

October 2021



BRISBANE AIRPORT FLIGHT PATHS POST IMPLEMENTATION REVIEW

# ADVISORY FORUM BRIEFING

# OPERATIONAL INFORMATION

## BRISBANE AIRPORT OPERATIONS

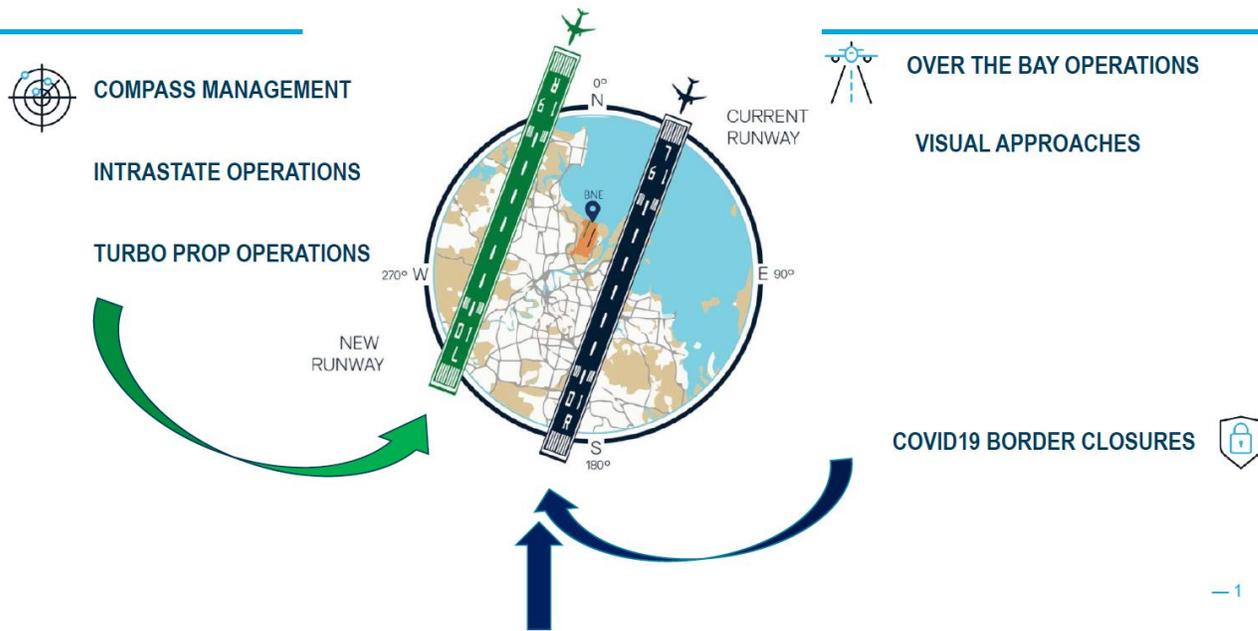
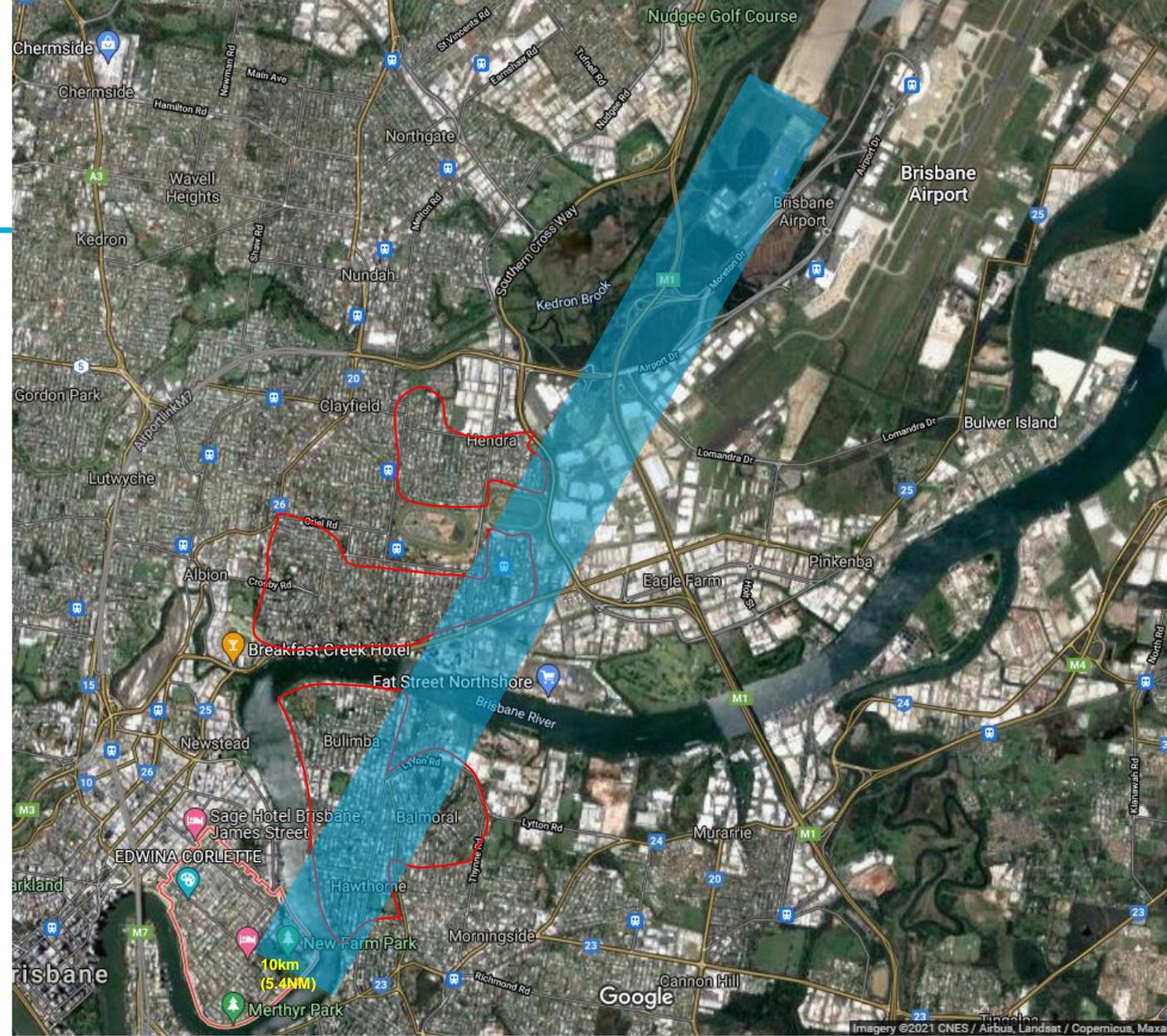


Figure 10.2: Runway Configuration.



