Appendix 4.12 Calculation of Marine Traffic Noise

Prevailing noise measurement results

	Leq(1-hr), dB(A)			Leq(1-hr), dB(A)		Leq(1-hr), dB(A)
Time	Ma Pui Tsuen (MPT)	On Luen Village (OLV)	**Time**	Ha Fa Chuen (HFC)	**Time**	Ocean Shores (OS)
2024/06/23 0:00	58	52	2024/06/30 00:00:00	59	2024/07/07 00:00	52
2024/06/23 1:00	60	53	2024/06/30 01:00:00	56	2024/07/07 01:00	50
2024/06/23 2:00	56	50	2024/06/30 02:00:00	59	2024/07/07 02:00	50
2024/06/23 3:00	60	50	2024/06/30 03:00:00	61	2024/07/07 03:00	50
2024/06/23 4:00	57	51	2024/06/30 04:00:00	58	2024/07/07 04:00	49
2024/06/23 5:00	59	55	2024/06/30 05:00:00	60	2024/07/07 05:00	67
2024/06/23 6:00	59	52	2024/06/30 06:00:00	59	2024/07/07 06:00	67
2024/06/23 7:00	61	53	2024/06/30 07:00:00	60	2024/07/07 07:00	59
2024/06/23 8:00	63	53	2024/06/30 08:00:00	63	2024/07/07 08:00	70
2024/06/23 9:00	65	54	2024/06/30 09:00:00	61	2024/07/07 09:00	62
2024/06/23 10:00	65	53	2024/06/30 10:00:00	61	2024/07/07 10:00	54
2024/06/23 11:00	65	53	2024/06/30 11:00:00	63	2024/07/07 11:00	55
2024/06/23 12:00	63	53	2024/06/30 12:00:00	61	2024/07/07 12:00	65
2024/06/23 13:00	65	57	2024/06/30 13:00:00	61	2024/07/07 13:00	55
2024/06/23 14:00	63	51	2024/06/30 14:00:00	59	2024/07/07 14:00	65
2024/06/23 15:00	65	51	2024/06/30 15:00:00	61	2024/07/07 15:00	55
2024/06/23 16:00	64	54	2024/06/30 16:00:00	62	2024/07/07 16:00	61
2024/06/23 17:00	67	54	2024/06/30 17:00:00	62	2024/07/07 17:00	55
2024/06/23 18:00	65	55	2024/06/30 18:00:00	66	2024/07/07 18:00	55
2024/06/23 19:00	62	57	2024/06/30 19:00:00	59	2024/07/07 19:00	59
2024/06/23 20:00	62	56	2024/06/30 20:00:00	56	2024/07/07 20:00	56
2024/06/23 21:00	61	53	2024/06/30 21:00:00	58	2024/07/07 21:00	56
2024/06/23 22:00	61	57	2024/06/30 22:00:00	58	2024/07/07 22:00	54
2024/06/23 23:00	59	55	2024/06/30 23:00:00	59	2024/07/07 23:00	53
2024/06/24 0:00	60	57	2024/07/03 00:00:00	61	2024/07/08 00:00	52
2024/06/24 1:00	56	56	2024/07/03 01:00:00	55	2024/07/08 01:00	49
2024/06/24 2:00	58	53	2024/07/03 02:00:00	54	2024/07/08 02:00	49
2024/06/24 3:00	61	52	2024/07/03 03:00:00	55	2024/07/08 03:00	48
2024/06/24 4:00	60	50	2024/07/03 04:00:00	56	2024/07/08 04:00	51
2024/06/24 5:00	60	56	2024/07/03 05:00:00	58	2024/07/08 05:00	65
2024/06/24 6:00	59	53	2024/07/03 06:00:00	57	2024/07/08 06:00	68
2024/06/24 7:00	62	60	2024/07/03 07:00:00	60	2024/07/08 07:00	66
2024/06/24 8:00	64	59	2024/07/03 08:00:00	63	2024/07/08 08:00	63
2024/06/24 9:00	65	57	2024/07/03 09:00:00	62	2024/07/08 09:00	56
2024/06/24 10:00	61	55	2024/07/03 10:00:00	61	2024/07/08 10:00	56
2024/06/24 11:00	60	56	2024/07/03 11:00:00	62	2024/07/08 11:00	63
2024/06/24 12:00	61	55	2024/07/03 12:00:00	61	2024/07/08 12:00	55
2024/06/24 13:00	65	56	2024/07/03 13:00:00	61	2024/07/08 13:00	62
2024/06/24 14:00	65	52	2024/07/03 14:00:00	64	2024/07/08 14:00	59
2024/06/24 15:00	63	52	2024/07/03 15:00:00	62	2024/07/08 15:00	56
2024/06/24 16:00	63	55	2024/07/03 16:00:00	61	2024/07/08 16:00	56
2024/06/24 17:00	61	54	2024/07/03 17:00:00	61	2024/07/08 17:00	56
2024/06/24 18:00	64	57	2024/07/03 18:00:00	63	2024/07/08 18:00	57
2024/06/24 19:00	61	56	2024/07/03 19:00:00	60	2024/07/08 19:00	62
2024/06/24 20:00	57	55	2024/07/03 20:00:00	57	2024/07/08 20:00	53
2024/06/24 21:00	58	54	2024/07/03 21:00:00	57	2024/07/08 21:00	54
2024/06/24 22:00	57	54	2024/07/03 22:00:00	57	2024/07/08 22:00	54
2024/06/24 23:00	55	53	2024/07/03 23:00:00	56	2024/07/08 23:00	52

