Environmental Management of Changes to Aircraft Operations

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Prepared:

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Change summary

Version	Date	Change Description	Amended by
17	1 July 2022	Changes to existing processes for the management of ATM changes	s47F

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1 Purpose

The purpose of this Standard is to prescribe the requirements for environmental impact assessment (EIA), community sensitivity analysis (CSA) and community engagement that must be met, prior to implementing changes to aircraft operations.

These activities shall be collectively referred to as environmental change management within this document.

2 Scope

This Standard applies to all proposed changes to air traffic management practices (proposals) that may involve a change to aircraft operations.

Proposals include, but are not limited to, the following:

- new, or amendment to an existing, instrument flight procedure;
- new, or amendment to an existing, air route;
- re-classification of airspace;
- change to noise abatement procedures or preferred runways;
- a change that allows use of a flight path/airspace by a different type or quantity of aircraft;

Note: A tactical decision of an air traffic controller to alter the track of an individual aircraft does not constitute a proposal.

Note: Changes involving the administration or facilitation of emergency operations (aerial firefighting, police, Border Force, military or other covert ops) are not required to be screened as they are considered inherently tactical.

2.1 Out of Scope

This Standard does not necessarily apply to other business revenue (OBR) work undertaken by Airservices. For OBR work, an approach shall be determined by the Chief Service Delivery Officer, to assess the potential application of the *Environmental Protection and Biodiversity Conservation Act 1999*, and the potential environmental impact of the work.

Refer to Appendix A for applicable changes and Appendix C for further information regarding OBR work.

3 Objectives of environmental change management

Recognising that safety is our most important consideration, the main objectives of environmental change management for aircraft operations are to:

1. meet our legislative obligations to:
    a. avoid ‘significant’ environmental impacts resulting from any Airservices action, and ensure appropriate regulatory consideration and impact assessment, as required under the *Environmental Protection and Biodiversity Conservation Act 1999* (the EPBC Act).

b. ensure air traffic management practices are conducted in a manner that protects the environment, as far as is practicable, as required under the *Airservices Act 1995;*

c. meet applicable Ministerial Directions relating to aircraft noise management;

2. minimise our business risks by maintaining effective community engagement and sound corporate citizenship in aircraft noise management;
3. provide a standardised and rigorous approach to assessing the impacts of changes to aircraft operations, as a demonstration of organisational due diligence in environmental management (in compliance with the requirements of our Environmental Management System (EMS) - as described in AA-NOS-ENV-0001);
4. assist in achieving organisational environmental, sustainability and community management commitments (as described in our Environmental Policy C-POL0030); and
5. assist in achieving efficiency outcomes for our customers, through improved flight paths and associated reductions in fuel costs and emissions.

4 Principles and mandatory requirements

4.1 Change process collaboration

Environmental change management is a collaborative process involving impact assessment (environmental, social and reputational); risk assessment and management; and community engagement.

These management elements shall be conducted collaboratively and concurrently by relevant parties throughout the change lifecycle, such that flight paths are designed and implemented in a manner that minimises environmental and community impacts to the greatest extent practicable.

4.2 Change governance

A formal standing change governance panel shall be established with representation by accountable managers from all business units with accountability for elements of the end-to-end airspace/aircraft operations change management. This change governance panel shall oversee the entire change pipeline from initial proposals to post implementation reviews, and authorise progress at key decision points established in this Standard. Decisions of the governance panel shall have minutes and attached to the CIRRIS change record as evidence.

The roles and responsibilities of the governance panel[13] shall be published as a functional group procedure or a Terms of Reference, which defines membership, decision making and delegations.

4.3 Requirements for all proposals

All proposed changes to our air traffic management practices that may affect aircraft operations shall:

[13] The governance panel is currently implemented as the 'Airspace Governance Panel' described in ATS-PROC-0147.

1. be undertaken in accordance with this Standard and subordinate procedures, while being commensurate and scalable to the complexity of the change;
2. be assessed for environmental and community impacts prior to implementation
3. be designed to avoid environmental and community impacts to the greatest extent practicable (whilst prioritising operational safety);
4. involve community engagement prior to the final decision, where potential community or environmental impacts are identified;
5. be reassessed[14] and reengaged with the community prior to implementation, if the proposal has already been impact assessed in accordance with this Standard and:
   a. has subsequently been substantially modified or;
   b. over 24 months has elapsed since the original assessment and engagement.
6. undertake a gap analysis for the assessments which were previously endorsed through a formal Environmental Impact Statement (EIS) or Major Development Plan (MDP) process to ensure assessment metrics used in the originally endorsed EIS/MDP adequately addresses the current environmental impact standard and industry practice, and to determine whether additional advice is required from the Environment Minister regarding whether the proposal presents the potential for 'significant impact' under the EPBC Act. Refer to Guide ENV-GUIDE-0028 *Environmental Impact Assessment of Changes to Aircraft Operations* for more details about the content and process of 'gap analysis'.
7. seek to achieve an outcome that balances the needs of the environment, community and aviation industry stakeholders, in accordance with Airservices Flight Path Design Principles (FPDP).

Note: For third party assessments, Flight Path Design team (FPD) shall review and lodge Environmental Change Screenings in CIRRIS. Safety & Environmental Assessments team will undertake endorsements, and Community Engagement team will ensure if communities have been appropriately engaged.

4.4 Third party framework

Airservices Third Party Framework (TPF) procedure (C-PROC0429: Third Party Proposed Change Management Procedure) shall be applied to all proposals led by a third party (an Airport for example) where Airservices is in a supporting or joint development/delivery role. The TPF clearly defines Airservices airspace and flight path change obligations and the requirements identified through this Standard.

A Third Party Change Management Plan (TPCMP) is required to be completed as part of the TPF. This plan identifies roles and responsibilities against these obligations and requirements, and confirms input, review, approval and assurance requirements for both parties. The TPCMP shall be completed prior to any Airservices activity commencing on the proposed change.

[14] 'Re-assessment' is scalable depending on the extent of the given variation to the change, and may only consist of validation of original inputs and assumptions.

4.5 Information systems

The Corporate Integrated Reporting and Risk Information System (CIRRIS) Management of Change (MOC) module must be used to record case workflows and due diligence activities associated with a change proposal.

The Environment & Sustainability Principal Advisor is accountable for ensuring that CIRRIS accurately codifies the screening and assessment criteria and logic described at Appendix A of this Standard.

If CIRRIS functionality is unavailable, the Accountable CSDO Manager shall ensure that change proposals are documented in a manner that conforms to the criteria and process steps outlined in this Standard.

The end to end CIRRIS processes can be completed by Flight Path Design (FPD) on the basis they provide evidence that the decision has been supported by the change governance panel or other relevant risk delegate/s.

4.6 Proposals with potential 'significant impact'

Wherever practicable, Airservices shall seek to avoid changes with the potential to result in 'significant impact' to the environment, as defined under the EPBC Act.

Where avoidance of potentially significant impact is not practicable (e.g. due to a clear safety imperative), the proponent of the change shall seek advice from the Commonwealth Environment Portfolio Minister (the Environment Minister), in accordance with Sections 28 and 160 of the EPBC Act, prior to implementing the change. Refer to Section 6.4 for further information regarding advice and assessment requirements under the EPBC Act.

4.7 Development of procedures

Airservices business groups with accountabilities for planning and implementing changes to aircraft operations shall develop procedures and other supporting documents that describe:

a. the internal business processes required to enact the requirements of this Standard (including interactions with other business groups and external stakeholders);

b. the relevant methodologies for undertaking environmental impact assessments, community sensitivity analyses and community engagement (as required by this Standard), and how they will collaboratively inform flight path design;

c. the Flight Path Design Principles (FPDP) applicable to the design of all new and amended flight path changes to ensure balanced consideration of customer, community, environment and operational requirements, having first given regard to safety

d. Any additional standards, principles and templates applicable to the development of products or processes defined in this Standard, such as Flight Path Design Principle Report (FPDPR).

5 Accountabilities

5.1 Overall change implementation

The following abbreviations for accountable personnel are used throughout this standard:

- Chief Executive Officer (CEO)
- Chief Service Delivery Officer (CSDO)
- Chief Customer Experience and Strategy Officer (CCXSO)
- Chief Safety & Risk Officer (CSRO).

The CSDO group holds ultimate accountability for ensuring that no change proposal is implemented without completion of the appropriate environmental change management requirements, in accordance with this Standard.

In practice this means:

- managing the change process to ensure that all assessment and management elements are completed and approved by relevant managers;
- accepting or rejecting risk assessments produced during the environmental change management process (in accordance with Risk Management Standard (AA-NOS-RISK-0001), Environmental Risk Management Procedure (ENV-PROC-0004) and Airspace Change Process (ATS-PROC-0147).
- approving implementation of the change once all environmental change management requirements (as described in this Standard and any change specific plans) have been met.

