

## **Appendix 1.2: Stakeholder Engagement**

### **1 Summary**

- 1.1 Hong Kong International Airport (HKIA) is one of the most important pieces of infrastructure in Hong Kong. HKIA connects the people of Hong Kong and its businesses with the rest of the world and plays a key role in supporting and driving the city's economic growth and development.
- 1.2 Following the preparation of the HKIA Master Plan 2030 (MP2030) in 2008, Airport Authority Hong Kong (AAHK) reached out to a wide spectrum of stakeholders to seek their views and explain the airport's development plans, which included two options for the long-term development of HKIA. These options were to maintain the airport's two-runway system, or to develop HKIA into a three-runway system.
- 1.3 From late 2008 to early 2014, AAHK organised and took part in 970 engagement activities with a variety of stakeholder groups to explain the airport's long-term development plan. Such activities included meetings, briefings, seminars, discussion forums, exhibitions and airport visits. AAHK has also kept stakeholders, including the general public, informed through a number of communication channels including a dedicated website, exhibitions, videos, mass media and printed materials.
- 1.4 After the start of the Environmental Impact Assessment (EIA) process in May 2012, AAHK further intensified its efforts to engage stakeholders in order to foster better mutual understanding, address concerns, and incorporate opinions into the final EIA report as much as was practically feasible. Of the 970 engagement activities completed since AAHK started developing MP2030 at the end of 2008, 494 were carried out during the EIA period.
- 1.5 Among the various engagement initiatives that were held during the EIA phase, AAHK set up four Technical Briefing Groups and five Community Liaison Groups. In addition, the Airport Authority held public forums, one-on-one and roundtable meetings with green groups, media workshops, and airport visits and briefings for students, residents, professional bodies and opinion leaders.
- 1.6 Important stakeholder groups included:
  - a. Universities, secondary, primary schools and education sector
  - b. Political parties, district councils and resident groups
  - c. Professional bodies, industry and business associations, business partners
  - d. Media
  - e. Green groups
  - f. Academia, think tanks and opinion leaders
  - g. Technical briefing groups
  - h. Fishermen groups
  - i. Consultative bodies
  - j. General public
- 1.7 Details of the engagement activities are summarised in Table 1.

## **2 Objectives of the Stakeholder Engagement Programme**

- 2.1 Explain the expansion option's potential environmental impact, actively gauge the views of relevant stakeholders and address their concerns as far as practicable.
- 2.2 Build understanding of the need and process for the expansion of HKIA into a three-runway system, and address concerns related to the project.
- 2.3 Ensure transparent, responsive and responsible communications with stakeholders and the wider public.
- 2.4 Promote understanding and appreciation of the economic and social contributions of HKIA, as well as its significance to the city's overall competitiveness; highlight the importance of maintaining Hong Kong's status as a leading international and regional aviation centre.

## **3 Key Public Engagement Activities**

### **3.1 Pre-EIA Period**

- 3.1.1 The Pre-EIA period is defined as the time from the preparation of the HKIA Master Plan 2030 in 2008, to the submission of the Project Profile for expanding HKIA into a three-runway system in May 2012.
- 3.1.2 During this period, AAHK organised and participated in 476 engagement activities. An overview of the key activities and detailed information about their content are provided below.
- 3.1.3 *Three-month Public Consultation in 2011*
  - 3.1.3.1 AAHK launched a 20-year airport development blueprint, HKIA Master Plan 2030 (MP2030), on 2 June 2011. This was followed by a three-month public consultation exercise (PCE) from 3 June 2011 to 2 September 2011. In MP2030, two airport development options were presented: maintaining a two-runway system, and expanding into a three-runway system.
  - 3.1.3.2 AAHK employed a variety of channels during the public consultation to raise stakeholder and public awareness about the two development options:
    - Print advertisements in 13 major local newspapers
    - Advertisements on outdoor billboards in high-traffic locations, such as MTR stations in Central, Causeway Bay, Tsim Sha Tsui and Kowloon Tong as well as Airport Express Line platforms.
    - Advertisements at bus stations along major road networks
    - Announcements of Public Interest on TV and radio stations
    - Online banner ads on popular websites

- 3.1.3.3 Three roving exhibitions were organised on Hong Kong Island, in Kowloon and the New Territories, and two exhibitions at Terminal 1 and 2 of the airport attracted over 40,000 visitors.
- 3.1.3.4 AAHK also organised three public forums linked to the roving exhibitions, for the purpose of collecting views from the public and answering questions from participants. Approximately 550 people attended the forums.
- 3.1.3.5 During the consultation period, the Airport Authority held approximately 200 meetings/ briefings/ forums with various stakeholders and the general public including district councillors, community leaders, residents, professional bodies, fishermen, green groups, academia, think tanks, business partners, students, media and the general public.
- 3.1.3.6 A broad range of communication materials – including publications, videos, newspaper supplements and a dedicated website – were produced to enhance the understanding of stakeholders and the general public.

#### *3.1.4 Publications*

Three sets of bilingual MP2030 publications containing varying levels of detail were prepared to facilitate the public's understanding of the airport's development. These included a 60-page MP2030 report, a 10-page booklet and a 250-page Technical Report. The reports were distributed to a wide range of stakeholders including airport community members, Exco and LegCo members, district councillors, professional bodies, think tanks, labour unions, green NGOs, etc. The 10-page booklet was also distributed to the general public through the roving exhibition. All these publications were uploaded to the website.

#### *3.1.5 Website*

- 3.1.5.1 On 1 June 2011, a dedicated website about MP2030 ([www.hkairport2030.com](http://www.hkairport2030.com)) was launched for the public's reference. The site provided extensive details on the two development options and invited the public to give feedback on the options through the online version of the HKU questionnaire.

#### *3.1.6 HKU Survey Study*

- 3.1.6.1 A survey was conducted independently by the Social Sciences Research Centre (SSRC) of the University of Hong Kong (HKU) to gauge the public's views about their preferred option for airport expansion. A total of 24,242 questionnaires were received online, by mail, and from collection boxes located at HKIA and the roving exhibitions that were held during the three-month public consultation. The views were then studied by the SSRC.
- 3.1.6.2 During this time AAHK also produced a number of communication materials including publications, videos, newspaper supplements and the designated website to enhance people's understanding of the two development options. A total of 35 videos, including eight informational videos on various aspects of the consultation documents, 25 stakeholder interviews and two technical videos on runway capacity and aircraft noise issues were produced.

