

**Confirmed Minutes of the 223rd Meeting of
the Advisory Council on the Environment (ACE)
held on 8 May 2017 at 2:30 pm**

Present:

Mr Stanley WONG, SBS, JP (Chairman)
Prof Nora TAM, BBS, JP (Deputy Chairman)
Ir Cary CHAN
Dr Billy HAU
Dr HUNG Wing-tat, MH
Prof LAU Chi-pang, JP
Ms Julia LAU
Dr Michael LAU
Prof Albert LEE
Mr Andrew LEE
Prof Kenneth LEUNG
Ir Prof Irene LO
Mr Anthony LOCK
Ir MA Lee-tak, SBS
Prof John NG
Dr Eric TSANG
Ir Conrad WONG, BBS, JP
Prof Jonathan WONG, MH, JP
Mrs Alice CHEUNG, JP (Secretary)

Absent with Apologies:

Ir Michelle TANG
Mr Simon WONG, JP
Mr Luther WONG, JP
Prof WONG Sze-chun, BBS, JP

In Attendance:

Mr Donald TONG	Permanent Secretary for the Environment/Director of Environmental Protection
Ms Lily YAM	Assistant Director of Planning/Technical Services, Planning Department (PlanD)
Mr Simon CHAN	Assistant Director (Conservation), Agriculture, Fisheries and Conservation Department (AFCD)
Miss Heidi LIU	Principal Information Officer, Environmental Protection Department (EPD)

Ms Becky LAM Chief Executive Officer (CBD), EPD
Miss Dora CHU Executive Officer (CBD) 1, EPD
Miss Apple LEUNG Executive Officer (CBD) 2, EPD

In Attendance for Item 3:

Mr Dick CHOI Senior Marine Conservation Officer (West), AFCD
Mr Louis CHAN Principal Environmental Protection Officer (Regional Assessment), EPD
Mr Lawrence NGO Senior Environmental Protection Officer (Regional Assessment) 1, EPD

Project Proponent Team

Airport Authority Hong Kong Mr Kevin Poole, Executive Director, Third Runway
Mr Peter Lee, General Manager, Environment, Third Runway
Mr Martin Putnam, Senior Manager, Environment, Third Runway
Mr Lawrence Tsui, Principal Manager, Environment, Third Runway
Ms Mabel Quan, Manager, Project Liaison

Mott MacDonald Hong Kong Ltd Mr Eric Ching, Divisional Director
Ms Julia Chan, Associate Director

Clymene Enterprises Dr Thomas Jefferson, Dolphin Specialist
Dr Bernd Würsig, Dolphin Specialist

Action

The Chairman informed Members that apologies of absence had been received from Ir Michelle Tang, Mr Simon Wong, Mr Luther Wong and Prof Wong Sze-Chun.

Item 1 : Confirmation of the draft minutes of the 222nd meeting held on 3 April 2017 (Closed-door session)

2. The draft minutes were confirmed without amendment.

Item 2 : Matters arising (Closed-door session)

3. The Chairman expressed appreciation to the work of the Secretariat in making available a background note on the subject matter (i.e. *ACE Paper 10/2017*) that had been circulated to Members for reference before the meeting.

Item 3 : Expansion of Hong Kong International Airport into a Three-Runway System - Report on the Effectiveness of the Marine Travel Routes and Management Plan for High Speed Ferries of SkyPier on Chinese White Dolphins

(ACE Papers 9/2017 and 10/2017)

4. The Chairman invited Members to declare interest. A Member declared that his construction company had provided minor works and maintenance services to the Airport Authority Hong Kong (AAHK). Two Members declared that they were Members of the Marine Ecology Enhancement Fund Management Committee set up by the AAHK. A Member further declared that she was a Member of the Hong Kong International Airport (HKIA) Environment Fund Assessment Committee. Two Members declared that they were Members of the Fisheries Enhancement Fund Management Committee set up by the AAHK.

[The presentation team joined the meeting at this juncture.]