The Accountable CSDO Manager is the point of accountability for the overall success of a change. The Accountable CSDO Manager is either:

- the Head accountable for the operations to which the change pertains; or
- the Chief Service Delivery Officer (if the proposed change represents a risk in the 'High' risk class (in accordance with AA-NOS-RISK-0001) as indicated by the environmental or community sensitivity analysis and/or the airport risk rating15).

Environmental change management shall be integrated with the overall change governance framework. Accountable managers from all business groups involved in the change process must be informed of potential environmental and community risks and benefits from a proposed change at relevant decision points throughout the change lifecycle[16]; including the design and initial proposal stage. See Airspace Change Process (ATS-PROC-0147).

The CEO holds the ultimate approval authority for change implementation. The change governance panel must ensure that the CEO is kept informed of the change program and of any high risk changes prior to implementation.

[15] To enable this, CSDO group shall maintain a risk in CIRRIS which describes ongoing environmental risks associated with noise management at specific Airports, in addition to assessing the risk of the particular change.

[16] ATS-PROC-0147 establishes the Airspace Governance Panel (AGP) which meets the intention of this requirement.

6 Environmental change management elements

There are six key elements to environmental change management for aircraft operations. These are as follows[17]:

1. Initial design review (including Preliminary Noticeability and Sensitivity Assessment (PNSA))
2. Community Sensitivity Analysis (CSA) and community engagement
3. Environmental Change Screening (ECS)
4. Environmental Impact Assessment (EIA)
5. Advice and assessment under the EPBC Act (where required)
6.
7. Risk Assessment and Management

These elements are further discussed in the following sections.

6.1 Initial Design Review

Purpose and context

6.1.1 The change proponent articulates a need for change which is developed into an initial design by FPD. An initial design review provides an opportunity to undertake an early assessment of potential aircraft noise issues.

The key product of this phase is the Preliminary Noticeability and Sensitivity Assessment (PNSA) which may inform:

- a design amendment;
- any potential community engagement strategy; or
- a decision to terminate the proposal early.

The initial design stage is overseen by the change governance panel.

Table 1 Outcomes and requirements for initial design review

Outcome: 1. Changes with apparent community risk are identified at the initial design stage and can inform a decision to modify the design.
Requirements: 1.1. A change record is created for the proposal using the CIRRIS Management of Change module. 1.2. Initial design review is conducted to support early assessment of potential environmental issues. 1.3. The change governance panel will consider changes and determine if they are approved for screening and requires a PNSA.

[17] After Environmental Change Screening is conducted, these elements may be undertaken concurrently (informing each other) and not necessarily carried out in the order listed herein.

1.4. Findings from the PNSA shall be submitted to the airspace change governance panel for a decision.
Outcome: 2. A decision is made regarding whether the change can proceed to Environmental Change Screening.
Requirement: 2.1. Business group procedures shall define when a PNSA is required and the approved format 2.2. A PNSA shall: (a) Inform iteration of flight path design, the EIA and CSA; (b) analyse potential impact on all potentially affected communities and noise sensitive receivers, referring to both qualitative and quantitative values; (c) include explicit commentary on social impact, taking into account existing risk information, particular community history, context and sensitivities; (d) be commensurate with the size of the change and the sensitivity of the social environment; (e) incorporate the most up to date information on the communities affected. 2.3. Findings from the PNSA shall be submitted to the airspace change governance panel for a decision to proceed to ECS, iterate the design or terminate the proposal. PNSA shall be attached to the CIRRIS change record. 2.4. Decisions of the airspace change governance panel shall be documented and attached to the CIRRIS record as evidence. 2.5. Any proposed changes originating from outside the Accountable CSDO Manager's team must be approved by the Accountable CSDO Manager. 2.6. The PNSA informs a decision to conduct an early community engagement activity. 2.7. All PNSA shall: (a) be prepared by appropriately qualified and experienced staff[18] (b) be based on accepted industry practices and social impact analysis methodologies

6.2.1

6.2 Environmental Change Screening

Purpose and context

Environmental Change Screening (ECS) enables early identification of change proposals that are highly unlikely to result in any environmental or community impact and can therefore be progressed without further detailed assessments (unless the proposal relates to a 'high' risk airport – see Table 2 below).

[18] PNSAs may be undertaken by parties outside of Airservices, however they are still subject to the Change Implementation requirements of this NOS and Airservices Airspace Change Process (ATS-PROC-0147).

ECS enables an initial assessment of potential impacts at a high level, using defined criteria (included in Appendix A).

Outcomes and Requirements

Table 2 prescribes the outcomes that must be achieved through ECS, as well as the associated requirements for achieving the outcomes.

Table 2 Outcomes and requirements for Environmental Change Screening (ECS)

6.2. **Outcome:** 3. Changes are screened to identify those that require further environmental assessment/management
Requirements: 3.1. Environmental Change Screening (ECS) shall be undertaken using the CIRRIS Management of Change module (which incorporates the Environmental Screening Criteria, Appendix A) to create a unique record in CIRRIS for the change – 'The Environmental Change Record (ECR)'.
Outcome: 4. A decision is made regarding whether the change can proceed to implementation, or if further environmental assessment/management is required.
Requirement: 4.1. The result of all ECS shall be reviewed and accepted by the change governance panel. 4.2. Evidence that the change governance panel has accepted the screening outcome shall be attached to the ECR. 4.3. The outcome of the ECS assessment shall also be recorded in the Change Request Centre (CRC) system (at the appropriate time) 4.4. Any change at an airport in the 'High' risk class (as defined in RSK-494 in CIRRIS) shall be discussed at the change governance panel irrespective of the screening result to determine if the change requires a Community Sensitivity Analysis (CSA). 4.5. Proposals may screen out for environmental assessment/management, but still be determined as requiring community engagement due to the noticeability of the change or sensitivity of the community. The change governance panel will consider this requirement at the time of change screening review.
6.3.1 **Note:** The change governance panel may, at any time, require a change to undergo further environmental change management regardless of the result of the Change Screening.

6.3 Environmental Impact Assessment (EIA)

Purpose and context

The purpose of the Environmental Impact Assessment (EIA) is to ensure that:

- potential environmental impacts are appropriately identified and assessed (including those considered potentially 'significant' under the EPBC Act);

- information regarding potential impacts is prepared to support the CSA process and effective community engagement efforts;
- flight path designs are informed by environmental considerations, and minimise the effect of aircraft operations on the environment (including communities) to the greatest extent practicable;
- due diligence is conducted for potential impact on threatened species on whether the flight path change proposal is a threatening process.
- An EIA is required where triggered through the ECS (as per application of the ECS criteria in Appendix B).

Outcomes and Requirements

6.3.2 Table prescribes the outcomes that must be achieved through the EIA, as well as the associated requirements for achieving the outcomes.

Table 3 Outcomes and requirements for Environmental Impact Assessment

Outcome: 5. All potential environmental impacts arising from the proposed change are appropriately identified and assessed.
Requirements: 5.1. An EIA shall be undertaken by appropriately qualified and experienced staff[7] 5.2. The EIA shall be based on accepted industry practices and environmental assessment methodologies; 5.3. The EIA shall include an assessment of: a) impacts[8] to applicable environment values, as described under the EPBC Act (including noise, communities[9], air quality and impacts to biodiversity values); b) potentially significant impact (as defined under the EPBC Act); c) benefits of the change (including fuel and aircraft emissions reductions where applicable); d) environmental impacts of future associated with the proposed change e) potential community noticeability of the proposed change; 5.4. The EIA shall have a level of rigor and detail that is informed by: a) findings of the Community Sensitivity Analysis (CSA) (refer to Section 6.4);

[7] EIAs may be undertaken by parties outside of Airservices, however they are still subject to the Change Implementation requirements (including Accountable CSDO Manager endorsement/approval) described in Section 7

[8] In Accordance with the Australian Government Significant Impact Guidelines 1.2 (EPBC Act), Impact assessment shall include 'consideration of whether the proposed change 'has a real chance or possibility of affecting the health, safety, welfare or quality of life of members of a community though factors such as noise'

[9] Potentially affected noise sensitive receivers and communities will be identified in the EIA, however more detailed assessment of associated impacts to these elements will be analysed in the CSA and Community engagement stages

b) the particular identified environmental values, sensitivities and communities potentially affected by the proposed change[10]

c) the Environmental Risk Assessment.

