NOISE ACTION PLAN FOR BRISBANE

Version 1.0

Effective Date: 18 December 2022

CONTENTS

1. PURPOSE

The purpose of this document is to describe Airservices Australia's plan to reduce the impact of aircraft operations on the Brisbane community.

This *Noise Action Plan for Brisbane* was the outcome of the *Brisbane New Parallel Runway Flight Paths Post Implementation Review* (PIR) conducted between July 2021 and December 2022.

2. BACKGROUND

2.1. New Parallel Runway and PIR timeline

2005: Brisbane Airport Corporation (BAC) commenced the planning and approval process for a new runway, parallel to the existing north-east/south-west oriented main runway.

2007: A Major Development Plan (MDP) and Environmental Impact Statement (EIS) for the project were approved by the then-Federal Minister for Transport and Regional Services (as required under the *Airports Act 1996* and the *Environment Protection and Biodiversity Conservation Act 1999*).

2012: Construction commenced on BAC's new runway in July.

2020: New Parallel Runway (NPR) opened on 12 July.

2021: July - Development of the Terms of Reference for a Post Implementation Review (PIR) commenced in consultation with community and industry stakeholders.

December - Terms of Reference finalised.

2022: January - Airservices engaged independent consultant, Trax International (Trax), to conduct an independent review as part of the PIR.

June – Trax community workshops were held in 13 locations, plus an all-day drop-in session and an online session.

August - Trax *Brisbane New Parallel Runway Flight Paths Post Implementation Review Independent Review Final Report* was published, with Airservices adopting all recommendations.

September - Community and industry stakeholders consulted on the draft PIR recommendations. This included nine community workshops that were attended by 232 community members from 88 suburbs, plus two industry workshops.

October - Draft PIR report released for a four-week public comment period, receiving 450 written community submissions, including one submission attaching a petition signed by 1,284 community members. Submissions were also received from Australia's two largest domestic airlines and from Brisbane Airport Corporation (BAC).

December - Final PIR report released.

3. REFERENCE DOCUMENTS

- *Brisbane New Parallel Runway Flight Paths Post Implementation Review (PIR) Final Report*
- Airservices *Community Engagement Framework*
- Airservices *DRAFT Community Engagement Standard*
- Airservices *Flight Path Design Principles*, Version 1, 01 October 2020
- Airservices Environmental Management of Changes to Aircraft Operations (AA-NOS-ENV-2.100), Version 18, 01 July 2022
- International Association of Public Participation (IAP2) Spectrum of Public Participation

4. *NOISE ACTION PLAN FOR BRISBANE*

Package One – Strong, transparent and representative governance (Development and implementation Q3-Q4 2022)

Recommendation 1.1 – Oversight, management and assurance program: Airservices will support government and other stakeholders in the establishment of oversight, management and coordination functions to support flight path change delivery, as well as development of assessment frameworks and independent assurance mechanisms.

a) An independent airport community forum, supported by third-party technical expertise where required, as a mechanism to ensure coherent, transparent and aligned activities.

(aa) The Department will establish governance mechanisms including undertaking assurance checks.

b) A program management office which provides the disciplines required to ensure that roles and responsibilities are clear, stakeholders work to a common plan, activities are adequately resourced and the risks to delivering the proposed changes are well understood and managed.

c) A technical coordination group to support the development of options from a technical perspective.

d) An options development and assessment framework which ensures the criteria and methods used to evaluate the impacts of different options for change proposals are comprehensive and consistent.

e) An independent assurance process that coordinates the engagement of qualified third parties not directly involved in the development of the change proposals, to challenge specific aspects of the program from a technical and process perspective, build trust with external stakeholders and support the independent airport community forum as required.

f) Airservices will support a government-led, assurance process through technical inputs and advice.

g) Airservices will consider the use of appropriately skilled and qualified consultants to support its legislated technical role in flight path and airspace design.

Recommendation 1.2 – Industry-wide communications planning: Airservices will work with industry stakeholders, government and community to develop effective communications plans supported by all relevant organisations and agencies, to ensure that information provided is consistent, clear and transparent.

a) Without an effective and well managed approach to communications, flight path changes may generate outcomes that are unacceptable to stakeholders and vociferously challenged.

b) The importance of an effective communications is based on the expectation that, when done well, it improves the social, environmental and economic outcomes of flight path changes and increases stakeholders' trust in the process for the future.

c) Conduct engagement on the proposed approach to communications for flight path changes.

