AIRSERVICES AUSTRALIA'S RESPONSE TO BRISBANE NEW PARALLEL RUNWAY FLIGHT PATHS POST IMPLEMENTATION REVIEW (PIR) INDEPENDENT REVIEW FINAL REPORT BY TRAX INTERNATIONAL

Background

In January 2022, Airservices Australia's (Airservices) CEO, Jason Harfield, appointed Trax International (Trax) to independently review and make improvement recommendations across all aspects of the Brisbane Post Implementation Review (PIR), with a particular focus on opportunities to limit, and where possible, reduce the impacts of aircraft noise.

Trax, a global air traffic management adviser based in the United Kingdom, brings significant experience working on similar airspace, flightpath and airport changes overseas, including both Gatwick and Heathrow airports. The Trax team includes experts with backgrounds in air traffic operations, flight path design and community engagement.

Trax released an Interim Report in April 2022 containing a list of 49 potential short, medium and long-term improvement opportunities. They continued to analyse the feasibility, benefits, impacts and dependencies of the potential improvements and consolidated the viable opportunities into four work packages with 10 recommendations, presented in the Final Report which was released for public consideration in mid-August 2022.

To complete the independent review, Trax consulted widely with stakeholders, including members of the community, the Brisbane Airport PIR Advisory Forum (BAPAF), Brisbane Airport Corporation (BAC) and airlines. Airservices thanks all stakeholders for their contributions, which have informed the Trax Final Report.

Airservices has now considered and adopted all the recommendations in the Trax Final Report. Further information on our response to each of the recommendations presented in the Final Report is provided below. Community and industry stakeholder engagement is critical in the development of the final PIR recommendations which will seek to improve noise outcomes for the Brisbane community.

Community and industry workshops are scheduled during September 2022 to seek initial feedback for the draft PIR report. All stakeholders will then have a four-week period to provide detailed feedback and submissions as part of the engagement process. The feedback and submissions received will inform the final PIR recommendations planned for release later in the year.

PACKAGE ONE: STRONG, TRANSPARENT AND REPRESENTATIVE GOVERNANCE

TIMELINES: DEVELOPMENT & IMPLEMENTATION IN Q3-Q4 2022

Ref	Recommendation	Description	Response
1.1	Establish a Programme Oversight, Management and Assurance function that coordinates the development and assessment of options for change proposals to the NPR flight path design	a) A senior-level oversight group tasked with coordinating the various activities at a strategic level to ensure they are coherent, transparent and aligned to the achievement of a balanced set of objectives.	Airservices supports the need for a senior-level oversight group at the strategic level to ensure coherent, transparent and aligned activities. The establishment of an oversight group will require a joined-up approach by government, community and industry stakeholders.
		b) A programme management office that 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.	Airservices will establish a programme management office to implement the changes identified in the PIR in a coordinated way and provide transparent reporting on implementation and performance.
		c) A technical coordination group to support the development of options from a technical perspective.	Airservices will establish a technical coordination group to support the detailed development of options to meet safety, regulatory and operational requirements.
		d) An options development and assessment framework that ensures the criteria and methods used to evaluate the impacts of different options for change proposals are comprehensive and consistent.	Airservices will develop transparent criteria and methods to evaluate the impacts of different options for change.
		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 Programme from a technical and process perspective and build trust with external stakeholders.	Airservices will engage appropriate third-party assurance with transparent reporting in the development of specific change proposals.

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1.2	Implement a joined-up Communications Plan for the aviation organisations that are responsible for developing options to communicate effectively with community stakeholders	a) Without an effective and well managed approach to communications, flight path changes may generate outcomes that are unacceptable to stakeholders and vociferously challenged.	Airservices will establish a communications coordination group to support the development of a comprehensive Communications Plan.
		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.	
1.3	Define the engagement process that will be followed to gather meaningful inputs from community and aviation stakeholders to help shape the change proposals	a) The engagement process should confer legitimacy on the development and assessment of options for change proposals.	Airservices will work collaboratively and transparently to ensure that all stakeholders have an opportunity to shape change proposals. Following community and industry consultation, the final PIR report recommendations will form the initial set of change proposals. Airservices will enhance existing Community Engagement Frameworks to ensure the involvement of all stakeholders in 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.	
1.4	Produce a long-term Noise Action Plan that clearly lays out how the change proposals and other measures not related to flight path design will contribute to limiting and where possible reducing noise over the short,	a) Ensure that the specific noise mitigation measures included as part of the plan as it evolves (including trials, research projects and major changes) are scoped effectively, with agreed objectives, milestones, accountabilities and performance measures.	Following community and industry stakeholder consultation, Airservices will progress the final PIR report recommendations.
		b) Track the progress of options development, assessment, engagement and implementation plans linked to specific noise mitigation measures.	Airservices will progress the final PIR report recommendations through the programme management office and report implementation to the senior- level oversight group.