Presentation cum Question and Answer Session (Open session)

5. Mr Kevin Poole briefed Members on the latest progress of the expansion of HKIA into a Three-Runway System (3RS). Mr Eric Ching recapped the background of the diverted routes of High Speed Ferries (HSFs) under the “Marine Travel Routes and Management Plan for High Speed Ferries of SkyPier on Chinese White Dolphins” (SkyPier Plan) to mitigate potential disturbance to the Chinese White Dolphins (CWDs). Dr Thomas Jefferson and Dr Bernd Würsig then briefed Members on the 12-month monitoring data and survey results in relation to the effectiveness of the SkyPier Plan.

SkyPier HSFs route diversion

6. In response to a Member's enquiry on the re-routing of the SkyPier HSFs operating between SkyPier and Zhuhai/Macau, Mr Peter Lee explained that as the navigation corridor between the southern boundary of the Sha Chau and Lung Kwu

Chau Marine Park (SCLKCMP) and the airport north was projected to narrow down to around 600 metres during the construction of the 3RS, the EIA's assessment was that an increasing number of vessels using this narrow stretch of water might pose a higher risk of collision and disturbance to CWDs in this area. In the light of this, the SkyPier Plan, which was considered by the ACE and approved by the EPD in November 2015, committed to diverting SkyPier HSFs using this navigation corridor to a route passing north of SCLKCMP with a speed control section along the part of the diverted route with higher CWD abundance in order to minimize collision risks and noise disturbance to CWDs.

7. Mr Peter Lee added that the monitoring results from the 12-month survey period i.e. December 2015 to December 2016 showed that the SkyPier HSFs diversion/speed control section did not appear to have adverse impact on CWDs at the north of SCLKCMP and overall appeared to be helping to minimize anticipated negative impacts on CWDs. He also noted that SCLKCMP as well as the west and southwest of Lantau continued to be active hotspots for CWDs and there were some individual CWDs using both areas for foraging and other activities.

Speed limits and exceedance in the SCZ and the number of HSF movements

8. In response to a Member's enquiry on the basis of the 15-knot speed limit for HSF movements within the Speed Control Zone (SCZ), Mr Peter Lee explained that the 15 knots speed limit was one of the commitments of the SkyPier Plan. It was the lowest practicable speed limit possible for operating HSFs as this would allow a buffer for the captains to adjust ferry speed between the range of 11 and 14 knots according to the sea conditions. The HSFs were designed to travel at a speed of 30 to 40 knots and a further reduction of the speed limit might lead to navigation and passenger safety concerns.

9. On the issue of speeding as raised by a Member and another Member, Mr Peter Lee said that there were approximately 170 cases of instantaneous speeding in total during the survey period from March to December 2016, with the duration mostly less than one minute speeding due to navigation or public safety reasons. 99.96% of the diverted HSF trips complied with the 15-knot speed limit; only 3 trips had an average speed exceeding the limit. A Member suggested the AAHK update the data on the average speed of diverted HSFs within the SCZ to enhance the monitoring of HSF movements. Mr Lee agreed.

AAHK

10. Regarding a Member's question on the number of daily HSF movements and another Member's question on the average number of diverted HSF trips per day, Mr Peter Lee clarified that the highest number of daily HSF movements (all routes) was 97 (below the cap of 125) and annual daily average of HSF movements was 91 (below the cap of 99). The daily average number of diverted HSFs operating between SkyPier and Zhuhai/Macao was 27. Given that CWDs were found to be more active in the evening, a Member suggested the AAHK present the data in terms of a distribution frequency of daily HSF movements in the daytime as well as in the evening which could help better establish whether the diverted HSFs had any impact on CWDs. AAHK

11. A Member asked the AAHK to confirm if the projected number of diverted SkyPier HSFs in 2030 was still valid given the imminent commissioning of the Hong Kong-Zhuhai-Macao Bridge (HZMB). Mr Peter Lee explained that the marine traffic forecast in the 3RS EIA Report had taken into account not only a potential associated drop in marine traffic movements after the commissioning of the HZMB but also a projected increase in HSF traffic owing to the overall economic growth in the region. AAHK

Comparison of CWD data before and after implementation of SkyPier Plan

12. Noting that the report did not include any data collected prior to the implementation of the SkyPier Plan with effect from 28 December 2015, a Member questioned the basis of the conclusion that there was no evidence of any significant decline in dolphin use of the SkyPier Plan's SCZ around Lung Kwu Chau after the implementation of the SkyPier Plan. He considered that a comparison on data collected before and after the implementation of SCZ was necessary to assess the effectiveness of the SkyPier Plan. Another Member echoed that the data obtained after the implementation of the SkyPier Plan should be compared to that obtained by AFCD and/or under the HZMB project before the implementation of the SkyPier Plan.

