Noise Action Plan for Brisbane

Departures over land at night

Package 3, option 4

Since the new runway opened in 2020, there has been a Noise Abatement Procedure (NAP) in place that prevents aircraft movement over land to and from the new runway at night. This NAP was introduced by Brisbane Airport Corporation (BAC) to minimise night-time noise impact on new runway communities. However, the NAP allows for use of this runway at night when the legacy runway is closed for essential maintenance and in the event of emergencies.

Currently, the legacy runway is used for all night-time (10pm to 6am) over land departures when the wind is blowing from the south and when Simultaneous Opposite Direction Parallel Runway Operations (SODPROPS) cannot be used.

In looking for options to reduce night-time noise on communities, we have identified a possible option for these over land departures. This involves using the new runway, with planes making a tight left turn immediately after take-off to fly over the airport and industrial land before continuing toward Moreton Bay to complete their climb over water. Once over water and having gained altitude, planes would connect to their required flight path at relevant points (see **Figure 1**).

We propose to trial this option during planned maintenance works on the legacy runway in mid-2026 to determine whether it has a community noise benefit.

All options for Package 3 of the Noise Action Plan for Brisbane, which aims to reduce the concentration of flights over the most affected communities, are outlined in the *Phase 6 Overview*.

We propose trialling this new option when Brisbane Airport Corporation undertakes planned runway works in 2026. The trial would be used to determine if planes remain entirely over industrial and airport land while turning and to assess community noise benefit.

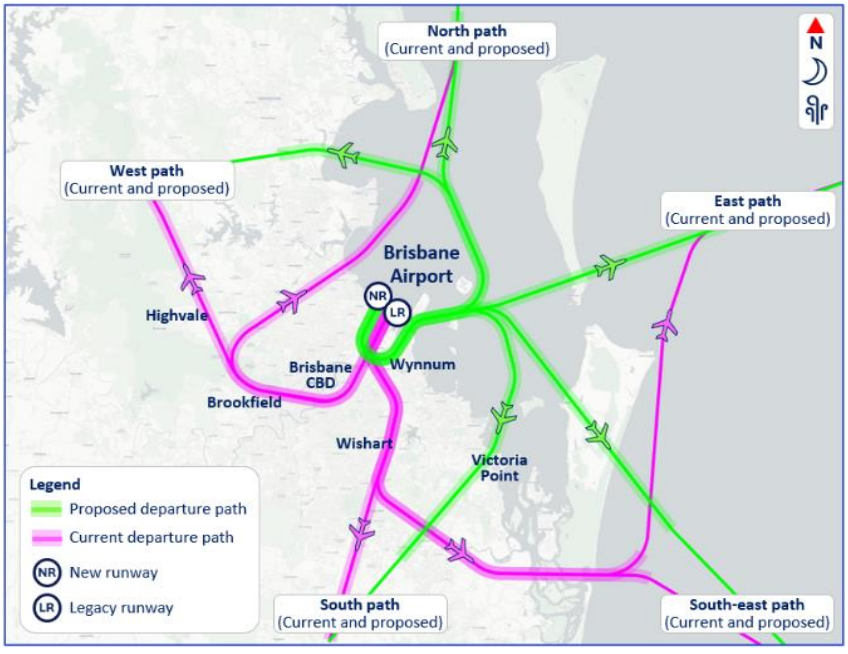

Figure 1: Current (pink) and proposed (green) night-time overland departure paths, with 1km overflight buffer either side

Naming of departure paths

In aviation, departure paths are referred to by waypoint names. A waypoint is a geographical location used to define a point on a flight path. They typically take the form of a five-letter capitalised word. In this information sheet, the departure paths are referred to by the direction that planes are flying in. Some community members may be more familiar with their waypoint names.

North path = BIXAD
West path = WACKO
East path = GUMKI
South path = SANEG
South-east path = SCOTT

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Proposed changes

At night whenever the legacy runway is closed, the new runway has to be used. This change would mean planes would turn shortly after take-off to remain clear of residential areas, tracking over the airport and industrial land to climb over Moreton Bay before joining regular flight paths at different points.

If this option were progressed, SODPROPS would remain the highest priority night-time mode. This new option would be second and only used when winds are blowing from the south. During northerly wind conditions, planes already depart over water.

