30700	22100	21200	20400	24700	22200	21000	19800

Calculated Emission Factor

Vehicle Type	NO _x (g/min-veh)
Passenger Car	0.2
Goods vehicle	1.036
Bus/Coach	1.036
Taxi	0.2

Note: refer to Calculation of Idling Emission Factor in Year 2027

AM Peak Factor for Maximum Hourly Traffic Flow

Peak Factor	Year 2027			
	Bus	GV	CT	Car
In-bound	0.064	0.048	0.040	0.043
Out-bound	0.091	0.052	0.055	0.072

Kiosks - Idling Time = 40 s *

Lok Ma Chau BCP	Daily Traffic					Peak Hourly Traffic					NO _x (g/h) - 40s (kiosks)				
	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total
Year 2027 In-bound	1650	1450	1500	5900	10500	105	69	59	255	489	72.52	47.58	40.97	34.07	195.13
Year 2027 Out-bound	1650	1450	1500	5900	10500	150	76	82	423	731	103.60	52.28	56.96	56.41	269.25

Note * The idling time is advised by Arup Traffic Engineer

Unloading Bay - Idling Time = 4 min *

Lok Ma Chau BCP	Daily Traffic **					Peak Hourly Traffic (veh/hr) **					NO _x (g/h) - 4min (unloading bay)				
	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total
Year 2027 In-bound	1650	-	-	-	1650	105	-	-	-	105	435.12	-	-	-	435.12
Year 2027 Out-bound	1650	-	-	-	1650	150	-	-	-	150	621.60	-	-	-	621.60

Note * The idling time is the design parameter, as advised by Arup Traffic Engineer

Note ** only buses and coaches will idle at unloading bay

Loading Bay - Idling Time = 15 min *

Lok Ma Chau BCP	Daily Traffic **					Peak Hourly Traffic (veh/hr) **					NO _x (g/h) - 15min (Loading bay)				
	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total
Year 2027 In-bound	1650	-	-	-	1650	105	-	-	-	105	1631.70	-	-	-	1631.70
Year 2027 Out-bound	1650	-	-	-	1650	150	-	-	-	150	2331.00	-	-	-	2331.00

Note * The idling time is the design parameter, as advised by Arup Traffic Engineer