13. Dr Thomas Jefferson said that although no direct data in the year of 2015 had been collected by the 3RS monitoring effort, data collected from the HZMB monitoring in 2015 had been made available and reviewed. Based on a comparison of the 2016 3RS survey data with 2015 HZMB survey data for Northwest Lantau waters, similar CWD abundance estimates were obtained. The preliminary conclusion indicated that there was no evidence of a significant decline in dolphin numbers before and after the implementation of SCZ in 2015

and 2016 respectively.

14. A Member considered that impacts on CWDs should be further assessed before drawing the conclusion as claimed by the AAHK in its report. Dr Jefferson clarified that the analysis of the data collected so far had not revealed evidence of a decline in dolphin numbers and added that the extent of any impact on CWDs from the diverted HSFs might not be ascertained with 100% certainty at this point. The Member asked the AAHK to provide a full report of the 12-month review on the effectiveness of the implementation of the SkyPier Plan for CWDs after the meeting. AAHK

Expansion of survey areas

15. A Member said that there were reports of CWDs having been spotted at the eastern waters of Hong Kong e.g. Sai Kung. He suggested the AAHK extend the monitoring network and survey areas to other parts of Hong Kong waters and the Pearl River Estuary (PRE) to show the CWDs' shifting pattern. He also considered that the CWD data from outside Hong Kong should be provided in addition to the SCZ data. In the EIA process, he recalled that the AAHK had suggested that disturbance to CWDs would be minimized owing to their movements to other nearby waters during the construction of the 3RS project and they would return into Hong Kong waters after completion of the construction works. As such, the monitoring of CWDs should not be limited to Hong Kong waters, but also PRE waters in order to assess impacts on CWDs.

16. Mr Peter Lee said that in addition to monitoring in the monitoring areas stipulated in the updated Environmental Monitoring and Audit (EM&A) Manual, the survey area had been further extended to the northern waters in Hong Kong covering the Deep Bay. The inclusion of Deep Bay was intended to facilitate a more comprehensive assessment of CWD abundance in Hong Kong waters to help better ascertain shifting patterns of dolphin abundance within Hong Kong waters in response to anticipated disturbance from the 3RS project.

17. As regards the extension of Passive Acoustic Monitoring (PAM) of underwater noise including dolphin communication sounds to other parts of Hong Kong waters, Mr Peter Lee said PAM did have limitation as it might only record dolphin sounds up to around 2 kilometres from the device and was not able to derive dolphin numbers or their behaviours. He added that the AAHK relied on vessel-transect surveys to monitor the abundance and density of CWDs. He

opined that the current vessel-transact monitoring arrangements covering Southwest Lantau, West Lantau, Northwest Lantau and Northeast Lantau and also the Deep Bay waters should be adequate.

18. Dr Thomas Jefferson supplemented that he was not aware of CWD movements near the eastern and south-eastern areas of Hong Kong such as Sai Kung. He said extensive surveys had been and would continue to be conducted in Hong Kong's eastern and south-eastern waters under AFCD's ongoing cetacean monitoring programme which surveyed both CWDs and Finless Porpoises. As Hong Kong's western waters was estuarine and the eastern waters was oceanic, it was highly unlikely that CWDs, being estuarine species, would move towards Hong Kong's eastern waters.

