

Appendix 3.7 Emission Inventory for Portal Emissions
Interim Phase (Year 2030)

Source Name	Description	Percentage for Portal	Length (m)	Portal ID	Road Link ID	No. of Portal Sources	Hour	Q (veh/hr)	Total Emission Factor				Total Emission Rate				Emission Rate (from Portal Sources)				Daily Emission Rate / Diurnal Profile (from 1st 50m for Each Portal Source)				Daily Emission Rate / Diurnal Profile (from 2nd 50m for Each Portal Source)																								
									NO (g/mile-veh)	NO ₂ (g/mile-veh)	RSP (g/mile-veh)	FSP (g/mile-veh)	NO (g/s)	NO ₂ (g/s)	RSP (g/s)	FSP (g/s)	NO (g/s)	NO ₂ (g/s)	RSP (g/s)	FSP (g/s)	NO (g/s) / %	NO ₂ (g/s) / %	RSP (g/s) / %	FSP (g/s) / %	NO (g/s) / %	NO ₂ (g/s) / %	RSP (g/s) / %	FSP (g/s) / %																					
									A	Enclosure A (From Yuen Long Highway (WB) To Long Tin Road)	100%	148	Portal : A1-A6	9235	6	1	522	0.6582	0.0655	0.0337	0.0311	8.781E-03	8.739E-04	4.495E-04	4.144E-04	8.781E-03	8.739E-04	4.495E-04	4.144E-04	1.1%	0.8%	1.1%	1.1%	1.1%	0.8%	1.1%	1.1%												
B	Enclosure B (From Long Tin Road to TYST Interchange)	100%	83	Portal : B1-B10	9161	10	1	448								0.4775	0.0588	0.0220	0.0202	3.068E-03	3.777E-04	1.411E-04	1.297E-04	3.068E-03	3.777E-04	1.411E-04	1.297E-04	1.4%	1.1%	1.4%	1.4%	1.4%	1.1%	1.4%	1.4%														
							C	Enclosure C (From Long Tin Road to Yuen Long Highway (EB))								100%	83	Portal : C1-C16	9158	16	1	288	0.9978	0.0811	0.0534	0.0491	4.114E-03	3.342E-04	2.203E-04	2.026E-04	4.114E-03	3.342E-04	2.203E-04	2.026E-04	2.0%	1.3%	2.2%	2.2%	2.0%	1.3%	2.2%	2.2%							
																												Daily	-	-	-	-	-	8.070E-01	1.118E-01	4.002E-02	3.684E-02	8.070E-01	1.118E-01	4.002E-02	3.684E-02	1.793E-01	2.485E-02	8.892E-03	8.187E-03	8.966E-02	1.242E-02	4.446E-03	4.093E-03
																												Daily	-	-	-	-	-	2.917E-01	5.191E-02	2.218E-02	2.042E-04	4.971E-03	5.191E-04	2.218E-04	2.042E-04	2.3%	1.5%	2.2%	2.2%	2.3%	1.5%	2.2%	2.2%

Appendix 3.7 Emission Inventory for Portal Emissions
Interim Phase (Year 2030)