Note ** only buses and coaches will idle at loading bay

Emission Rate

Lok Ma Chau BCP*	X1 (m)	Y1 (m)	X2 (m)	Y2 (m)	Length (m)	Traffic ** (veh/hr)	NO _x ** (g/hr)	NO _x (g/m/hr)	NO _x (g/mile/hr)	NO _x *** (g/mile-veh)
Kiosk Out to China (OutBound)	825619.2	841006.6	825633.7	840990.0	22.0	30	11.2	0.51	819.25	26.888
Kiosk Out to China (OutBound)	825623.8	841010.6	825638.3	840994.0	22.0	30	11.2	0.51	819.24	26.888
Kiosk Out to China (OutBound)	825628.3	841014.5	825642.8	840997.9	22.0	30	11.2	0.51	819.24	26.888
Kiosk Out to China (OutBound)	825632.8	841018.5	825647.3	841001.9	22.0	30	11.2	0.51	819.24	26.888
Kiosk Out to China (OutBound)	825637.3	841022.4	825651.8	841005.8	22.0	30	11.2	0.51	819.24	26.888
Kiosk Out to China (OutBound)	825641.8	841026.4	825656.3	841009.8	22.0	30	11.2	0.51	819.24	26.888
Kiosk Out to China (OutBound)	825646.4	841030.3	825660.9	841013.7	22.0	30	11.2	0.51	819.24	26.888
Kiosk Out to China (OutBound)	825650.9	841034.3	825665.4	841017.7	22.0	30	11.2	0.51	819.24	26.888
Kiosk Out to China (OutBound)	825655.4	841038.2	825669.9	841021.6	22.0	30	11.2	0.51	819.24	26.888
Kiosk Out to China (OutBound)	825659.9	841042.2	825674.4	841025.6	22.0	30	11.2	0.51	819.24	26.888
Kiosk Out to China (OutBound)	825664.4	841046.1	825678.9	841029.5	22.0	30	11.2	0.51	819.24	26.888
Kiosk Out to China (OutBound)	825669.0	841050.1	825683.4	841033.5	22.0	30	11.2	0.51	819.24	26.888
Kiosk Out to China (OutBound)	825582.2	841049.3	825596.6	841032.8	21.9	30	11.2	0.51	822.94	27.009
Kiosk Out to China (OutBound)	825586.7	841053.3	825601.1	841036.7	21.9	30	11.2	0.51	822.94	27.009
Kiosk Out to China (OutBound)	825591.2	841057.2	825605.7	841040.7	21.9	30	11.2	0.51	822.94	27.009
Kiosk Out to China (OutBound)	825595.8	841061.1	825610.2	841044.6	21.9	30	11.2	0.51	822.94	27.009
Kiosk Out to China (OutBound)	825600.3	841065.1	825614.7	841048.6	21.9	30	11.2	0.51	822.94	27.009
Kiosk Out to China (OutBound)	825604.8	841069.0	825619.2	841052.5	21.9	30	11.2	0.51	822.94	27.009
Kiosk Out to China (OutBound)	825609.3	841073.0	825623.7	841056.5	21.9	30	11.2	0.51	822.93	27.009
Kiosk Out to China (OutBound)	825613.8	841076.9	825628.3	841060.4	21.9	30	11.2	0.51	822.94	27.009
Kiosk Out to China (OutBound)	825618.4	841080.9	825632.8	841064.3	21.9	30	11.2	0.51	822.94	27.009
Kiosk Out to China (OutBound)	825622.9	841084.8	825637.3	841068.3	21.9	30	11.2	0.51	822.93	27.009
Kiosk Out to China (OutBound)	825627.4	841088.8	825641.8	841072.2	21.9	30	11.2	0.51	822.93	27.009
Kiosk Out to China (OutBound)	825631.9	841092.7	825646.3	841076.2	21.9	30	11.2	0.51	822.94	27.009
Kiosk In to HK (InBound)	825741.9	841191.4	825756.1	841174.9	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825737.3	841187.5	825751.6	841171.0	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825732.8	841183.6	825747.0	841167.0	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825728.2	841179.7	825742.5	841163.1	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825723.7	841175.8	825737.9	841159.2	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825719.1	841171.9	825733.4	841155.3	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825714.6	841168.0	825728.8	841151.4	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825710.1	841164.0	825724.3	841147.5	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825705.5	841160.1	825719.8	841143.6	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825701.0	841156.2	825715.2	841139.7	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825696.4	841152.3	825710.7	841135.7	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825691.9	841148.4	825706.1	841131.8	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825687.3	841144.5	825701.6	841127.9	21.9	19	7.5	0.34	552.64	29.402
Kiosk In to HK (InBound)	825779.2	841148.4	825793.2	841132.1	21.5	19	7.5	0.35	561.34	29.865
Kiosk In to HK (InBound)	825774.6	841144.5	825788.6	841128.2	21.5	19	7.5	0.35	561.34	29.865
Kiosk In to HK (InBound)	825770.1	841140.6	825784.1	841124.3	21.5	19	7.5	0.35	561.34	29.865
Kiosk In to HK (InBound)	825765.5	841136.7	825779.5	841120.4	21.5	19	7.5	0.35	561.34	29.865
Kiosk In to HK (InBound)	825761.0	841132.8	825775.0	841116.5	21.5	19	7.5	0.35	561.34	29.865
Kiosk In to HK (InBound)	825756.4	841128.9	825770.4	841112.6	21.5	19	7.5	0.35	561.34	29.865
Kiosk In to HK (InBound)	825751.9	841125.0	825765.9	841108.7	21.5	19	7.5	0.35	561.34	29.865
Kiosk In to HK (InBound)	825747.3	841121.0	825761.4	841104.7	21.5	19	7.5	0.35	561.34	29.865
Kiosk In to HK (InBound)	825742.8	841117.1	825756.8	841100.8	21.5	19	7.5	0.35	561.34	29.865
Kiosk In to HK (InBound)	825738.2	841113.2	825752.3	841096.9	21.5	19	7.5	0.35	561.34	29.865
Kiosk In to HK (InBound)	825733.7	841109.3	825747.7	841093.0	21.5	19	7.5	0.35	561.34	29.865
Kiosk In to HK (InBound)	825729.1	841105.4	825743.2	841089.1	21.5	19	7.5	0.35	561.34	29.865
Kiosk In to HK (InBound)	825724.6	841101.5	825738.6	841085.2	21.5	19	7.5	0.35	561.34	29.865
Unloading Bay Out to China (OutBound)	825770.5	840966.8	825713.5	841032.5	87.0	150	621.6	7.15	11500.67	76.671
Unloading Bay In to HK (InBound)	825599.1	841209.1	825664.7	841134.3	99.4	105	435.1	4.38	7040.60	67.053
Loading Bay Out to China (OutBound)	825648.5	841119.9	825548.8	841233.0	150.8	150	2331.0	15.45	24864.81	165.765
Loading Bay In to HK (InBound)	825731.1	841047.4	825821.3	840943.3	137.8	105	1631.7	11.84	19058.12	181.506

