Australia example

### ICAO

**Template for good practice examples of environmental assessment (Draft V1.0)**

*Note: The italicized text is for guidance only and merely indicates the kind of information that is likely to be of value for users of the ICAO assessment guidance. You do not need to cover all points if some are not applicable to your case study.*

<table>
<thead>
<tr>
<th>Organisation/Company: (The name of the body that undertook or sponsored this assessment)</th>
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<tbody>
<tr>
<td>Airservices Australia</td>
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<table>
<thead>
<tr>
<th>Project Title: (The title of the project being assessed)</th>
<th>Date of Assessment:</th>
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<tr>
<td>Canberra Airport ITAR (Implementation of Terminal Area RNP-AR)</td>
<td>January 2013</td>
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<tr>
<th>ASBU Module Code(s)</th>
<th>State’s Action Plan</th>
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<th>Project Description: (Briefly describe the project or proposed operational change to be assessed for its environmental implications; Please when possible, use schematics for illustration.)</th>
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<td>As part of Airservices Australia’s ITAR program, a number of Required Navigation Performance Authorisation Required (RNP-AR) approach and departure procedures were proposed for Canberra Airport, Australia. RNP provides precision approach and departure navigation without ground-based equipment; allowing for the design of curved flight paths- avoiding terrain and providing lower minimum descent altitude (MDA). The approach paths allowed for Continuous Descent Approach (CDA) with potential to reduce fuel burn.</td>
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<tr>
<th>Reason for the environmental assessment: (Explain why the environmental assessment was undertaken and, if applicable, include any specific regulation, policy, or rule that requires the assessment to be undertaken)</th>
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<td>An environmental assessment was conducted to discharge Airservices’ responsibilities under the Environment Protection and Biodiversity Conservation (EPBC) Act 1999 (Cth) and the Airservices Act 1995 (Cth), and in accordance with Airservices Environment Management System (EMS). The environmental assessment process also focussed on collaboratively embedding environment by design into the proposed procedures, seeking opportunities to create environmental benefits compared to current operations particularly in respect of the effect of aircraft noise on communities – supporting Airservices mission to provide safe and environmentally responsible air traffic services.</td>
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<th>Client or competent Authority: (Explain which body the assessment will be submitted to for their approval or decision making. Was the assessment internal or public? What audiences is it intended to inform?)</th>
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7. APTA—Approach procedures including vertical guidance; WAKE—Wake vortex; RSEQ—AMAN / DMAN; SURF—SMGCS, ASDE-X; ACDM—Airport CDM; FICE—Increased efficiency through ground-ground integration; DAIM—Digital AM; AMET—Meteorological information supporting enhanced operational efficiency; FRTO—Enroute Flexible Use of Airspace and Flexible routes; NOFS—Air Traffic Flow Management; ASUR—ADS-B satellite based and ground based surveillance; ASEF—Air Traffic Situational awareness; OPFL—In-Trail procedures (ADS-B); ACAS—ACAS improvements; SNET—Ground based safety nets; CDO—Continuous Descent Operations; PBN STARS; TBO—Data link en-route; CCO—Continuous Climb Operations

8. [http://www.icao.int/environmental-protection/Pages/action-plan.aspx](http://www.icao.int/environmental-protection/Pages/action-plan.aspx)
The environmental assessment and environment by design process was conducted internally by Airservices Australia and a suite of community and government consultation support material was prepared from the technical assessment. Judicious use of external contractors was made to streamline the process of completing mathematical noise modelling.

Through embedding environmental considerations in the design, referral criteria under the EPBC Act were not triggered. This expedited the approval, consultation and implementation process – with procedures published two months after community consultation was completed with positive feedback about the outcome and process.

The procedures are currently in use and available to all aircraft and crews equipped certified by the Australian Civil Aviation Safety Authority (CASA) to use RNP-AR.

Assessment Approach: (This section asks for a brief description of your application of the ICAO guidance for each main assessment step. If a step was not undertaken, give a brief explanation of why the step was omitted or is not applicable to this assessment example. Please complete each section individually. In this box you can explain why the ICAO approach to assessment was chosen. If you did not apply the ICAO methodology, please explain how your methodology differed from the ICAO approach.)

As Per ICAO Doc 9968 Airservices approached the assessment under the provisions of Airservices’ ISO14001 aligned EMS. A number of improvement opportunities were identified during the assessment process – focussing on opportunities to drive environment by design and adopting the ICAO principle of continuous improvement, broad issues were identified and discussed with the design team, efficiently affecting positive environmental change; prior to conducting detailed analysis including noise modelling.

Preparatory Work: (Briefly explain the relevant background activities that have been undertaken to prepare for the assessment. This may include decisions or processes such as, deciding that an environmental assessment is required, identifying the assessment client, gathering base data, deciding on years to be assessed, deciding on assessment methods or standards to be applied. There is no need to cover all possible information, simply provide a sufficient explanation of the reasons why the assessment steps and approach were selected. How did you establish which rules, regulations, or standards applied to the assessment?)

Airservices EMS requires an initial screening process be undertaken to determine if environmental assessment is required. From this screening, briefing papers were prepared that identified key issues to be considered by the implementation team, supporting a collaborative environment by design approach.