# UPDATE

- New runway opened 14 July 2021
- Current operations at 50% of pre-COVID levels
- Pre recent state border closures operations were as high as 75%
- COVID-19 continues to affect operations:
  - movement numbers
  - origin and destination
  - fleet mix
- Higher intrastate travel has resulted in greater use of the new runway
- Suburbs recording the highest complainant volume are:
  - Balmoral
  - Hawthorne
  - Bulimba
  - Hamilton
  - Hendra
- International safety standards require arrivals to be runway aligned 10 to 15km from the runway



# OPTIMISATION ACTIVITY



## TURBO PROP

Turbo prop operations have continued to be monitored. They were part of the Australian Noise Exposure Forecast (ANEF) and N70 calculations.

Airservices implemented a temporary Noise Abatement Procedure to move operations on or south of the river during peak traffic times.

This is aligned with the EIS and community messaging.



## SODPROPS

Airservices continues to maximise Simultaneous Opposite Direction Parallel Runway Operations (SODPROPS) at night to increase over-the-bay operations.

Data shows >25% of all SODPROPS operations have occurred outside the hours of 10pm and 6am, including up to 9.30am on some mornings.

## HEIGHTS AND FREQUENCY OF OPERATIONS

Airservices is reviewing the utilisation of flight paths, frequency of operations and heights of aircraft across several communities including:

- Samford
- Upper Brookfield
- New Farm
- Bulimba/Balmoral



## 10 KNOT TAILWIND

BAC, with Airservices support, submitted a proposal for consideration by the Civil Aviation Safety Authority (CASA), to extend the tailwind criteria for runway use from 5 to 10 knots (KT) to enable increased over-the-bay operations.

The 10KT tailwind criteria was included in the EIS, but has been refused by CASA. Discussions continue around a 7kt limit.



## NADP MONITORING

Monitoring of Noise Abatement Departure Procedures (NADP) to ensure height compliance of operations over community.

# POST IMPLEMENTATION REVIEW

## Two phase review

**Phase one:** COVID affected operations  
*July 2021 – mid to late 2021*

**Phase two:** Post COVID-9 operations  
*timing to be determined\**

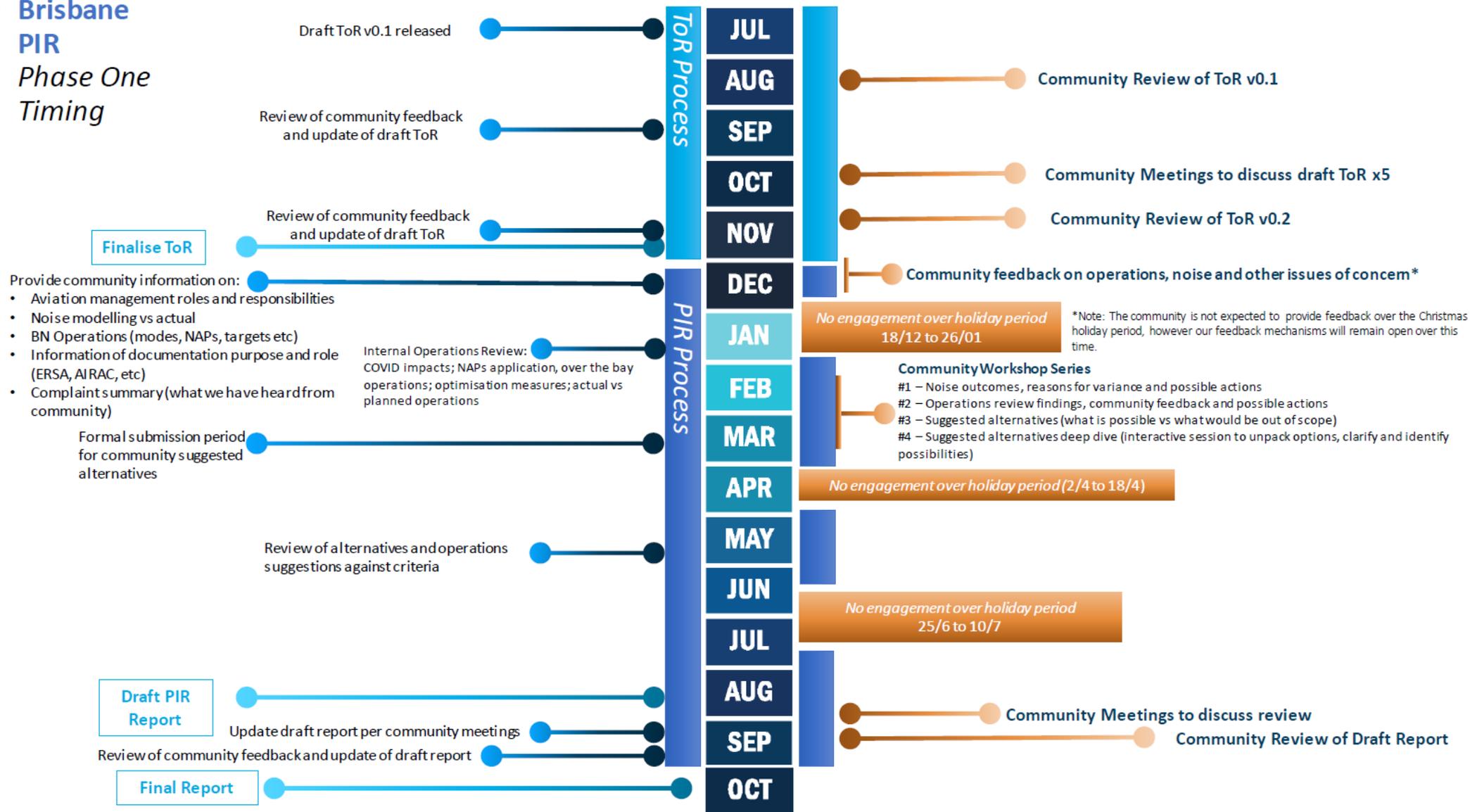
*\* Post COVID-19 operations to be assessed during phase one. This will be used to determine timing for phase two.*