Hourly Profile for Portals

Hour	Enclosure A				Enclosure B				Enclosure C			
	NO	NO _x	RSP	FSP	NO	NO _x	RSP	FSP	NO	NO _x	RSP	FSP
Hour 1	1.1%	0.8%	1.1%	1.1%	1.4%	1.1%	1.4%	1.4%	2.0%	1.3%	2.2%	2.2%
Hour 2	0.7%	0.6%	0.8%	0.8%	0.9%	0.7%	0.9%	0.9%	1.3%	0.9%	1.4%	1.4%
Hour 3	0.5%	0.4%	0.6%	0.6%	0.7%	0.6%	0.7%	0.7%	0.9%	0.6%	1.0%	1.0%
Hour 4	0.4%	0.3%	0.4%	0.4%	0.6%	0.5%	0.6%	0.6%	0.7%	0.5%	0.8%	0.8%
Hour 5	0.4%	0.4%	0.5%	0.5%	0.6%	0.5%	0.6%	0.6%	0.8%	0.6%	0.8%	0.8%
Hour 6	0.7%	0.6%	0.7%	0.7%	0.9%	0.8%	0.9%	0.9%	1.1%	0.9%	1.2%	1.2%
Hour 7	1.9%	1.7%	2.0%	1.9%	2.6%	2.6%	2.7%	2.7%	3.4%	2.8%	3.6%	3.6%
Hour 8	5.1%	5.0%	5.1%	5.1%	7.5%	7.9%	7.4%	7.4%	9.9%	8.7%	9.8%	9.8%
Hour 9	4.9%	5.0%	5.0%	5.0%	7.5%	8.2%	7.6%	7.6%	9.9%	9.0%	9.7%	9.7%
Hour 10	4.9%	5.3%	4.9%	4.9%	7.5%	8.5%	7.4%	7.4%	9.2%	8.9%	9.0%	9.0%
Hour 11	4.6%	5.3%	4.7%	4.7%	7.2%	8.5%	7.2%	7.2%	8.5%	8.7%	8.4%	8.4%
Hour 12	4.2%	4.7%	4.3%	4.3%	6.6%	7.7%	6.6%	6.6%	7.6%	7.6%	7.5%	7.5%
Hour 13	6.4%	7.4%	6.4%	6.4%	5.0%	5.5%	5.2%	5.2%	4.1%	5.4%	4.1%	4.1%
Hour 14	6.4%	7.4%	6.3%	6.3%	5.1%	5.4%	5.1%	5.1%	4.2%	5.4%	4.1%	4.1%
Hour 15	6.9%	8.1%	6.8%	6.8%	5.5%	6.1%	5.6%	5.6%	4.6%	6.1%	4.5%	4.5%
Hour 16	6.9%	8.0%	6.7%	6.7%	5.6%	6.0%	5.6%	5.6%	4.5%	6.0%	4.4%	4.4%
Hour 17	7.6%	8.4%	7.4%	7.4%	6.1%	6.4%	6.1%	6.1%	4.9%	6.0%	4.8%	4.8%
Hour 18	8.2%	8.4%	8.0%	8.0%	6.5%	6.3%	6.4%	6.4%	5.2%	5.9%	5.1%	5.1%
Hour 19	7.2%	6.5%	7.2%	7.2%	5.7%	4.9%	5.8%	5.8%	4.4%	4.3%	4.4%	4.4%
Hour 20	5.6%	4.7%	4.8%	4.8%	4.4%	3.6%	4.6%	4.6%	3.4%	3.1%	3.5%	3.5%
Hour 21	4.5%	3.4%	4.5%	4.5%	3.5%	2.6%	3.5%	3.5%	2.7%	2.3%	2.8%	2.8%
Hour 22	4.1%	3.0%	4.1%	4.1%	3.3%	2.3%	3.1%	3.1%	2.5%	2.0%	2.5%	2.5%
Hour 23	4.0%	2.5%	3.9%	3.9%	3.0%	1.8%	2.8%	2.8%	2.4%	1.7%	2.4%	2.4%
Hour 24	2.9%	2.0%	2.9%	2.9%	2.3%	1.5%	2.2%	2.2%	1.8%	1.3%	1.8%	1.8%

