

Confirmed Minutes of the 55th Meeting of
the Advisory Council on the Environment
held on 28 September 1998 at 2:30 p.m.

Present:

Mr. Peter H. Y. WONG, JP (Chairman)
Mr. Barrie COOK
Mr. CHAN Kwok-wai, JP
Mr. Clement CHEN
Dr. HO Kin-chung
Mr. Joseph LAU Man-wai
Mr. LIN Chuan-ming
Dr. NG Cho-nam
Mr. PAO Ping-wing, JP
Ms Iris TAM
Miss Alex YAU
Mr. Danny TSUI (Secretary)

Absent with Apologies:

Mr. Julian BARCLAY
Miss Ann CHIANG
Mr. Paul C. H. FAN
Professor Anthony HEDLEY
Professor Peter HILLS
Professor LAM Kin-che
Dr. LEONG Che-hung
Mr. Otto L. T. POON
Mr. Michael J. D. RUSHWORTH
Mr. Tan Teng Huat
Mr. Plato YIP

In Attendance:

Mr. Kim SALKELD	Deputy Secretary for Planning, Environment & Lands (Environment)
Mr. Rob LAW	Director of Environmental Protection
Mr. S P LAU	Assistant Director of Agriculture and Fisheries, Agriculture and Fisheries Department (AFD)
Mr. P K S Pun	Director of Planning
Dr. Cindy LAI	Assistant Director of Health
Mr. David CHAN	Principal Information Officer, Environmental Protection Department (EPD)
Mr. Eugene FUNG	Assistant Secretary for Planning, Environment & Lands (Environment)

Ms S M HUNG	Assistant Secretary for Planning, Environment & Lands (Environment)
Miss Cora SO	Executive Officer, Planning, Environment & Lands Bureau (Environment)

In Attendance for Agenda Item 4 :

Dr. Malcolm BROOM	Principal Environmental Protection Officer (Water Policy and Planning Group), EPD
Dr. Samuel CHUI	Senior Environmental Protection Officer (Water Policy and Planning Group), EPD
Mr. Peter CHAN	Managing Director, Montgomery Watson (MW)
Mr. Allan KWOK	Joint Project Manager, MW
Professor M R HUANG	Joint Project Manager, Binhai Consultants

In Attendance for Agenda Item 5 :

Mr. C C CHAN	Senior Agricultural Development Officer, AFD
Mr. K W CHEUNG	Acting Senior Ecological Assessment Officer, AFD

In Attendance for Agenda Item 6 :

Mr. Clinton LEEKS	Corporate Development Director, Airport Authority (AA)
Mr. Howard ENG	Deputy Airport Management Director, AA
Mr. Amin EBRAHIM	Commercial Manager - Aviation Support Services, AA
Mr. Bill ROBERTS	Senior Design Engineer, AA
Mr. Rick MORSE	Environmental Manager, AA
Mr. Martin PUTNAM	Environmental Scientist, AA
Mr. Simon HUI	Principal Environmental Officer (Assessment & Audit), EPD

Agenda Item 6 : Progress of Investigations into the Location of Permanent Aviation Fuel Receiving Facilities (AFRF) For the New Airport
(ACE Paper 40/98)

42. The Chairman welcomed the team from AA to the meeting. Mr. Clinton Leeks started the briefing by explaining the current position of AA regarding the recommendations made by the consultants on East of Soko Island (EOS) and South of Kau Yi Chau (KYC). Mr. Bill Roberts then briefed Members on the background to and results of the study by the Consultant. He also gave the reasons as to why AA considered that neither EOS nor KYC should be pursued further. Lastly, Mr. Rick Morse briefed Members on the environmental aspects with regard to Sha Chau.

43. The Chairman was concerned about a replacement site for the tank farms in Tsing Yi because it had become a residential area. He said that this should be included in the planning of the permanent AFRF site to avoid high cost being incurred again when they had to move away from Tsing Yi. Mr. P K S Pun said that Planning Department had not decided on a replacement site yet, but would need to search for one soon.