Remarks:
[1] Free field measurement was conducted
[2] Façade correction of +3dB is added for above result
[3] Prevailing noise measurement was conducted with reference to Technical Memoranda under Noise Control Ordinance
[4] Locations of prevailing measurement point is presented in Figure 4.2

Appendix 4.12 Calculation of Marine Traffic Noise

Prevailing Noise Measurement Location Photos

MPT	OLV
	
OS	HFC
	

Appendix 4.12 Calculation of Marine Traffic Noise

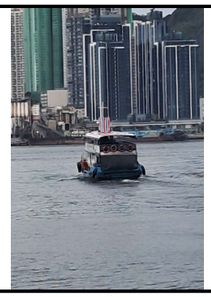
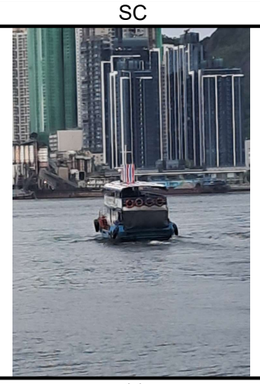
Criteria of marine traffic noise for each measurement point

NAP	Criteria Leq (1-hr) [1], dB(A)	Meausurement Point Corresponded to [2]
E-OS-R-M1	56	OS
E-OLV-R-M1	54	OLV
E-OLV-R-M2	54	OLV
E-OLV-R-M3	54	OLV
E-OLV-R-M4	54	OLV
E-MPT-R-M1	64	MPT
P-PR1-R-M1	61	HFC
P-PR2-R-M1	61	HFC
P-PR3-R-M1	61	HFC
P-PR4-R-M1	61	HFC
P-PR5-R-M1	61	HFC

Remarks [1] As per agreed with EPD, marine traffic noise criteria were selected as Leq (1-hr) of prevailing noise level measured during maximum marine traffic hour predicted by Marine Traffic Consultant
[2] Locations of prevailing measurement point is presented in Figure 4.2