This new option is explained further below.

Over land departures at night

We engaged on an initial concept in August 2024 for changes to the north and west night-time departure paths over land from the legacy runway. The concept aimed to direct night-time departures over different areas compared to daytime flights by having aircraft fly straight ahead for longer before turning north and west. We also engaged during earlier phases on options to reduce the impact of over land night-time departures on communities.

What the community told us

- Many residents supported efforts to reduce night-time noise over communities already affected by daytime flights.
- Some residents were concerned about shifting night-time departures over runway aligned communities that are already impacted by night-time arrivals and daytime departures.
- Many residents suggested directing all night-time departures over water, which is the current operation when winds are from the north.

During engagement in 2023, a proposal to turn planes early from the legacy runway after take-off, to circle over airport industrial land and then climb over water, had a mixed response. While many supported the idea of turning planes away from runway aligned communities, concerns were raised by communities to the south of the airport about overflight of these areas. Modelling of this earlier option showed fewer people would be overflown but those who were overflown would experience higher noise levels due to the lower altitude of aircraft immediately after departure.

As the new runway is two kilometres northwest of the legacy runway, there is more distance between the runway and communities to the south of the airport, which would avoid planes tracking directly over these residential areas, while providing potential relief to some communities currently overflown during night-time legacy runway use (see **Figure 2**, below).

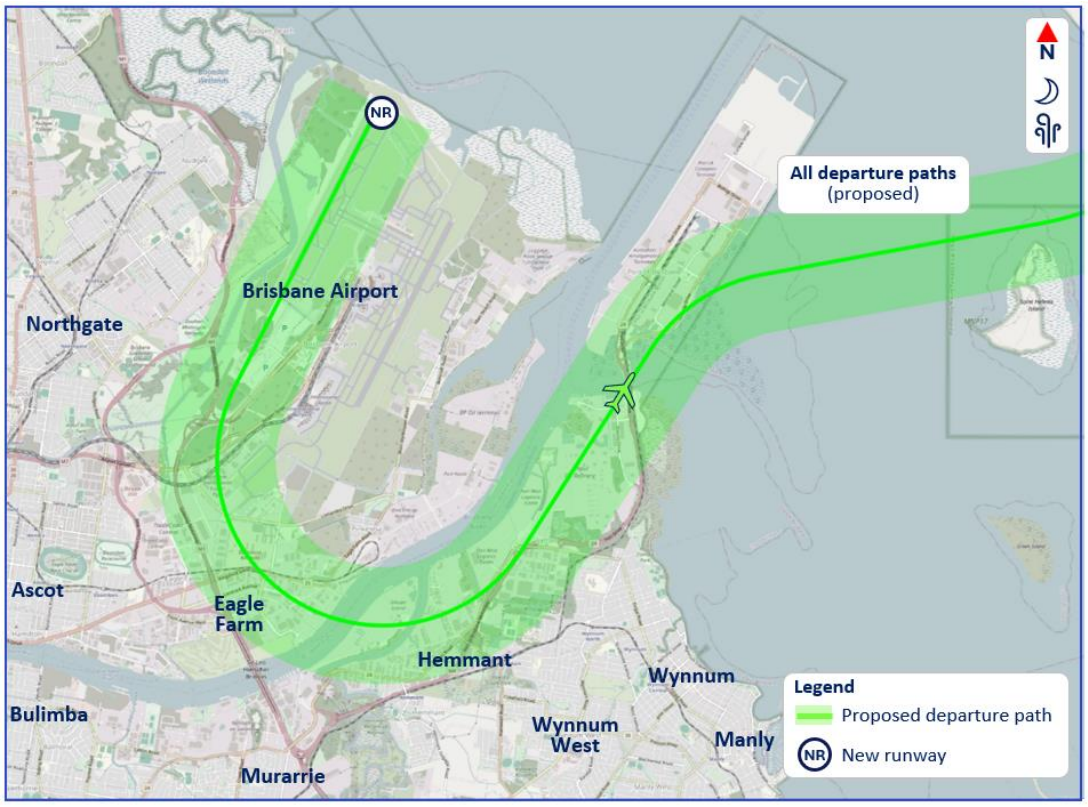

Figure 2: A closer view of the initial section of the proposed night-time over land departure path, with a 1km buffer either side, within which most aircraft would be expected to fly

Testing the proposed turn

Given previous community concerns about proposed early turn departures, we worked with airlines to test how accurately different types of planes (A320, A330, A350, A380, B738 and B777) would follow this preferred flight path centreline. In all simulations, the planes stayed on or inside of the path centreline until they were over water. This shows that the path would generally be expected to be well followed, although there may occasionally be times when a plane makes a slightly wider turn, depending on conditions.