Recommendation 1.3 – Meaningful engagement process: Airservices will work with government, community and industry stakeholders to develop effective community engagement plans and tools, to ensure communities are adequately engaged, have

the opportunity to input to decision-making and that the metrics used to make decisions are understood and transparently reported against.

a) The engagement process should confer legitimacy on the development and assessment of options for change proposals.

b) Those who may be affected by options for change proposals should be encouraged to actively participate in the development and assessment process.

c) To be effective, stakeholders should be offered the information, time and support to make meaningful contributions.

d) The outputs of community engagement must be considered conscientiously by the proponents and have the potential to influence the final designs.

Recommendation 1.4 – Long-term Noise Action Plan: Airservices proposes the recommendations in this report form the initial version of the Noise Action Plan. This plan will implement noise mitigation measures which are well-planned, tracked, reported against, and supported by community and industry stakeholder involvement.

a) Ensure that the specific noise mitigation measures included as part of the plan as it evolves, such as trials, research projects and major changes, are scoped effectively, with agreed objectives, milestones, accountabilities and performance measures.

b) Track the progress of options development, assessment, engagement and implementation plans linked to specific noise mitigation measures.

c) Manage the dependencies associated with noise mitigation measures over time, including the rate and scale at which the ATC operation and aircraft operators can adapt to successive changes.

d) Resolve issues that may impact the achievement of agreed milestones toward the development and implementation of noise mitigation measures.

e) Maintain cross-industry and community stakeholder involvement and momentum behind the development and implementation of options to manage and, where possible, reduce the impacts of aircraft noise.

f) Accept the outcome of this PIR as the Noise Action Plan for Brisbane, noting that as the industry and regulatory landscape evolves, this Plan may also evolve.

g) Introduce measures to improve NAP compliance.

h) Increased public reporting and transparency on operations, including NAP compliance, use of published paths and procedures, aircraft noise and altitude, and complaints and actions taken in response.

Package Two – Maximise flights over the water (Development and implementation in 2023)

Recommendation 2.1 - ATC Operating Plan to extend the use of SODPROPS: Airservices will develop an ATC Operating Plan, examine options to extend the use of SODPROPS and implement associated design enhancements.

a) Develop and implement an ATC Operating Plan to extend the use of SODPROPS with a focus on weekday evenings, Saturday afternoons and Sunday mornings, when the met conditions and traffic levels permit.

b) Examine the costs, benefits and operational impacts of extending the use of SODPROPS, including the provision for a moderate amount of flight delay to maintain the use of the mode when traffic demand approaches the maximum capacity for SODPROPS.

c) Review SODPROPS’ daytime operational plan and implement design enhancements to increase use of this mode during daytime hours.

Recommendation 2.2 - Reduce ATC workload and complexity associated with SODPROPS: Airservices will engage with Defence in relation to Amberley airspace, ATC procedures and specific flight paths that constrain SODPROPS operations.

a) Engage with Defence and RAAF Base Amberley to consider options for the targeted release and/or shared use of specific portions of Amberley segregated airspace to reduce the workload and complexity for Brisbane ATC associated with extending the use of SODPROPS.

b) Examine options to amend the ATC procedures for coordinating flights that route through the Brisbane airspace system inbound to other destinations which may constrain Brisbane ATC's ability to extend the use of SODPROPS.

c) Examine options to amend specific flight paths that serve traffic routeing through the Brisbane airspace system inbound to other destinations which may constrain Brisbane ATC's ability to extend the use of SODPROPS.

d) Develop STARs for Amberley and SIDs for Archerfield to reduce complexity and increase the opportunity to use SODPROPS.

e) Review operations north and south of Brisbane to enhance overall South-East Queensland operations.