- 3.1.6.3 Respondents indicated a clear preference for AAHK to meet Hong Kong's long-term air traffic demand by developing a three-runway system.
- 3.1.6.4 Seventy-three percent of respondents said they preferred the three-runway option, with 11% opting to maintain the two-runway system and 16% remaining neutral.
- 3.1.6.5 The HKU report also indicated that the majority of respondents (nearly 80%) agreed or strongly agreed that AAHK should make a decision urgently on HKIA's future expansion plans, while 6% held the opposite view.
- 3.1.6.6 The SSRC also collated qualitative comments collected through 10 channels, including the public forums and events, Legislative Council and District Council meetings, signature campaigns, opinion surveys, media and more.
- 3.1.6.7 After carefully considering the findings of MP2030 on the importance of meeting future demand growth and strengthening Hong Kong's role as a leading regional and international aviation centre, as well as the clear feedback from respondents to the HKU survey, the Board of AAHK submitted its recommendation to the Hong Kong Special Administrative Region Government in December 2011. Its recommendation was to adopt the three-runway system for planning purposes as the future development option for HKIA.

#### *3.1.7 Preparation of Project Profile*

- 3.1.7.1 In principle, the Government approved AAHK's request to adopt the three-runway system for planning purposes as the future development direction for HKIA on 20 March 2012.
- 3.1.7.2 Engagement activities continued after the close of the public consultation exercise on 2 September 2011 and before the submission of the Project Profile on 28 May 2012. Over 100 meetings/ briefings/ seminar/ visits were arranged for various stakeholder groups.
- 3.1.7.3 A nine-month MP2030 exhibition was held at HKIA's Terminal 2 following the public consultation exercise. Approximately 10,000 participants visited the exhibition from 9 June 2011 to end-March 2012.

### **3.2 EIA Study Period**

- 3.2.1 During the EIA period from 28 May 2012 to early 2014, AAHK organised/ took part in about 494 engagement activities, including meetings/ briefings/ seminars/ airport visits for various stakeholders.
- 3.2.2 A range of communications methods were used to keep stakeholders and members of the public abreast of the progress being made during the EIA study process.

#### *3.2.2.1 Publications*

- AAHK regularly published a Chinese/ English bilingual newsletter titled *3RS Bulletin*. This covered a number of aspects regarding the EIA and the three-runway system, or 3RS, such as the scope, methodology, preliminary findings and potential mitigation measures of the EIA

study, stakeholder engagement activities, and HKIA's green initiatives.

- The *3RS Bulletin* was distributed to stakeholders including the airport community, major business chambers, academia, workers' unions, fishermen groups, professional bodies, media, Legislative Councillors, District Councillors, secondary schools and universities.
- Four issues of *3RS Bulletin* have been published as at the end of 2013.
- Leaflets on the airport's development and green initiatives were also produced to enhance the understanding of the public.
- Online versions of the newsletters and leaflets are available to the public on the dedicated website: [www.threerunwaysystem.com/en/Information/Publications.aspx](http://www.threerunwaysystem.com/en/Information/Publications.aspx).

#### 3.2.2.2 Website

- On 10 August 2012, another designated website ([www.threerunwaysystem.com](http://www.threerunwaysystem.com)) was launched to provide up-to-date information on HKIA's proposed expansion into a three-runway system as well as the EIA. It also serves as a platform for the public to register for engagement activities, and as a channel for people to express their views on the project.
- On 31 March 2013, the MP2030 website was merged with the 3RS website.

#### 3.2.2.3 Video

- A video explaining the deep cement mixing (DCM) trial, as a measure being considered for reclamation works of the 3RS, and another illustrating the three phases of future airport expansion were produced in the early stages of the EIA. Another six videos in English, Cantonese and Putonghua versions, which focussed on several key environmental aspects of the EIA study, were also produced during the EIA process. All were uploaded to YouTube and the dedicated website to enhance the public's understanding of the EIA and the 3RS project.

#### 3.2.2.4 Media

- AAHK issued six press releases, published four editorial opinion pieces in newspapers, organised nine media workshops/ briefings, and arranged nine interviews as well as 25 meetings and airport visits for media.
- The Airport Authority's media outreach generated over 1,000 articles related to the 3RS and the airport's development.
- To view the press releases and articles, please visit the following links.  
Press releases: [www.threerunwaysystem.com/en/Information/Press\\_release.aspx](http://www.threerunwaysystem.com/en/Information/Press_release.aspx)  
Articles: [www.threerunwaysystem.com/en/Information/Articles.aspx](http://www.threerunwaysystem.com/en/Information/Articles.aspx)

### **3.3 Key Stakeholders and Activities during EIA Study Period**

#### *3.3.1 Setting up of dedicated engagement platforms*

3.3.1.1 Three focus groups comprising stakeholders from various backgrounds were set up to facilitate exchanges and provide updates on the progress of the EIA. The Airport Authority also held regular meetings for these groups, which included:

- a. Technical Briefing Group
- b. Community Liaison Group
- c. Airport Infrastructure, Planning and Development Users Working Group

#### 3.3.1.2 Technical Briefing Groups (TBG)

Four TBGs were formed, comprising a total of 28 members from industry and academia with technical expertise in four specific environmental aspects: noise (including aircraft noise health impact assessment), air quality (including air quality health impact assessment), marine ecology (including Chinese White Dolphin) and fisheries. Three rounds of TBG meetings were held during the EIA period. Field trips and airport visits on environmental aspects and airport operations were also arranged. The members of the TBGs were briefed on the major progress of the EIA in related aspects and consulted on views/advice on all practicable mitigation measures to address the relevant environmental concerns. To view the TBG meeting materials, please visit the following links. [www.threerunwaysystem.com/en/Engagement/Meetings.aspx](http://www.threerunwaysystem.com/en/Engagement/Meetings.aspx).