19. Dr Thomas Jefferson further explained that the CWDs were a variety of humpback dolphins that moved within relatively small home ranges (e.g. tens of kilometres). While these dolphins might move such short distances within their habitats to avoid disturbance, these movements were relatively small in scale and likely restricted to other areas within Hong Kong waters as well as into PRE waters. Having considered the expected movement of dolphins outside Hong Kong waters and into the PRE, Mr Peter Lee added that the AAHK had supported research and monitoring of CWDs in the PRE. The HKIA Environmental Fund had provided funding support to a survey undertaken by the University of Hong Kong in the last two years to conduct science-based research on PRE CWD populations as well as the development of a conservation research framework for the entire PRE CWD populations (including the identification of future research needs). In addition, Marine Ecology Enhancement Fund had been set up in accordance with Environmental Permit (EP) conditions to fund research into marine ecology, including research on the conservation of CWDs in Hong Kong waters as well as the broader PRE area.

Relevancy of data analysis

20. A Member considered that the grid analysis on CWD density should focus on the SCZ. He opined that quantitative assessment grids within the SCZ and in its vicinity should be presented to show the possible movement of dolphins away from this area into new areas, for example as a result of increased HSF activities, instead of just showing the situation for the entire Northwest Lantau survey area. In response, Dr Thomas Jefferson explained that targeting a very small area with an associated small dataset was likely to give an unreliable estimate of abundance

and he cautioned against splitting the larger area into such small units of assessment at this stage. He said that a grid analysis on the smaller SCZ-specific scale might be possible when a larger database was built up over time. The current use of estimates for the whole of the Northwest Lantau survey area (and the other transect survey areas) had made use of a bigger dataset and provided a more reliable abundance analysis. He also said that they had made reference to the AFCD monitoring database and the HZMB database to compare quantitative assessments. The general observation was that the historic CWD hotspots within the North Lantau waters were still being used as important dolphin habitats.

21. A Member was of the view that the sampling frequency of transect surveys, i.e. twice per month was insufficient. He considered that greater sampling efforts should be deployed in the diverted route area at the northeast of Lung Kwu Chau. Dr Thomas Jefferson said that each of the five survey areas was surveyed twice per month. Similar surveying efforts had been deployed under the HZMB project. He explained that while AFCD's sampling frequency varied in different areas and changed over the years, the AAHK was primarily interested in the distribution and shifts of CWD populations within the western Hong Kong waters. Therefore sufficient survey frequency had been maintained in all historically known important CWD habitats, including additional voluntary vessel surveys in the Deep Bay area, with a view to document the movement of CWDs in and out of these areas over time. Mr Peter Lee supplemented that the AAHK had conducted over 5,600 kilometres of survey per year, which was higher than that of AFCD over the same one-year period.

22. A Member opined that greater details, such as the frequency of sightings and range patterns, should be provided for the 16 identified CWD individuals sighted within/in close proximity to the SCLKCMP. Dr Thomas Jefferson clarified that 10 sightings were recorded during the 24 surveys. He also clarified that the figure of 785 CWD individuals showed in the presentation referred to the number of sightings rather than the number of individual CWDs identified by photo identification.

23. A Member requested the AAHK to provide specific data on the distribution of CWDs' known behavioural states within the SCZ in addition to the bar chart covering same parameters of the entire survey area, as well as to provide a response to his written comments and questions. Dr Bernd Würsig suggested and the Member agreed that it might be useful to compare data on the distribution of a specific group of CWDs' known behavioural states recorded with the presence

of HSFs within 500 metres of the CWDs as compared to that without HSFs.

Correlating CWDs and HSFs data

24. Dr Thomas Jefferson said that the vessel-based survey was conducted by a team consisted of two on-effort observers who focused entirely on observing CWDs. A Member pointed out that there was no evidence showing that the CWDs had shifted to SCZ in the presence of HSFs and/or other marine vessels, and suggested the AAHK conduct a correlation analysis by referring to the log showing the location and speed of marine vessels travelling within the SCZ.

25. A Member opined that the CWD data review should focus on the SCZ in order to analyze the impact of HSFs travelling through the SCZ on CWDs. Another Member questioned the conclusion made by the AAHK claiming that there were no statistically significant differences in the response variables relative to the presence and speed of vessels.