## Review focus

- Actual noise levels compared to modelled Airservices final flight path design environmental assessment projections
- Airservices aircraft noise and operations information tools effectiveness
- Opportunity to minimise the impact of aircraft operations, including consideration of community suggested alternatives
- Industry feedback, including consideration of suggested alternatives
- Impact of COVID-19 on projected operations including future projections
- Review of opportunities to increase over the bay operations
- Review of parallel runway operations
- Opportunities for greater noise sharing and reduced concentration of movements
- Review of optimisation measures since runway opening
- Review of noise monitor locations
- Review of opportunities to disperse movements over communities further away from the airport

# ENGAGEMENT PROGRAM (DRAFT FOR DISCUSSION)

## Brisbane PIR Phase One Timing



# UPCOMING ENGAGEMENT

## Community information sessions

**Date: Wednesday, 13 October 2021**

Time: 5.30pm – 7.30pm

Venue: Norman Park Sports & Community Club

**Date: Friday, 15 October 2021**

Time: 5.30pm – 7.30pm

Venue: View Brisbane, Hamilton

**Date: Monday, 18 October 2021**

Time: 5.30pm – 7.30pm

Venue: Brookfield Hall

**Date: Saturday, 23 October 2021**

Time: 3.00pm – 5.00pm

Venue: Samford Farmer's Hall

**Date: Wednesday, 27 October 2021**

Time: 5.30pm – 7.30pm

Venue: Norman Park Sports & Community Club

*(additional session added due to first session being oversubscribed)*

## Terms of Reference

**30 July to 5 September 2021** – public review period

— 136 submissions received

**25 October to 14 November 2021** – second public review period

— Updated draft Terms of Reference available for a second round of review

**30 November 2021** – finalise Terms of Reference and commence PIR

## Changes made to Terms of Reference

— Additional items added to scope

— Additional stakeholders added

— Definitions of technical terms added

# ANO INVESTIGATION REPORT

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- ANO received 265 submissions
- Report to be released this week:
  - Three findings
  - Four recommendations