Once the design phase of the project had been completed data analysis for the detailed environmental assessment commenced. This included utilising Airservices’ Noise and Flight Path Monitoring System (NFPMS) to extract one full calendar year of radar flight path data to feed into an Integrated Noise Model (INM) software package. INM metrics studied included LAmx and LAn.

LAmx data was added using the Department of Infrastructure and Regional Development Transparent Noise Information Package (TNIP) software package to prepare N60 and N70 data. Geospatial software packages and Census data were used to determine population impacted by various noise metrics.

Literature analysis and government search tool databases were used to determine broader natural and cultural heritage issues, such as threatened species habitats or indigenous sacred sites.

Emissions were calculated on the basis of track mile changes.
Describe the proposed [operational] change, its purpose and alternatives: (Explain what will change as a result of the proposal to be assessed – this may repeat the information in the earlier project description. Explain why this project is required and what purpose it serves, and what alternatives have been considered. Information on why these alternatives were rejected is useful but not essential)

The proposed change included the implementation of terminal area RNP-AR approach and departure procedures at Canberra Airport.

Required Navigation Performance represents a step change in navigation technology – allowing design of curved flight paths and greater navigational accuracy; along with reduced minima and potential to operate with continuous descent approaches.

The Required Navigation Performance approach procedures provide a lower minimum descent altitude, providing opportunities for aircraft to conduct safe approach and landing in reduced weather minima; with the potential environmental benefit of reducing fuel usage to track to an alternate aerodrome.

Describe the scope and extent of the assessment: (How was it decided that this assessment was needed – “screening”. Describe the impacts to be assessed, for example, aircraft noise, CO2 or NOx emissions, climate impacts or air quality impacts. Explain the decision making process that determined this scope and the level of detail to be used in the assessment – “scoping”. Also describe any formal processes to consult upon or agree on the scope, for example, via a nominated competent authority if applicable. Explain, for example, if the scope was set using expert judgement or a pre-assessment checks or information gathering. Also describe how the decision to undertake a more detailed assessment, or not, was taken. How were the base-case and proposed case(s) determined, why were particular years chosen?)

Describe the assessment itself: (Describe any standards or mandatory requirements for the assessment to be undertaken together with the methodology, monitoring or model used to determine the extent of the environmental impacts for the proposal. Give an indication of the extent or time-horizons that were chosen (if not already described earlier). Was quality management applied? For example, was there a process to ensure that the input data for the environmental assessment was consistent with other parallel assessments? Were interdependencies encountered and how did you address any trade-off issues? Was the expertise for this assessment available from internal resources or procured externally?)

The assessment was completed in line with regulatory requirements specified in the EPBC Act. The assessment methodology included use of noise and emissions modelling.

Following preliminary screening assessment, an environmental assessment was undertaken considering the following factors:

- Potential impact of noise on community
- Emissions – studied as directly proportional to track miles
- Matters of Natural Environmental Significance – as proscribed in the EPBC Act.
- Potential impact on threatened flora and fauna
- Consideration of cultural heritage values, including indigenous heritage.

Above and beyond the regulatory requirement to consider the potential for significant environmental impact, the environmental assessment process and documentation focussed on identifying opportunities to create noise benefits for local communities, along with opportunities to reduce fuel burn, delivering environmental benefits along with operational and cost benefits to the aviation industry.
Describe the results and how they were communicated: *(Explain in general terms what the results of the assessment were, how this was used, for example to what extent it informed decision making or approval for the project. Was it produced as a draft for consultation or simply as a final report? Were the results validated or verified in any way – for example were the assessment processes or quality management processes independently audited? Did the results feed into a wider process, for example, a business case assessment?)*

From the analysis a number of reporting products were developed, including:

- Technical assessment document
- “Assessment on a page” technical summary document to support advance preparation of communication strategies for internal stakeholders
- Community consultation package, including text, and a Powerpoint presentation – communicated through a Community Aviation Consultation Group (CACG) meeting.
- Summary assessment document – produced for government and industry briefing and published on the Airservices Australia.

Lessons learned: *(Explain here what worked well, what could be improved, what you would do differently next time – If applicable please explain if you think the ICAO assessment guidance could be improved and in what way. If you did not use the ICAO methodology can you identify aspects of your methodology that could provide benefits to future iterations of the ICAO guidance? What aspects of the ICAO guidance would you apply to your own methodology for future assessments?)*

Embedding environment by designed proved to be a successful endeavour, and has resulted in improved noise outcomes for potentially impacted communities. The assessment and consultation process developed in this example has subsequently rolled out across a number of airports in Australia under the implementation of terminal area RNP program.

Key lessons learned included allowing additional time for:

- Early engagement in design process
- Internal review and consultation
- Options and benefits identification
- Selection of preferred options with a view to completing these activities to allow detailed technical assessment and early publication of reports and procedures to meet stakeholder needs (including airlines, community groups and airports).
- Allowing adequate time provides greater opportunity to prepare detailed consultant briefs and management of contractor outputs – particularly where scope or proposed procedures are amended (which frequently occurs when dealing with environmental and community aspects, that may not be able to be clearly or fully defined at the start of the assessment.)

Comments: *(Optional - Offer here any other advice or hints that may be of value to others using ICAO environmental assessment guidance.)*

A copy of the environmental assessment can be provided on request.