#### 3.3.1.3 Community Liaison Groups (CLG)

CLGs serve as interactive platforms for District Councillors and other community leaders to exchange views on the airport's development, plus a range of environmental subjects including aircraft noise and air quality which are of particular concerns to the community. Five CLGs have been formed for HKIA's neighbouring districts: Islands, Kwai Tsing, Shatin, Tsuen Wan and Tuen Mun. All relevant District Council members, and members from the relevant Area Committees/resident committees were invited to join the CLGs which comprised a total of over 150 members. Three rounds of CLG meetings were held to explain various aspects of the EIA and to listen to members' views directly. In addition, airport visits were organised to enhance members' understanding on airport operations and environmental efforts. During these visits, members were given opportunity to tour operations that are of their particular concern, e.g. checking out aircraft noise level at the runways with noise measurement equipment. To view the CLG meeting materials, please visit the following links. [www.threerunwaysystem.com/en/Engagement/Meetings.aspx](http://www.threerunwaysystem.com/en/Engagement/Meetings.aspx).

#### 3.3.1.4 Airport Infrastructure Planning and Development (AIPD) Users Working Group

The group comprises working-level representatives of major relevant airport business partners, such as airlines, ground services, cargo operators, caterers, marine trade operators and more. Its meetings are designed to provide a forum for updates and discussions on airport planning and development, including the progress of the 3RS project and EIA. Three meetings were held during the EIA period.

### *3.3.2 Public Forums and Exhibition*

- 3.3.2.1 In the course of the EIA study, AAHK held an exhibition and two public forum sessions to update the public on the progress of the EIA and the mitigation measures being considered. These were held at the Hong Kong Convention and Exhibition Centre in early August 2013. The exhibition and the public forum were opened for participation by the general public. Approximately 1,000 visitors attended the exhibition from 1 to 4 August 2013, while some 800 participants attended the forum on 2 and 3 August 2013. The exhibition featured assessment methodologies, preliminary findings and mitigation directions for the five major environmental aspects, plus information relating to all 12 environmental aspects required in the Study Brief. The majority of the participants who spoke at the forum supported the 3RS project.

### *3.3.3 Media briefings*

- 3.3.3.1 Nine media workshops, one press conference and nine media interviews were organised to enhance journalists' understanding of the latest progress on the EIA and 3RS, in addition to 25 meetings and airport visits. AAHK also answered 13 enquiries related to the EIA.

### *3.3.4 Green group briefings*

- 3.3.4.1 Six roundtable meetings were held to explain the methodologies of various aspects of the EIA studies, their preliminary findings and potential mitigation measures, and to facilitate the exchange of views about the environmental issues related to the project. Individual and small-group briefings were also arranged. These meetings enabled AAHK to incorporate views from the green groups during the study as much as was practically feasible.

### *3.3.5 Fishermen group briefings*

- 3.3.5.1 AAHK places utmost importance on the livelihoods of fishermen, who work in the surrounding waters of HKIA. Two briefings were held with the Hong Kong Fishermen Consortium and Hong Kong Fishery Alliance to update the fishermen groups on the progress of the EIA studies, and over 200 fishermen representatives attended in total. Another nine meetings with key fishermen representatives were also arranged.

### *3.3.6 Community briefings and airport visits*

- 3.3.6.1 Talks and airport visits were arranged for approximately 1,000 members from 20 area committees and 22 resident groups living along the flight paths, including rural committees, owners' committees, incorporated owners and mutual aid committees. During these visits, AAHK provided the most current information about HKIA's operations, green initiatives and future development, as well as the progress of the EIA. Sessions where participants could safely experience aircraft noise were also arranged.
- 3.3.6.2 Two ongoing exhibitions at Terminal 1 and HKIA Tower, AAHK's office tower, were opened in October 2012. The exhibitions highlight HKIA's economic contributions, the survey results of MP2030, the 3RS development plan, the EIA process, the environmental aspects relating to the 3RS, and HKIA's green efforts.

### *3.3.7 Briefings for business partners and professional bodies*

3.3.7.1 AAHK arranged 63 seminars, meetings and airport visits for approximately 2,500 participants from business chambers, industry associations, business partner groups and professional bodies to explain the airport's development plans and operations. During these sessions the Airport Authority was also able to collect views from professionals working in areas such as engineering, aviation, environmental impact and logistics.

### *3.3.8 Workers' Unions*

3.3.8.1 Five rounds of meetings were arranged with union representatives to listen to their views.

### *3.3.9 Other public engagement*

3.3.9.1 To enhance students' understanding of the importance of our airport's development and economic growth of Hong Kong, AAHK arranged 213 briefings and airport visits for universities, secondary school and primary schools. AAHK also had 20 meetings with different academia, think tanks and opinion leaders to exchange views on the airport's operations, development plans as well as environmental and economic impacts on 3RS.

## **3.4 Major Comments/ Suggestions Received and Summary of Responses**

### **3.4.1 Air Quality**

3.4.1.1 The following is a summary of key comments and suggestions relating to the air quality portion of the EIA collected by AAHK at the various stakeholder engagement activities.

3.4.1.2 In general, views expressed by participants at the stakeholder engagement activities are related to the anticipated increase in flight movements resulting from the operation of the three-runway system. Certain participants showed more concern about the possibility of increased air pollution. At the same time, participants believe the air quality issue can be contained through the rigorous emissions reduction measures currently being adopted by airlines and HKIA. As presented in the EIA, according to IATA's survey and research it is found that airlines in general have plans to replace their ageing aircraft by newer types of aircrafts. With continuous improvement on engine technology and more stringent emission standards, it is expected that there will be improvement in aircraft emissions.