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25 October 2021



BRISBANE AIRPORT FLIGHT PATHS POST IMPLEMENTATION REVIEW

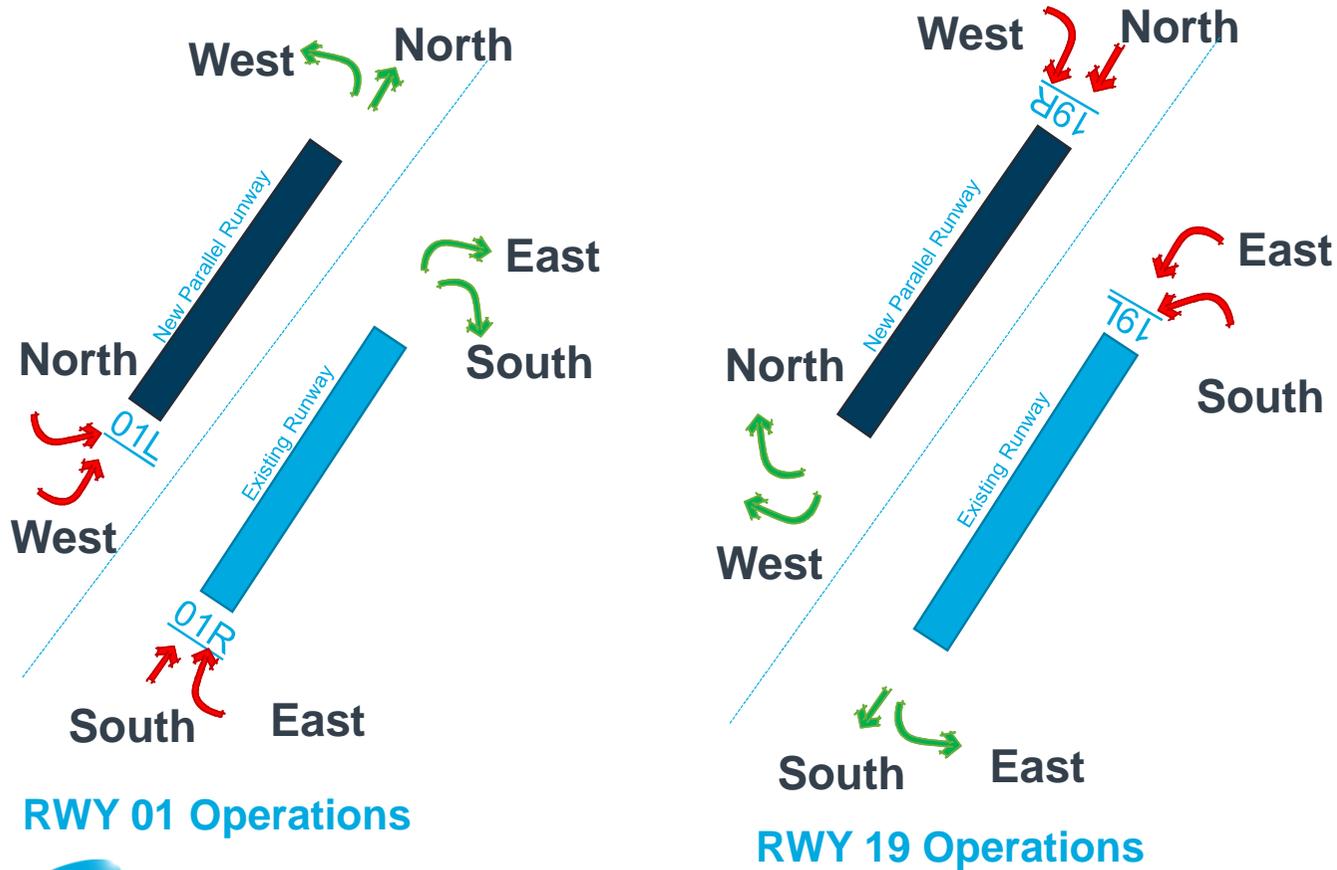
# ADVISORY FORUM BRIEFING

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# OPERATIONS INFORMATION

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# COMPASS ARRIVALS AND DEPARTURES

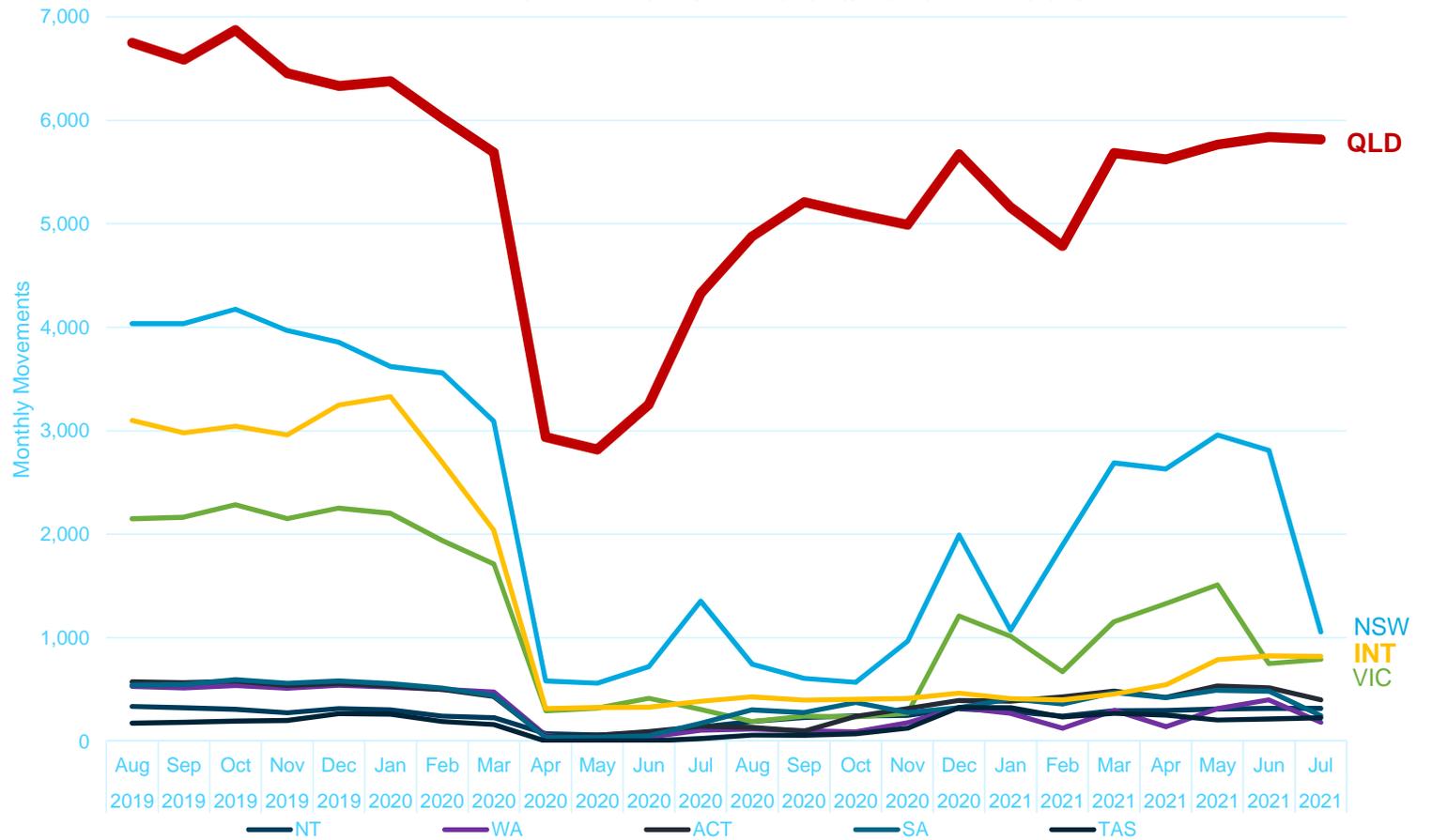


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- NT and TAS traffic are operating close to Pre-Covid levels
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BRISBANE AIRPORT OPERATIONS TO/FROM OTHER REGIONS



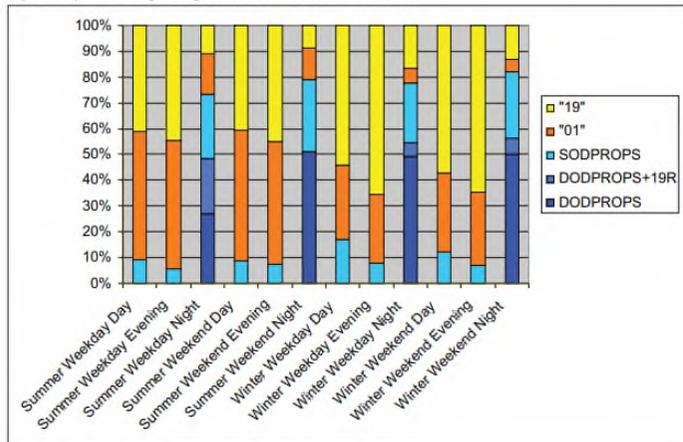
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# OVER THE BAY - EIS vs ACTUAL

Previously presented EIS information – updated in response to community feedback

Figure 5.2j: Percentage Usage of Modes, Year 2015 with NPR.