Note * Location of Kiosks and Loading/Unloading Bay are shown in Figure 3.4.

Note ** it is assumed that both the traffic flow and total emission of Nox are evenly distributed to each kiosks

Note ***Emission factor for peak hour is applied on all 24 hours in the CALINE model for conservative assessment.

Calculation of Idling Emission Rate at Lok Ma Chau BCP

Daily Traffic Flow

Cross	Vehicle Type	2016	2021	2026	2031	2012	2020	2027	2035
Lok Ma Chau (LMC)	Bus/ Coach	2600	3200	3300	3400	2200	3100	3300	3500
	GV	8100	3500	3000	2600	6200	3600	2900	2300
	CT	8200	3600	3100	2600	6200	3700	3000	2200
	Car	11800	11800	11800	11800	10100	11800	11800	11800
	Total	30700	22100	21200	20400	24700	22200	21000	19800

Calculated Emission Factor

Vehicle Type	RSP (g/min-veh)
Passenger Car	0
Goods vehicle	0.024
Bus/Coach	0.024
Taxi	0

Note: refer to Calculation of Idling Emission Factor in Year 2027

AM Peak Factor for Maximum Hourly Traffic Flow

Peak Factor	Year 2027			
	Bus	GV	CT	Car
In-bound	0.064	0.048	0.040	0.043
Out-bound	0.091	0.052	0.055	0.072

Kiosks - Idling Time = 40 s *

Lok Ma Chau BCP	Daily Traffic					Peak Hourly Traffic					RSP (g/h) - 40s (kiosks)				
	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total
Year 2027 In-bound	1650	1450	1500	5900	10500	105	69	59	255	489	1.68	1.10	0.95	0.00	3.73
Year 2027 Out-bound	1650	1450	1500	5900	10500	150	76	82	423	731	2.40	1.21	1.32	0.00	4.93

Note * The idling time is advised by Arup Traffic Engineer

Unloading Bay - Idling Time = 4 min *

Lok Ma Chau BCP	Daily Traffic **					Peak Hourly Traffic (veh/hr) **					RSP (g/h) - 4min (unloading bay)				
	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total
Year 2027 In-bound	1650	-	-	-	1650	105	-	-	-	105	10.08	-	-	-	10.08
Year 2027 Out-bound	1650	-	-	-	1650	150	-	-	-	150	14.40	-	-	-	14.40

Note * The idling time is the design parameter, as advised by Arup Traffic Engineer