Hour	Enclosure D				Enclosure E				Enclosure F			
	NO	NO _x	RSP	FSP	NO	NO _x	RSP	FSP	NO	NO _x	RSP	FSP
Hour 1	1.1%	0.7%	0.9%	0.9%	1.7%	1.4%	1.7%	1.7%	1.3%	0.9%	1.3%	1.3%
Hour 2	0.7%	0.5%	0.6%	0.6%	1.1%	1.0%	1.1%	1.1%	0.8%	0.6%	0.9%	0.9%
Hour 3	0.5%	0.4%	0.5%	0.5%	0.8%	0.7%	0.8%	0.8%	0.6%	0.5%	0.6%	0.6%
Hour 4	0.4%	0.4%	0.4%	0.4%	0.6%	0.6%	0.6%	0.6%	0.5%	0.4%	0.5%	0.5%
Hour 5	0.5%	0.4%	0.4%	0.4%	0.6%	0.6%	0.7%	0.7%	0.5%	0.4%	0.5%	0.5%
Hour 6	0.7%	0.6%	0.6%	0.7%	1.0%	0.9%	1.0%	1.0%	0.8%	0.7%	0.8%	0.8%
Hour 7	1.9%	1.7%	1.8%	1.8%	2.7%	2.7%	2.7%	2.7%	2.3%	2.2%	2.3%	2.3%
Hour 8	5.0%	4.9%	4.9%	4.9%	7.5%	7.8%	7.2%	7.2%	6.4%	6.5%	6.4%	6.4%
Hour 9	4.8%	4.8%	5.0%	5.0%	7.0%	7.3%	6.8%	6.8%	6.4%	6.7%	6.4%	6.4%
Hour 10	4.4%	4.4%	4.4%	4.4%	6.5%	7.1%	6.3%	6.3%	6.2%	6.7%	6.1%	6.1%
Hour 11	4.1%	4.2%	4.2%	4.2%	5.9%	6.6%	5.8%	5.8%	5.8%	6.6%	5.8%	5.8%
Hour 12	3.8%	3.8%	3.9%	3.9%	5.5%	6.2%	5.3%	5.3%	5.3%	6.0%	5.3%	5.3%
Hour 13	6.8%	7.8%	7.4%	7.4%	4.9%	5.4%	5.0%	5.0%	5.7%	6.4%	5.8%	5.8%
Hour 14	7.0%	7.8%	7.3%	7.3%	4.9%	5.3%	4.9%	4.9%	5.7%	6.4%	5.7%	5.7%
Hour 15	7.7%	8.7%	8.0%	8.0%	5.0%	5.5%	5.0%	5.0%	6.2%	7.2%	6.2%	6.2%
Hour 16	7.7%	8.6%	8.0%	8.0%	5.0%	5.5%	5.0%	5.0%	6.2%	7.1%	6.2%	6.2%
Hour 17	8.3%	9.1%	8.5%	8.5%	6.1%	5.9%	5.8%	5.8%	6.9%	7.5%	6.8%	6.8%
Hour 18	8.2%	8.7%	8.3%	8.3%	6.6%	6.5%	6.6%	6.6%	7.4%	7.5%	7.3%	7.3%
Hour 19	7.1%	6.8%	7.2%	7.2%	6.4%	5.7%	6.4%	6.4%	6.5%	5.9%	6.6%	6.6%
Hour 20	5.2%	5.0%	5.4%	5.4%	5.3%	4.5%	5.4%	5.4%	5.0%	4.2%	5.2%	5.2%
Hour 21	4.2%	3.6%	3.9%	3.9%	4.4%	3.7%	4.5%	4.5%	3.9%	3.0%	4.0%	4.0%
Hour 22	3.9%	3.0%	3.3%	3.3%	4.2%	3.5%	4.2%	4.2%	3.6%	2.6%	3.5%	3.5%
Hour 23	3.5%	2.3%	2.7%	2.7%	3.9%	3.0%	4.0%	4.0%	3.4%	2.2%	3.3%	3.3%
Hour 24	2.6%	1.9%	2.1%	2.1%	2.9%	2.3%	3.0%	3.0%	2.5%	1.7%	2.5%	2.5%