5.5. Findings of the EIA shall be:

a) objective and take into account both quantitative and qualitative information (where relevant) in deriving conclusions regarding environmental impact;

b) clearly documented in a report that includes all information and assumptions that form the basis of the environmental assessment and conclusions.

5.6. The EIA shall include clear conclusions regarding the potential for environmental impact on key values described in the EPBC Act (particularly noise impacts). Conclusions shall be supported by cited literature where relevant;

5.7. The EIA report shall be attached to the ECR in the CIRRIS MOC module.

5.8. The EIA shall include an environmental risk assessment for the change (Refer to section 6.5 for relevant risk assessment requirements)

5.9. The level of detail and criteria required for the EIA shall be captured within the applicable procedure.

Outcome:

6. The EIA identifies the potential for the change to result in 'significant impact' under the EPBC Act

Requirement:

6.1. The potential for 'significant impact' under the EPBC Act shall be identified through:

a) application of the criteria for seeking advice under the EPBC Act (and associated methodology) included in Appendix B;

b) any other relevant findings of the EIA or CSA processes.

6.2. The EIA shall include recommendations to address identified potential significant impacts (i.e. seek advice from the Environment Minister, or redesign the proposed change).

Refer to section 6.4 for further details regarding the outcomes and requirements for changes with potential significant impact.

Outcome:

7. Environmental Impact Assessment supports effective community engagement and flight path design

7.1. Effective procedural mechanisms shall be established to ensure that the EIA outcomes inform effective community engagement and flight path design throughout the change lifecycle.

[10] In addition to assessing potential impacts on residential communities, particular attention shall be given to assessing potential impacts on newly overflown rural-residential communities

6.4 Advice and assessment under the EPBC Act

Purpose and context

The purpose of this stage is to seek advice (usually through a 'referral', but may be through alternative means) from the Environment Minister regarding whether a Proposal presents the potential for 'significant impact' under the EPBC Act.

6.4.1 A request for advice may result in the requirement for formal assessment under the EPBC Act (e.g. through an Environmental Impact Statement (EIS) process) if directed by the Minister.

Outcomes and requirements

Table prescribes the outcomes that must be achieved through seeking advice and assessment under the EPBC Act, as well as the associated requirements for achieving the outcomes.

6.4.2

Table 4 Outcomes and requirements for EPBC Act Advice and Assessment

Outcome: 8. Advice is sought from the Federal Environment Minister (e.g. an EPBC Act referral) regarding significant impact, where required.
Requirements: 8.1. Requests for advice under the EPBC act shall be sought where: a) application of the criteria for seeking advice under the EPBC Act (Appendix B), or other findings of the EIA, have identified potential significant impact; and/or b) qualitative information (as identified through the CSA) suggests the possibility for heightened community sensitivities that could be considered potentially 'significant' under the EPBC Act; c) potential significant impact has been identified (as per 'a' and 'b' above) and the Accountable CSDO Manager has decided to proceed with the Proposal as planned (rather than redesign to avoid the impact). 8.2. Prior to formally seeking advice, a 'pre referral' meeting shall be held with the Department of Environment to discuss the proposed change and seek feedback regarding the required manner for seeking advice (e.g. through a 'referral' or by alternative means); 8.3. Any requests for advice shall be prepared by suitably qualified and/or experienced environmental practitioner/s. 8.4 Any correspondence seeking the Minister's advice as per Section 160 or Section 28 of the EPBC Act shall be signed by the proponent of the change. 8.5. **NOTE**: The Accountable CSDO Manager may decide to seek advice from the Minister, regardless of impact assessment findings, as a precautionary approach in certain circumstances (e.g. if there is a high degree of reputational risk associated with a given change). **NOTE**: Where previous advice has been received from the Department for potential impacts from a given change, and variation in scope of the change would not increase the potential noise impact for which the advice was originally

sought, no further advice from the Department is required. However, advice is still required if trigger criteria are reached for other sensitive receivers, which were not the subject of the previous advice.

Outcome:

9. Advice received from the Environment Minister is appropriately considered and actions documented.

Requirement:

9.1. In accordance with Section 160 of the EPBC Act, once advice is received from the Environment Minister:

a) the Environment Minister's advice shall be considered by the CEO; and

b) the action taken (e.g. in relation to implementation of the proposal) shall be recorded, and if the Minister's advice was not given effect, the reasons why shall be documented and forwarded to the Environment Minister by the CEO.

9.2. The Environmental Change Risk shall be updated following conclusion of any requests for advice (Refer to section 6.6 for relevant risk management requirements)

Outcome:

10. Formal assessment under the EPBC Act is undertaken (if required following a request for advice).

10.1. If required, formal assessment under the EPBC Act shall be:

a) undertaken in accordance with advice received from the Department of Environment; and relevant timeframes and provisions of the EPBC Act.

b) supported by advice and documentation (e.g. an Environmental Impact Statement - EIS) prepared by suitably qualified environmental professionals.

10.2. Approval commitments or conditions set by the Minister, shall be recorded in the CIRRIS Permit/Licence Management module.

10.3. A formal response to the Environment Minister's advice shall be provided in writing at the completion of the required actions, including evidence of the action if required by the advice.

6.5.1

6.5 Community Sensitivity Analysis (CSA) and community engagement

Purpose and context

The purpose of Community Sensitivity Analysis (CSA) and community engagement is to ensure that:

- potential community impacts are appropriately analysed to inform design/change proposals, and development of the Community Engagement Plan (CEP) (which describes the requirements for either informing and/or seeking feedback from the community, and provides a record of all engagement delivered)
- communities are adequately informed and engaged regarding change proposals that may affect them, and given appropriate opportunities to provide feedback;

- implemented flight path designs are informed by the outcomes of the CSA, and community engagement, and minimise the effect of aircraft operations on communities to the greatest extent practicable

A formal CSA report shall be completed where a change proposal is identified through the PNSA as having a high potential (level 3) for community impact. Where the PNSA identifies the change proposal as having a moderate potential or lower (level 1 and 2) for community impact, the CSA will be completed in summary as part of the CEP development.

Where required, the formal CSA report shall be developed prior to the commencement of the EIA, drafts of which shall inform the development of the EIA. A CEP shall not be approved until both the EIA and CSA are complete, including receipt of Environment Minister's advice if the proposed change is subject to referral.

A Flight Path Design Principles Report (FPDPR) shall be prepared for all change proposals which undergo an EIA or community engagement campaign. The FPDPR will be released publicly at the commencement of the community engagement campaign.

Outcomes and requirements

6.5.2 Table prescribes the outcomes that must be achieved through CSA and community engagement, as well as the associated requirements for achieving the outcomes.

Table 5 Outcomes and requirements for CSA and community engagement

Outcome: 11. Potential community impacts are identified and assessed for a given change.
Requirements: 11.1. A Community Sensitivity Analysis (CSA) shall be undertaken to: a) inform any flight path design/change development and the EIA; b) analyse all potentially affected communities and noise sensitive receivers, referring to both qualitative and quantitative values; c) include explicit commentary on potential sensitivities; d) be commensurate with the size of the change and the sensitivity of the social environment; e) incorporate the most up to date information on the communities affected. 11.2. All CSAs shall: a) be prepared by appropriately qualified and experienced staff[11]; b) be based on accepted industry practices;

[11] CSAs may be undertaken by parties outside of Airservices, however they are still subject to the Change Implementation requirements (including Accountable CCXSO Manager endorsement/approval) described in Section 7).

c) include recommendations to address potential impacts if identified (e.g. more targeted analysis under the EIA assessment), targeted engagement requirements or redesign the proposed change)[12].

Outcome:

12. Community stakeholders are appropriately informed and engaged regarding potential changes which may affect them.

Requirements:

12.1. A Community Engagement Plan (CEP) shall be prepared that, as a minimum:

a) reflects the findings of the CSA and the EIA, and any other considerations (e.g. reputational and other business risks) relating to impacts to the community;

b) reflects any recommendations regarding potential significant impact (under the EPBC Act) as identified through the CSA or EIA processes, or Environment Minister advice;

c) includes a community engagement strategy that is reflective of the complexity of the proposed change, the noticeability of the change and the level of community sensitivity;

d) provides justification for the change, explicitly describing potential impacts (both positive and negative), and on what basis the proposal is optimal compared to viable alternatives, and any efforts made to minimise impacts on communities.

12.2. The CEP shall provide quantitative flight path information including:

a) specific proposed flight paths (mapped);

b) heights and distances of proposed flight paths from communities (including visual impacts);

c) likely noise levels at relevant community locations;

d) emissions associated with the proposal.

12.3. A Flight Path Design Principles Report (FPDPR) shall be produced which describes how the proposed change gives effect to Airservices' published Flight Path Design Principles. The FPDPR shall be approved by the accountable CCXSO manager prior to release.