Appendix 4.12 Calculation of Marine Traffic Noise

Photo record

			
Event number	1	2	3
Type of vessel	TT	SC	SC
			
Event number	4	5	6
Type of vessel	SC	SC	RTV
			
Event number	7	8	9
Type of vessel	SC	SC	LF
			
Event number	10	11	12
Type of vessel	FL	LF	OGV

Appendix 4.12 Calculation of Marine Traffic Noise

Measured L_{max} and Calculation of Single Event Sound Exposure Level

Event	Date and Time of Event	Vessel Type [1]	Measured Lmax, dB(A) [2] [6]	Distance between Vessel and Measurement Point, m [3]	Speed of Vessel, m/s [3]	Prevailing background noise (LAeq, 5-min), dB(A) [4]	Corrected Lmax (Lmax,c), dB(A)	Background correction applied , dB(A)	Single Event Sound Exposure Level (L_{AX}), dB(A) [5]	Calculated LAX at 25m after background correction (L_{AX25}) [6]
1	2024/07/18 10:23	TT	72.0	49	3.1	63.0	71.4	-0.6	86.4	92.3
2	2024/07/18 10:28	SC	68.3	128	7.2	63.0	66.8	-1.5	82.3	96.5
3	2024/07/18 10:54	SC	68.0	143	7.2	63.0	66.3	-1.7	82.3	97.5
4	2024/07/18 11:02	SC	74.3	73	7.2	63.0	74.0	-0.3	87.0	96.3
5	2024/07/18 11:14	SC	71.2	110	7.2	63.0	70.5	-0.7	85.3	98.2
6	2024/06/24 12:04	RTV	61.4	281	4.0	53.3	60.7	-0.7	82.1	103.2
7	2024/07/18 13:29	SC	61.5	93	7.2	56.2	60.0	-1.5	74.1	85.6
8	2024/07/18 13:35	SC	59.8	105	7.2	56.2	57.3	-2.5	72.0	84.5
9	2024/07/18 15:45	LF	72.5	7	7.2	64.2	71.8	-0.7	74.8	64.0
10	2024/07/18 15:57	FL	69.0	46	9.3	64.2	67.3	-1.7	77.2	82.6
11	2024/07/18 16:15	LF	76.4	7	7.2	64.2	76.1	-0.3	79.1	68.3
12	2024/06/30 22:25	OGV	67.7	336	5.3	64.2	65.1	-2.6	86.2	108.7

Remarks:

[1] Vessel are classified as Ocean-going Vessel (OGV), River Trade Vessel (RTV), Local Ferry (LF), Fast Launch (FL), Tug and Tow (TT) and Small Craft (SC), according to information provided by Marine Traffic Consultant

[2] Free field measurements were conducted

[3] Distance is obtained / estimated by AIS radar data or site observation, and speed is obtained by AIS radar data

[4] Prevailing background noise was measured according to ISO 2922:2020

[5] $L_{max,c}$ = 10log(10^(0.1 L_{max})-10^(0.1 L_{Aeq}))

[6] L_{AX}= $L_{max,c}$ + 10log(kd/V), where k = 2, d=distance between vessel and measurement point (m), and V=speed of vessel (m/s)

[7] L_{AX25} = L_{AX} + 20log(d/25)

[8] Noise measurement was conducted with reference to ISO 2922:2020

Maximum L_{AX} used for Assessment

Vessel Type	Event No.	Max L_{AX25}, dB(A)
OGV	12	108.7
RTV	6	103.2
TT	1	92.3
LF	11	68.3
FL	10	82.6
SC	5	98.2

Appendix 4.12 Calculation of Marine Traffic Noise

Marine traffic noise impact on planned NSRs in TKO 137 affected by both project-related vessels and the existing vessels