Recommendation 2.3 - Modify specific SODPROPS flight paths and ATC procedures: Airservices will review options to reduce track miles and emissions associated with SODPROPS operations, update ATC procedures to optimise final approach efficiency and review options to reduce the impact of over water operations on affected communities.

a) Examine options to reduce the track miles and aircraft emissions generated by the specific arrival and departure routes that flights use during SODPROPS, including the potential to incorporate arrival routes designed to advanced navigation standards.

b) Examine options to amend the ATC procedures used to manage inbound traffic when SODPROPS is in use to enable pilots to optimise the descent to final approach.

c) Examine short-term options to moderately increase the tactical use of over-the-water operations when the simultaneous parallel runway modes are in use. For example, launching occasional departures in a 01 direction while the airport is configured for 19 operations when traffic conditions, met constraints and other operational factors confirm it is safe to do so.

d) Examine opportunities to improve over water departure paths that fly over communities after they cross the coastline to increase height, maintain over water for longer, or travel further east.

e) Examine opportunities to modify weather condition constraints, where safe, to allow greater use of SODPROPS.

f) Develop mechanisms to report on SODPROPS usage, including transparent explanation of when this mode has not been applied and the reasons for this.

The intent of Package 2 recommendations is to enable SODPROPS to be operated as the number one priority mode at all times, subject to weather and other published operational constraints.

Note: Expansion of SODPROPS operations should be delivered in parallel to reviewing operations over bayside communities, to ensure any increased use of SODPROPS does not increase impacts on these communities.

Recommendation 2.4 – Reduce the impact of overnight operations on communities

a) Examine opportunities to shift night-time operations over water or away from inland communities, including redesign of SIDs and STARs for night-time operations (10pm to 6am).

b) Engage with industry (including time critical freight operators) to assess the impact on operations of additional track miles required to support night-time operations which provide night-time respite.

c) Develop specific night-time operating modes that will apply between 10pm and 6am.

Package Three – Reduce the frequency and concentration of flights over communities (Development during 2023 and implementation in 2024)

Recommendation 3.1 – Reduce the frequency and concentration of flights over communities: Airservices will develop options for departure and arrival paths over the city to allow for noise-sharing and to reduce the occurrence of communities being subject to both arrival and departure operations. Airservices will also develop options to reduce the impact on communities of non-jet tactical operations, flight paths further from the airport, merge points and hold downs. In addition, Airservices will introduce opportunities for greater use of advanced navigation technology where this improves community noise outcomes.

a) Options to redesign the two departure routes over the city from the new runway to the north so the flight paths are offset from the extended runway centreline and follow a different track over the ground to that overflown by inbound traffic on final approach to the new runway.

b) Options to redesign the two departure routes over the city from the new runway so they diverge and the flight paths each follow different tracks over the ground.

c) Options to redesign the two departure routes over the city from the existing runway used after 10pm so the flight paths follow a different track over the ground to that overflown by the new runway departure routes used in the daytime.

d) Options to introduce an ATC procedure to vector outbound flights using the two departure routes over the city from the new runway when a specific altitude has been reached (e.g., 4000ft) that would disperse the tracks over the ground because aircraft with higher climb rates would reach the specified altitude quicker and turn sooner.

e) Options to redesign the three departure routes over the city from the existing runway to the south so they follow different tracks over the ground and potentially save track mileage, by turning sooner and/or tighter.

f) Options to redesign two of the arrival routes over the city to the new runway from the north so the flight paths converge further to the west and the tracks over the ground are different to those overflown by outbound traffic heading north.

g) Options to re-evaluate three of the standard compass headings that non-jet departures are instructed to follow after take-off (subject to the impacts on operational capacity) so that the tracks over the ground may be dispersed or repositioned over water.

h) The development of a baseline option that describes the actual impacts created by the existing NPR flight paths over the city and outer suburbs in terms that are directly comparable to the options for any proposed modifications.

i) Develop baseline that describes actual impact pre-NPR over the city and outer suburbs.

j) Investigate opportunities for jet aircraft early turns to avoid overflight of communities.

k) Replace RWY 01L WACKO SID departures to the west with the existing RWY 01R WACKO SID to reduce overflight of Bribie Island.

l) Review of SIDs to determine if track miles can be reduced to improve industry outcomes (and potentially offset increased track miles for other changes).

m) Redesign STARs and merge arrivals further north to reduce overflight of suburbs to the north and north-west of the airport.

n) Engage with Defence and RAAF Base Amberley to access airspace to reduce overflight of suburbs to the north-west of the airport.

o) Redesign MORBI non-jet visual STAR to avoid the Redcliffe Peninsula.

p) Introduce advanced navigation (RNP-AR) approaches for suitable certified non-jet aircraft.

q) Redesign flight paths leading to the independent parallel runway operations final approach commencement point to both runways to meet new ruleset requirements and reduce overflight of communities.

r) Design separated procedural SIDs, one for jet aircraft and one for non-jet aircraft, to better share aircraft noise.