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	medium and long-term as traffic levels grow	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.	Airservices will assess and manage noise interdependencies relating to flight path design and operations through the programme management office. Reporting will be provided to the senior-level oversight group on the management of these interdependencies.
		d) Resolve issues that may impact the achievement of agreed milestones toward the development and implementation of noise mitigation measures.	Airservices will work collaboratively with stakeholders on noise mitigation measures relating to flight path design and operations.
		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.	Airservices will work collaboratively through the programme management office and the senior-level oversight group to develop and implement options to manage noise related to flight path design and operations.

PACKAGE TWO: MAXIMISE FLIGHTS OVER THE WATER

TIMELINES: DEVELOPMENT & IMPLEMENTATION IN 2023

Ref	Recommendation	Description	Response
2.1	Develop and implement an ATC Operating Plan to extend the use of SODPROPS	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.	Airservices will develop and implement an ATC Operating Plan through the programme management office, including work completed during the SODPROPS trial and in response to the Trax Interim Report. Details of the proposed ATC Operating Plan will be consulted with the senior-level oversight group.
		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 simultaneous opposite direction parallel operations.	Airservices will examine the costs, benefits and operational impacts of extending SODPROPs via the development of an ATC Operating Plan through the programme management office. Criteria for transitioning between SODPROPS and other modes will be developed and consulted through the senior-level oversight group.
2.2	Reduce the workload and complexity for Brisbane ATC associated with extending the use SODPROPS	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.	Department of Defence and local personnel at Royal Australian Air Force (RAAF) Base Amberley have been engaged to explore solutions to this recommendation.
		b) Examine options to amend the ATC procedures for coordinating flights that route through the Brisbane airspace system inbound to other destinations and may constrain Brisbane ATC's ability to extend the use of SODPROPS.	Airservices will examine options to amend ATC procedures through the programme management office including reviewing airspace constraints.

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		c) Examine options to amend specific flight paths that serve traffic routeing through the Brisbane airspace system inbound to other destinations and may constrain Brisbane ATC's ability to extend the use of SODPROPS.	Airservices will examine options to amend specific flight paths through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group.
2.3	Modify specific SODPROPS flight paths and ATC procedures, where required, to maximise the potential improvements associated with recommendations 2.1 and 2.2	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.	Airservices will examine options to reduce track miles and emissions through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group.
		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.	Airservices will examine options to amend ATC procedures through the programme management office.
		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.	Airservices will examine short-term options for tactical use of over-the-water operations as part of an ATC Operating Plan developed through the programme management office. Options will be subject to safety assessment and consultation with industry stakeholders through the programme management office. Outcomes of the assessments will be consulted with the senior-level oversight group.

PACKAGE THREE: REDUCE THE FREQUENCY & CONCENTRATION OF FLIGHTS OVER COMMUNITIES

TIMELINES: DEVELOPMENT DURING 2023 & IMPLEMENTATION IN 2024

Ref	Recommendation	Description	Response
3.1	Develop and assess options for change proposals to reduce the frequency and concentration of flights over communities, and where they are feasible, engage with all affected stakeholders on the impacts and trade-offs	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.	Airservices will progress options to redesign through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group.
		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.	Airservices will progress options to redesign through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group.
		c) Options to redesign the two departure routes over the city from the existing runway used after 10 pm so the flight paths follow a different track over the ground to that overflown by the new runway departure routes used in the daytime.	Airservices will progress options to redesign through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group. Will require consultation with communities that may be newly overflown, or experience increases in frequency of overflight.