Note: it is not possible for planes to take-off directly over water from the other end of the runway when the wind is blowing from the south, as aircraft operate safest when taking off and landing into the wind.

Opportunity to trial the option

Increased use of the new runway is required when BAC undertakes maintenance of the legacy runway. This will provide the opportunity to trial this proposed option to confirm how it actually operates and if it results in noise improvements for the community. This timeframe required to design and publish new flight paths means the trial could begin during legacy runway maintenance closures in 2026. We would determine next steps based on the results of the runway works trial.

Assessing the trial

Assessment criteria have been identified to assess the trial to determine if it is successful in providing a noise benefit to the community. Please note, there are no safety measures included as safety and regulatory compliance are essential.

Measure	Positive outcome	Assessment method
Aircraft tracking	Aircraft track over airport and industrial land, demonstrated by radar track data. • Target: >80% track over airport and industrial land over the trial period.	Radar track data captured through the Noise and Flight Path Monitoring System (NFPMS) in conjunction with Geographic Information System (GIS) software identifying residential and industrial land
Noise reduction	New runway community night-time noise does not increase • Target: No audible increase (>3dB(A)) in noise level as compared to current night-time departures from 19R Night-time noise reduces for communities • Target: Number of people overflown at 60dB(A) reduced by 20%.	Combination of existing and temporary additional noise monitors within 60dB(A) area (night-time)
Overall noise	Overall aircraft noise (cumulative day and night) decreases for communities • Target: Reduce Lden** for existing night-time communities without increasing Lden for any new communities above the existing baseline. ***Lden: average noise level experienced over a 24-hour period with weightings for day, evening and night.*	Combination of existing and temporary additional noise monitors within 60dB(A) area (night-time)

Comparison of key metrics

Please refer to the *Phase 6 Overview* for general information on key metrics.

How often are the flight paths used at night?

The numbers below are based on night-time operations only, when SODPROPS is not available and when wind is blowing from the south.

Departure path (night-time)	Average number of flights each night	Highest number of flights each night
West departure path	3	9
North departure path	3	9
East departure path	1	4
South departure path	3	13
South-east departure path	<1	3

Table 1: Average daily and peak daily flight numbers for the night-time overland departure paths

Number of people overflown

Note: this metric is from the runway out to 40 nautical miles. This option does not overfly any residential areas at initial departure. It is only when the plane crosses over island communities or after it turns back over the mainland coast, that communities are overflown, noting this would be at higher altitudes.

Departure path (night-time)	Population overflown (current flight paths)	Population overflown (proposed option)	Difference
West departure path	87,500	9900	↓ 77,600
North departure path	136,000	-<100	↓ 135,500
East departure path	62,400	<100	↓ 61,900
South departure path	73,700	26,500	↓ 47,200
South-east departure path	62,400	800	↓ 61,600

Table 2: Comparison of population overflown within 1km buffer either side of the current and proposed departure paths

Noise impacts: population numbers

Departure path (night-time)		Population counts in +60dB noise contours	Difference: proposed vs current	Population counts in +70dB noise contours	Difference: proposed vs current
West departure path	Current	159,700	↓ 137,400	16,200	↓ 16,200
	Proposed	22,300		0	
North departure path	Current	158,300	↓ 136,000	16,300	↓ 16,300
	Proposed	22,300		0	
East departure path	Current	41,100	↓ 18,500	7500	↓ 7500
	Proposed	22,600		0	
South departure path	Current	40,400	↓ 17,600	7600	↓ 7600
	Proposed	22,800		0	
South-east departure path	Current	41,100	↓ 18,700	7500	↓ 7500
	Proposed	22,400		0	

Table 3: Comparison of population numbers in areas +60dB and +70dB; west, north and east night-time departure paths

Noise impacts: contours

The image below shows the modelled noise contours where maximum noise levels are 60 decibels (dB) or more and 70dB or more, based on the most common plane that would use the path. The contours can be viewed and zoomed in on the Brisbane Baseline Model for a closer look at locations within each contour. Please note there is no Environmental Impact Assessment for this proposal as it is a new option, not a preferred option.