<b>Air Quality</b>	
<b>Key views</b>	<b>Responses</b>
<ul style="list-style-type: none"> <li>Stakeholders generally appreciated that the air quality impact would be assessed against the AQOs which have been effective since 1 January 2014. It was suggested that a conservative approach should be adopted in air quality modeling. Total air quality impact, including emissions from road vehicles adjacent to the airport, should be taken into account. Information specific to current or future operations at HKIA should be used where available, and local air quality information should also be assessed.</li> </ul>	<ul style="list-style-type: none"> <li>AAHK has conducted a comprehensive and exhaustive study, and it has investigated the future cumulative air quality impact from the three-runway system (3RS) due to airport operation-related emissions, air emissions from infrastructure located nearby, and general emissions in the HKSAR and Pearl River Delta (PRD) region in accordance with the EIA Study Brief requirements.</li> <li>AAHK adopted the PATH Model developed by the Environmental Protection Department (EPD) as its assessment tool. This model covers all major emissions sources, including industrial, power generation and transportation (road, marine and aviation), in both the HKSAR and PRD. The air quality assessment has also worked across various assimilated scenarios, including 2011 as the base scenario as well as a future highest aircraft emission year according to the International Air Transport Association air traffic forecast. In addition, the assessment has taken into account other planned developments as set out in Chapters 4 and 5 of the EIA report.</li> </ul>
<ul style="list-style-type: none"> <li>The higher number of flight movements brought about by the third runway might worsen air quality, especially by doubling the number of PM10 and PM2.5 suspended particles.</li> </ul>	<ul style="list-style-type: none"> <li>AAHK included assessments of Respirable Suspended Particulate (RSP or PM10) and Fine Suspended Particulate (FSP or PM2.5) in the EIA study, which were benchmarked against the AQOs. Emissions of such particulates can be reduced by implementing appropriate emissions reduction measures, such as banning of APU in frontal stands, adoption of the latest emission standards, reduction of take-off in south runway, etc. The impacts of other pollutants, such as NO<sub>2</sub>, CO and others, have also been studied in the assessment. Based on the modelling results, the predicted levels of all assessed pollutants are in compliance with the AQOs.</li> </ul>

<ul style="list-style-type: none"> <li>After the completion of the 3RS, air quality in Tung Chung will be very poor unless the usage rate of the third runway is limited to 40% or less.</li> </ul>	<ul style="list-style-type: none"> <li>According to the assessment findings in the EIA study, air quality at all the identified ASRs within the 5 km assessment area, including those at Tung Chung and Tuen Mun, will be in compliance with the AQOs.</li> </ul>
<ul style="list-style-type: none"> <li>The 3RS could increase flight movement capacity and reduce the number of aircraft waiting to land, resulting in less fuel being used.</li> </ul>	<ul style="list-style-type: none"> <li>Noted.</li> </ul>
<ul style="list-style-type: none"> <li>New passenger aircraft like the A350 and freighters like the B747-8 could reduce emissions. Compared to aircraft in the 1960s, their fuel efficiency is 75% higher.</li> </ul>	<ul style="list-style-type: none"> <li>Noted.</li> </ul>

### 3.4.2 Noise

3.4.2.1 The following is a summary of key comments and suggestions relating to the noise impact assessment portion of the EIA. Feedback was collected by AAHK at the various stakeholder engagement activities.

3.4.2.2 In general, concerns centred on the potential noise impact of the 3RS on districts including Kwai Tsing, Shatin, Tsuen Wan, Tuen Mun and Islands. Stakeholders asked whether the anticipated increase in air traffic volume would lead to a bigger impact from aircraft noise for residents living in these districts. They speculated about the noise implications of the proposed new flight paths and runway operation modes. They also asked about the noise impact of the current two-runway system (2RS) on nearby residents. At the same time, some participants believe the aircraft noise issue can be contained through the improvement in aircraft technologies and rigorous noise reduction measures currently being adopted by airlines and HKIA.

Noise	
Key views	Responses
<ul style="list-style-type: none"> <li>Aircraft landing/ take-off noise can be heard every evening and early morning in nearby areas, and the situation in Ma Wan will be worse. AAHK should conduct a thorough study and EIA on the 3RS.</li> </ul>	<ul style="list-style-type: none"> <li>A thorough noise impact study has been conducted as part of the EIA report, which includes not only aircraft noise, but also noise arising from construction, traffic and the operation of airport facilities.</li> </ul>

	<ul style="list-style-type: none"> <li>For aircraft noise, factors such as future flight paths, flight schedules and mitigation measures have all been taken into consideration for the EIA. The assessment findings show compliance with the NEF25 standard at all Noise Sensitive Receivers in Ma Wan.</li> </ul>
<ul style="list-style-type: none"> <li>The new runway will create noise for Tuen Mun residents as the distance between the runway and Tuen Mun will be shorter.</li> <li>The increase in the number of flights will intensify air traffic noise for Shatin and Ma On Shan residents. How can such noise issues be managed?</li> </ul>	<ul style="list-style-type: none"> <li>For aircraft noise, factors such as future flight paths, flight schedules and mitigation measures have all been taken into consideration for the EIA. The assessment findings show that no residual aircraft noise impact at Tuen Mun, Shatin and Ma On Shan is identified to be associated with the operation of the 3RS.</li> </ul>
<ul style="list-style-type: none"> <li>The proposed third runway should be relocated to farther western waters.</li> </ul>	<ul style="list-style-type: none"> <li>In the planning for the 3RS, AAHK has taken a number of different options into consideration. After carefully assessing factors including operational safety and efficiency, environmental impact and passenger convenience, it was concluded that the currently proposed scheme is the most appropriate option.</li> </ul>
<ul style="list-style-type: none"> <li>The forecast of 3RS noise impact during night-time was made based on Boeing 777, an ICAO (International Civil Aviation Organization) Chapter 4 aircraft. However, in reality, not all airlines will use Chapter 4 aircraft.</li> </ul>	<ul style="list-style-type: none"> <li>The forecast of 3RS aircraft noise impact during both daytime and night-time is based on a number of factors, including aircraft operations, fleet mix (i.e., including numbers and types of aircraft employed), runway and track utilisations. Fleet mix of 3RS is based on the air traffic forecast and the findings of survey on major airlines.</li> </ul>
<ul style="list-style-type: none"> <li>Aircraft movements will continue to increase in the future. Many of the take-offs/ landings happen during night-time, and this could lead to intensified aircraft noise.</li> </ul>	<ul style="list-style-type: none"> <li>With the improving aircraft technology, engine noise would be reduced and therefore it is expected that overall aircraft noise emission would decrease in the future. Moreover, a number of mitigation measures have been recommended for reducing aircraft noise impact during night-time including putting the existing south runway on standby where</li> </ul>