Hour	Enclosure G				Underpass H			
	NO	NO _x	RSP	FSP	NO	NO ₂	RSP	FSP
Hour 1	1.7%	1.5%	1.8%	1.8%	0.8%	0.8%	0.8%	0.8%
Hour 2	1.2%	1.0%	1.2%	1.2%	0.6%	0.5%	0.6%	0.6%
Hour 3	0.8%	0.7%	0.9%	0.9%	0.4%	0.4%	0.4%	0.4%
Hour 4	0.7%	0.6%	0.7%	0.7%	0.3%	0.3%	0.4%	0.4%
Hour 5	0.7%	0.6%	0.7%	0.7%	0.4%	0.3%	0.4%	0.4%
Hour 6	1.0%	0.9%	1.0%	1.0%	0.6%	0.5%	0.6%	0.6%
Hour 7	2.7%	2.6%	2.8%	2.8%	1.8%	1.7%	1.9%	1.9%
Hour 8	7.1%	6.9%	7.0%	7.0%	5.5%	5.5%	5.6%	5.6%
Hour 9	6.3%	6.1%	6.4%	6.4%	5.8%	5.9%	6.0%	6.0%
Hour 10	5.9%	5.9%	5.9%	5.9%	6.4%	6.7%	6.6%	6.6%
Hour 11	5.3%	5.4%	5.4%	5.4%	6.4%	6.8%	6.7%	6.7%
Hour 12	5.0%	5.2%	5.0%	5.0%	5.9%	5.9%	5.9%	5.9%
Hour 13	5.1%	5.8%	5.1%	5.1%	6.7%	7.3%	7.1%	7.1%
Hour 14	5.0%	5.7%	5.0%	5.0%	7.2%	7.6%	7.3%	7.3%
Hour 15	5.1%	5.8%	5.0%	5.0%	8.4%	8.9%	8.3%	8.3%
Hour 16	5.2%	5.9%	5.2%	5.2%	8.2%	8.6%	8.1%	8.1%
Hour 17	6.0%	6.5%	5.9%	5.9%	8.3%	8.5%	8.0%	8.0%
Hour 18	6.8%	7.0%	6.7%	6.7%	8.2%	8.1%	7.7%	7.7%
Hour 19	6.6%	6.3%	6.5%	6.5%	5.9%	5.5%	5.7%	5.7%
Hour 20	5.6%	5.2%	5.6%	5.6%	3.7%	3.3%	3.8%	3.8%
Hour 21	4.7%	4.2%	4.7%	4.7%	2.7%	2.2%	2.6%	2.6%
Hour 22	4.4%	4.0%	4.4%	4.4%	2.5%	2.0%	2.3%	2.3%
Hour 23	4.1%	3.4%	4.2%	4.2%	2.1%	1.5%	1.8%	1.8%
Hour 24	3.0%	2.6%	3.1%	3.1%	1.6%	1.2%	1.5%	1.5%

Appendix 3.7 Emission Inventory for Portal Emissions
Operation Phase (Year 2033)

Hourly Profile for Portals

Hour	Enclosure A				Enclosure B				Enclosure C			
	NO	NO _x	RSP	FSP	NO	NO _x	RSP	FSP	NO	NO _x	RSP	FSP
Hour 1	1.1%	0.8%	1.1%	1.1%	1.3%	1.0%	1.3%	1.3%	1.7%	1.1%	2.0%	2.0%
Hour 2	0.7%	0.5%	0.8%	0.8%	0.9%	0.7%	0.9%	0.9%	1.1%	0.7%	1.3%	1.3%
Hour 3	0.5%	0.4%	0.6%	0.5%	0.6%	0.5%	0.7%	0.7%	0.7%	0.5%	0.9%	0.9%
Hour 4	0.4%	0.3%	0.4%	0.4%	0.5%	0.4%	0.5%	0.5%	0.6%	0.4%	0.7%	0.7%
Hour 5	0.4%	0.3%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%	0.4%	0.8%	0.8%
Hour 6	0.6%	0.8%	0.7%	0.7%	0.8%	0.7%	0.9%	0.9%	0.9%	0.7%	1.2%	1.2%
Hour 7	1.8%	1.7%	1.9%	1.9%	2.5%	2.5%	2.7%	2.6%	2.9%	2.4%	3.4%	3.4%
Hour 8	5.0%	5.1%	5.2%	5.1%	7.7%	8.2%	7.5%	7.5%	14.2%	14.5%	12.9%	12.9%
Hour 9	5.0%	5.2%	5.2%	5.2%	7.8%	8.6%	7.8%	7.8%	19.2%	21.9%	15.6%	15.6%
Hour 10	4.8%	5.2%	4.9%	4.9%	7.7%	8.7%	7.4%	7.3%	12.3%	13.0%	11.1%	11.1%
Hour 11	4.6%	5.3%	4.7%	4.7%	7.3%	8.6%	7.0%	7.0%	9.5%	10.0%	9.1%	9.1%
Hour 12	4.1%	4.6%	4.2%	4.2%	6.5%	7.4%	6.3%	6.3%	7.7%	7.8%	7.7%	7.7%
Hour 13	6.1%	7.0%	6.2%	6.2%	4.8%	5.3%	5.1%	5.1%	2.6%	2.8%	3.0%	3.0%
Hour 14	6.2%	6.8%	6.1%	6.1%	5.0%	5.2%	5.0%	5.0%	2.6%	2.8%	3.0%	3.0%
Hour 15	6.8%	7.8%	6.5%	6.5%	5.4%	5.9%	5.4%	5.4%	2.9%	3.2%	3.2%	3.2%
Hour 16	6.8%	7.7%	6.6%	6.6%	5.5%	5.8%	5.4%	5.5%	2.9%	3.1%	3.2%	3.2%
Hour 17	7.7%	8.4%	7.4%	7.4%	6.1%	6.4%	6.1%	6.1%	3.1%	3.2%	3.5%	3.5%
Hour 18	8.4%	8.5%	8.1%	8.1%	6.6%	6.4%	6.5%	6.6%	3.4%	3.2%	3.8%	3.8%
Hour 19	7.5%	8.8%	7.6%	7.6%	6.0%	5.3%	6.3%	6.3%	2.9%	2.4%	3.4%	3.4%
Hour 20	5.7%	5.0%	6.1%	6.1%	4.4%	4.8%	4.9%	4.9%	1.7%	2.7%	2.7%	2.7%
Hour 21	4.5%	3.6%	4.6%	4.6%	3.5%	2.7%	3.6%	3.7%	1.7%	1.3%	2.1%	2.1%
Hour 22	4.3%	3.2%	4.1%	4.1%	3.3%	2.2%	3.2%	3.2%	1.6%	1.2%	2.0%	2.0%
Hour 23	4.0%	2.7%	3.9%	3.9%	3.1%	1.9%	2.9%	2.9%	1.6%	1.0%	1.9%	1.9%
Hour 24	3.0%	2.1%	2.9%	2.9%	2.3%	1.5%	2.2%	2.2%	1.1%	0.8%	1.4%	1.4%