Current north and west departure paths

Proposed north and west departure paths

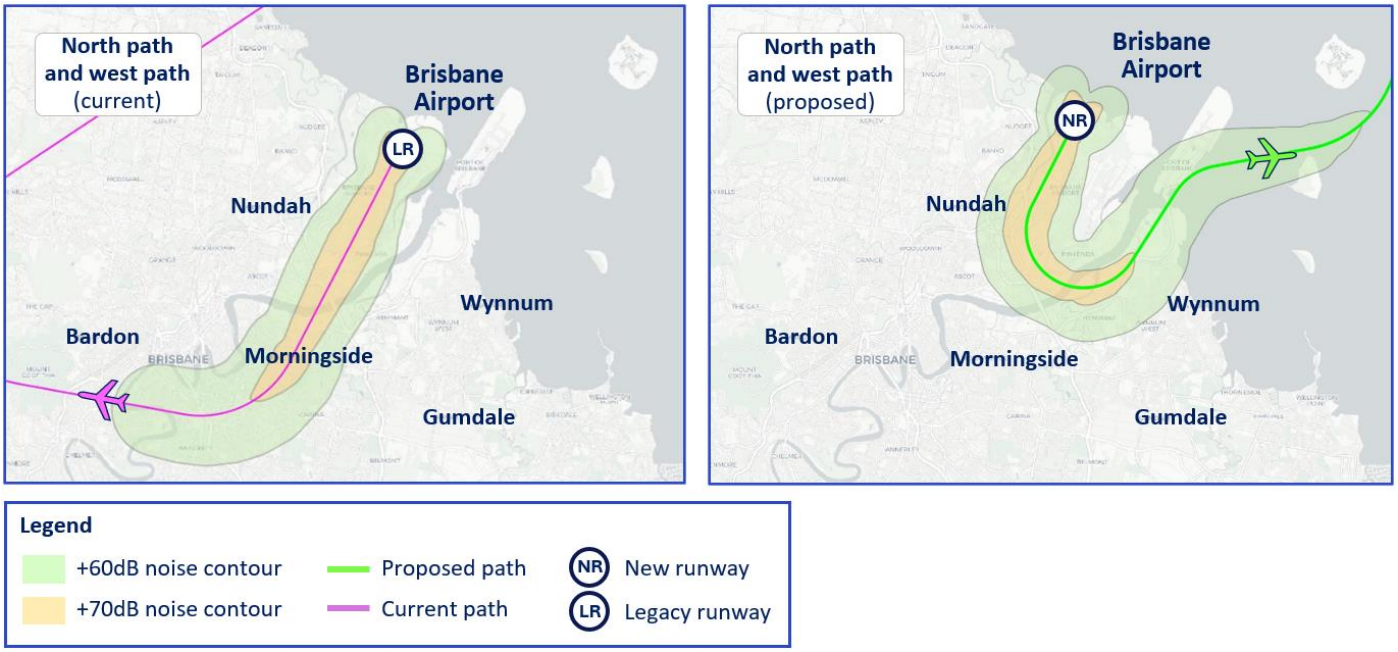

Figure 3: Noise contours of +60dB (green shading) and +70dB (orange shading) are modelled for current (pink line, left images) and proposed (green line, right images) for all night-time departure paths