Note ** only buses and coaches will idle at unloading bay

Loading Bay - Idling Time = 15 min *

Lok Ma Chau BCP	Daily Traffic **					Peak Hourly Traffic (veh/hr) **					RSP (g/h) - 15min (Loading bay)				
	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total	Bus/ Coach	GV	CT	Car	Total
Year 2027 In-bound	1650	-	-	-	1650	105	-	-	-	105	37.80	-	-	-	37.80
Year 2027 Out-bound	1650	-	-	-	1650	150	-	-	-	150	54.00	-	-	-	54.00

Note * The idling time is the design parameter, as advised by Arup Traffic Engineer

Note ** only buses and coaches will idle at loading bay

Emission Rate

Lok Ma Chau BCP*	X1 (m)	Y1 (m)	X2 (m)	Y2 (m)	Length (m)	Traffic ** (veh/hr)	RSP ** (g/hr)	RSP (g/m/hr)	RSP (g/mile/hr)	RSP*** (g/mile-veh)
Kiosk Out to China (OutBound)	825619.2	841006.6	825633.7	840990.0	22.0	30	0.2	0.01	15.00	0.492
Kiosk Out to China (OutBound)	825623.8	841010.6	825638.3	840994.0	22.0	30	0.2	0.01	15.00	0.492
Kiosk Out to China (OutBound)	825628.3	841014.5	825642.8	840997.9	22.0	30	0.2	0.01	15.00	0.492
Kiosk Out to China (OutBound)	825632.8	841018.5	825647.3	841001.9	22.0	30	0.2	0.01	15.00	0.492
Kiosk Out to China (OutBound)	825637.3	841022.4	825651.8	841005.8	22.0	30	0.2	0.01	15.00	0.492
Kiosk Out to China (OutBound)	825641.8	841026.4	825656.3	841009.8	22.0	30	0.2	0.01	15.00	0.492
Kiosk Out to China (OutBound)	825646.4	841030.3	825660.9	841013.7	22.0	30	0.2	0.01	15.00	0.492
Kiosk Out to China (OutBound)	825650.9	841034.3	825665.4	841017.7	22.0	30	0.2	0.01	15.00	0.492
Kiosk Out to China (OutBound)	825655.4	841038.2	825669.9	841021.6	22.0	30	0.2	0.01	15.00	0.492
Kiosk Out to China (OutBound)	825659.9	841042.2	825674.4	841025.6	22.0	30	0.2	0.01	15.00	0.492
Kiosk Out to China (OutBound)	825664.4	841046.1	825678.9	841029.5	22.0	30	0.2	0.01	15.00	0.492
Kiosk Out to China (OutBound)	825669.0	841050.1	825683.4	841033.5	22.0	30	0.2	0.01	15.00	0.492
Kiosk Out to China (OutBound)	825582.2	841049.3	825596.6	841032.8	21.9	30	0.2	0.01	15.07	0.495
Kiosk Out to China (OutBound)	825586.7	841053.3	825601.1	841036.7	21.9	30	0.2	0.01	15.07	0.495
Kiosk Out to China (OutBound)	825591.2	841057.2	825605.7	841040.7	21.9	30	0.2	0.01	15.07	0.495
Kiosk Out to China (OutBound)	825595.8	841061.1	825610.2	841044.6	21.9	30	0.2	0.01	15.07	0.495
Kiosk Out to China (OutBound)	825600.3	841065.1	825614.7	841048.6	21.9	30	0.2	0.01	15.07	0.495
Kiosk Out to China (OutBound)	825604.8	841069.0	825619.2	841052.5	21.9	30	0.2	0.01	15.07	0.495
Kiosk Out to China (OutBound)	825609.3	841073.0	825623.7	841056.5	21.9	30	0.2	0.01	15.07	0.495
Kiosk Out to China (OutBound)	825613.8	841076.9	825628.3	841060.4	21.9	30	0.2	0.01	15.07	0.495
Kiosk Out to China (OutBound)	825618.4	841080.9	825632.8	841064.3	21.9	30	0.2	0.01	15.07	0.495
Kiosk Out to China (OutBound)	825622.9	841084.8	825637.3	841068.3	21.9	30	0.2	0.01	15.07	0.495
Kiosk Out to China (OutBound)	825627.4	841088.8	825641.8	841072.2	21.9	30	0.2	0.01	15.07	0.495
Kiosk Out to China (OutBound)	825631.9	841092.7	825646.3	841076.2	21.9	30	0.2	0.01	15.07	0.495