NAP	Vessel Type	L_{AX25}, dB(A)	Distance between NAP and nearest vessel track [1], m	Distance Correction, dB	Time Correction, dB	Façade Correction, dB	Nearest Gate	Max Hourly Traffic, Vessel/hour [2]	Correction for Hourly Traffic, dB(A)	Leq (1-hr) at NAP, dB(A)	Overall Leq (1-hr) at NAP, dB(A)	Criteria of NAP
P-PR1-R-M1	OGV	108.7	550	-26.8	-35.6	3	Gate 1	0	0.0	0.0		
	RTV	103.2	330	-22.4	-35.6	3	Gate 1	4	6.0	54.2		
	TT	92.3	1160	-33.3	-35.6	3	Gate 1	0	0.0	0.0		
	LF	68.3	420	-24.5	-35.6	3	Gate 1	6	7.8	19.0		
	FL	82.6	420	-24.5	-35.6	3	Gate 1	1	0.0	25.5		
	SC	98.2	270	-20.7	-35.6	3	Gate 1	29	14.6	59.6	61	
P-PR2-R-M1	OGV	108.7	530	-26.5	-35.6	3	Gate 1	0	0.0	0.0		
	RTV	103.2	310	-21.9	-35.6	3	Gate 1	4	6.0	54.8		
	TT	92.3	1270	-34.1	-35.6	3	Gate 1	0	0.0	0.0		
	LF	68.3	350	-22.9	-35.6	3	Gate 1	6	7.8	20.6		
	FL	82.6	350	-22.9	-35.6	3	Gate 1	1	0.0	27.1		
	SC	98.2	270	-20.7	-35.6	3	Gate 1	29	14.6	59.6	61	
P-PR3-R-M1	OGV	108.7	520	-26.4	-35.6	3	Gate 1	0	0.0	0.0		
	RTV	103.2	300	-21.6	-35.6	3	Gate 1	4	6.0	55.0		
	TT	92.3	1160	-33.3	-35.6	3	Gate 1	0	0.0	0.0		
	LF	68.3	330	-22.4	-35.6	3	Gate 1	6	7.8	21.1		
	FL	82.6	330	-22.4	-35.6	3	Gate 1	1	0.0	27.6		
	SC	98.2	260	-20.3	-35.6	3	Gate 1	29	14.6	60.0	61	
P-PR4-R-M1	OGV	108.7	520	-26.4	-35.6	3	Gate 1	0	0.0	0.0		
	RTV	103.2	280	-21.0	-35.6	3	Gate 1	4	6.0	55.6		
	TT	92.3	1070	-32.6	-35.6	3	Gate 1	0	0.0	0.0		
	LF	68.3	400	-24.1	-35.6	3	Gate 1	6	7.8	19.5		
	FL	82.6	400	-24.1	-35.6	3	Gate 1	1	0.0	25.9		
	SC	98.2	260	-20.3	-35.6	3	Gate 1	29	14.6	60.0	61	
P-PR5-R-M1	OGV	108.7	530	-26.5	-35.6	3	Gate 1	0	0.0	0.0		
	RTV	103.2	280	-21.0	-35.6	3	Gate 1	4	6.0	55.6		
	TT	92.3	1070	-32.6	-35.6	3	Gate 1	0	0.0	0.0		
	LF	68.3	380	-23.6	-35.6	3	Gate 1	6	7.8	19.9		
	FL	82.6	380	-23.6	-35.6	3	Gate 1	1	0.0	26.4		
	SC	98.2	280	-21.0	-35.6	3	Gate 1	29	14.6	59.3	61	61

Remarks: [1] Distances of OGV, LF, FL and SC, and RTV and TT of E-MPT-R-M1 were obtained by measurement with track provided by Marine Traffic Consultant endorsed by Marine Department and berthing area
[2] Maximum hourly traffic vessel were provided by Marine Traffic Consultant

Appendix 4.12 Calculation of Marine Traffic Noise

Marine traffic noise impact on existing NSRs in TKO 132 affected by both project-related vessels and the existing vessels