Hour	Enclosure D				Enclosure E				Enclosure F			
	NO	NO _x	RSP	FSP	NO	NO _x	RSP	FSP	NO	NO _x	RSP	FSP
Hour 1	0.8%	0.6%	0.7%	0.7%	1.7%	1.3%	1.7%	1.7%	1.0%	0.7%	1.1%	1.1%
Hour 2	0.5%	0.4%	0.5%	0.5%	1.1%	0.9%	1.1%	1.1%	0.7%	0.5%	0.7%	0.7%
Hour 3	0.4%	0.3%	0.4%	0.4%	0.8%	0.6%	0.8%	0.8%	0.5%	0.3%	0.5%	0.5%
Hour 4	0.3%	0.3%	0.3%	0.3%	0.6%	0.5%	0.6%	0.6%	0.4%	0.3%	0.4%	0.4%
Hour 5	0.3%	0.3%	0.3%	0.3%	0.6%	0.5%	0.6%	0.6%	0.4%	0.3%	0.5%	0.5%
Hour 6	0.5%	0.5%	0.5%	0.5%	0.9%	0.8%	1.0%	1.0%	0.6%	0.5%	0.7%	0.7%
Hour 7	1.3%	1.3%	1.6%	1.4%	2.7%	2.6%	2.8%	2.8%	1.9%	1.7%	2.1%	2.1%
Hour 8	3.4%	3.8%	3.7%	3.7%	8.3%	8.6%	7.9%	7.9%	7.7%	8.3%	7.4%	7.4%
Hour 9	3.2%	3.4%	3.6%	3.7%	8.0%	8.4%	7.6%	7.7%	9.6%	11.1%	8.9%	8.9%
Hour 10	3.0%	3.3%	3.3%	3.3%	6.8%	7.1%	6.5%	6.5%	7.1%	7.9%	6.6%	6.6%
Hour 11	2.8%	3.2%	3.1%	3.1%	6.1%	6.5%	5.8%	5.8%	6.2%	7.0%	5.9%	5.9%
Hour 12	2.7%	2.9%	2.9%	2.9%	5.6%	5.8%	5.4%	5.4%	5.4%	6.0%	5.3%	5.3%
Hour 13	7.0%	8.3%	7.5%	7.4%	4.7%	5.2%	4.9%	4.9%	4.6%	5.0%	4.9%	4.9%
Hour 14	7.3%	8.1%	7.2%	7.2%	4.7%	5.1%	4.7%	4.7%	4.8%	4.9%	4.8%	4.8%
Hour 15	7.7%	8.7%	7.7%	7.7%	4.9%	5.5%	4.9%	4.9%	5.3%	5.5%	5.2%	5.2%
Hour 16	8.1%	9.0%	8.0%	8.0%	5.0%	5.5%	5.0%	5.0%	5.3%	5.5%	5.3%	5.3%
Hour 17	8.7%	9.6%	8.7%	8.6%	6.1%	5.8%	6.1%	5.8%	6.4%	6.6%	6.3%	6.3%
Hour 18	9.2%	9.6%	9.2%	9.2%	6.6%	6.6%	6.5%	6.5%	8.5%	8.7%	8.1%	8.1%
Hour 19	8.2%	7.8%	8.6%	8.7%	6.2%	5.8%	6.3%	6.3%	8.6%	8.3%	8.7%	8.7%
Hour 20	6.3%	5.9%	6.9%	6.9%	5.0%	4.5%	5.3%	5.3%	4.3%	3.7%	5.1%	5.1%
Hour 21	5.2%	4.3%	5.0%	5.0%	4.0%	3.5%	4.3%	4.3%	3.2%	2.4%	3.6%	3.6%
Hour 22	4.9%	3.5%	4.2%	4.2%	3.8%	3.2%	4.0%	4.0%	2.9%	1.9%	3.0%	3.0%
Hour 23	4.6%	2.8%	3.5%	3.5%	3.6%	2.9%	3.8%	3.8%	2.7%	1.6%	2.8%	2.8%
Hour 24	3.4%	2.2%	2.7%	2.7%	2.6%	2.2%	2.8%	2.8%	2.0%	1.2%	2.1%	2.1%