Kiosk In to HK (InBound)	825741.9	841191.4	825756.1	841174.9	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825737.3	841187.5	825751.6	841171.0	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825732.8	841183.6	825747.0	841167.0	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825728.2	841179.7	825742.5	841163.1	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825723.7	841175.8	825737.9	841159.2	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825719.1	841171.9	825733.4	841155.3	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825714.6	841168.0	825728.8	841151.4	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825710.1	841164.0	825724.3	841147.5	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825705.5	841160.1	825719.8	841143.6	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825701.0	841156.2	825715.2	841139.7	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825696.4	841152.3	825710.7	841135.7	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825691.9	841148.4	825706.1	841131.8	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825687.3	841144.5	825701.6	841127.9	21.9	19	0.1	0.01	10.57	0.562
Kiosk In to HK (InBound)	825779.2	841148.4	825793.2	841132.1	21.5	19	0.1	0.01	10.73	0.571
Kiosk In to HK (InBound)	825774.6	841144.5	825788.6	841128.2	21.5	19	0.1	0.01	10.73	0.571
Kiosk In to HK (InBound)	825770.1	841140.6	825784.1	841124.3	21.5	19	0.1	0.01	10.73	0.571
Kiosk In to HK (InBound)	825765.5	841136.7	825779.5	841120.4	21.5	19	0.1	0.01	10.73	0.571
Kiosk In to HK (InBound)	825761.0	841132.8	825775.0	841116.5	21.5	19	0.1	0.01	10.73	0.571
Kiosk In to HK (InBound)	825756.4	841128.9	825770.4	841112.6	21.5	19	0.1	0.01	10.73	0.571
Kiosk In to HK (InBound)	825751.9	841125.0	825765.9	841108.7	21.5	19	0.1	0.01	10.73	0.571
Kiosk In to HK (InBound)	825747.3	841121.0	825761.4	841104.7	21.5	19	0.1	0.01	10.73	0.571
Kiosk In to HK (InBound)	825742.8	841117.1	825756.8	841100.8	21.5	19	0.1	0.01	10.73	0.571
Kiosk In to HK (InBound)	825738.2	841113.2	825752.3	841096.9	21.5	19	0.1	0.01	10.73	0.571
Kiosk In to HK (InBound)	825733.7	841109.3	825747.7	841093.0	21.5	19	0.1	0.01	10.73	0.571
Kiosk In to HK (InBound)	825729.1	841105.4	825743.2	841089.1	21.5	19	0.1	0.01	10.73	0.571
Kiosk In to HK (InBound)	825724.6	841101.5	825738.6	841085.2	21.5	19	0.1	0.01	10.73	0.571
Unloading Bay Out to China (OutBound)	825770.5	840966.8	825713.5	841032.5	87.0	150	14.4	0.17	266.42	1.776
Unloading Bay In to HK (InBound)	825599.1	841209.1	825664.7	841134.3	99.4	105	10.1	0.10	163.10	1.553
Loading Bay Out to China (OutBound)	825648.5	841119.9	825548.8	841233.0	150.8	150	54.0	0.36	576.02	3.840
Loading Bay In to HK (InBound)	825731.1	841047.4	825821.3	840943.3	137.8	105	37.8	0.27	441.50	4.205

Note * Location of Kiosks and Loading/Unloading Bay are shown in Figure 3.4.

Note ** it is assumed that both the traffic flow and total emission of Nox are evenly distributed to each kiosks

Note ***Emission factor for peak hour is applied on all 24 hours in the CALINE model for conservative assessment.

