

Contract No. HY/2011/03 -

Hong Kong- Zhuhai- Macao Bridge

Hong Kong Link Road Section between Scenic Hill and Hong Kong Boundary Crossing Facilities

Notifications of Environmental Quality Limits Exceedances

Notification No.: 303 ver 0

Date of Notification: 28 September 2023

Works Inspected: Not Applicable

Monitoring Location: NEL & NWL

Parameter: Ecology (Chinese White Dolphin Monitoring)

**Action & Limit Levels**

**Monitoring Results**

North Lantau Social Cluster		The quarter of June 2023 – Aug 2023
Action Level (AL)	Limit Level (LL)	
Northeast Lantau (NEL)	STG < 4.2 & ANI < 15.5	<b><u>STG=0; ANI=0</u></b>
Northwest Lantau (NWL)	STG < 6.9 & ANI < 31.3	

NEL: (STG < 2.4 & ANI < 8.9)  
and  
NWL: (STG < 3.9 & ANI < 17.9)

Notes:

1. STG means quarterly encounter rate of number of dolphin sightings.
2. ANI means quarterly encounter rate of total number of dolphins.
3. For North Lantau Social Cluster, AL will be triggered if either NEL or NWL falls below the criteria; LL will be triggered if both NEL and NWL fall below the criteria.
4. ***Bold Italic*** means AL exceedances.
5. ***Bold Italic with underline*** means LL exceedances

**Possible reason for Limit Level Non-compliance:**

There was a Limit Level exceedance of dolphin monitoring for the quarterly monitoring data (between June 2023 and August 2023). According to the contractor's information, toe loading removal works were undertaken for HKLR03 during the quarter of June 2023 – August 2023.

There is no evidence showing the current LL non-compliance directly related to the construction works of HKLR03 (where the amounts of working vessels for HKLR03 have been decreasing), although the generally increased amount of vessel traffic in NEL during the impact phase has been partly contributed by HKLR03 works since October 2012. It should also be noted that work area under HKLR03 (adjoining the Airport Island) situates in waters which has rarely been used by dolphins in the past, and the working vessels under HKLR03 have been travelling from source to destination in accordance with the Marine Travel Route to minimize impacts on Chinese White Dolphin (CWD). In addition, the contractor will implement proactive mitigation measures such as avoiding anchoring at Marine Department's designated anchorage site – Sham Shui Kok Anchorage (near Brothers Island) as far as practicable.

Hong Kong-Zhuhai-Macao Bridge Authority (HZMBA) for the Mainland section of Hong Kong-Zhuhai-Macao Bridge (HZMB) has commenced a survey on fisheries resources and CWD in the Mainland waters. During the one-year HZMBA survey between August 2015 to August 2016, the findings of the HZMBA survey on CWD sighting and photo-identification works which provide solid evidence that some CWD that were previously more often sighted in HK waters have expanded their ranges into the Mainland waters, and some with reduced usage in HK waters. These data were mentioned in Monitoring of Chinese White Dolphins in Southwest Lantau Waters – Ninth Quarterly Report (March to May 2017) which is available on ENPO's website.

**Actions taken/ to be taken:**

Inform the IEC, ENPO, ER/SOR and Contractor

The ETL informed IEC, ENPO, SOR and Contractor via email on 28 September 2023.

Repeat statistical data analysis to confirm findings and check monitoring data:

A two-way ANOVA with repeated measures and unequal sample size was conducted to examine whether there were any significant differences in the average encounter rates between the baseline and impact monitoring periods. The two variables that were examined included the two periods (baseline and impact phases) and two locations (NEL and NWL).

For the comparison between the baseline period and the present quarter (33<sup>rd</sup> quarter of the impact phase being assessed), the p-values for the differences in average dolphin encounter rates of STG and ANI 0.0004 and 0.0021 respectively in the present quarter. Even if the alpha value is set at 0.005, significant differences were still detected between the baseline and present quarter in both the average dolphin encounter rates of STG and ANI.

For comparison between the baseline period and the cumulative quarters in impact phase (i.e. first 44 quarters of the HKLR03/TMCLKL monitoring programme phase being assessed), the p-values for the differences in average dolphin encounter rates of STG and ANI were 0.000000 and 0.000000 respectively. Even if the alpha value is set at 0.00001, significant differences were still detected in both the average dolphin encounter rates of STG and ANI (i.e. between the two periods and the locations).

Review all available and relevant data, including raw data and statistical analysis results of other parameters covered in the EM&A, to ascertain if differences are as a result of natural variation or previously observed seasonal differences:

The AFCD monitoring data during June to August 2023 has been reviewed by the dolphin specialist. During the same quarter, no dolphin was sighted at all from 177.10 km of survey effort on primary lines in NEL and NWL. This review has confirmed that the extremely rare occurrence of dolphins reported by the HKLR03 monitoring surveys in summer 2023 in NEL and NWL survey area is accurate.

**Recommendations/ mitigation measures/ actions if necessary:**

Review to ensure all the dolphin protective measures are fully and properly implemented and advise on additional measures if necessary:

All dolphin protective measures are fully and properly implemented in accordance with the EM&A Manual, EIA report and EP. According to the Regular Marine Travel Route Plan, the travelling speed of vessels must not exceed 5 knots when crossing the edge of the Brothers Marine Park. The Contractor will continue to provide training for skippers to ensure that their working vessels travel from source to destination to minimize impacts on Chinese White Dolphin and avoid anchoring at Marine Department's designated anchorage site - Sham Shui Kok Anchorage (near Brothers Island) as far as practicable. Also, it is recommended to complete the marine works of the Contract as soon as possible so as to reduce the overall duration of impacts and allow the dolphins population to recover as early as possible.

ET will keep reviewing the implementation status of the dolphin related mitigation measures and remind the contractor to implement the relevant measures.

It was also recommended that the marine works footprint (e.g., reduce the size of peripheral silt curtain) and vessels for the marine works should be reduced as much as possible, and vessels idling / mooring in other part of the North Lantau shall be avoided whenever possible.

HyD updated that the draft map of the proposed Brothers Marine Park (BMP) was gazetted in February 2016. ENPO updated that the BMP was approved by the Chief Executive in the Executive Council in August 2016. The ETs were reminded to update the BMP boundary in the Regular Marine Travel Route (RMTR) Plan. The BMP was designated on 30 December 2016. It was suggested that the protection measures (e.g. speed limit control) for the approved BMP shall be brought forward so as to provide a better habitat for dolphin recovery. It was noted that under the latest RMTR Plan, the contractors have committed to reduce the vessel speed in BMP.

The marine travel route will shift along the edge of the Brothers Marine Park as much as practical under the RMTR Plan. It was noted that even though marine vessels may moor within the mooring site of BMP, commercial activities including loading / unloading / transshipment are not allowed except a permit is obtained. The HZMB works vessels were recommended to avoid the BMP.

It was noted that starting from January 2016, HSF from the SkyPier will be re-routed north to the northern edged of the Sha Chau and Lung Kwu Chau Marine Park. While the HSF will reduce speed to 15 knots, the associated disturbance may still affect CWD in the area. It was implied that the CWDs in the area shall be closely followed.

There was a discussion on exploring possible further mitigation measures, for example, controlling the underwater noise. It was noted that the EIA reports for the projects suggested several mitigation measures, all of which have been implemented.

Reviewed by Claudine Lee

Title : ET Leader

Copied to Supervising Officer, ENPO/ IEC, Contractor

Date : 31 October 2023