Hour	Enclosure G				Underpass H			
	NO	NO _x	RSP	FSP	NO	NO ₂	RSP	FSP
Hour 1	1.6%	1.4%	1.7%	1.7%	0.6%	0.4%	0.7%	0.7%
Hour 2	1.1%	1.0%	1.2%	1.2%	0.4%	0.3%	0.5%	0.5%
Hour 3	0.8%	0.7%	0.8%	0.8%	0.3%	0.2%	0.4%	0.4%
Hour 4	0.6%	0.6%	0.7%	0.7%	0.2%	0.2%	0.3%	0.3%
Hour 5	0.6%	0.6%	0.7%	0.7%	0.3%	0.2%	0.3%	0.4%
Hour 6	0.9%	0.9%	1.0%	1.0%	0.4%	0.4%	0.6%	0.6%
Hour 7	2.5%	2.5%	2.7%	2.7%	1.4%	1.3%	1.7%	1.7%
Hour 8	6.6%	6.6%	6.7%	6.7%	4.8%	4.9%	5.2%	5.2%
Hour 9	6.0%	6.1%	6.2%	6.2%	5.4%	5.5%	5.7%	5.7%
Hour 10	5.6%	5.8%	5.7%	5.7%	6.0%	6.3%	6.1%	6.1%
Hour 11	5.2%	5.5%	5.3%	5.3%	5.9%	6.3%	6.1%	6.1%
Hour 12	4.9%	5.2%	5.0%	5.0%	5.1%	5.4%	5.4%	5.4%
Hour 13	5.3%	5.8%	5.3%	5.3%	6.0%	6.5%	6.4%	6.4%
Hour 14	5.2%	5.6%	5.1%	5.1%	6.3%	6.6%	6.4%	6.4%
Hour 15	5.3%	5.7%	5.1%	5.1%	8.3%	8.9%	7.8%	7.7%
Hour 16	5.4%	5.8%	5.2%	5.2%	8.6%	9.1%	7.9%	7.9%
Hour 17	6.3%	6.6%	6.1%	6.1%	9.6%	10.1%	8.6%	8.6%
Hour 18	7.0%	7.0%	6.8%	6.8%	11.4%	11.8%	9.8%	9.8%
Hour 19	6.9%	6.6%	6.8%	6.8%	7.4%	6.9%	7.5%	7.5%
Hour 20	5.7%	5.4%	5.8%	5.8%	3.5%	3.1%	4.2%	4.2%
Hour 21	4.8%	4.4%	4.7%	4.8%	2.4%	1.8%	2.8%	2.8%
Hour 22	4.5%	4.0%	4.4%	4.4%	2.2%	1.5%	2.3%	2.3%
Hour 23	4.3%	3.5%	4.1%	4.1%	2.0%	1.2%	1.9%	1.9%
Hour 24	3.1%	2.6%	3.1%	3.0%	1.5%	0.9%	1.5%	1.5%