	possible at night, requiring departures to take the southbound route via West Lamma Channel during east flow at night, adopting a new arrival RNP Track 6 for preferential use in the runway 25 direction at night, and implementing preferential runway use programme when wind levels allow during night-time.
<i>Mitigation direction</i>	
<ul style="list-style-type: none"> <li>Emphasis should be placed on direct mitigation measures rather than indirect measures. These might include restricting the use of older, noisier aircraft types, and designing flight paths to take noise into consideration.</li> </ul>	<ul style="list-style-type: none"> <li>AAHK worked closely with the Civil Aviation Department (CAD) on direct mitigation measures for reducing noise at source. These include putting the existing south runway on standby where possible at night, landing from the southwest, and using runways that can minimise noise impact on residents. Airlines are also encouraged to replace their older and noisier aircraft early.</li> </ul>
<ul style="list-style-type: none"> <li>Noise barriers should be used around the airport and in NSRs as a mitigation measure.</li> <li>What mitigation measures will AAHK implement, besides the airlines' plans to introduce quieter aircraft?</li> </ul>	<ul style="list-style-type: none"> <li>Noise barriers, which are normally of limited height, are insufficient to block aircraft noise affecting residents and are more commonly deployed to address road traffic noise. Instead of building noise barriers, AAHK will employ a number of other noise mitigation measures, such as putting the future south runway on standby mode at night most of the time. This will help minimise the noise impact for residents, in particular those living in Tung Chung. Moreover, a number of mitigation measures have been recommended for reducing aircraft noise impact during night-time including putting the existing south runway on standby where possible at night, requiring departures to take the southbound route via West Lamma Channel during east flow at night, adopting a new arrival RNP Track 6 for preferential use in the runway 25 direction at night, and implementing preferential runway use programme when wind levels allow during night-time.</li> </ul>
<i>Aircraft technology</i>	

<ul style="list-style-type: none"> <li>• Aircraft technology is becoming more and more advanced, and today's aircraft models are much quieter. By 2020, most will be able to meet ICAO Chapter 4 standards.</li> <li>• Relevant departments should consider speeding up the pace of prohibiting noisier Chapter 3 aircraft and replacing them with Chapter 4 aircraft to mitigate noise impact.</li> </ul>	<ul style="list-style-type: none"> <li>• CAD banned operations of the older, noisier Chapter 2 aircraft at Hong Kong International Airport in 2002. Only the newer, quieter Chapter 3 and Chapter 4 aircraft are allowed to operate.</li> <li>• With effect from the end of March 2014, to further improve the local noise environment and to alleviate the aircraft noise impact on the local communities, CAD will not allow airlines to schedule the noisier, marginally compliant Chapter 3 (MCC3) aircraft to operate between 2300 and 0659 (MCC3-Prohibited Period). Upon review of this measure, CAD would consider extending the MCC3-Prohibited Period to cover the whole day for the existing two-runway operation.</li> </ul>
<ul style="list-style-type: none"> <li>• Aircraft flying at night-time are typically older cargo aircraft. Has this been factored into the assessment, and will the NEF be reduced due to the deployment of more efficient aircraft in the future?</li> </ul>	<ul style="list-style-type: none"> <li>• The latest and best-available information of airport operation and aircraft fleet mix data has been used in the EIA studies in accordance with the EIA Study Brief requirements. AAHK has engaged the International Air Transport Association (IATA) who possesses the most accurate aircraft type information, to carry out the forecast and such information has been incorporated in the study, including various freighter models.</li> </ul>
<p><i>Adjustments in flight paths and runway operation modes</i></p>	
<ul style="list-style-type: none"> <li>• Are there any strategic measures to keep aircraft from flying over residential areas during holidays and night-time? Will there be any regulations prohibiting noisier aircraft from flying over residential areas?</li> </ul>	<ul style="list-style-type: none"> <li>• To minimise the impact of aircraft noise on residents, AAHK and the CAD have taken a number of mitigation measures. For example, aircraft can use the 07 runway during night-time as long as it complies with safe flying operations. Aircraft using the 07 runway to land at HKIA should approach the airport over the sea, thus avoiding the need to fly over residential areas. Aircraft using the 07 runway for take-off are required to turn toward the West Lamma Channel to leave Hong Kong, resulting in less impact on residents.</li> </ul>

### 3.4.3 Health Impact Assessment (HIA)

#### 3.4.3.1 Air quality HIA

Key views and responses are summarised as follows:

Air quality HIA	
Key views	Responses
<ul style="list-style-type: none"><li>Based on comments made to the Director of the Environment, the HIA should calculate the total impact within the 5km study area. That means emissions from road traffic should also be taken into account.</li></ul>	<ul style="list-style-type: none"><li>In accordance with the EIA Study Brief requirements, the EIA has assessed the potential health impact of emissions from airport operations and the proximity infrastructure (including road traffic emissions) within the 5km study area.</li></ul>
<ul style="list-style-type: none"><li>The construction of the 3RS could increase air traffic and cause air pollution, impacting the health of Tung Chung and Tuen Mun residents.</li></ul>	<ul style="list-style-type: none"><li>According to the assessment findings of the EIA study, the acute risk, non-carcinogenic chronic risk and increase in carcinogenic health risk due to 3RS are considered as acceptable at all the identified potential human receptors within the 5 km assessment area, including those at Tung Chung and Tuen Mun.</li></ul>
<ul style="list-style-type: none"><li>What will be done if there is no excess risk, but air quality is still not at a satisfactory level?</li></ul>	<ul style="list-style-type: none"><li>According to the assessment findings of the EIA study, the acute risk, non-carcinogenic chronic risk and increase in carcinogenic health risk due to 3RS are considered as acceptable at all the identified potential human receptors within the 5 km assessment area. The EIA findings have also shown that air quality at all the identified ASRs within the 5 km assessment area will be in compliance with the AQOs.</li></ul>
<ul style="list-style-type: none"><li>What mitigation measures will there be in the event that an adverse impact on health is identified?</li></ul>	<ul style="list-style-type: none"><li>As part of the EIA, practicable measures to avoid and reduce air pollutant emissions from the 3RS operation have been investigated and recommended, which will accordingly reduce any potential impact on health from airport operation emissions. According to the EIA findings, the acute risk, non-carcinogenic chronic risk and increase in carcinogenic health</li></ul>