NAP	Berthing Area of TKO 132	Vessel Type	L_{AX25}, dB(A)	Distance between NAP and Nominal Vessel Track / TKO 132 Pier [1] [2], m	Distance Correction, dB	Time Correction, dB	Nearest Gate	Max Hourly Traffic [3], Vessel/hour	Correction for Hourly Traffic, dB(A)	Leq (1-hr) at NAP, dB(A)	Total Leq (1-hr) at NAP per Vessel Type, dB(A)	Criteria of NAP, dB(A)
E-OS-R-M1		OGV	108.7	630	-28.0	-35.6	Gate 4	0	0.0	0.0		
	CWHF	RTV	103.2	1120	-33.0	-35.6	Gate 4	1	0.0	37.6		
	CWHF	TT	92.3	1120	-33.0	-35.6	Gate 4	1	0.0	26.7		
	PFTF	TT	92.3	1310	-34.4	-35.6	Gate 4	2	3.0	28.3		
	PFTF	RTV	103.2	1310	-34.4	-35.6	Gate 4	2	3.0	39.2		
	CBP	TT	92.3	1420	-35.1	-35.6	Gate 4	1	0.0	24.6		
	CBP	RTV	103.2	1420	-35.1	-35.6	Gate 4	1	0.0	35.5		
	RTS	RTV	103.2	1460	-35.3	-35.6	Gate 4	1	0.0	35.3		
		LF	68.3	630	-28.0	-35.6	Gate 4	2	3.0	10.7		
		FL	82.6	630	-28.0	-35.6	Gate 4	1	0.0	22.0		
		SC	98.2	630	-28.0	-35.6	Gate 4	9	9.5	47.2	49	56
E-OLV-R-M1		OGV	108.7	760	-29.7	-35.6	Gate 4	0	0.0	0.0		
	CWHF	RTV	103.2	770	-29.8	-35.6	Gate 4	1	0.0	40.8		
	CWHF	TT	92.3	770	-29.8	-35.6	Gate 4	1	0.0	29.9		
	PFTF	TT	92.3	620	-27.9	-35.6	Gate 4	2	3.0	34.8		
	PFTF	RTV	103.2	620	-27.9	-35.6	Gate 4	2	3.0	45.7		
	CBP	TT	92.3	300	-21.6	-35.6	Gate 4	1	0.0	38.1		
	CBP	RTV	103.2	300	-21.6	-35.6	Gate 4	1	0.0	49.0		
	RTS	RTV	103.2	440	-24.9	-35.6	Gate 4	1	0.0	45.7		
		LF	68.3	760	-29.7	-35.6	Gate 4	2	3.0	9.1		
		FL	82.6	760	-29.7	-35.6	Gate 4	1	0.0	20.3		
		SC	98.2	760	-29.7	-35.6	Gate 4	9	9.5	45.6	53	54
E-OLV-R-M2		OGV	108.7	790	-30.0	-35.6	Gate 4	0	0.0	0.0		
	CWHF	RTV	103.2	730	-29.3	-35.6	Gate 4	1	0.0	41.3		
	CWHF	TT	92.3	730	-29.3	-35.6	Gate 4	1	0.0	30.4		
	PFTF	TT	92.3	590	-27.5	-35.6	Gate 4	2	3.0	35.2		
	PFTF	RTV	103.2	590	-27.5	-35.6	Gate 4	2	3.0	46.2		