12.4. The CEP shall describe all community engagement to be undertaken for the change (including content and format of information to be provided and estimated dates and timeframes[13]);

12.5. The CEP shall be reviewed and approved by the accountable CCXSO manager prior to its implementation (including all supporting artefacts).

12.6. A CEP addendum[14] shall be prepared where:

a) additional activities are identified as necessary once the CEP is approved and engagement activities are underway, or

[12] The intent is not that a full significant impact assessment (for the purposes of the EPBC Act) is undertaken at this early stage of change planning. Moreover, recommendations shall be made where qualitative information suggests the possibility for heightened community or socio-political sensitivities which could warrant a request for advice under the EPBC Act.

[13] Note that community engagement can be undertaken in a staged approach, with different versions of the CEP prepared and implemented as change planning progresses.

[14] A CEP Addendum is prepared in recognition of the flexible and iterative nature of community engagement activities.

b) where the community engagement activity enters a different stage of activity.

12.7. Community engagement (as described in the CEP, and any CEP addendum) shall be delivered in a manner that:

a) is targeted to all areas potentially affected by the change;

b) is tailored to the particular audience and forum (considering the social, economic and cultural context) to ensure genuine engagement, accessibility of information and effective consultation, where appropriate;

c) provides sufficient notice and mechanisms to ensure relevant communities have the means and time to provide feedback

d) provides the opportunity for the community to influence the change decision.

12.8. A Community Engagement Report (CER) shall:

a) be prepared on completion of the community engagement activities;

b) describe the effectiveness and outcomes of the engagement activities;

12.9. include data and metrics on the community engagement mechanisms used and the community interaction and feedback, where applicable, and record the decisions made that have considered these mechanisms. The Environmental Change Risk is updated following completion of the CSA and CEP stages (Refer to Section 6.6 for specific requirements).

Outcome:

13. Final flight path designs reflect community feedback and minimise community impacts to the greatest extent practicable.

13.1. Effective procedural mechanisms shall be established to ensure that flight paths are designed collaboratively within Airservices, considering the results of CSA and community consultation as it progresses

6.6.1

6.6 Risk assessment and management

Purpose and context

The purpose of risk assessment and management is to ensure:

- appropriate manager oversight and accountability for reviewing key outcomes of flight path change stages and for approving overall change implementation;

6.6.2

- alignment with our risk appetite for environmental management and compliance with associated standards and procedures (including the Risk Management Standard (AA-NOS-RISK-0001) and Environmental Risk Management Procedure (ENV-PROC-0004)).

Outcomes and requirements

Table prescribes the outcomes that must be achieved through risk assessment and management, as well as the associated requirements for achieving the outcomes.

Table 6 Outcomes and requirements for Change Risk Management

Outcomes

14. Changes are risk assessed and reviewed/accepted by the appropriate risk delegate at appropriate stages throughout the change lifecycle.

14.1. All changes that require an EIA and/or CSA shall have a risk assessment undertaken that meets the requirements of AA-NOS-RISK-0001 and considers potential environmental and social[15] consequences of the change.

14.2. Environmental risk shall be accepted by the CSRO.

14.3. Reputational (community) risk shall be accepted by the CCXSO.

14.4. Financial (including legal compliance) risk attributable to environmental aspects of ATM change shall be accepted by the relevant Chief for the group proposing the change.

14.5. The risk assessment shall:

a) be recorded in CIRRIS[16] and linked to the ECR in the MOC module;

b) be given a 'High' risk rating (requiring review/acceptance by the Chief Customer Experience Officer where the change occurs at an airport considered 'high' risk (according to the aggregated enterprise Noise (airports) Risk);

c) be updated with relevant consequence information as necessary[17] following completion of each of the CSA, EIA, CEP and CER elements (associated final reports shall be attached to the change record in the MOC Module);

d) have a final risk rating that reflects the highest consequence class of the various change elements (i.e. environmental, social/reputational);

e) be periodically reviewed by the accountable manager as required (e.g. prior to delivery of key activities, such as community consultation);

f) be approved by the accountable CCXSO manager prior to change implementation.

7 Change Implementation

For any given change, the accountable CSDO manager shall consider all information and recommendations provided through the EIA, CSA, CEP, CER and final risk assessment (and any other relevant sources), and make an informed decision regarding whether it can be implemented as designed.

A proposed change shall not be implemented prior to the accountable CSDO manager verifying in CIRRIS that:

- all requirements of the EIA, CSA, CEP and CER have been met (including conclusion of any EPBC Act advice and assessment requirements, and implementation of the CEP as planned);
- all final and approved EIA, CSA, CEP and CER reports (and supporting artefacts) are captured in the CIRRIS MOC module;

[15] Social consequences are recorded as reputational in CIRRIS to align with the organisational risk standard (AA-NOS-RISK-0001).

[16] A Unique stand-alone CIRRIS risk for each individual change is not necessarily required provided a risk assessment and review is undertaken in accordance with this standard and documented in some form in the CIRRIS risk module (for example, in an electronic file saved within a generic/parent ANS Environmental Change Risk record).

[17] Inclusion of environmental and social (or reputational) consequences in the one risk assessment, enables consideration of these factors in concert to derive a single overall risk for the change. The risk is considered transitional and shall be closed following change implementation and completion of a PIR.

- the final environmental change risk (which includes up to date environmental and social consequence information) has been accepted by the appropriate risk delegate with evidence recorded in CIRRIS.

8 Post implementation reviews

8.1 Purpose and context

All changes involving implementation of a CEP shall be subject to a Post Implementation Review (PIR).

The level of detail and criteria required for the PIR shall be captured within the applicable procedure.

The PIR will:

a. verify assumptions made about potential environmental and community impacts and risks, and the effectiveness of the change implementation;

b. inform future changes and improve the overall change management process;

c. update ongoing operational environmental and reputational risks, as required.

8.2 Outcomes and requirements

Table prescribes the key outcomes that must be achieved through the PIR process, as well as the associated requirements for achieving the outcomes.

Table 7 Outcomes and requirements for Post Implementation Reviews

Outcomes
15. The organisation can continuously improve and demonstrate that benefits have been realised and risks have been managed.
15.1. All changes involving implementation of a CEP shall be subject to some form of PIR; 15.2. The scope, scale and approach for the PIR shall be determined by the governance panel on a case by case basis (through consideration of a range of factors including the magnitude of the change, environmental and community impacts, or associated reputational issues); 15.3. The minimum acceptable form of a PIR is a review of ongoing environmental risks associated with the flight path operation (any findings that may influence the management of RSK-494 should be recorded in CIRRIS); 15.4. A more detailed PIR (if required) should also[18]: a. draw conclusions regarding whether the actual change outcomes aligned with the EIA, CSA and CEP; b. highlight any ongoing actions required; c. identify any benefits resulting from the change or required improvements to processes and associated documentation;

[18] These requirements can be incorporated into any other applicable CSDO change process reviews as required, rather than developing a stand-alone EIA and/or CEP PIR

d. identify any opportunities for noise improvements with regards to actual operating data and community feedback/complaints.

15.5. Where a CIRRIS action has been raised to conduct a detailed PIR, the CIRRIS change record can be closed prior to completion of the PIR.

9 Skills, qualifications and awareness

Managers accountable for requirements described in this Standard shall:

- ensure that all staff involved in environmental management of proposed changes have the necessary skills and/or qualifications and/or access to mentoring and coaching from appropriately experienced personnel to effectively perform their role;
- implement training and/or education and/or coaching programs to build required capabilities and experience, as required.

10 Assurance assessments

Managers accountable for requirements described in this Standard shall conduct periodic assurance assessments to confirm that associated requirements and obligations are being met.

Additionally, the CSRO Group shall conduct targeted assurance assessments of key elements of the change management process on a periodic basis.

On occasion relevant regulatory and/or oversight bodies may conduct assurance assessments on our application of this Standard.

11 Documentation and recording

All artefacts required to acquit the requirements of this Standard (including EIAs, CSAs, risk assessments CEPs and CERs) shall:

1. be maintained on record in accordance with Airservices Records Management Standard (AA-NOS-GOV-0004);
2. be attached in CIRRIS (in the relevant Management of Change record);
3. have key actions recorded in CIRRIS.