Estimated Traffic for year 2020

Estimated Daily Profile for year 2020				Kiosk						Loading/Unloading		
Estimated Daily Profile for year 2020				Estimated Traffic Flow for Year 2020						Estimated Traffic Flow for Year 2020		
Bus	GV	CT	Car	Bus	GV	CT	Car	Total	Total (Per Kiosk)	Bus	Total	
2%	2%	2%	3%	35.13	41.51	43.01	149.74	269.39	10.36	35.13	35.13	
2%	2%	2%	2%	23.52	27.79	28.80	91.07	171.18	6.58	23.52	23.52	
1%	1%	1%	1%	13.11	15.49	16.04	54.08	98.71	3.80	13.11	13.11	
1%	1%	1%	1%	10.40	12.29	12.73	33.95	69.38	2.67	10.40	10.40	
1%	1%	1%	0%	11.82	13.97	14.47	26.28	66.53	2.56	11.82	11.82	
1%	2%	2%	1%	23.13	27.33	28.31	35.42	114.19	4.39	23.13	23.13	
3%	3%	3%	1%	43.11	50.94	52.77	69.67	216.49	8.33	43.11	43.11	
4%	4%	4%	3%	67.14	79.33	82.19	151.23	379.89	14.61	67.14	67.14	
6.36%	4.73%	3.96%	3.93%	98.64	85.16	73.33	232.06	489.19	18.82	98.64	98.64	
3%	4%	4%	4%	53.41	63.10	65.38	239.42	421.30	16.20	53.41	53.41	
4%	4%	4%	5%	63.71	75.27	77.98	299.61	516.56	19.87	63.71	63.71	
5%	5%	5%	6%	78.63	92.91	96.26	339.74	607.54	23.37	78.63	78.63	
6%	6%	6%	6%	96.42	113.92	118.03	343.12	671.50	25.83	96.42	96.42	
6%	7%	7%	6%	100.72	119.00	123.29	336.89	679.91	26.15	100.72	100.72	
5%	5%	5%	6%	75.19	88.83	92.04	359.00	615.06	23.66	75.19	75.19	
5%	5%	5%	7%	81.97	96.85	100.34	383.85	663.02	25.50	81.97	81.97	
6%	6%	6%	7%	92.66	109.48	113.43	398.37	713.95	27.46	92.66	92.66	
6%	6%	6%	7%	96.94	114.54	118.67	434.30	764.46	29.40	96.94	96.94	
6%	6%	6%	7%	95.34	112.65	116.71	435.79	760.48	29.25	95.34	95.34	
5%	6%	6%	7%	84.90	100.32	103.93	411.47	700.63	26.95	84.90	84.90	
5%	5%	5%	6%	81.27	96.03	99.49	331.04	607.83	23.38	81.27	81.27	
5%	6%	6%	5%	83.93	99.17	102.74	295.02	580.86	22.34	83.93	83.93	
4%	4%	4%	4%	66.57	78.66	81.50	255.56	482.29	18.55	66.57	66.57	
5%	5%	5%	3%	72.33	85.46	88.54	193.33	439.67	16.91	72.33	72.33	
Total								11100.00		Total		1550.00