	risk due to 3RS are considered as acceptable at all the identified potential human receptors within the 5 km assessment area.
<ul style="list-style-type: none"> <li>Will the HIA study continue to follow up on and assess the amount of people impacted by the project after the project is in operation?</li> </ul>	<ul style="list-style-type: none"> <li>AA has conducted the HIA in accordance with the requirement of the Study Brief and Technical Memorandum.</li> </ul>
<ul style="list-style-type: none"> <li>What are the general environmental illnesses and long-term cancer risks from toxic air pollutants (TAPs)?</li> </ul>	<ul style="list-style-type: none"> <li>The HIA has covered all potential acute and chronic health risks (including cancer and non-cancer risks) linked to TAPs.</li> </ul>

#### 3.4.3.2 Aircraft noise HIA

Key views and responses are summarised as follows:

Noise HIA	
Key views	Responses
<ul style="list-style-type: none"> <li>AAHK should assess the potential health impact of the 3RS on residents in Tuen Mun and Tsuen Wan, especially the impact of noise on people living along Ma Wan, Castle Peak Road and the Gold Coast.</li> </ul>	<ul style="list-style-type: none"> <li>For the aircraft noise HIA, noise sensitive populated districts/regions, including Sha Lo Wan, Tung Chung, Northern Lantau, Ma Wan and Siu Lam, were identified as key areas of interest.</li> </ul>
<ul style="list-style-type: none"> <li>The disturbances experienced by residents in originally quiet locations may be more significant than the indicated changes in dB levels. Cumulative impacts from road traffic should also be looked into.</li> </ul>	<ul style="list-style-type: none"> <li>AAHK has conducted the HIA in accordance with the Study Brief and Technical Memorandum.</li> </ul>
<ul style="list-style-type: none"> <li>How will the level of annoyance be estimated?</li> </ul>	<ul style="list-style-type: none"> <li>Annoyance has been assessed using the exposure-response relationships, which was developed overseas based on findings from intensive research studies.</li> </ul>
<ul style="list-style-type: none"> <li>Will the literature review indicate a threshold for the acceptable percentage of people subject to sleep disturbance?</li> </ul>	<ul style="list-style-type: none"> <li>As part of the HIA, the night-time noise metric, <math>L_{night}</math>, has been used to evaluate the impact of aircraft noise on sleep disturbance in neighbouring districts. However, as there is no</li> </ul>

	existing local standard on $L_{night}$ , the study has made reference to overseas experience and relevant local studies.
<ul style="list-style-type: none"> <li>Will the cognitive impact of aircraft noise be assessed in the health impact assessment?</li> </ul>	<ul style="list-style-type: none"> <li>The cognitive impact on school children of aircraft noise has been assessed in the HIA.</li> </ul>
<ul style="list-style-type: none"> <li>Why was heart disease not considered in the HIA study?</li> </ul>	<ul style="list-style-type: none"> <li>Regarding cardiovascular effects, there is a lack of overall consistency in findings of reported studies, even often with statistically insignificant results due to a number of confounding factors and thus there is yet sufficient scientific evidence on reliable exposure-response relationship for analysis.</li> </ul>

### 3.4.4 Marine Ecology and Chinese White Dolphins

3.4.4.1 The following is a summary of the key comments and suggestions relating to the marine ecology component of the EIA. They were collected by AAHK at the various stakeholder engagement activities.

3.4.4.2 The impact on natural habitats and wildlife, especially Chinese White Dolphins (CWDs), is one of the most widely discussed topics in relation to the EIA study for the three-runway system. Stakeholders have urged AAHK to protect CWDs as much as it can from adverse effects stemming from land formation works and high-speed vessel traffic. They would like AAHK to assess all possible cumulative effects generated from the airport expansion, the nearby Tung Chung Bay reclamation work and the construction of the Hong Kong-Zhuhai-Macao Bridge (HZMB). They have also asked AAHK to devise an integrated action plan addressing these aggregate environmental concerns, and to conduct an eco-valuation on the potential loss of species. At the same time, some participants believe that the 3RS Project would not necessarily endanger the CWD habitat in Hong Kong, based on the previous good example of the construction of HKIA in the 90s which demonstrated a re-bounce of CWD numbers after the completion of the reclamation works and the establishment of Sha Chau and Lung Kwu Chau Marine Park. A balance between conservation and development can be struck.

Marine Ecology and CWD	
Key views	Responses
<ul style="list-style-type: none"> <li>While some stakeholders acknowledged that AAHK had responded positively to their views</li> </ul>	<ul style="list-style-type: none"> <li>Noted.</li> </ul>



<p>during the EIA process, especially in terms of developing mitigation measures for CWDs and marine ecology, there were also concerns that the project would adversely impact CWDs. AAHK should be as vigilant as possible in determining its final mitigation efforts, and carefully and conscientiously re-examine the practicality and real value of each option.</p> <ul style="list-style-type: none"> <li>There were also views that AAHK should implement conservation measures before the commencement of the project.</li> </ul>	
<i>Construction methodology</i>	
<ul style="list-style-type: none"> <li>Stakeholders generally believe that deep cement mixing (DCM) could minimise the impact on water quality and the associated impact on marine ecology.</li> </ul>	<ul style="list-style-type: none"> <li>Noted.</li> </ul>
<ul style="list-style-type: none"> <li>Given the other construction projects in the region, how can AAHK address/ mitigate the cumulative impact?</li> </ul>	<ul style="list-style-type: none"> <li>AAHK has maintained liaison with other projects in the vicinity and incorporated cumulative impacts into its assessment.</li> </ul>
<i>Reduction in high-speed marine traffic</i>	
<ul style="list-style-type: none"> <li>AAHK should carefully consider how to protect an existing 'travelling area' for CWDs between Sha Chau and the north of the third runway reclamation footprint as a key CWD impact avoidance / minimisation measure.</li> </ul>	<ul style="list-style-type: none"> <li>The proposed marine park would provide a large area of protection for CWDs (by connecting the existing Sha Chau Lung Kwu Chau (SCLKC) Marine Park and the planned Brothers Marine Park) and reduce the chance of adverse impact from fast vessel traffic.</li> <li>High Speed Ferry route restrictions and speed limits are proposed in the EIA report to divert SkyPier HSFs away from this waterway from commencement of construction.</li> </ul>
<ul style="list-style-type: none"> <li>AAHK should consider mitigation measures to divert traffic caused by marine construction work. Impact from marine works barges is often underestimated, so designated areas</li> </ul>	<ul style="list-style-type: none"> <li>Mitigation measures for controlling construction vessel traffic have been proposed in the EIA report.</li> </ul>