12 Definitions

Within this document, the following definitions apply:

Term	Definition
Accountable CSDO Manager	The clear point of accountability for the overall success of a change. The Accountable CSDO Manager is either: • the Head accountable for the operations to which the change pertains; or • the Chief Service Delivery Officer (if the proposed change represents a 'High' class risk).
CSDO	Chief Service Delivery Officer Group
ATM	Air Traffic Management
ATC	Air Traffic Control
ATS	Air Traffic Service
CASA	Civil Aviation Safety Authority
Aircraft Emissions	Emissions to air of chemicals and other substances as a result of the combustion of fuel to power aircraft. Aircraft emissions typically include greenhouse gases (predominantly CO_2), as well as nitrogen oxides (NOx), water vapour and particulates (soot and sulphate particles), sulphur oxides, carbon, incompletely burned hydrocarbons, tetra-ethyl-lead (piston aircraft only), and radicals such as hydroxyl, depending on the type of aircraft in use.
CEP	Community Engagement Plan – a document that sets our requirements and commitments for informing and seeking feedback from the community regarding change proposals. Its preparation is informed by the findings of the CSA and EIA.
CER	Community Engagement Report – a document that provides an evidence based summary of the activities and outcomes of the CEP and describes the effectiveness of the community engagement, including a final reputational risk assessment of the change proposal prior to final decision.
CIRRIS	Corporate Integrated Reporting and Risk Information System which enables employees to record, report and search issues, occurrences, obligations and risks on one common and integrated platform. Three CIRRIS modules are specified for use in this Standard: 1. Management of Change (MOC) 2. Risk 3. Permit/licence Management
Change Proponent	The Airservices employee who is entering the change proposal into CIRRIS
EIA	Environmental Impact Assessment. A documented assessment of potential impacts to environmental values (listed under the EPBC Act) arising from a proposed change. The EIA informs the CSA and flight path design, and preparation/delivery of the CEP.
EMS	Environmental Management System – A structured framework of elements (including policy, processes, and practices) that enables an organisation to manage its environmental aspects and impacts. Airservices EMS is aligned with the international environmental management standard ISO14001:2015.

Term	Definition
Environment Minister	Australian Federal Government Minister responsible for administering the EPBC Act
Environmental Change Record	A record of the proposed change created in the CIRRIS Management of Change (MOC) module through the Environmental Change Screening stage of the environmental change management process. The Environmental Change Record is updated throughout the change lifecycle.
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* – Australian Commonwealth legislation that provides a framework to manage significant impact to matters of national environmental significance, or arising from actions undertaken on Commonwealth land, or actions undertaken by a Commonwealth body.
EPBC Referral	A mechanism for requesting advice from the Australian Minister for the Environment as to whether a Proposal may have significant impact on the environment (under the EPBC Act), and whether it requires formal assessment under that Act.
MNES (or NES)	Matter of National Environmental Significance – An environmental value, defined and protected under the EPBC Act, considered to have national environmental significance.
Noise Sensitive Receivers	Noise sensitive uses are places where sensitivities to the effects of noise are likely to be experienced including residential buildings, education establishments, offices, hospitals, aged care facilities, churches, religious activities, theatres, cinemas, recording studios, court houses, libraries and galleries as specified as 'noise sensitive developments' in Australian Standard AS2021:2015 (Acoustics – Aircraft noise intrusion – Building siting and construction)
NOS	National Operating Standard. An Airservices governance document that sets mandatory organisational requirements for key business processes and actions.
Ongoing Airport Noise Management Risk Assessment	An assessment, recorded in CIRRIS, which considers the baseline risk (including social, environmental and reputational consequences) associated with aircraft noise management at a particular airport.
Proposal	A proposal is any proposed change in Airservices' air traffic management practices that may affect aircraft operations. This includes, but is not be limited to: • A new, or amendment to an existing, instrument approach • A new, or amendment to an existing, flight path or air route • Re-classification of airspace • Change to preferred runways • Change in time of day of operation (e.g. amendments to tower hours of operations – as the time of day that a tower operates may alter the flight path used by aircraft) • A change that allows use of a flight path/airspace by a different type or number of aircraft **Note:** A tactical decision of an air traffic controller to alter the track of an individual aircraft does not constitute a proposal.
CRC	Change Request Centre. A corporate system to manage changes to documentation and procedures, including CSDO flight path changes
Significant Environmental Impact	A proposal determined to have significant impact in accordance with the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*.

Term	Definition
Threatening Process	The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides for the identification and listing of key threatening processes
CSA	Community Sensitivity Analysis – A documented assessment of potential social impacts to communities arising from a proposed change. The CSA both considers the results, and informs the preparation, of the EIA and flight path design, and is considered in preparing the CEP.

13 References/related documents

Internal Documents

- Environment Policy: C-POL0030
- Risk Management Standard: AA-NOS-RISK-0001
- Environmental Risk Management Procedure: ENV-PROC-0004
- Environmental Management System Objectives and Requirements – AA-NOS-ENV-0001
- Airspace Change Process: ATS-PROC-0147
- National ATS Administration Manual (NAAM): ATS-MAN-0013
- Community Engagement – Change to Aircraft Operations ENV-PROC-0011
- Environmental Impact Assessment of Changes to Aircraft Operations: ENV-GUIDE-0028
- Environmental Assessment of Change and Regulatory Compliance Procedure: C-PROC0313
- Environment Risk Assessment Template: C-TEMP0290
- Preliminary Noticeability and Sensitivity Analysis template
- Community Sensitivity Analysis Template
- Community Engagement Plan Template
- Community Engagement Report Template
- Community Engagement Framework
- Flight Path Design Principles
- Flight Path Design Principles report template

External Documents

- SEWPaC 2010, 'Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies' Significant impact guideline 1.2, Environment Protection and Biodiversity Conservation Act 1999.
- AS2021-2000: Acoustics – Aircraft noise intrusion – Building siting and Construction, Standards Australia International Ltd, Sydney, NSW 2000.
- Former Commonwealth Department of Transport and Regional Services (DOTARS), Discussion Paper 'Expanding ways to describe and assess aircraft noise' (March 2000).
- Transport Noise Management Code of Practice – Volume 1 Road Traffic Noise, Queensland Department of Transport and Main Roads, 2013.

Appendix A Environmental Screening Criteria

Context

The Environmental Change Screening of proposed changes to aircraft operations is undertaken to identify those proposals that do not require further Environmental Impact Assessment (EIA) or community engagement (including preparation of a Community Engagement Plan (CEP)). In keeping with our risk appetite in the environmental sphere, the criteria aim to ensure that only those proposed changes with very low risk (e.g. change occurs at high altitude or wholly over water and distant from residential areas) are not subject to detailed environmental assessment.

The criteria (shown in Table 1) were developed by acoustics engineers and aviation environmental scientists. They were peer reviewed and refined by industry experts and specialist consultants in 2018 and have been enacted for over a decade. Application of the criteria over an extended timeframe, as well as scrutiny by external stakeholders (including the Aircraft Noise Ombudsman), has validated and verified their appropriateness for driving the required level of environmental assessment for proposed changes to aircraft operations.

Explanatory notes

1. *What is "new"?*

   A new flight path or other aircraft operation is one that is not currently being used. In cases where a practice has emerged and it is sought to formalise it, these must still follow the requirements of this Standard.

   Where a route has become inactive due to industry decisions, but is still published and available for use, this is not considered "new". Changes to a published but 'inactive' route must still meet the screening criteria and consideration of application of the criteria to determine any unforeseen impacts due to the 'inactive' nature of the route.

2. *What is the baseline measurement for calculating an increase in numbers?*

   For the purpose of criterion C4, baseline measurements shall be derived from periods of normal aviation activity. Where traffic numbers are reduced due to abnormal events affecting the industry (slowdowns related to extraordinary social, economic or security-related events), baseline traffic measurements shall refer to data for the period immediately preceding the event.

   Notwithstanding, baseline traffic numbers shall not include periods more than 24 months old[19], regardless of whether a route received greater utilisation before that period. Data which is more than two years old may not reflect the current community experience or expectations of aircraft noise.

   The applicable standard is a representative "**busy week**" – 90th percentile, including a summer and winter scenario.

3. Changes involving the administration or facilitation of emergency operations (Bushfire attack operations, Police Airwing, Coastwatch, other covert ops) are not required to be screened as they are considered inherently tactical.

[19] Exceptions may be where due to external influences operating conditions over the preceding 24 months have been abnormally affected

Application of the Criteria

Table 1: Aircraft operations change – environmental screening criteria[20].