**EIS**  
Average mode usage  
projection

Night time: ~76%  
24 hours: ~66%

\*Based on 2015 projections

## EIS Supplementary Report Percentage of movements (flights)

Summer weekday: 50% - 85%\*  
Winter weekday: 50% - 90%\*

Higher percentages at night (10pm to 6am)

\* Assumed a 10 knot tailwind

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Night time: 72.8%\*  
24 hour: 52.7%\*

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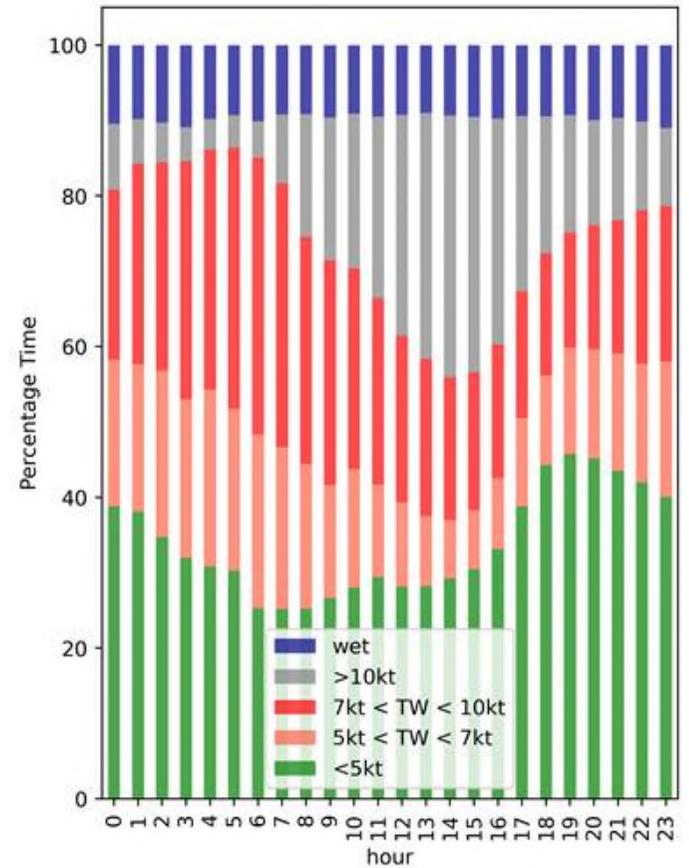
\* Applying a 5 knot tailwind

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# 5 KNOT VS 10 KNOT TAILWIND LIMIT

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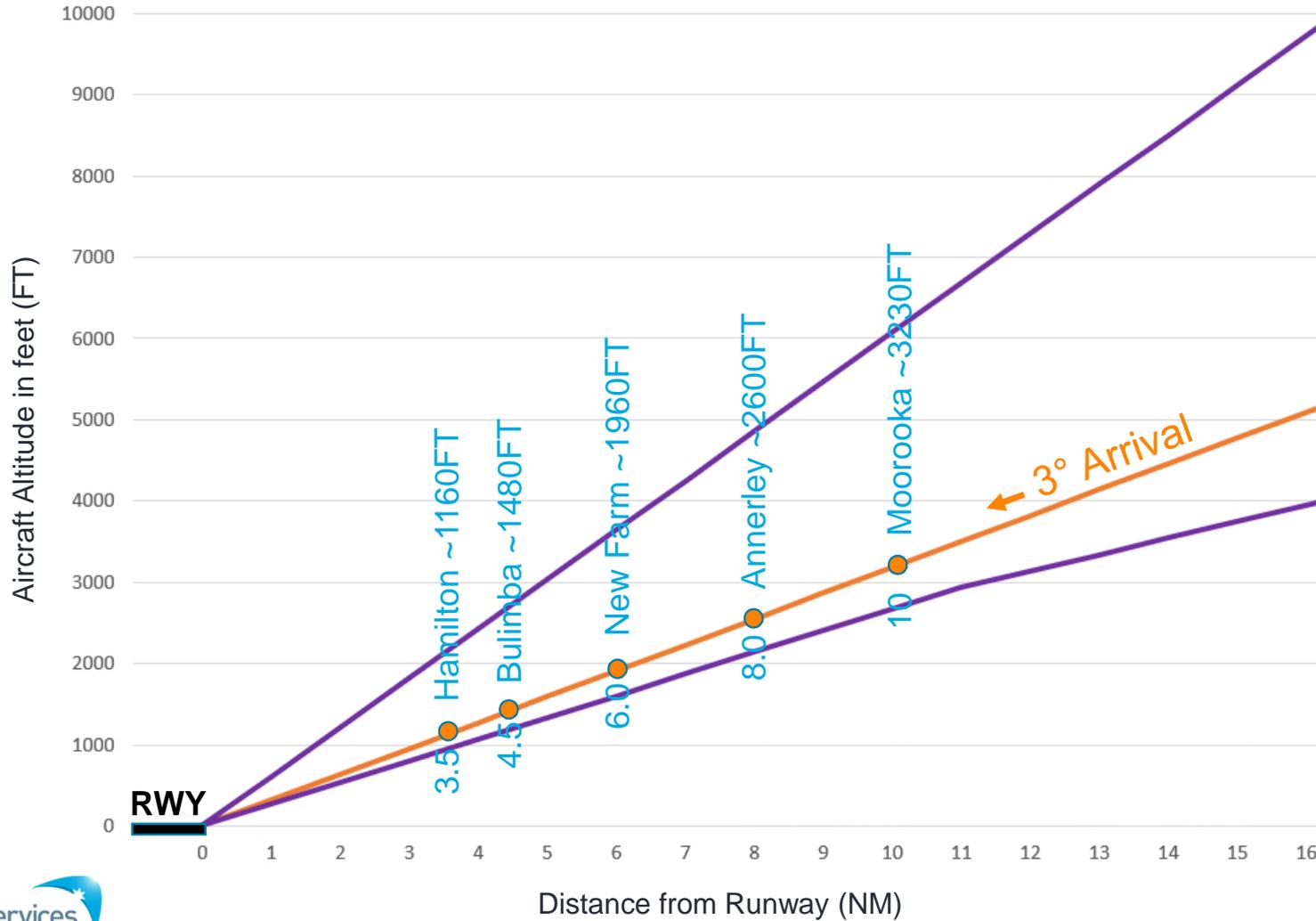
Brisbane Airport  
SODPROPS conditions