for barges should be clearly indicated with a set speed limit.	
<ul style="list-style-type: none"> <li>AAHK should consider introducing speed control for fast vessels prior to construction.</li> </ul>	<ul style="list-style-type: none"> <li>Speed limits and route diversions for the SkyPier high-speed ferries would be introduced from commencement of construction to reduce the impact of high-speed marine traffic on CWDs during the construction and operational stages.</li> </ul>
<i>Marine Park</i>	
<ul style="list-style-type: none"> <li>AAHK should consider designating high-ecological-value areas along North Lantau as protected areas.</li> </ul>	<ul style="list-style-type: none"> <li>The establishment of a new marine park to connect the existing SCLKC Marine Park and the planned Brothers Marine Park has been proposed in order to enhance local marine ecology.</li> </ul>
<ul style="list-style-type: none"> <li>AAHK should consider ways to attract CWDs back into Hong Kong waters.</li> </ul>	<ul style="list-style-type: none"> <li>It is expected that the proposed marine park, together with other proposed marine ecological enhancement measures, will help improve marine ecology and fishery resources in surrounding waters, thereby encouraging CWDs to inhabit in HK waters.</li> </ul>
<i>Ecological improvement and artificial seawall</i>	
<ul style="list-style-type: none"> <li>AAHK should consider constructing artificial reefs to mitigate the impact of land formation works on marine ecology, compensate for loss of fisheries and promote the growth of soft bottom species.</li> </ul>	<ul style="list-style-type: none"> <li>Deployment of artificial reefs has been explored and proposed as one of the enhancement measures in the EIA.</li> </ul>
<ul style="list-style-type: none"> <li>AAHK should explore the possibility of establishing an off-site nursery for the future translocation of corals.</li> </ul>	<ul style="list-style-type: none"> <li>Translocation of corals affected by the project will be explored. The practicability of translocation is subject to site-specific conditions.</li> </ul>
<ul style="list-style-type: none"> <li>AAHK should deploy eco-enhanced seawalls around the expanded airport platform in areas where the projected hydrodynamic flows are suitable, and target species known</li> </ul>	<ul style="list-style-type: none"> <li>Proposed seawall locations for potential eco-enhancement designs will be selected in accordance with hydrodynamic modeling results, with features developed to suit target</li> </ul>

to inhabit such habitats	species during the detailed design stage.
--------------------------	---

### 3.4.5 Fisheries

3.4.5.1 The following is a summary of key comments and suggestions related to the fisheries impact assessment portion of the Environmental Impact Assessment, or EIA. Feedback was collected by AAHK at the various stakeholder engagement activities listed in the above sections of this document.

3.4.5.2 In general, stakeholders raised concerns over how the construction works of the 3RS would impact fishery resources and the marine ecology of nearby waters, and the livelihoods of fishermen. Particular attention was given to the impact of the reclamation works. During the engagement activities, stakeholders also stressed the importance of engaging fishermen in order to assess the impact of the 3RS. At the same time, some participants believe that the 3RS Project is critical to the future economy development of Hong Kong. A balance between conservation and development should be struck.

Fisheries	
Key views	Responses
<ul style="list-style-type: none"> <li>The construction works of the 3RS will affect the livelihoods of fishermen who work around Tung Chung, as fishery resources in the area will decline further.</li> </ul>	<ul style="list-style-type: none"> <li>In terms of the construction methodology, AAHK will adopt non-dredged methods (e.g. DCM) for land formation works in addition to other impact reduction and mitigation measures (including silt curtains). For the diversion of submarine fuel pipelines, AAHK will adopt the horizontal directional drilling (HDD) method through rock stratum underneath the seabed to avoid impacting marine water habitats.</li> </ul>
<ul style="list-style-type: none"> <li>Stakeholders expressed views on the proposed mitigation measures to improve fisheries resources, including the proposed new marine park and artificial reefs. Concerns were raised about the potential implications of these measures on fishery activities, as well as their effectiveness in enhancing fisheries resources in the area.</li> </ul>	<ul style="list-style-type: none"> <li>Fish fry re-stocking and artificial reefs have been explored, and details will be developed during the design stage of the planned 3RS project. Such measures may help improve fishery resources in north Lantau waters.</li> </ul>
<ul style="list-style-type: none"> <li>The proposed new marine park, if linked with the SCLKC Marine Park (and also taking into</li> </ul>	<ul style="list-style-type: none"> <li>The proposed new marine park will connect the proposed SCLKC Marine Park, the planned</li> </ul>