44. Dr. Ng Cho-nam, on behalf of Mr. Barrie Cook who had left the meeting earlier, asked if there were any sites proposed by private sectors. Mr. Leeks said that there were two proposals which were outside HKSAR boundary which, as Mr. Kim Salkeld remarked, had not been considered by the government. Upon the Chairman's request, Mr. Leeks said that they would provide Members with a summary of those proposals after conferring with PELB to see if the information could be released.

AA

45. In response to Miss Yau's question, Mr. S P Lau replied that the study commissioned by AFD on the suitability of EOS to be designated as a marine park was in progress.

[Post-meeting Note : The study would be completed by May 1999.]

46. In response to Dr. Ng's concern about the impact on Chinese White Dolphins from increasingly frequent marine traffic of ferries operating between Tuen Mun and Discovery Bay, and the high speed of those vessels, Mr. Morse said that the frequency was actually lower compared with that in the past few years, while the speed was little changed.

47. The Chairman asked AA to update Members on the investigations with a progress report in 6 months' time, Mr. Leeks agreed.

AA



**PROGRESS OF INVESTIGATIONS
INTO THE LOCATION OF
PERMANENT AVIATION FUEL RECEIVING FACILITIES
FOR THE NEW AIRPORT**

PURPOSE

The purpose of the paper is to update Members on the current position regarding the search for a suitable site for the permanent aviation fuel receiving facilities for the new airport.

2. Members are invited to note that:
 - (a) Studies undertaken on behalf of the Airport Authority, identified a site to the East of the Soko Islands followed by a site near Kau Yi Chau as the best and second best sites, respectively, of those included in the scope of the studies;
 - (b) These two options exhibit similar environmental problems to those encountered at Sha Chau. They are also, on grounds of their cost, commercially unattractive, particularly so in the current economic situation. The Authority therefore has serious doubts of the value of pursuing either of these two options further;
 - (c) The Authority has no plan or intention to upgrade the facilities at Sha Chau to a permanent facility;
 - (d) The Aviation Fuel Receiving Facilities (AFRF) at Sha Chau will therefore remain under interim use, then will revert to a back-up facility. The Authority, in conjunction with Government and other parties, will continue to implement all necessary mitigation measures until a permanent facility has been commissioned; and
 - (e) The Authority, in conjunction with Government, will continue to expedite our efforts to explore alternatives for a permanent facility which could potentially be preferable. These would include alternatives that have arisen relatively recently or may do so in the future.

BACKGROUND

History of Studies

3. In accordance with the advice of the Council in March 1995 and with the direction of the Governor in Council in May 1995, the Authority that year commenced studies to seek to expedite completion of a permanent fuel pipeline to the new airport. To this end, the Authority in June 1995 commissioned a study entitled "Feasibility Study and Environmental Impact Assessment for Aviation Fuel Pipeline" to be carried out by the Authority's Consultant, Montgomery Watson under an AA Contract. The brief for the study and a summary of the study's progress through Stages 1 and 2 is provided in a synopsis attached at Annex.

4. The two options selected during Stage 1 for further consideration in Stage 2, were:

- (a) East of Soko Islands (close to the South Cheung Chau spoil disposal area ("EOS")); and
- (b) South of Kau Yi Chau ("KYC").

5. During a consultation period at the end of Stage I of the study in late 1996 comments on both options were received from the Council, Government and others. These options were then reassessed in the light of these comments in Stage 2. The study effectively concluded on 31 October 1997 when the Study Management Group (SMG), chaired by EPD, endorsed the Consultant's recommendation for a piled facility located East of the Soko Islands with a twin pipeline installed within a deep, mostly bored, tunnel to the new airport. The Authority has since reviewed carefully with Government the wide issues raised by the recommended East of Sokos option: and while doing so has been able to assess more closely the direct impacts (or lack of them) arising from the facility at Sha Chau following its physical completion and commissioning in the spring of 1998.

Evaluation of Results of Studies

6. The permanent facility is a similar facility to that already at Sha Chau but on at least twice the scale. To the extent therefore that at both EOS and KYC there are believed to be environmental concerns which would need to be mitigated, the issues raised at Sha Chau would, the Authority believes, to a degree be repeated should either of these options be pursued.