Stage	Action	Criteria	Result
A	1) Change to aircraft operations	A change that is entirely: • Above 20,000 ft, or • Over water and greater than 5 NM from land, or • Over non-residential areas[21] and above 2,000 ft, •	**True to any** – No EIA or notification to Community Engagement required **False or unknown to all** – Proceed to Stage B
		A change at a remote aerodrome[22] where • the number of IFR movements is 2 or less per day, or • there are no scheduled flights.	
		A change related to: • Raising the MSA within 25NM of an aerodrome OR • Raising a grid or route LSALT (anywhere) [23] OR • Adding a height requirement on a SID or STAR to keep aircraft arriving/departing above the base of CTA.	
B	1) Duration of change	The change is temporary (less than 30 days duration)	**True** - Notification to Community Engagement required but no EIA **False or unknown** – Proceed to Stage C
C	1) New aircraft operations	The change introduces an entirely new[24] flight path or area[25]	**True or unknown to any** – EIA and notification to Community Engagement required **False to all** – No EIA or notification to
	2) Lateral change	The change is a lateral change: (a) At a controlled aerodrome: below 3,000 ft	

[20] All vertical measurements are in feet Above Ground Level (AGL).

[21] For the purposes of environmental screening, residential areas are identified through analysis of aerial photographs and/or satellite imagery for residences or communities underneath or close to the flightpath. All dwellings must be considered, but not commercial / farming buildings.

[22] Remote aerodromes are generally found in localities that are classified as Remote or Very Remote using the Accessibility /Remoteness Index of Australia (ARIA).

[23] Minimum safe altitudes (MSA), lowest safe altitudes (LSALT) and height requirements for CTA containment provide guidance to operators as to the lowest altitude they can safely conduct IFR operations at, as dictated by terrain or CASA, but does not require an operator to *operate at* that level.

[24] A regularly used tactically operated flight path is not considered new aircraft operations.

[25] "Area" means any aircraft operating area, such as a parachute drop zone / area, airwork (e.g. survey, crop spraying).

Stage	Action	Criteria	Result
		(b) At any location: • >100m below 1,000 ft • > 200m at 1,000 ft to below 2,000 ft • > 300m at 2,000 ft to below 3,000 ft • > 600m at 3,000 ft to below 6,000 ft • > 2,000m at 6,000 - 20,000 ft	Community Engagement required
	3) Decrease in altitude	The change results in a decrease of operating altitude of more than 10%	
	4) Increase in movements	The change directly results in an increase in the number of aircraft movements on an existing flight path or in an area, by more than 20%	
	5) Change in hours of operation	The change directly allows a departure or arrival time between the hours of 10pm – 7am local	
	6) Change of aircraft type	The change directly allows a different type or category of aircraft to use an existing flight path or area	
	7) Increase in distance	The change results in a greater than 20% increase in flight path distance (within a 20NM radius from the Aerodrome Reference Point)	

Note: If uncertain of any criteria, responses should be recorded as 'unknown', or the Safety & Environmental Assessments Team can be contacted for advice.

Appendix B Criteria for seeking advice under the EPBC Act

Context

The following criteria have been developed by Airservices to provide a quantitative mechanism for determining proposed changes to aircraft operations with the potential to result in 'significant impact' to the environment (as defined under the EPBC Act). All proposed changes that meet the criteria shall be avoided wherever practicable through flight path redesign. Where it is not reasonably practicable for a change to be redesigned to avoid the potential environmental impact (for example, due to a clear safety imperative) Airservices shall seek advice from the Commonwealth Environment Minister prior to implementing the change (in accordance with Sections 28 and 160 of the EPBC Act).

Where the criteria is not met for a given change, Airservices may still decide to seek advice from the Environment Minister for potential significant impact (for example, if Community Sensitivity Analysis indicates a heightened risk of community or socio-political sensitivities to a change).

Application of the criteria

The criteria and application methodology are organised in four parts, as follows:

1. Aircraft noise
2. Fuel burn and emissions
3. Biodiversity
4. Other EPBC Act matters

1. Aircraft Noise Assessment

1.1 Potential significance assessment

Tables 1 - 2 below provide criteria to determine whether advice must be sought (under the EPBC Act) regarding potentially significant aircraft noise impacts arising from proposed changes to our air traffic management practices. The methodology for applying the criteria is described following Table 2.

Table 1: Noise thresholds for seeking advice under the EPBC Act – total number of aircraft noise events.

Noise Metric	Total number[26] of aircraft noise events
N70 (24 hr)	≥ 5
N60 (24 hr)	≥ 10
N60 (11pm – 6am[27])	≥ 2

[26] The number and time pattern of operations is to be based on a 'busy day' for both the existing conditions and conditions associated with the proposed change (the 90th percentile of movements is used to define a 'busy day').

[27] The usage of the hourly ranges for 'day' (6:00am to 11:00pm) and 'night' (11:00pm to 6:00am) is as per the definition of night (11:00pm to 6:00am) used at Australian curfew airports (see Commonwealth Sydney Airport Curfew Act 1995). This definition is applied consistently for all Airservices environmental assessments, whether or not a curfew is in place at the specific airport

Table 2: Noise thresholds for seeking advice under the EPBC Act – increase in flight numbers.

Noise Metric	% change from existing situation
N60, N70 (24 hr)	> 20%
N60, N70 (11pm – 6am)	> 2 flights or > 20% (whichever is larger)

Steps in applying noise criteria:

- **Step A** **Determine aircraft noise levels[28] associated with the proposed change. This may include the following metrics (as required):**
  - **L_{Amax} for selected representative aircraft types,**
  - **Number above metrics (Nxx).**
- **Step B** **Identify a sample of applicable Noise Sensitive Receivers (NSRs)[29] using online mapping tools.**
- **Step C** **Categorise areas impacted by the change as either 'rural' or 'urban' based on state, territory or local government land use zoning definitions**
- **Step D** **Compare expected number of aircraft noise events arising from the change with the thresholds described in Table 1 and Table 2, over.**

► Outcome:

- **If applicable thresholds from BOTH Tables 1 and 2 are exceeded for any populations in the area of the proposed change, then advice must be sought from the Commonwealth Environment Minister regarding the potential for the change to cause 'significant impact' [note: (2) Fuel Burn and Emissions, and (3) Biodiversity assessments are also required to support the request for advice]**
- **If applicable thresholds are not exceeded, then proceed to (2) Fuel Burn and Emissions, then (3) Biodiversity assessment sections.**

1.2 Consideration of aircraft 'noise noticeability' and 'newly overflown' NSRs

Determining whether a given NSR (or community) will experience 'noticeable' aircraft noise, or will be 'newly overflown', allows us to carry out qualitative consideration of the potential effects of flight path changes, and determine how best to manage them (including community engagement or flight path redesign).

1.2.1 Noise noticeability

Aircraft noise noticeability shall be determined in one of the following two ways, depending on whether noise modelling is conducted as part of an EIA:

[28] Noise levels may be calculated using a noise model such as INM or AEDT, or using look-up tables in AS 2021:2015 or other applicable calculations

[29] Noise Sensitive Receivers include residences; hotels, motels and other places of temporary residence; schools and other places of education; pre-schools and child care centres; hospitals, aged care facilities and other health-related facilities; places of worship

a) EIA with noise modelling:	• 50 dB(A) single event noise contours (LAmax) are modelled for urban areas; and 42dB(A) contours are modelled for rural areas, • Any overflights of NSRs within the above contours are considered to be 'noticeable'.
b) EIA without noise modelling:	• An area is identified 10km either side of the nominal flight path for urban areas (representative of 50dB(A) noise levels), and 20 km[30] either side of the nominal flight path for rural areas (representative of 42dB(A) noise levels), up to a maximum distance of 35 nautical miles (nm) from the relevant runway threshold, • Any overflights of NSRs within the above areas are considered to be 'noticeable'.

Note – where part of an existing procedure remains unchanged under the proposed change, that part of the design is excluded from noticeability modelling or the other noticeability identification process described above.

1.2.2 Determining newly overflown NSRs

A NSR is considered to be "newly overflown" if:

- The proposed change has been identified as 'noticeable', AND

The NSR currently experiences negligible existing aircraft noise – i.e. less than one overflight per day, during the daytime (i.e. 6:00 am – 11:00pm) by an equivalent aircraft movement to what is subject to assessment.*1.2.3 Outcomes of noise noticeability and newly overflown assessment*

All proposed changes that are identified by the AEA team as being 'noticeable' or 'newly overflown', must be communicated to the CE team to assist with effective, targeted community engagement efforts.

This determination does not affect the outcomes of the 'potential environmental significance' assessment (described in Section 1.1 above), which shall be undertaken in all cases (where the environmental change screening has determined an EIA is required).

2. Fuel Burn and Emissions Assessment

Table 4 provides criteria to determine whether to seek advice under the EPBC Act regarding potentially significant environmental impacts associated with increases in aircraft fuel burn and emissions, as a result of proposed changes to our air traffic management practices.

