

Appendix 11.4 Marine Population Estimation and Site Survey Data

1. A site survey was conducted to gather data for the estimation of marine population at the sea area in vicinity of SCISTW. The number of marine vessels present at the sea area were counted and recorded every fifteen minutes. The recorded number of marine vessels at each time interval is presented in **Table 1**. It can be observed from the data that on average there were 53 marine vessels recorded in each 15 minutes time slot.

Table 1 Number of Marine Vessels within the Assessment Area

Vessel Type	Large ^a		Medium ^b		Small ^c		Goods (L) ^d		Goods (M) ^e		Total		
	Docked	Mobile	Docked	Mobile	Docked	Mobile	Docked	Mobile	Docked	Mobile	Docked	Mobile	All
10:00 - 10:15	6	1	10	4	8	1	9	1	8	1	41	8	49
10:15 - 10:30	7	1	8	4	7	1	10	0	9	0	41	6	47
10:30 - 10:45	6	1	6	5	6	3	10	3	9	0	37	12	49
10:45 - 11:00	7	0	7	3	9	1	11	2	7	1	41	7	48
11:00 - 11:15	7	1	6	2	8	2	11	2	6	1	38	8	46
11:15 - 11:30	6	2	6	1	10	0	11	3	7	0	40	6	6
11:30 - 11:45	8	0	7	2	8	2	14	2	7	0	44	6	50
11:45 - 12:00	8	0	9	2	10	2	16	0	7	0	50	4	54
12:00 - 12:30	6	1	9	3	12	1	12	2	5	1	44	8	52
12:30 - 12:45	6	1	12	3	11	2	12	1	6	0	47	7	54
12:45 - 13:00	6	1	13	2	13	0	13	0	6	0	51	3	54
13:00 - 13:15	5	1	11	2	13	1	13	0	6	0	48	4	52
13:15 - 13:30	6	0	9	2	14	1	13	0	6	0	48	3	51
13:30 - 13:45	6	1	9	2	13	1	11	1	6	0	45	5	50
13:45 - 14:00	5	3	11	1	12	1	12	0	6	0	46	5	51
14:00 - 14:15	6	1	10	1	13	1	10	2	6	1	45	6	51

14:30 - 14:45	6	1	11	5	14	1	8	3	5	1	44	11	55
14:45 - 15:00	5	2	16	2	13	0	11	1	6	1	51	6	57
15:00 - 15:15	5	1	18	1	13	0	6	4	7	2	49	8	57
15:15 - 15:30	6	1	19	1	13	1	10	1	9	1	57	5	62
15:30 - 15:45	7	1	18	1	12	4	11	0	9	1	57	7	64
15:45 - 16:00	8	0	19	4	16	1	11	0	10	0	64	5	69
Average	6	1	11	2	11	1	11	1	7	1	47	6	53

Note:

- (a) Large vessels are generally ferries and touring cruisers, which are not carrying any passengers as they are heading back to dock. An average of 3 crew members was observed on board.
- (b) Medium vessels are generally coastal patrols. An average of 5 crew members was observed on board.
- (c) Small vessels are generally sea janitors or jet boats. An average of 2 crew members was observed on board.
- (d) Goods (Large) vessels are generally container cargo vessels. An average of 8 crew members was observed on board.
- (e) Goods (Medium) vessels are generally fishing / general goods vessels. An average of 5 crew members was observed on board.

2. Apart from recording the number of vessels, the following observations were made in the site survey:

- a large portion of the occupied marine vessels counted were docked near the Government Dockyard (location 1 as presented in [Figure 11.5](#)), dock at the open storage area and New World First Ferry (locations 17 and 15), and the food wholesale market (location 16), where almost all of the docked vessels at other locations were not occupied
- a small portion of recorded marine vessels were mobile (about 10%) and occupied, travelling to/from the Government Dockyard, open storage area/New World First Ferry or the food wholesale market
- The vessels travelling to/from or docked at the Government Dockyard were medium vessels, vessels travelling to/from or docked at the open storage area/New World First Ferry were large vessels and goods (large) vessels, and the vessels travelling to/from or docked at the wholesale market were small vessels and goods (medium) vessels

3. Based on the survey data and the above observations, the followings were taken into account in estimating the marine population:

- 50% of the docked marine vessels were occupied, which is a conservative estimate since most of the docked vessels were observed not occupied in the site survey

- There were 3 clusters of marine population near SCISTW, which were at the Government Dockyard, open storage area/New World First Ferry and the food wholesale market
 - The mobile marine population was assumed to be evenly distributed at the sea area near the SCISTW
4. Therefore, the marine population in vicinity of SCISTW at the 3 clusters was estimated to be:
- Cluster at pier of Government dockyard = 11 (average number of medium vessel) x 5 (average number of crew member on board) x 0.5 (factor for occupied vessels) = 28 people
 - Cluster at the dock of open storage area/New World First Ferry = [6 (average number of large vessel) x 3 (average number of crew member on board) + 11 (average number of goods (large) vessels) x 8 (average number of crew member on board)] x 0.5 (factor for occupied vessels) = 53 people
 - Cluster at dock near the Wholesale Food Market Office = [11 (average number of small vessel) x 2 (average number of crew member on board) + 7 (average number of goods (medium) vessel) x 5 (average number of crew member on board)] x 0.5 (factor for occupied vessels) = 29 people
5. Therefore, the mobile marine population was estimated to be:
- 2 (avg. no. of mobile medium vessel) x 5 (avg. no. of crew member on board) + 1 (avg. no. of mobile large vessel) x 3 (avg. no. of crew member on board) + 1 (avg. no. of mobile goods (large) vessels) x 8 (avg. no. of crew member on board) + 1 (avg. no. of mobile small vessel) x 2 (avg. no. of crew member on board) + 1 (avg. no. of mobile goods (medium) vessel) x 5 (avg. no. of crew member on board) = 28 people. The size of the sea area in vicinity of SCISTW¹ (the hatched area shown in Figure 1) is about 0.45km²; the mobile marine population density of the concerned sea area is therefore = 28 people / 0.45km² = 62.2 people/km².