26. While land-based theodolite tracking might detect the swimming speeds and reorientation rates of CWDs as well as the track and speed of nearby vessels, Dr Bernd Würsig explained that the number of CWDs recorded within 500 metres of HSFs had been too low over the period of monitoring so far to support any data analysis with statistical significance. Nevertheless, he said that the data and analysis from other studies had identified a trend that when there were fast vessels (e.g. HSFs) in the vicinity, CWDs swam faster at 4 to 4.5 kilometres per hour and they had more rapid reorientations and demonstrated longer and more abrupt dives. The lowest speeds of CWDs at 2 to 3 kilometres per hour were recorded while there were no marine vessels nearby. He envisaged that such observations might be supported by further analysis when more data was obtained from the ongoing 3RS survey effort.

27. Dr Bernd Würsig confirmed that a comparison had been made of four circumstances, including data obtained without the presence of marine vessels, data obtained with HSFs travelling at high and low speeds, and data obtained with the presence of vessels other than HSFs. Given the small sample size within the SCZ, especially for the scenarios where vessels were not around or travelled at a low speed, a Member suggested that the data collected within the entire monitoring area in the Lung Kwu Chau waters should be sufficient to increase the sample size to support an analysis with statistical significance.

28. In response to a Member's question, Dr Thomas Jefferson clarified that while it might not be determined definitively that there was no impact on CWDs arising from the diverted HSFs, no significant decline in dolphin abundance in Northwest Lantau waters had been observed so far after the implementation of the SkyPier Plan.

29. Noting that HSF movements under the regulation of the AAHK comprised merely 5% of the total traffic using the Urmston Road area including the SCZ, a Member sought clarification on the significance and/or impact of the 5% of traffic in terms of minimizing disturbance to CWDs. Another Member added that it would be difficult to attribute any changes in the CWD numbers or behaviour to the SkyPier Plan given that only 5% of all marine traffic in the Urmston Road area including the SCZ was under the control of the AAHK. She suggested the AAHK take account of the 95% of the rest of the marine traffic and conduct data analysis in a more prudent manner.

30. Mr Peter Lee clarified that the diverted HSFs, which had to pass through the SCZ at a lower speed, accounted for around 5% of all marine traffic using the Urmston Road channel. It was important to note that the SCZ took up only a portion of the Urmston Road channel, and hence, it was reasonable to assume that the HSFs contributed more than 5% influence within the SCZ. In order to determine the effectiveness of the mitigation measures in the SkyPier Plan, a Member said that the percentage of HSFs out of all vessels using the SCZ should be determined.

Conclusion

31. The Chairman thanked the AAHK for their presentation and explanation, and invited them to make progress reports to ACE on a regular basis to facilitate further review and improvements. In order to ascertain whether the diverted HSFs had posed significant impact on CWDs at the SCZ and its vicinity, he suggested the AAHK present data analysis with greater relevance and enhance the survey efforts in future. AAHK

32. Mr Kevin Poole thanked Members for their valuable comments/suggestions and agreed that the AAHK would continue to fine-tune the data analysis to present more precise results in assessing the effectiveness of the SkyPier Plan on the CWDs.

[The presentation team left the meeting at this juncture.]

Internal Discussion Session (Closed-door session)

Review of EP

33. The Chairman pointed out that all mitigation measures had been carried out as stipulated under the EP. While AAHK had fulfilled its duties, it should continue to monitor the project and gather more relevant data, particularly those pertaining to SCZ, for incorporation into its progress report to provide a more informative and objective basis when drawing conclusions.

34. Mr Louis Chan said that if a project proponent fulfilled all the relevant EP requirements, there were no provisions in the Environmental Impact Assessment Ordinance (EIAO) to suspend or revoke the EP, unless the project proponent was found to have provided misleading or false information in the EIA report. Mr Donald Tong commented that if the monitoring results showed that environmental impacts of a project turned out to be worse than that assessed in the EIA report despite full implementation of all mitigation measures by the project proponent as required under the EP, EPD would coordinate with other relevant departments as appropriate seeking to reduce the negative impacts as far as practicable through administrative means.

35. A Member remarked that with route diversion proposed as a mitigation measure, no impact assessment on CWDs was conducted during the EIA process. With reference to the EM&A Manual, he considered that adjustments should be made to the management of HSFs should the limit and action levels relating to CWD abundance be exceeded.