[30] Based on a B737 on departure, as per modelled noise levels in AS2021:2015, it has been identified that generally at 2,500m from the centre line of the track (sideline), noise levels will be approximately 60dB(A). This is the maximum sideline distance at which 60dB(A) noise levels would be experienced. Based on geometric spreading of noise, it was calculated that noise levels would be 50dB(A) at around 7,900m sideline and would be 42dB(A) at around 20,000m sideline. The units of 42dB(A) for rural areas and 50dB(A) for urban areas have been selected as representative of noticeability of noise, with consideration of state and territory EPA guidelines. See GHD literature review for additional information. Furthermore, departure noise levels were utilised as overall these are higher than for aircraft on arrival. As such, distances of 10km for urban and 20km for rural have been used as a conservative measure for noticeability and to account for any potential variations in aircraft levels

Table 4: Fuel burn and emissions criteria for seeking advice under the EPBC Act

Assessment element	Criteria
1. Airport and flight characteristics	
Airport size and category	A large airport that has both a staffed Air Traffic Control tower and runways equal to or wider than Category 4C[31]
Airport movements	≥ 100 Regular Public Transport (RPT[32]) movements per day ≥ 200 movements per day at a training airport
Change in distance flown	≥ 20% increase in flight path (within a 20NM radius from the Aerodrome Reference Point or ARP) [16]
2. Fuel burn and emissions characteristics	
Increase in fuel burn, CO_2 and other CO_2-e emissions below 10,000 ft (compared to the existing situation)*	≥ 20%
Increase in fuel burn, NOx, SOx and Particulate Matter (PM) below 3,000 ft (compared to the existing situation)*	≥ 20%

* Using AEDT modelling

Steps in applying fuel burn and emissions criteria:

- **Step A** — **Determine the airport and flight characteristics and compare with associated criteria in Table 4.**
  [If all '(1) Airport and flight characteristics' criteria have been met, then proceed to steps B and C to assess '(2) Fuel burn and emissions characteristics'. If these criteria are not ALL met, then no further fuel burn or emissions analysis is required (proceed to Biodiversity assessment)]
- **Step B** — **Using AEDT modelling, calculate any increase in fuel burn, CO_2 and other CO_2-e emissions below 10,000 ft altitude. Compare with Table 4 criteria.**
- **Step C** — **Using AEDT modelling, calculate any increase in NOx, SOx and particulate matter (PM) emissions below 3,000 ft altitude. Compare with Table 4 criteria.**

► **Outcome:**

- **If the criteria in Steps B or C are met , then advice must be sought from the Commonwealth Environment Minister regarding the potential for the change to cause 'significant impact'.**

[31] Runway Code number 4 with Code letter of C, D, E or F. Table 6.2-1 minimum runway width. CASA Manual of Standards Part 139—Aerodromes. https://www.legislation.gov.au/Details/F2012C00095

[32] Civil Aviation Safety Regulations 1998 (CASR). Part 121 - Commercial air transport operations (aeroplanes). "Fitted with more than 9 passenger seats in its approved configuration." https://www.casa.gov.au/standard-page/casr-part-121-commercial-air-transport-operations-aeroplanes

[16] The change in distance flown should consider all changes being undertaken by the proposal (so, if multiple procedures, 20% of all distances, but if a single procedure, 20% of that procedure).

- **If criteria are not triggered for steps B or C, then no further fuel burn and emissions analysis is required (proceed to Biodiversity assessment).**

3. Biodiversity Assessment

Where the proposed number of aircraft movements associated with ≥ 60 dB(A) noise events is less than 10 per day, no further analysis is required. Where Biodiversity Sensitive Receivers[33] (BSRs) have been identified in the area of the proposed change, then this information should still be presented in the EIA report for information purposes.

Where the proposed number of movements associated with ≥ 60 dB(A) noise events is 10 or more per day, Table 5 provides criteria for determining whether advice shall be sought under the EPBC Act for potentially significant impacts on BSRs, as a result of a proposed change to aircraft overflights.

Table 5: Assessment of Potentially Significant Impacts on Biodiversity Sensitive Receivers (BSRs), as a result of proposed change to aircraft overflights.

Trigger Criteria
Increase of >20% in number of aircraft movements above 60 dB(A).
Increase of >20% in number of aircraft movements above 70 dB(A).
Substantial increase in area of BSR in local area* exposed to noise ≥ 60 dB(A).

* The 'local area' is considered to be a 10km zone either side of the nominal track of the proposed flight path/s.

Steps in assessing biodiversity criteria:

- **Step A** **Identify and classify BSRs including:**
  - Type and status of BSRs in the area where the change has been determined as noticeable, utilising the Commonwealth Matters of National Environmental Significance (MNES) search tool (and other information sources as appropriate); and
  - Noise exposure (in dB(A)) of BSRs overflown by the proposed change.
- **Step B** **Determine extent of potential impacts of proposed change to aircraft overflights, including:**
  - Potential noise level exposure in dB(A) for areas potentially overflown by the proposed change; and
  - Approximate proportion of BSR habitat overflown by proposed flight path change (with reference to the local extent of the type of BSR potentially affected), where available.

► **Outcome:**

[33] BSRs include: 1) Matters of National Environmental Significance (MNES) listed under the EPBC Act (including World Heritage Properties, Wetlands of International Importance, Commonwealth Marine Environment, the Great Barrier Reef Marine Park, National Heritage Places), and 2) Other sensitive areas which are likely to contain important habitat for EPBC Act listed threatened biota and migratory species or state-listed threatened biota (including nationally important wetlands, State forests, National Parks, other Conservation Reserves listed under State legislation).

- **If applicable criteria for any BSR are exceeded (as per the criteria in Table 5), then advice must be sought from the Commonwealth Environment Minister regarding the potential for the change to cause 'significant impact'.**

4. Other EPBC Act Matters

No specific criteria are provided in relation to other categories of potential impacts identified in the EPBC Act definition of the 'environment' (which includes, for example, consideration of potential impacts on heritage values, amenity, people, disadvantaged groups, and the economic or cultural aspects of a place or person).

This does not reflect their relative importance as an assessment issue. However, it is reasonable to assume that the other noise criteria described in the previous sections will serve as a proxy for identifying potentially significant impacts on these matters (e.g. noise impact is considered a reasonable proxy for potential impacts on sensitive communities, including cultural values, amenity and heritage places).

Further details on the methodology for undertaking the assessment of these social and other impacts is provided in the EIA template (Environment Risk Assessment Template C-TEMP0290).

Explanatory notes

1. Our criteria for determining when to seek advice from the Commonwealth Environment Minister regarding potential 'significant impact' under the EPBC Act establish a range of threshold levels for key noise metrics, below which aircraft noise arising from a proposed change is considered highly unlikely to represent 'significant impact', as defined under the EPBC Act.
2. Where assessments indicate that a proposed change may result in metrics exceeding these thresholds, and the change is planned to proceed in its current form, advice shall be sought from the Commonwealth Environment Minister (in accordance with S160 the EPBC Act) regarding whether it constitutes significant impact.
3. The criteria were developed giving consideration to international aircraft noise assessment metrics and methodologies, Australian regulatory requirements for noise management, and associated approaches of another Air Navigation Service Providers. Of particular relevance in developing the criteria were AS2021:2015 (Acoustics – Aircraft noise intrusion – Building siting and construction), the National Safeguarding Airports Guidelines (NASAG), and the (then) Commonwealth Department of Transport and Regional Services (DOTARS) discussion paper entitled 'Expanding ways to describe and assess aircraft noise' (March 2000).
4. The rationale behind the criteria and associated assessment methodologies is as follows:

   a. Aircraft Noise

   L_{Amax}

   This is a fundamental unit of noise level from an aircraft noise event, and represents the highest noise level reached during the event, measured in A-weighted decibels - written dB(A) - and using "Slow" speed on a sound level meter. In interpreting L_{Amax} noise levels, the following relationships are useful.

- A noise is potentially noticeable if its L_{Amax} level exceeds the background noise level by more than 5 dB(A);
- 70dB (A) is considered to be the external sound level below which no difficulty with reliable communication from radio, television or conversational speech is expected in a typical room with windows open;
- 60 dB(A) equates to the indoor design guide level of 50 dB(A) specified in AS2021:2015 Acoustics – Aircraft noise intrusion – Building siting and construction for sleeping areas (with windows open)

Based on published literature[34] a change in the A-weighted noise level is perceived by the human ear as follows:

- Changes of up to 3dB(A) – not likely to be perceptible.
- Changes between 3dB(A) and 5dB(A) – may be perceptible.
- Changes between 5dB(A) and 10dB(A) – likely to be perceptible.