<p>consideration the expansions of the HKIA marine exclusion zone), could increase the operating cost for fishermen as they will need to consume more fuel to bypass the zone. Does AAHK have any planned travel routes for large vessels?</p>	<p>Brothers Marine Park and the HKIA Approach Area (marine exclusion zone) in order to provide effective ecological links among the various marine protected areas. According to current legislation, vessels are allowed to enter marine parks (subject to speed control), and licensed fishermen can still operate there. In addition, AAHK has included a proposal in the EIA to implement fishery enhancement measures that could further assist fishermen who are affected by the project.</p>
<ul style="list-style-type: none"> <li>Will the Marine Exclusion Zone or Hong Kong International Airport Approach Area be established as a 'no-take' zone for fisheries to compensate for the marine ecological impact?</li> </ul>	<ul style="list-style-type: none"> <li>The HKIA Approach Area is a 'no-take' zone.</li> </ul>
<ul style="list-style-type: none"> <li>Fishermen support conservation initiatives, but setting up a new marine park could affect their livelihoods.</li> </ul>	<ul style="list-style-type: none"> <li>AAHK has been actively engaging with fishermen through briefings and meetings, and the concerns raised by fishermen have been noted. Aside from the marine park, enhancement measures such as eco-enhancement of seawall design and deployment of artificial reefs have been proposed to enhance fisheries resources, while a Fisheries Enhancement Strategy will be developed to support the sustainable development of the fisheries industry.</li> </ul>
<ul style="list-style-type: none"> <li>The Pearl River Delta is an important area for fish spawning, but it has become increasingly degraded in recent years. The focus for mitigation should be on fishery protection, targeting overfishing and benefitting the recovery of juvenile fishes.</li> </ul>	<ul style="list-style-type: none"> <li>This will be taken into account when exploring possible mitigation measures.</li> </ul>
<ul style="list-style-type: none"> <li>A question was raised with regard to whether, in addition to improving fishery resources, there might be scope for issuing an ex-gratia allowance to fishermen during the construction period.</li> </ul>	<ul style="list-style-type: none"> <li>AAHK has been actively engaging with fishermen through briefings and meetings, and the concerns raised by fishermen have been noted. AAHK will relay the feedback collected from fishermen to relevant government departments and consider feasible means to</li> </ul>

	support the fishing industry.
<ul style="list-style-type: none"> <li>Some stakeholders expressed their appreciation for the comprehensive EIA study on the 3RS, the ongoing communications with fishermen and the feasible solutions proposed to help the industry. Among the major infrastructure projects that involve reclamation, the 3RS project is the one most active in communicating with fishermen. AAHK should continue communicating with fishermen and propose feasible solutions to aid the industry.</li> </ul>	<ul style="list-style-type: none"> <li>AAHK has been actively engaging with fishermen through briefings and meetings, and the concerns raised by fishermen have been noted.</li> </ul>

### 3.4.6 Other Comments – Need and Justification for Airport Expansion

3.4.6.1 In general, stakeholders who support the expansion of HKIA into a three-runway system (3RS) opined that it would enhance local employment, economic development and the competitiveness of Hong Kong.

3.4.6.2 Some stakeholders believe that enhanced coordination among the Pearl River Delta region's various airports could help alleviate the pressures of increasing passenger and air cargo volumes. AAHK has emphasised that coordination or cooperation among nearby airports does not work or help address the issues concerning airport capacity, given the highly regulated air services rights and the projected growing air traffic demand of the Pearl River Delta region in the coming years. Those who are more hesitant are concerned about the considerable project cost that might be incurred, as well as the project's impact on the environment.

Other Comments	
Key views	Responses
<ul style="list-style-type: none"> <li>The advantages of building a new runway outweigh the disadvantages. It could enhance economic development as well as the competitiveness of the air cargo industry. Generally speaking, it would have a positive impact on the economy of Hong Kong and people's quality of life.</li> <li>Hong Kong is facing strong competition, and it will be outstripped by other markets if it</li> </ul>	<ul style="list-style-type: none"> <li>Noted.</li> </ul>

<p>does not embark upon the construction of the 3RS soon. Effective recovery from any major flight disruption or typhoon is becoming more and more difficult because of capacity constraints, which is detrimental to the reputation of Hong Kong as an aviation hub. There is a clear need to move ahead with the 3RS as quickly as possible.</p>	
<ul style="list-style-type: none"> <li>The 3RS could become a white elephant due to the global economic recession. AAHK should make clear how it intends to fully utilise the two existing runways. Taking into consideration the decline of China's export volume and productivity, as well as the impact of the expansion of Pearl River Delta region and the opening of new high-speed rail links, AAHK should consider reviewing whether its air travel demand forecasts are too optimistic.</li> </ul>	<ul style="list-style-type: none"> <li>Because of the continuous growth of trade and the regional economy, IATA Consulting has estimated that the capacity of the aviation market in the greater PRD will fall short of the demand of 100 million annual passengers by 2030. The Study has already taken into account the anticipated increase in the total handling capacity of the five PRD airports, the opening of direct cross-strait transport and the implementation of high-speed rail and advised that there will still be significant unfulfilled demand/shortfall in capacity for air services – both in the medium term, up to 2020, and in the long term, 2030 and beyond). The current 2RS capacity is forecasted to reach saturation in a few years' time, which is much earlier than previous forecasts. Any expansion of 2RS (e.g. Midfield development) can only address the increase temporarily and will not be able to increase airport / runway capacity substantially unless there is a 3RS.</li> </ul>
<ul style="list-style-type: none"> <li>Some stakeholders wondered whether the increase in private aircraft is causing airport saturation.</li> </ul>	<ul style="list-style-type: none"> <li>Civil aviation, including passengers and freighter flights, remains HKIA's major user and occupy the vast majority of capacity at HKIA. Business flights only use time slots that are not already occupied by scheduled flights, and they account for only about 2% of HKIA's total aircraft movements. When considering HKIA's future development and 3RS, our primary goal will continue to be meeting the needs of civil flights.</li> </ul>

**Table 1: List of Stakeholder Engagement Activities** *[Up to 31 March 2014]*

**Summary**

<b>Completed activities</b>				
	<b>Pre-PCE (17 Nov 08 – 1 Jun 11)</b>	<b>PCE (2 Jun 11 – 2 Sep 11)</b>	<b>Sep 2011 – Before start of EIA (May 2012)</b>	<b>Start of EIA process – 31 Mar 14</b>
	173	194	109	494
<b>Total</b>	<b>970</b>			

*\*PCE – Public Consultation Exercise*

**List of Stakeholder Engagement Activities**

	<b>Start of EIA process – 31 Mar 2014</b>
Universities, secondary and primary schools, education sector	213
Political parties, district councils, resident groups	106
Professional bodies, industry and business association and business partners	63
Media	32
Green groups	28
Academia, think tanks and opinion leaders	20
Technical briefing groups	12
Fisherman groups	11
Consultative bodies	6
General public	3
<b>Total:</b>	<b>494</b>