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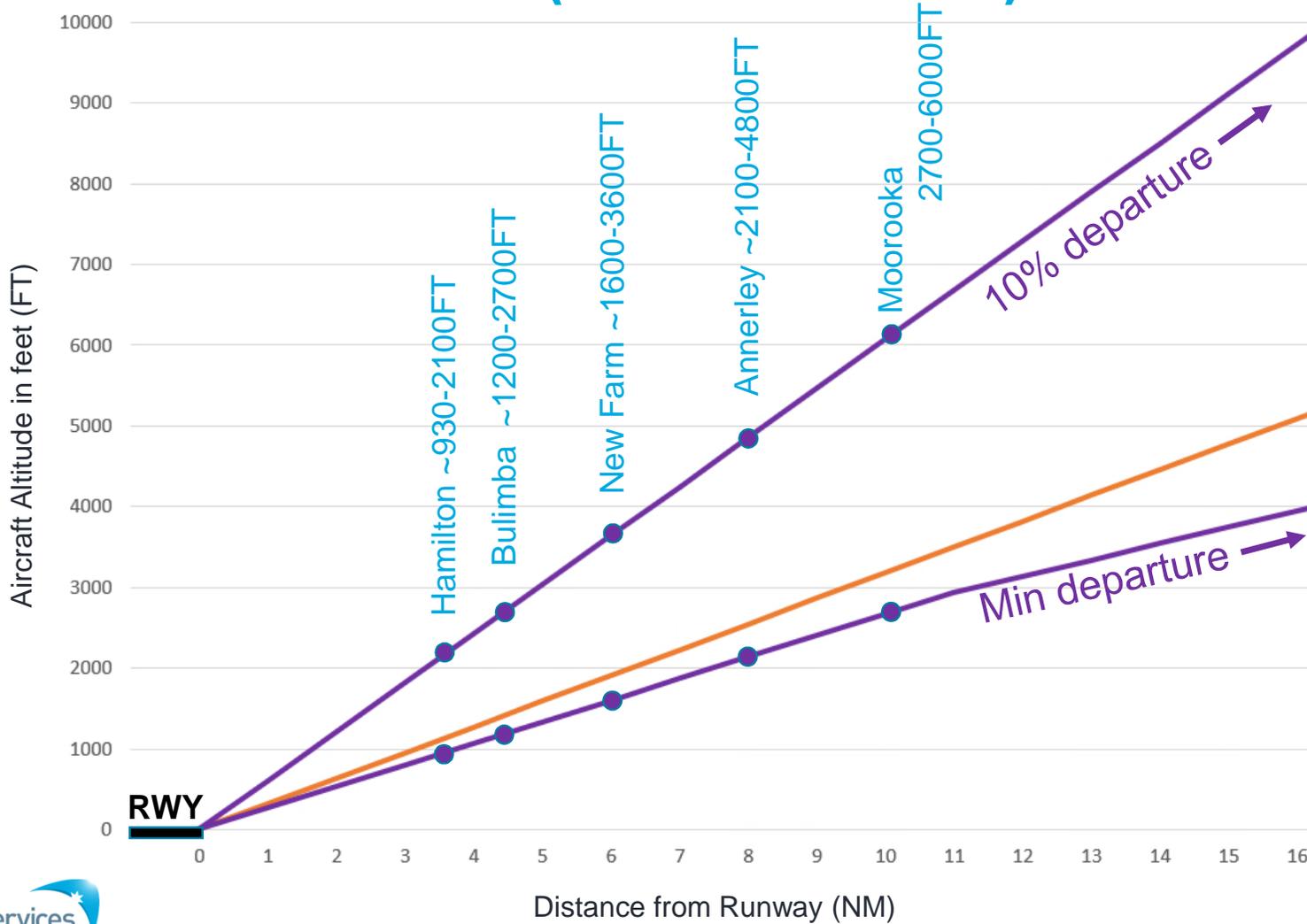
# FLIGHT PATH DESIGN

# DESCENT PROFILE (ARRIVALS)



Aircraft arrive on 3° slope  
3° is International Standard  
Maximum arrival is 3.5°  
International guidance does not permit increasing gradient for noise abatement.  
10NM (18.5KM) Standard distance of straight arrival

# ASCENT PROFILE (DEPARTURES)



Minimum departure protects against terrain and obstacles. 4.4% to 3000FT then 3.3%

10% is a gradient reached by high performing aircraft

Publishing gradients steeper than ~6% are subject to some aircraft not being able to reach altitude requirements.