s) Review the lead in waypoints on approach to the new runway to allow a shallower intercept angle to improve operations for all aircraft types and to reduce the impact on communities.

t) Redesign of STAR height requirements to reduce level segments over communities and improve continuous decent of aircraft, reducing noise impacts.

u) Review options to keep over-the-bay departures over water for longer, reducing impact on communities as they turn to travel over land.

v) Review speed and height for aircraft off runway off the legacy runway over water to get them higher before they cross the over land.

w) Investigate turning departures over land immediately to cross back over the airport to climb over water.

x) Redesign arrivals over water to the new runway to take aircraft further away from the southern part of Bribie Island.

y) Redesign non-jet departures to avoid turning and climbing at the same time.

z) Investigate moving RNP-AR join point to the new runway further north (similar to the old river track).

aa) Redesign the junction points for multiple procedures to they are not over communities.

bb) Introduce gradual glide operations and more aggressive climbs to reduce noise.

cc) Investigate benefit of reducing departure operations over communities, including engagement with communities to confirm if departures are more disruptive than arrivals.

Package Four – Optimise the performance of the wider Brisbane airspace system (Development in 2023 and 2024, implementation from 2025)

Recommendation 4.1 - Introduce noise sharing through new operating modes: Airservices will develop options to connect flight paths to all runway ends to provide greater flexibility for noise sharing, and investigate a range of modes, including segregated and semi-mixed modes, to provide periods of respite for communities.

a) The options included in work Package Four will take longer to develop than those in packages Two and Three because of the scale and complexity of the proposed changes, extending the expected timelines for implementation into 2025.

b) The options to introduce new noise-sharing runway modes supported by an updated flight path design that deviates from compass operations should be configured to align with the modifications implemented as part of package three.

c) It is important to emphasise that the areas that would benefit from temporary periods of relief through runway alternation would at other times experience comparatively more noise events when the alternation schedule is reversed.

d) It is envisaged that the segregated and semi-mixed runway modes would be used alongside the simultaneous parallel modes and SODPROPS as part of a system to manage noise as traffic levels grow, designed with community and aviation stakeholders in a long-term Noise Action Plan.

e) The options for a runway alternation schedule should consider the use of the semi-mixed modes, where departures use both runways and arrivals operate to one, or arrivals use both runways and departures operate from one, so that the airport's capacity can be allocated to accommodate peaks in traffic demand at different times.

f) Dedicated safety assurance work, ATC simulations and aviation stakeholder engagement should be conducted to assess the risks associated with switching between the segregated modes and simultaneous parallel operations.

g) Redesign of flight paths to support removal of compass operations and greater flexibility to share noise and provide respite operations.

h) Design SIDs and STARs for each departure/arrival gate from/to each runway to support new modes to provide noise sharing.

Recommendation 4.2 - Introduce multiple arrival routes over the city: Airservices will develop options for multiple arrival routes which can be alternated on a planned schedule to provide respite to communities. This will be completed in parallel with an already planned IT system upgrade.

a) The NPR flight path design includes several arrival routes that use advanced navigation standards for more precise and flexible approaches, and which may be re-configured and supplemented with additional routes to deliver planned respite for some communities through alternation.

b) The existing IT systems used by Brisbane ATC to support air navigation do not have the capacity to manage multiple alternating arrival routes. Airservices is implementing a national program of IT system upgrades, which when complete, is expected to enable options for respite routes on arrival to be developed and assessed for the Brisbane airspace system.

c) Options to introduce respite routes on arrival should be incorporated into the proposed changes to the flight path design required to enable runway alternation.

d) If, following the outcome of stakeholder engagement, options to implement runway alternation are not progressed, respite routes on arrival should be considered in isolation through a separate engagement exercise with community and aviation stakeholders, for use with simultaneous parallel operations.

e) It is important to emphasise that the areas that would benefit from the use of respite routes on arrival would at other times experience comparatively more noise events when the alternation schedule is reversed and that the total population overflown would increase.

f) The introduction of respite routes would add significant complexity to the Brisbane airspace system, creating interactions with other arrival and departure routes and interdependencies with the airspace structures that integrate Brisbane traffic with the wider enroute network. The improvements expected from introducing respite routes should be assessed against the impacts on flight efficiency and aircraft emissions where longer tracks and sub-optimal climb and descent profiles are required to accommodate alternation.