'Number Above' metrics

'Number Above' metrics (also known as 'N Contours') are an aircraft noise characterisation mechanism used to map noise 'zones' around an aerodrome. They show the number of noise events per day (or other time period) with L_{Amax} levels above a specified value. For example, N70 contours would show the number of aircraft noise events per day with L_{Amax} greater than 70dB(A). N70 and N60 are particularly useful as they express the number of noise events per day that may potentially affect listening activities or sleep respectively, as described above. Use of these metrics was first documented in the discussion paper 'Expanding ways to describe and assess aircraft noise' produced by the (then) Commonwealth Department of Transport and Regional Services in March 2000.

These metrics are also useful in assessing the impact of a change in noise exposure, which may involve a change in the number of events exceeding a given noise level. The magnitude of the change can be expressed as the percentage change in N60, N70 or another relevant noise value. For further information refer to: https://infrastructure.gov.au/aviation/environmental/transparent_noise/expanding/4.aspx)

Noticeability

The noticeability of a noise depends fundamentally on the relationship between the highest noise level achieved (L_{Amax}) and the existing background noise level. The Noticeability methodology was developed with consideration of thresholds from Australian state and territory regulations for industrial noise. Noise noticeability is intended to identify NSRs which may notice changes in noise levels and therefore should be considered for community engagement (even if not considered 'potentially significant under the EPBC Act). Where required population and dwelling counts may be included as part of the noticeability assessment for the purposes of community engagement.

b. Fuel Burn and Emissions

[34] For example, Transport Noise Management Code of Practice – Volume 1 Road Traffic Noise, Queensland Department of Transport and Main Roads 2013.

i. Following a process outlined in ICAO 2011[35], which provides information on common thrust settings and estimates of time-in-mode, and FAA 2000[36], using a height-weighting factor for various stages of flight, it is estimated that the taxiing of aircraft can account for as much as 90% of ground level emissions (i.e.. the landing and take-off (LTO) cycle accounts for about 10% of aircraft emissions during an entire flight). Further, FAA 2000 demonstrates that emissions from aircraft at 3,000 ft have an impact on ground level pollutant concentrations two orders of magnitude lower than emissions at 100 ft.

ii. Aircraft emissions in the LTO cycle below 3,000ft (apart from taxiing emissions) may have an impact on human health, as per ICAO: https://www.icao.int/environmental-protection/Pages/local-air-quality.aspx

iii. At the time of writing, the Australian Government did not have a policy regarding increases in aviation CO_2 emission that could be used for guidance in establishing criteria for potential significance. Therefore a nominal figure of a 20% increase has been used (per proposed change).

c. Biodiversity

i. A recent review of 20 years of international research documenting the effects of anthropogenic noise on wildlife[37], including aircraft noise, has found the following:

- The range of noise levels reported to induce annoyance in humans and responses in terrestrial wildlife are similar, ie. 40-100 dB(A).
- Noise sensitivity varies greatly and there is large variability in responses to noise between species and individuals and at different locations.
- Some species are more susceptible to disturbance from noise than others because of auditory capabilities, social structure, life history patterns or habitat.
- While some species may develop a tolerance when overflights are frequent or regular, others do not.
- Physiological and fitness effects in wildlife have been documented at noise exposure levels from 52 dBA for certain species (in particular songbirds).

ii. The noise level threshold of 60 dBA adopted for the criteria represents a reasonably conservative noise threshold based on the findings of the published literature (i.e. this threshold captures 60% of studies that have shown adverse responses in terrestrial wildlife, including impacts on physiology and fitness) and given the large variability in responses between species and individuals and at different locations.

[35] ICAO (2011): Airport Air Quality Manual. Doc 9889, First Edition 2011

[36] FAA (2000). Consideration of Air Quality Impacts by Airplane Operations at or Above 3000 feet AGL. Federal Aviation Administration, FAA-AEE-00-01 DTS-34, September 2000.

[37] Shannon, G., McKenna, M.F., Angeloni, L. M., Crooks, K. R., Fistrup, K. M., Brown, E., Warner, K. A., Nelson, M. D., White, C., Briggs, J., McFarland, S., and Wittemyer, G. (2016). A synthesis of two decades of research documenting the effects of noise on wildlife. *Biological Reviews* **91**: 982-1005.

iii. Biodiversity Sensitive Receivers (BSRs), are areas protected under the EPBC Act or other areas that are likely to contain important habitat and are used as a proxy for EPBC Act listed threatened biota and migratory species and state-listed threatened biota.

iv. BSRs should be located and classified over at least a 10km buffer around the proposed flight path/s to enable a comparison of the area of BSR affected by a change in noise with the extent of BSR in the locality.

v. The 10km buffer area in (iv) is consistent with the definition of 'locality' for EPBC Act Protected Matter Searches.

5. Impact Assessment Methodology

The EMS has included criteria for determining significant impact under the EPBC Act, since 2013 to the present, over which time the associated metrics and methodologies have been validated through:

a. discussion of changes being implemented at Community Aviation Consultation Group (CACG) meetings at airports around Australia;

b. ongoing analysis of aviation noise complaint data, and associated flight path changes, from the Noise Complaints Information Service (NCIS);

c. consultation with stakeholders (including the Aircraft Noise Ombudsman and the Commonwealth Department of Infrastructure and Regional Development and Cities) regarding noise complaints and noise impact assessments;

d. a referral to the Commonwealth Department of Environment and Energy, under the EPBC Act, for the Gold Coast Airport Instrument Landing System (ILS) Project (which included discussion of the criteria and associated methodology to assess potential significance of aviation noise impacts).

Over 200 airspace changes have been assessed for potential aviation noise impacts and implemented by us since 2013, without later being found to represent 'significant impact' under the EPBC Act. Given this result, and the significant traffic growth experienced in Australia since 2013, our assessment methodologies (and the criteria) can be seen to be appropriate and relatively conservative.

6. Continuous Improvement of the Criteria

As part of our continuous improvement efforts (and in response to feedback from the Aircraft Noise Ombudsman), the significance criteria were reviewed and updated in 2018, with the assistance of an external specialist consultant. As a result, a number of revisions were made to the criteria in 2019: to more comprehensively address environmental values under the EPBC Act; formally introduce concepts of 'noise noticeability'; and to improve the clarity of the environmental assessment methodology. This process also involved consultation with the Commonwealth Department of Environment and Energy (DoEE), and the Department of Infrastructure, Regional Development and Cities (DIRDC), regarding the appropriateness and rigour of the criteria, and its overall environmental impact assessment process (for changes to air traffic management practices).

Definitions

- ‘Existing flight’ refers to any flight path that is either formalised or regularly used.
  - Formalised flight paths could include:
    - Noise Abatement Procedures (NAPs), or flight paths prescribed in Letters of Agreement (LoAs) with locals operators.
    - Instrument Flight Procedures (IFPs), such as Standard Instrument Departures (SIDs), Standard Approach Routes (STARs), and other approach procedures published in the Aeronautical Information Publications (AIP) Departure and Approach Procedures (DAP) plates.
    - Regional Routes and Domestic Routes published in the Designated Airspace Handbook (DAH).
  - Non-formalised paths could include a regularly used vectoring path or track shortening. Regular usage is subjective to each individual airport and can include seasonal variations. For example a path that is only used during certain meteorological conditions, but is used consistently in those situations, would be considered an existing track.
- Commonwealth Matters of National Environmental Significance (MNES) sites: sites that represent Matters of National Environmental Significance – as listed in the EPBC Protected Matters Search Tool.
- Names and definitions for ‘rural’ and ‘urban’ will differ between councils and districts throughout Australia, but there are generally similar zones corresponding to these. Where there is doubt, advice should be sought from the local planning body.
- The usage of the terms ‘day’ (6:00am to 11:00pm) and ‘night’ (11:00pm to 6:00am) is as per the definition of night (11:00pm to 6:00am) used at Australian curfew airports (see Commonwealth Sydney Airport Curfew Act 1995). We apply this definition consistently for all environmental assessments, whether or not a curfew is in place at the specific airport

Appendix C Other Business Revenue – explanatory notes

Other Business Revenue (OBR), otherwise referred to as 'Unregulated Revenue' or Non-Airways Revenue, relates to the provision of goods or services other than those which are provided by us as part of the regulated service that is subject to the Long Term Pricing Agreement (LTPA) with customers. For the avoidance of any doubt, OBR is a term applied to account for those Airservices activities not funded through Airways Revenue.

OBR includes (but is not limited to):

- provision of charting services and other publications
- maintenance or provision of navaids under contract
- provision of air traffic services under contract (eg. for Solomon Islands and Nauru)
- delivery of training, and
- funds received for official development assistance (aid) activities.
- For further information on OBR, refer to C-PROC0194