Bus	GV	CT	Car	Bus	GV	CT	Car	Total	Total (Per Kiosk)	Bus	Total	
1%	1%	1%	2%	20.42	24.72	25.35	113.83	184.33	7.68	20.42	20.42	
1%	1%	1%	1%	15.92	19.27	19.76	43.29	98.25	4.09	15.92	15.92	
1%	1%	1%	0%	11.46	13.87	14.22	24.51	64.06	2.67	11.46	11.46	
1%	1%	1%	0%	8.89	10.76	11.03	15.68	46.35	1.93	8.89	8.89	
1%	1%	1%	0%	10.36	12.54	12.86	13.64	49.41	2.06	10.36	10.36	
2%	2%	2%	0%	23.96	29.00	29.74	26.79	109.50	4.56	23.96	23.96	
3%	3%	3%	1%	47.48	57.47	58.93	75.84	239.72	9.99	47.48	47.48	
4%	4%	4%	4%	65.35	79.11	81.12	242.68	468.26	19.51	65.35	65.35	
9%	5%	5%	7%	140.91	94.38	100.98	413.11	749.37	31.22	140.91	140.91	
6%	6%	6%	7%	86.61	104.84	107.51	422.79	721.75	30.07	86.61	86.61	
7%	7%	7%	7%	101.86	123.30	126.44	389.31	740.91	30.87	101.86	101.86	
7%	8%	8%	6%	116.01	140.42	143.99	383.22	783.64	32.65	116.01	116.01	
7%	8%	8%	6%	114.39	138.46	141.98	365.44	760.27	31.68	114.39	114.39	
7%	7%	7%	6%	104.15	126.06	129.27	376.19	735.68	30.65	104.15	104.15	
6%	6%	6%	7%	86.67	104.91	107.58	399.07	698.24	29.09	86.67	86.67	
6%	6%	6%	7%	92.06	111.43	114.26	393.60	711.35	29.64	92.06	92.06	
6%	6%	6%	6%	88.33	106.92	109.64	369.10	674.00	28.08	88.33	88.33	
6%	6%	6%	6%	86.33	104.49	107.15	363.45	661.43	27.56	86.33	86.33	
5%	5%	5%	6%	80.11	96.97	99.44	334.25	610.77	25.45	80.11	80.11	
5%	5%	5%	5%	77.83	94.20	96.60	306.82	575.45	23.98	77.83	77.83	
5%	5%	5%	4%	71.01	85.96	88.15	256.83	501.95	20.91	71.01	71.01	
3%	3%	3%	4%	45.38	54.94	56.33	230.04	386.70	16.11	45.38	45.38	
2%	2%	2%	3%	28.27	34.22	35.09	184.10	281.68	11.74	28.27	28.27	
2%	2%	2%	3%	26.23	31.75	32.56	156.40	246.94	10.29	26.23	26.23	
Total								11100.00		Total		1550.00

Estimated Traffic for year 2027

Estimated Daily Profile for year 2027				Kiosk						Loading/Unloading			
Estimated Daily Profile for year 2027				Estimated Traffic Flow for Year 2027						Estimated Traffic Flow for Year 2027			
Bus	GV	CT	Car	Bus	GV	CT	Car	Total	Total (Per Kiosk)	Bus	Total		
2%	2%	2%	3%	37.40	33.43	34.87	149.12	254.82	9.80	37.40	37.40		
2%	2%	2%	2%	25.04	22.38	23.35	90.69	161.47	6.21	25.04	25.04		
1%	1%	1%	1%	13.95	12.47	13.01	53.85	93.29	3.59	13.95	13.95		
1%	1%	1%	1%	11.07	9.90	10.33	33.81	65.11	2.50	11.07	11.07		
1%	1%	1%	0%	12.58	11.25	11.73	26.17	61.73	2.37	12.58	12.58		
1%	2%	2%	1%	24.62	22.01	22.96	35.27	104.86	4.03	24.62	24.62		
3%	3%	3%	1%	45.89	41.02	42.79	69.38	199.09	7.66	45.89	45.89		
4%	4%	4%	3%	71.47	63.89	66.65	150.61	352.62	13.56	71.47	71.47		
6%	5%	4%	4%	105.00	68.89	59.32	255.49	488.69	18.80	105.00	105.00		
3%	4%	4%	4%	56.85	50.82	53.01	238.43	399.11	15.35	56.85	56.85		
4%	4%	4%	5%	67.82	60.62	63.24	298.37	490.04	18.85	67.82	67.82		
5%	5%	5%	6%	83.71	74.83	78.05	338.34	574.92	22.11	83.71	83.71		
6%	6%	6%	6%	102.64	91.75	95.71	341.71	631.81	24.30	102.64	102.64		
6%	7%	7%	6%	107.22	95.84	99.98	335.50	638.54	24.56	107.22	107.22		
5%	5%	5%	6%	80.04	71.55	74.63	357.52	583.73	22.45	80.04	80.04		
5%	5%	5%	6%	87.26	78.00	81.37	382.27	628.89	24.19	87.26	87.26		
6%	6%	6%	7%	98.64	88.18	91.98	396.73	675.52	25.98	98.64	98.64		
6%	6%	6%	7%	103.20	92.25	96.23	432.51	724.19	27.85	103.20	103.20		
6%	6%	6%	7%	101.49	90.73	94.64	433.99	720.84	27.72	101.49	101.49		
5%	6%	6%	7%	90.38	80.79	84.28	409.77	665.23	25.59	90.38	90.38		
5%	5%	5%	6%	86.52	77.34	80.68	329.67	574.20	22.08	86.52	86.52		
5%	6%	6%	5%	89.35	79.87	83.31	293.80	546.33	21.01	89.35	89.35		
4%	4%	4%	4%	70.87	63.35	66.08	254.50	454.81	17.49	70.87	70.87		
5%	5%	5%	3%	77.00	68.83	71.80	192.53	410.16	15.78	77.00	77.00		
				Total						10500.00	Total		1650.00