Current south and south-east departure paths

Proposed south and south-east departure paths

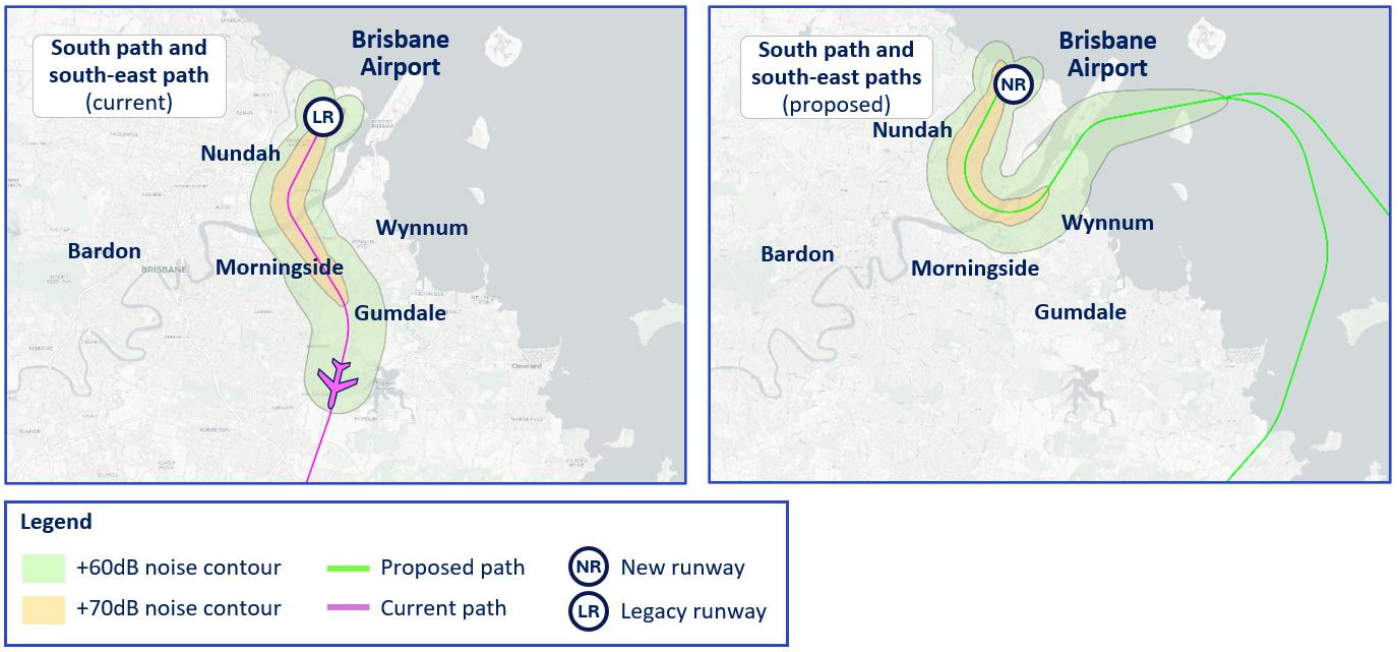

Figure 4: Noise contours of +60dB (green shading) and +70dB (orange shading) are modelled for current (pink line, left images) and proposed (green line, right images) for all night-time departure paths