	CBP	TT	92.3	270	-20.7	-35.6	Gate 4	1	0.0	39.0		
	CBP	RTV	103.2	270	-20.7	-35.6	Gate 4	1	0.0	49.9		
	RTS	RTV	103.2	420	-24.5	-35.6	Gate 4	1	0.0	46.1		
		LF	68.3	790	-30.0	-35.6	Gate 4	2	3.0	8.8		
		FL	82.6	790	-30.0	-35.6	Gate 4	1	0.0	20.0		
		SC	98.2	790	-30.0	-35.6	Gate 4	9	9.5	45.2	54	54
E-OLV-R-M3		OGV	108.7	1050	-32.5	-35.6	Gate 4	0	0.0	0.0		
	CWHF	RTV	103.2	540	-26.7	-35.6	Gate 4	1	0.0	43.9		
	CWHF	TT	92.3	540	-26.7	-35.6	Gate 4	1	0.0	33.0		
	PFTF	TT	92.3	550	-26.8	-35.6	Gate 4	2	3.0	35.9		
	PFTF	RTV	103.2	550	-26.8	-35.6	Gate 4	2	3.0	46.8		
	CBP	TT	92.3	430	-24.7	-35.6	Gate 4	1	0.0	35.0		
	CBP	RTV	103.2	430	-24.7	-35.6	Gate 4	1	0.0	45.9		
	RTS	RTV	103.2	540	-26.7	-35.6	Gate 4	1	0.0	43.9		
		LF	68.3	1050	-32.5	-35.6	Gate 4	2	3.0	6.3		
		FL	82.6	1050	-32.5	-35.6	Gate 4	1	0.0	17.5		
		SC	98.2	1050	-32.5	-35.6	Gate 4	9	9.5	42.7	52	54
E-OLV-R-M4		OGV	108.7	1030	-32.3	-35.6	Gate 4	0	0.0	0.0		
	CWHF	RTV	103.2	510	-26.2	-35.6	Gate 4	1	0.0	44.4		
	CWHF	TT	92.3	510	-26.2	-35.6	Gate 4	1	0.0	33.5		
	PFTF	TT	92.3	540	-26.7	-35.6	Gate 4	2	3.0	36.0		
	PFTF	RTV	103.2	540	-26.7	-35.6	Gate 4	2	3.0	46.9		
	CBP	TT	92.3	460	-25.3	-35.6	Gate 4	1	0.0	34.4		
	CBP	RTV	103.2	460	-25.3	-35.6	Gate 4	1	0.0	45.3		
	RTS	RTV	103.2	570	-27.2	-35.6	Gate 4	1	0.0	43.4		
		LF	68.3	1030	-32.3	-35.6	Gate 4	2	3.0	6.5		
		FL	82.6	1030	-32.3	-35.6	Gate 4	1	0.0	17.7		
		SC	98.2	1030	-32.3	-35.6	Gate 4	9	9.5	42.9	52	54
E-MPT-R-M1		OGV	108.7	260	-20.3	-35.6	Gate 3	1	0.0	55.8		
		RTV	103.2	260	-20.3	-35.6	Gate 3	6	7.8	58.0		
		TT	92.3	260	-20.3	-35.6	Gate 3	3	4.8	44.1		
		LF	68.3	260	-20.3	-35.6	Gate 3	6	7.8	23.2		
		FL	82.6	260	-20.3	-35.6	Gate 3	1	0.0	29.7		
		SC	98.2	260	-20.3	-35.6	Gate 3	30	14.8	60.1	63	64