Bus	GV	CT	Car	Bus	GV	CT	Car	Total	Total (Per Kiosk)	Bus	Total		
1%	1%	1%	2%	21.74	19.92	20.55	113.62	175.83	7.33	21.74	21.74		
1%	1%	1%	1%	16.95	15.53	16.02	43.22	91.71	3.82	16.95	16.95		
1%	1%	1%	0%	12.20	11.18	11.53	24.47	59.37	2.47	12.20	12.20		
1%	1%	1%	0%	9.46	8.67	8.94	15.65	42.72	1.78	9.46	9.46		
1%	1%	1%	0%	11.03	10.11	10.42	13.62	45.18	1.88	11.03	11.03		
2%	2%	2%	0%	25.51	23.37	24.10	26.74	99.72	4.16	25.51	25.51		
3%	3%	3%	1%	50.54	46.31	47.76	75.70	220.31	9.18	50.54	50.54		
4%	4%	4%	4%	69.57	63.74	65.75	242.24	441.30	18.39	69.57	69.57		
9%	5%	5%	7%	150.00	75.70	82.47	423.09	731.26	30.47	150.00	150.00		
6%	6%	6%	7%	92.20	84.47	87.13	422.02	685.82	28.58	92.20	92.20		
7%	7%	7%	7%	108.44	99.35	102.47	388.60	698.86	29.12	108.44	108.44		
7%	8%	8%	6%	123.49	113.14	116.70	382.52	735.86	30.66	123.49	123.49		
7%	8%	8%	6%	121.77	111.56	115.07	364.78	713.18	29.72	121.77	121.77		
7%	7%	7%	6%	110.87	101.58	104.77	375.51	692.72	28.86	110.87	110.87		
6%	6%	6%	7%	92.26	84.53	87.19	398.35	662.34	27.60	92.26	92.26		
6%	6%	6%	7%	98.00	89.78	92.61	392.88	673.27	28.05	98.00	98.00		
6%	6%	6%	6%	94.03	86.15	88.86	368.43	637.48	26.56	94.03	94.03		
6%	6%	6%	6%	91.90	84.20	86.84	362.79	625.73	26.07	91.90	91.90		
5%	5%	5%	6%	85.28	78.13	80.59	333.64	577.64	24.07	85.28	85.28		
5%	5%	5%	5%	82.85	75.90	78.29	306.26	543.30	22.64	82.85	82.85		
5%	5%	5%	4%	75.60	69.26	71.44	256.37	472.66	19.69	75.60	75.60		
3%	3%	3%	4%	48.31	44.26	45.66	229.63	367.86	15.33	48.31	48.31		
2%	2%	2%	3%	30.10	27.57	28.44	183.76	269.87	11.24	30.10	30.10		
2%	2%	2%	3%	27.92	25.58	26.39	156.11	236.01	9.83	27.92	27.92		
				Total						10500.00	Total		1650.00