Aircraft altitudes

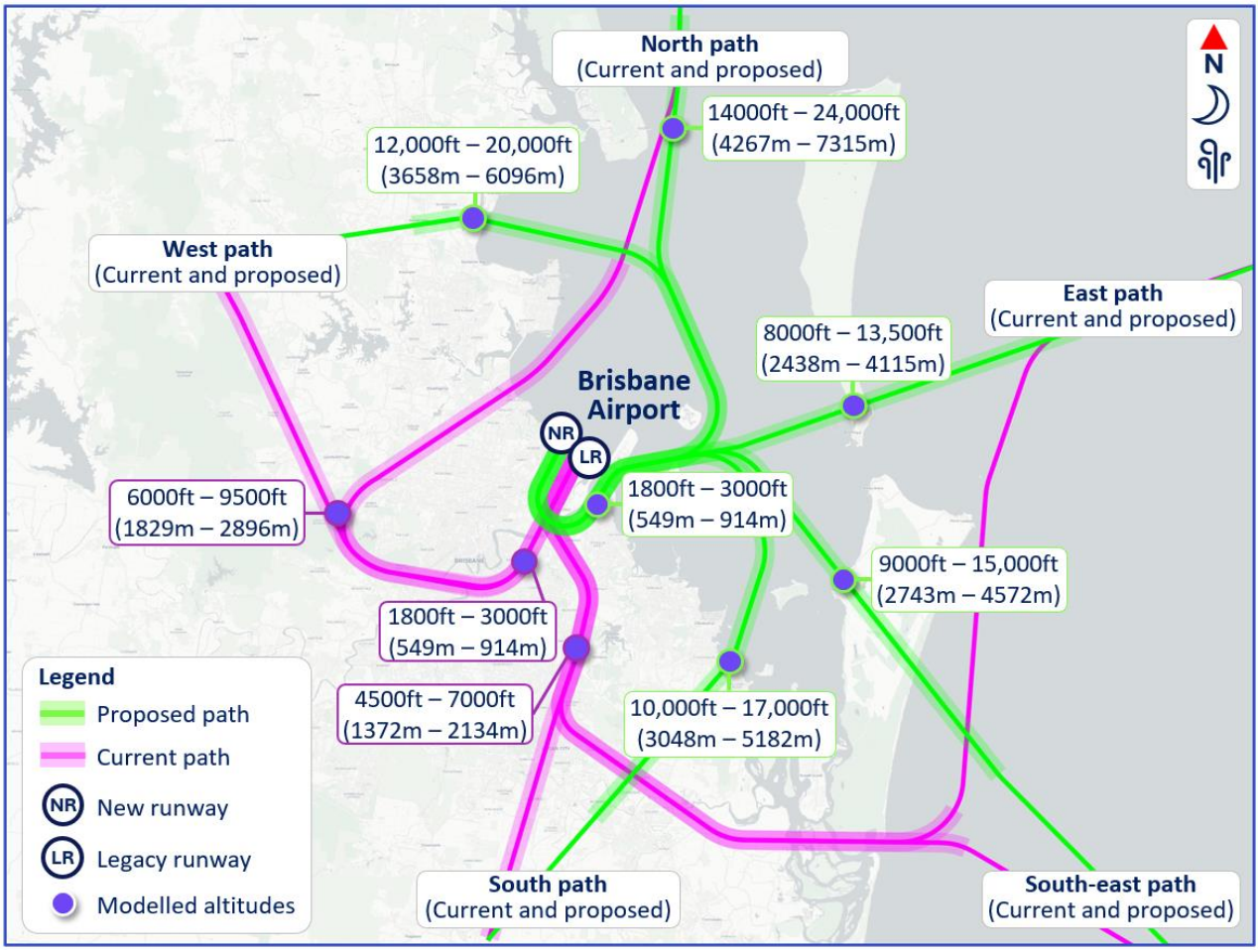

Figure 5: Current (pink) and proposed (green) night-time over land departure paths, with 1km buffers either side

Length of the departure paths

Shorter flight paths can generally be expected to reduce fuel consumption and CO_2 emissions. Please note there is no Environmental Impact Assessment for this proposal as it is not a preferred option.

Departure path (night-time)	Flight path length (NM) (current flight paths)	Flight path length (NM) (proposed option)	Difference
West departure path	35	51	↑ 16
North departure path	61	56	↓ 5
East departure path	79	48	↓ 31
South departure path	28	48	↑ 20
South-east departure path	55	56	↑ 1

Table 4**:** Lengths of current and proposed departure paths

More information

- Brisbane Baseline Model – use interactive maps to look up addresses, zoom in, compare current and proposed flight paths including modelled noise contours, and watch videos of all the options in this round of engagement
- *Phase 6 Overview* – a summary of all options in this round of engagement and methodology for producing key metrics

Next steps

As noted above, we plan to use Brisbane Airport legacy runway works to trial this new option. We will determine next steps after the trial is completed.

Further information will be shared with the community before the runway works that will trial this option commence.

Key questions for community feedback

Please give us your feedback using the **online survey.** If you prefer to provide feedback via email or mail, we encourage you to structure your responses using these key questions:

1. On a scale of 1 (not at all) to 5 (very much), do you think this option:
   - would have a positive noise outcome for the wider Brisbane community 1 2 3 4 5
   - should be used at night when jets can't take off directly over the water 1 2 3 4 5
2. Please explain your rating – what are the main benefits and/or drawbacks of this option that influenced your score?
3. Do you have any other feedback on this proposal?

Feedback closes Sunday 17 August 2025

Contact us:

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