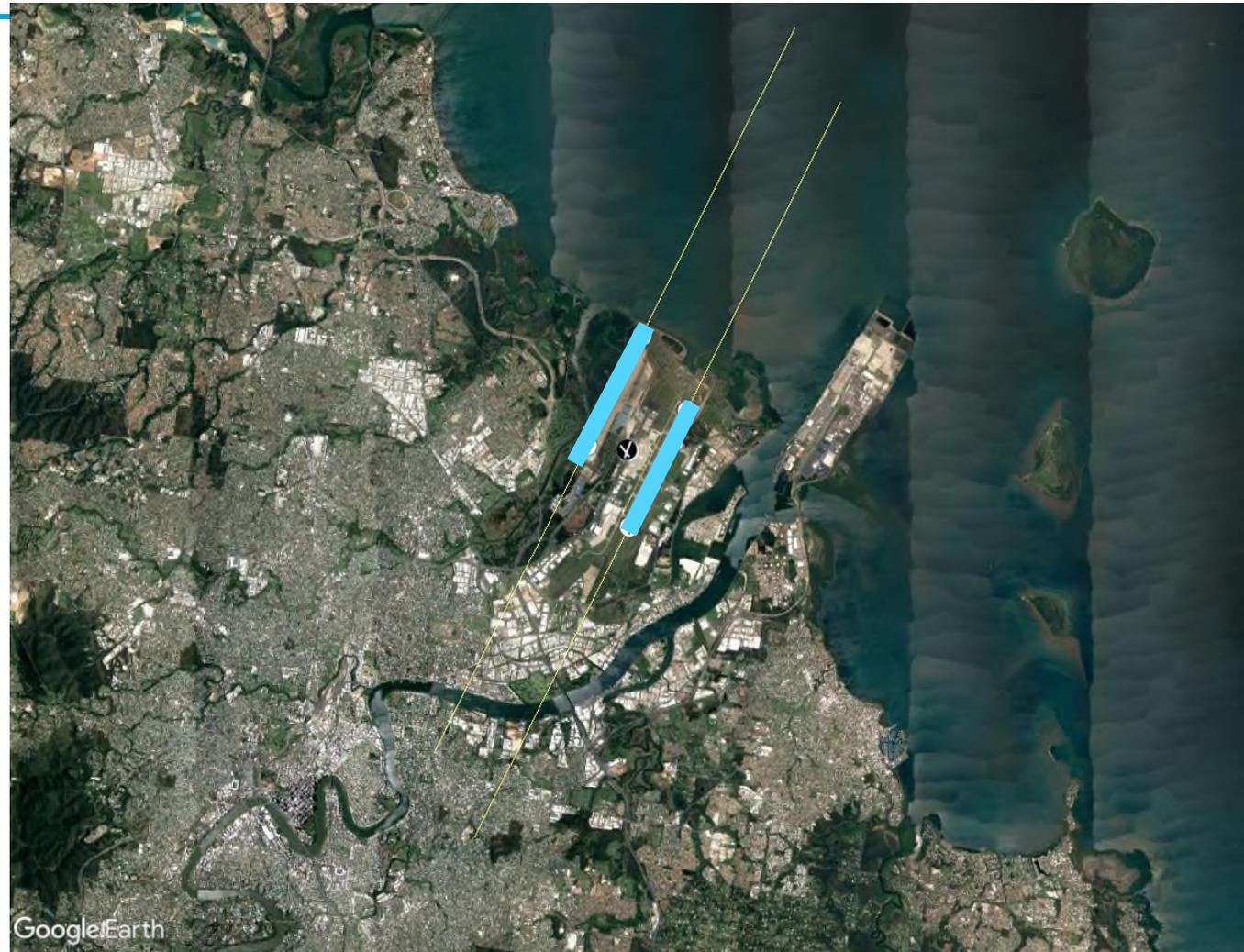
Few aircraft will depart along the minimum gradient line. Average will be 6-9%

4.4% = 2.52°  
10% = 5.7°

# RUNWAY DIRECTION

## THE CONCRETE CONSTRAINT

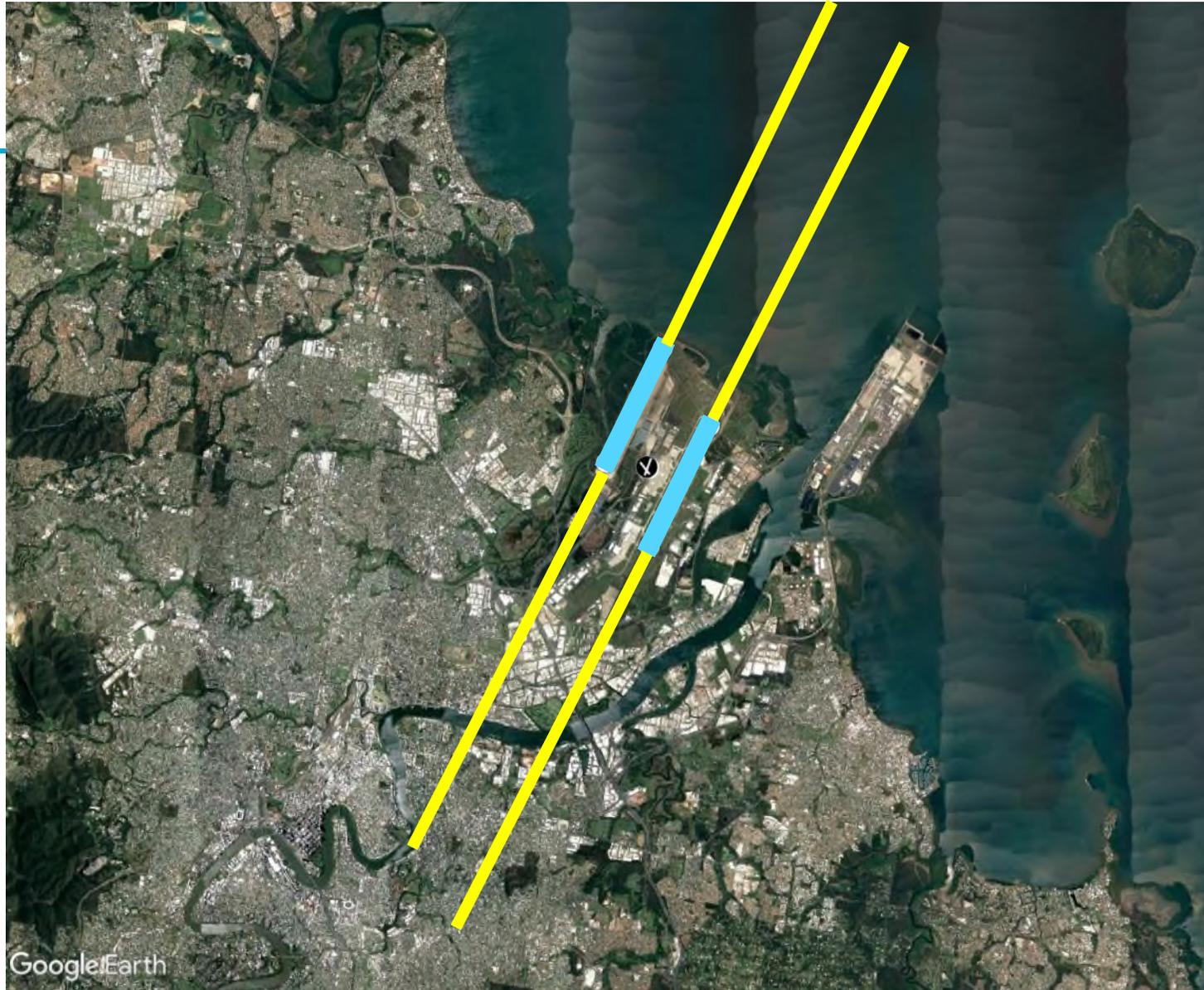
- The original runway (01R / 19L) opened in March 1988
- BAC began the approval process for the establishment of the new parallel runway in 2005 due to forecast air traffic levels.
- The runways are main determining factor for positioning flight paths.
- For info RWY19 = 196°, RWY01 = 016°