36. Given that EIASC had made extensive discussions on the arrangements regarding the route diversion and speed limit when deliberating the 3RS EIA Report, a Member opined that Members should adhere to the conclusions drawn from the discussions and refrain from revisiting the issues. She agreed with a Member that the impacts of the project might be monitored via the EM&A programme. Another Member also agreed that revisiting the discussions on arrangements of the SkyPier should only be explored in the event of any major infringement of public interests.

Review of the survey method

37. A Member opined that there was a lack of substantive evidence to support the AAHK's conclusion that the diversion of HSFs had no significant impact on CWDs. Two Members suggested the AAHK consult ACE on the research methodology for any on-going surveys.

38. A Member opined that the issue boiled down to the analysis and presentation of data provided by the AAHK rather than the adequacy of data. She considered that with the comments and suggestions provided by ACE, the AAHK should be able to provide data with greater relevance to SCZ.

39. Mr Dick Choi echoed a Member's view that Members' concerns mainly involved data analysis and presentation made by the AAHK rather than the survey design and method. He assured Members that the three study methodologies used by the AAHK were established techniques also employed by AFCD and other researchers.

40. A Member added that the assessment on the effectiveness of the SkyPier Plan should focus on data obtained within the SCZ. She opined that with the log recording vessels entering the SCZ, AAHK might be able to conduct correlation analysis retrospectively without conducting additional surveys.

41. With reference to Mr Dick Choi's advice that the 3RS and the HZMB projects had deployed separate teams to undertake the monitoring work, a Member was concerned that the use of different vessels and surveyors might cause compatibility problems if the data were pooled for analysis. Mr Choi explained that the two sets of data had been analysed separately.

42. A Member said that the AAHK should correlate the CWD data with the presence and speed of marine vessels within the SCZ and its vicinity for better analysis and presentation.

Investigations into speeding cases in the SCZ

43. As CWDs were often observed to travel near to HSFs, a Member expressed concern towards the cases of instantaneous speeding which exceeded 160 cases over the survey period. He suggested with the agreement of another Member that the AAHK should consider conducting investigation to see whether

individual operators or marine vessel captains had been violating the requirements more frequently. Management actions against individuals could then be undertaken if necessary to reduce their incidences of speeding in the SCZ.

The need for a larger database

44. Mr Dick Choi said that most CWDs had distinctive features that allowed recognition by photo identification. With reference to the AFCD survey conducted last year, some 160 individual dolphins were identified, while the AAHK's dolphin surveys identified 165 individual dolphins. With fewer CWD sightings in recent years, it would be necessary for the AAHK to collect sighting data over a longer duration to build up a database of sufficient size to enable in-depth analysis of the identified CWD individuals.

45. The Chairman suggested the Secretariat issue a letter to the AAHK to request for supplementary information and advise the AAHK to consider the views of ACE when preparing for the next progress report

Secretariat

[Post-meeting notes: the letter was issued to AAHK on 17 May 2017.]

Item 4 : Any other business (Closed-door session)

EIA report not selected for submission to ACE

46. The Chairperson of EIASC reported that since the last Council meeting, EIASC received the Executive Summary of the EIA report on "Mui Wo Lai Chi Yuen Cemetery Extension" which the Subcommittee had not selected for discussion. The EIA report was exhibited for public comments from 18 April to 17 May 2017. The Executive Summary was circulated to EIASC Members upon commencement of the public inspection period, with the relevant hyperlinks copied to non-EIASC Members for information. Individual Members were advised to provide their comments, if any, on the EIA report directly to the Director of Environmental Protection within the public inspection period. As the EIA report had not been selected by EIASC for presentation and discussion, the Chairman concluded that EPD would take it that ACE had no comments on the EIA report upon close of the public inspection period.

47. There was no other business for discussion at the meeting.

Item 5 : Date of next meeting (Closed-door session)

48. The next ACE meeting was scheduled for 5 June 2017 (Monday). Members would be advised on the agenda in due course.

**ACE Secretariat
June 2017**