Remarks: [1] Distances of OGV, LF, FL and SC, and RTV and TT of E-MPT-R-M1 were obtained by measurement with track provided by Marine Traffic Consultant endorsed by Marine Department and berthing area
[2] Distances of TT and RTV were obtained by measurement between NAP (E-OS-R-M1 and E-OLV-R-M1-4) and notional track of operation traffic for NAPs at TKO 132
[3] Hourly Traffic Vessel / hour were derived from daily traffic provided by Marine Traffic Consultant, assumed daily operation of 12 hours. Hourly traffic are rounded up to nearest integer for conservative assumption.

Appendix 4.12 Calculation of Marine Traffic Noise

Marine traffic noise impact on existing NSRs in TKO 132 due to project-related vessels only

NAP	Pier	Vessel Type	L_{AX25}, dB(A)	Distance between Vessel Track / facilities of TKO 132 and NAP [2], m	Distance Correction, dB	Time Correction, dB	Maximum Hourly Traffic, Vessel/hour [3]	Correction for Hourly Traffic, dB	Leq (1-hr) at NAP, dB(A)	Total Leq (1-hr) at NAP, dB(A)	Criteria of NAP
E-OS-R-M1	CWHF	RTV	103.2	1120	-33.0	-35.6	1	0.0	37.6		
	CWHF	TT	92.3	1120	-33.0	-35.6	1	0.0	26.7		
	PFTF	TT	92.3	1310	-34.4	-35.6	2	3.0	28.3		
	PFTF	RTV	103.2	1310	-34.4	-35.6	2	3.0	39.2		
	CBP	TT	92.3	1420	-35.1	-35.6	1	0.0	24.6		
	CBP	RTV	103.2	1420	-35.1	-35.6	1	0.0	35.5		
	RTS	RTV	103.2	1460	-35.3	-35.6	1	0.0	35.3	40	56
E-OLV-R-M1	CWHF	RTV	103.2	770	-29.8	-35.6	1	0.0	40.8		
	CWHF	TT	92.3	770	-29.8	-35.6	1	0.0	29.9		
	PFTF	TT	92.3	620	-27.9	-35.6	2	3.0	34.8		
	PFTF	RTV	103.2	620	-27.9	-35.6	2	3.0	45.7		
	CBP	TT	92.3	300	-21.6	-35.6	1	0.0	38.1		
	CBP	RTV	103.2	300	-21.6	-35.6	1	0.0	49.0		
	RTS	RTV	103.2	440	-24.9	-35.6	1	0.0	45.7	48	54
E-OLV-R-M2	CWHF	RTV	103.2	730	-29.3	-35.6	1	0.0	41.3		
	CWHF	TT	92.3	730	-29.3	-35.6	1	0.0	30.4		
	PFTF	TT	92.3	590	-27.5	-35.6	2	3.0	35.2		
	PFTF	RTV	103.2	590	-27.5	-35.6	2	3.0	46.2		
	CBP	TT	92.3	270	-20.7	-35.6	1	0.0	39.0		
	CBP	RTV	103.2	270	-20.7	-35.6	1	0.0	49.9		
	RTS	RTV	103.2	420	-24.5	-35.6	1	0.0	46.1	48	54
E-OLV-R-M3	CWHF	RTV	103.2	540	-26.7	-35.6	1	0.0	43.9		
	CWHF	TT	92.3	540	-26.7	-35.6	1	0.0	33.0		
	PFTF	TT	92.3	550	-26.8	-35.6	2	3.0	35.9		
	PFTF	RTV	103.2	550	-26.8	-35.6	2	3.0	46.8		
	CBP	TT	92.3	430	-24.7	-35.6	1	0.0	35.0		
	CBP	RTV	103.2	430	-24.7	-35.6	1	0.0	45.9		
	RTS	RTV	103.2	540	-26.7	-35.6	1	0.0	43.9	48	54
E-OLV-R-M4	CWHF	RTV	103.2	510	-26.2	-35.6	1	0.0	44.4		
	CWHF	TT	92.3	510	-26.2	-35.6	1	0.0	33.5		
	PFTF	TT	92.3	540	-26.7	-35.6	2	3.0	36.0		
	PFTF	RTV	103.2	540	-26.7	-35.6	2	3.0	46.9		
	CBP	TT	92.3	460	-25.3	-35.6	1	0.0	34.4		
	CBP	RTV	103.2	460	-25.3	-35.6	1	0.0	45.3		
	RTS	RTV	103.2	570	-27.2	-35.6	1	0.0	43.4	48	54
E-MPT-R-M1	combined	RTV	103.2	260	-20.3	-35.6	5	7.0	57.3		
	combined	TT	92.3	260	-20.3	-35.6	4	6.0	45.4	58	64

Remarks: [1] Distances of TT and RTV to E-MPT-R-M1 were obtained by measurment between notional track of operation traffic and NAP, with notional track of operation traffic derived from operation traffic track provided by marine traffic consultant
[2] Distances of TT and RTV were obtained by measurement between NAP (E-OS-R-M1 and E-OLV-R-M1-4) and notional track of operation traffic for NAPs at TKO 132
[3] Hourly Traffic Vessel / hour were derived from daily traffic provided by Marine Traffic Consultant, assumed daily operation of 12 hours. Hourly traffic are rounded up to nearest integer for conservative assumption.

Notional Route of Different Vessel Types according to Vessel Types Adopted in the Assessment

N

E-OS-R-M1

E-OLV-R-M4

E-OLV-R-M3

E-OLV-R-M2

E-OLV-R-M1

E-MPT-R-M1

P-PR1-R-M1

P-PR2-R-M1

P-PR3-R-M1

P-PR4-R-M1

P-PR5-R-M1

Notional Existing Track of Fast Launch and Local Ferry for NAPs at TKO 137

Notional Planned Track of Operation Traffic for NAPs at TKO 132

Notional Existing Track of Tug and Tow at TKO 137

Notional Existing Track of Small Craft for NAPs at TKO 137

Notional Existing Track of Ocean Going Vessels for NAPs at TKO 137

Notional Track of OGV, SC, RTV, LF, FL and TT for E-MPT-R-M1, and Notional Track of FL, LF, and SC for NAPs at OLV and OS

Notional Existing Track of Rivertrade Vessels for NAPs at TKO 137

Marine Traffic Noise Assessment Boundary

Marine Traffic Noise Representative NAP

Project Boundary

0 0.5 1 2 Kilometers