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		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.	Airservices will progress options for vectoring through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group. Will require consultation with communities that may be newly overflown, or experience increases in frequency of overflight.
		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.	Airservices will progress options to redesign through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group.
		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.	Airservices will progress options to redesign through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group.
		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.	Airservices will assess options to re-evaluate compass headings for non-jet departures through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group. Will require consultation with communities that may be newly overflown, or experience increases in frequency of overflight.

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		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.	The PIR includes provision of information on existing new parallel runway operations. Existing operations will be compared to proposed changes to clearly identify improvements and impacts. Detailed assessment of the proposed changes against current operations will be provided during the engagement period for each change.

PACKAGE FOUR: OPTIMIZE THE PERFORMANCE OF THE WIDER BRISBANE AIRSPACE SYSTEM

TIMELINES: DEVELOPMENT IN 2023 & 2024, IMPLEMENTATION FROM 2025

Ref	Recommendation	Description	Response
4.1	Develop and assess options for change proposals to introduce noise sharing through runway alternation using segregated and semi-mixed runway modes with an updated flight path design that deviates from compass operations, and if feasible engage with all affected stakeholders	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.	Information on the flight path change program and its timing will be shared and consulted through the senior-level oversight group. Timeframes for delivery of all actions will be included in the final PIR report.
		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.	Airservices will progress options for noise sharing through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group. Will require consultation with communities that may be newly overflown, or experience increases in frequency of overflight.
		c) It is important to emphasize 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.	Explanation of how these modes would operate and the implications will be shared and feedback sought in community meetings and in the draft PIR report. Implementation of these modes will be subject to engagement with affected communities.
		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.	Following community and industry stakeholder consultation, Airservices will progress the final PIR report recommendations.

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		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.	Following community and industry stakeholder consultation, Airservices will progress the final PIR report recommendations.
		f) The options for the dimensions of the noise relief areas introduced as part of runway alternation should be informed by stakeholder engagement with the affected communities. Significant engagement with communities and aviation stakeholders should also be conducted to gather inputs on the proposed changes to the flight path design needed to ensure the noise relief areas are effective when in use and the airport can operate efficiently in all modes.	Following community and industry stakeholder consultation, Airservices will progress the final PIR report recommendations.
		g) Engagement with community and aviation stakeholders should influence how the noise relief areas are used if established, in particular the schedule of alternation.	Following community and industry stakeholder consultation, Airservices will progress the final PIR report recommendations.
		h) 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.	Airservices will progress safety assurance work and stakeholder engagement through the programme management office.

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4.2	Develop and assess options for change proposals to introduce multiple arrival routes over the city that can be alternated to a planned schedule to deliver respite, and if feasible engage with all affected stakeholders	a) The NPR flight path design includes several arrival routes that use advanced navigation standards for more precise and flexible approaches and may be re-configured and supplemented with additional routes to deliver planned respite for some communities through alternation.	Airservices will progress options for more precise and flexible approaches through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group. Will require modification of current ATC system capability which is contingent on new civil/military air traffic control system programmed for delivery in 2026. Will require consultation with communities that may be newly overflown, or experience increases in frequency of overflight.
		b) The existing IT systems used by Brisbane ATC to support air navigation do not have the capacity to manage multiple alternating arrival routes. ASA is implementing a national programme of IT system upgrades that when complete is expected to enable options for respite routes on arrival to be developed and assessed for the Brisbane airspace system.	Required capacity will be provided as part of the new civil/military air traffic control system programmed for delivery in 2026.
		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.	Airservices will progress options to introduce respite routes through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group. Will require modification of current ATC system capability through new civil/military air traffic control system programmed for delivery in 2026. Will require consultation with communities that may be newly overflown, or experience increases in frequency of overflight.

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		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.	Airservices will assess following stakeholder engagement options to implement respite routes through the programme management office including design, safety and environmental assessment. Outcomes of the assessments will be consulted with the senior-level oversight group. Will require consultation with communities that may be newly overflown, or experience increases in frequency of overflight.
		e) It is important to emphasize 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.	Explanation of how these standard arrival routes would operate and the implications will be shared in community meetings and in the PIR report.
		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.	Airservices Flight Path Design Principles assess the impacts on flight efficiency, emissions and respite routes. Respite routes will be progressed through the programme management office including design, safety and environmental assessment.