¹ The sea area in vicinity of SCISTW is defined as the cove area bounded by Northeast of Stonecutters Island, South of Lai Chi Kok, and West of Cheung Sha Wan and Sham Shui Po, within 825m Northeast, East and Southeast of the Ferric Chloride tank farm. The distance 825m is the longest distance to receive 1% fatality probability of all hazardous events under the weather class with worst dilution. Therefore, the sea area that could be affected by the hazardous events of the Project has been considered in the hazard assessment.

6. Photo documentation of the site survey is presented below.



Open sea area in vicinity of SCISTW



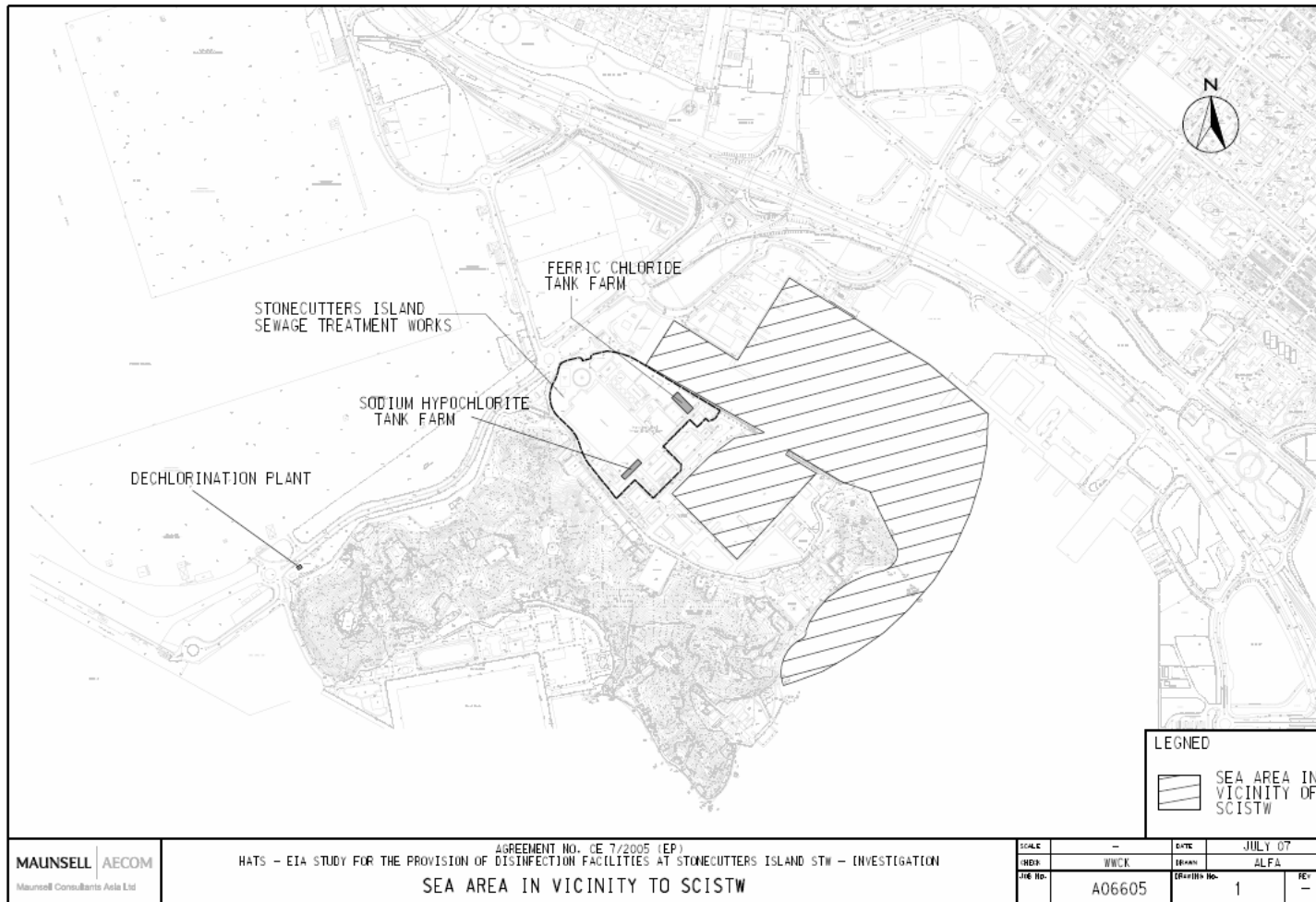
Marine traffic in vicinity of SCISTW



Docked marine vessels at open storage area (Location 17)



Marine vessels at the food wholesale market (close), and the Government Dockyard (far)



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AGREEMENT NO. CE 7/2005 (EP)
 HATS - EIA STUDY FOR THE PROVISION OF DISINFECTION FACILITIES AT STONECUTTERS ISLAND STW - INVESTIGATION
SEA AREA IN VICINITY TO SCISTW

SCALE	--	DATE	JULY 07
RED	WWCK	DESIGN	ALFA
JOB No.	A06605	CRASH No.	1
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