

Appendix 4.4 Calculation of Vehicle Emission generated During Queuing in VHA and Toll Plaza											
				Outbound				Inbound			
Kiosk 5-12		Kiosk 1		Kiosk 2-4		Kiosk 12		Kiosk 12		Kiosk 1-11	
		Alighting		Boarding		Alighting		Boarding		Alighting	
Capacity (veh per kiosk)	1	12	20	3*	12	20	12	20	1	1	1
total length (m)	17	74	131	12	126	126	76	126	5	17	17
NOX emission rate g/min/veh	2.10	2.10	2.10	0.21	2.10	2.10	2.10	2.10	0.21	2.10	2.10
g/hr	126	1512	2520	38	1512	2520	1512	2520	13	126	126
g/hr/km	7412	20338	19208	3163	19996	20041	19996	20041	2349	7412	7412
g/hr/mile	11928	32730	30913	5091	32180	32252	32180	32252	3781	11928	11928
				Outbound				Inbound			
Kiosk 5-12		Kiosk 1		Kiosk 2-4		Kiosk 12		Kiosk 12		Kiosk 1-11	
		Alighting		Boarding		Alighting		Boarding		Alighting	
Capacity (veh per kiosk)	1	12	20	3*	12	20	12	20	1	1	1
total length (m)	17	74	131	12	126	126	76	126	5	17	17
RSP emission rate g/min/veh	0.06	0.06	0.06	0.00	0.06	0.06	0.06	0.06	0.00	0.06	0.06
g/hr	3.6	43.2	72.0	0.0	43.2	72.0	43.2	72.0	0.0	3.6	3.6
g/hr/km	211.8	581.1	548.8	0.0	571.3	572.6	571.3	572.6	0.0	211.8	211.8
g/hr/mile	340.8	935.1	883.2	0.0	919.4	921.5	919.4	921.5	0.0	340.8	340.8
Note:											
In air quality modelling, Kiosk 2-4 is modelled as one line source. Thus, the total number vehicles in Kiosk 2-4 is 3.											