7. The sort of environmental issues raised by the EOS and KYC sites would be similar to those debated by the Council regarding Sha Chau in 1994-95, except that the new facility would be at least twice the size of the Sha Chau facility and able to handle 60,000 dwt tankers (whereas Sha Chau handles those up to 6,000 tonnes):

- (a) both EOS and KYC face areas of comparatively unspoilt beaches and country park, raising concerns about the impact of fuel spills;
- (b) the option recommended by the consultants, at EOS, in an area frequented by both Chinese White Dolphins and finless porpoises, and is adjacent to an area earmarked for a future Marine Park;
- (c) both options present certain risk issues, in that the EOS site is adjacent to the busy south Lantau shipping route (including the main jetfoil route to Macau) and the KYC site is at the south-eastern point of access to the Ma Wan Channel in the Western Harbour. In the case of either option very considerable care and planning would be needed in the design of the berthing and turning facilities for vessels of 60,000 dwt in such circumstances, and considerable dredging would be required.

8. The high cost of the facilities (around HK\$3.4 billion in 2001 prices compared to less than HK\$700 million for Sha Chau) including the tunnel, pipeline, dredging, jetty and associated equipment is also a factor. This would cause a significant increase in fuel throughput fee at the new airport. This is likely to impose an intolerable burden on airlines in the current climate, and raise questions about the new airport's competitiveness vis-a-vis its regional neighbours, because fuel represents a far higher proportion of airline overall costs than do other cost areas such as airport charges (20% compared to 4% on average) which have in their own way also proved rather controversial in airport financing terms in recent years.

9. Since the completion of the pipeline study, the AFD's dolphin consultant Dr. Thomas Jefferson has completed his own extensive study on the Health and Status of Hong Kong's hump-backed dolphin (i.e. Chinese white dolphin) population. Much has been learned as the result of Dr. Jefferson's work. He concludes that the Pearl River estuary supports a population of over 1000 animals and that the population is viable. In 1995 the accepted non-scientific view of many was that there were less than 100 animals and that the population was in serious decline. Obviously, as Dr. Jefferson cautions, much remains to be done to ensure that the dolphin population remains viable. However the scientific information he has collected helps to ensure that management decisions will now be scientifically based.

10. Similar to the dolphin situation in 1995, the available scientific information regarding the health and status of Hong Kong's other indigenous cetacean species, the black finless porpoise, is quite limited. In an effort to correct this situation, Dr. Jefferson has recently started a 2.5 year AFD supported study on the status of the finless porpoise. The size of the population is not known and its range appears to include waters south of Lantau, with the Soko Islands being an area of high use. It would be highly desirable to take into account Dr. Jefferson's study before reaching any firm conclusion on the potential impacts of the EOS option on porpoises from an environmental stand point.

11. The study by the Consultant indicated that the programme to completion would take some 6 years for the bored tunnel solution, based on recent experience of sub-sea tunnelling in Hong Kong to implement the sewage disposal strategy. There is a possibility that this programme could be shortened by laying a subsea pipeline around the west of Lantau. (This would however require an EIA.) By this means therefore the EOS option could be constructed within 3 years, but the cost of such a long pipeline (34 km) would remain very high.

12. For the reasons outlined in paragraphs 6 - 8 and 10 above the Authority considers that the options arising from the study by the Consultant should not be pursued further.

Temporary Facility at Sha Chau

13. Conversely, the Authority has no intention to upgrade the facilities at Sha Chau to enable it to become the permanent facility, recognising that the Sha Chau facility, lies within a Marine Park, (whose operation the AA will continue to fund during the active life of the Sha Chau AFRF). Indeed were such a change contemplated then several rigorous legal and statutory requirements would need to be met before it could be effected.

Performance of Mitigation Measures in Place at Sha Chau

14. Members will wish to know how the facilities at Sha Chau are performing in light of the Council's concerns when this option was first discussed in 1994/95. The position is that following successful completion of all required construction phase mitigation measures pre-airport opening, the required operational mitigation measures have been and will continue to be implemented at the AFRF at Sha Chau. This will continue until the facility reverts to a back-up role as envisaged for it when a permanent facility is commissioned elsewhere. The mitigation measures being implemented during the active life of Sha Chau include:

(a) Zero discharge of solid and liquid wastes

- solid waste removal
- sewage and greywater removal
- chemical waste removal

(b) Spill response capability

- 1000 feet inflatable boom
- Deployment Vessel

- (c) Vessel including specification for
 - Bow Thrusters to enhance manoeuvrability
 - Crew training for operations in a Marine Park
- (d) Dolphins - monitoring
 - AFSC consultant now conducting 6-month operational monitoring programme
 - Results are reported to Dr. Tom Jefferson and AFD
- (e) On-going coordination
 - Environmental Audits have been carried out to review the implementation of the above.
 - Meetings are held with AFSC officials to review audit reports to ensure continued adherence to environmental objectives.

The Way Forward

15. The Authority remains committed to expediting completion of a permanent pipeline as soon as an acceptable option can be identified. Although the results of the studies carried out by the Consultant did not produce any such options, the Authority has nevertheless monitored other developments, in conjunction with Government. Currently the options that appear to be more attractive than those considered to date are those potentially opened up by future development of the Tong Gu Channel west and northwest of the New Airport.

16. In particular, the Authority has expressed an interest in a site for the permanent facility at Tuen Mun Industrial Area. The timing of the development of this area is not however firmly established and is dependent upon the completion of construction of the Tong Gu Channel. The Channel will be developed by Shenzhen. Study on the environmental and economic impact of the Channel on Hong Kong is being carried out by Hong Kong SAR Government and is expected to be completed by the end of 1998. According to information from the Shenzhen side, the timing for the Channel has not yet been fixed. It is not likely that the Channel will be opened to shipping before 2003.

17. The Authority will continue to keep Members advised of progress in the search of a suitable permanent location, and to report at regular intervals on the environmental performance of the facility at Sha Chau.

Airport Authority
September 1998

SYNOPSIS OF THE STUDY CARRIED OUT BY
THE AUTHORITY'S CONSULTANT

- A1. On 20 March 1995 at a meeting of the Advisory Council on the Environment (ACE), a commitment was made by Government to expedite construction of a pipeline (or pipelines) to transfer aviation fuel to the new airport. The first step was to undertake a feasibility study and environmental impact assessment for a permanent facility to replace the shipment of aviation fuel by vessels to the interim facility at Sha Chau.
- A2. The permanent facility is to provide a jetty for the delivery of bulk aviation fuel in vessels up to 60,000 dwt and to transfer the fuel via a pumping station and pipelines to the tank farm on the new airport.
- A3. All the options considered in the study were developed from the following basic options:
- A bored tunnel from Tsing Yi or Lantau Port Development;
 - A bored tunnel (possibly combined with a subsea pipeline and/or a surface trench) from the Soko Islands; and
 - A combination of a bored tunnel and trenched overland route from Tsing Yi.

These specific options were identified for study because the time frame for the study was tight and several other possible options around Lantau had already been studied in the period 1992-94 and rejected as being non-viable for a wide variety of reasons.

The purpose of the study was to identify one or more recommended options from the basic options on the basis of environmental, programme, cost, technical and other criteria by use of a traceable process through which the identified options were screened and ranked.

- A4. Of these proposed options, only two were considered viable namely, Kau Yi Chau and Sokos (approximately 3 km east of Tai A Chau). Key environmental issues associated with these two options were identified by the Study Management Group (SMG). Comments were also raised on the findings by non-SMG Government Departments and other concerned parties. Stage 1 of the Study was completed on 28 October 1996, with a presentation to ACE and taking into account Member's comments.

- A5. The need to address these comments resulted in Stage 2 of the Study, which commenced on 3 March 1997. Using an analysis identical to Stage 1, the option finally recommended as the best option arising from those within the scope of the study at the end of Stage 2 was that to the East of the Soko Islands.
- A6. The environmental aspects of the study were overseen by the SMG, chaired by EPD. At a final meeting on 31 October 1997, the SMG endorsed the option recommended by the Consultants.

Airport Authority
19 September 1998