# FINAL APPROACH

## WORKING FROM TOUCHDOWN, BACK

- Aircraft must be runway-aligned for some distance on approach to land safely
- Three main approach types are used in Brisbane
- Consider separation between simultaneous parallel runway approaches
- This alignment requirement and parallel runway separation led to new flight paths being required.

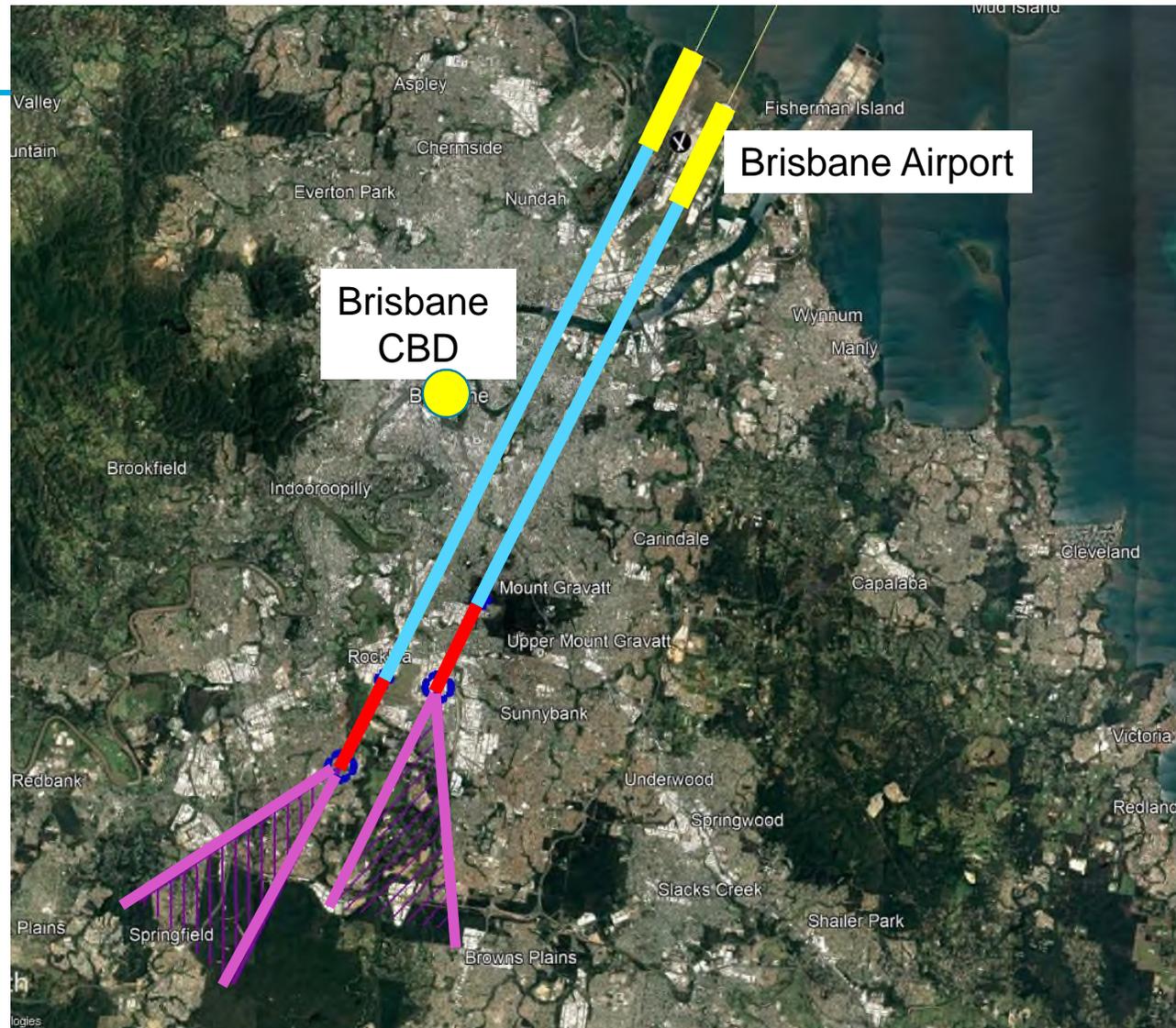


# LOW VISIBILITY OR GUIDED APPROACHES

## LOW SIDE / HIGH SIDE

- **RNAV:** GPS guidance approach
- **ILS:** Ground aid guidance approach
- Common starting point required by ATC
- **Blue** is the final approach (3°CDO)
- **Red** is the 2NM (3.7KM) level segment to prepare
- **Purple** is the region aircraft join for independent approaches
- **3000/4000FT** Join altitude for independent separation. (915/1220m)

\*RWY01 approaches only pictured, RWY19 over bay arrivals are the same

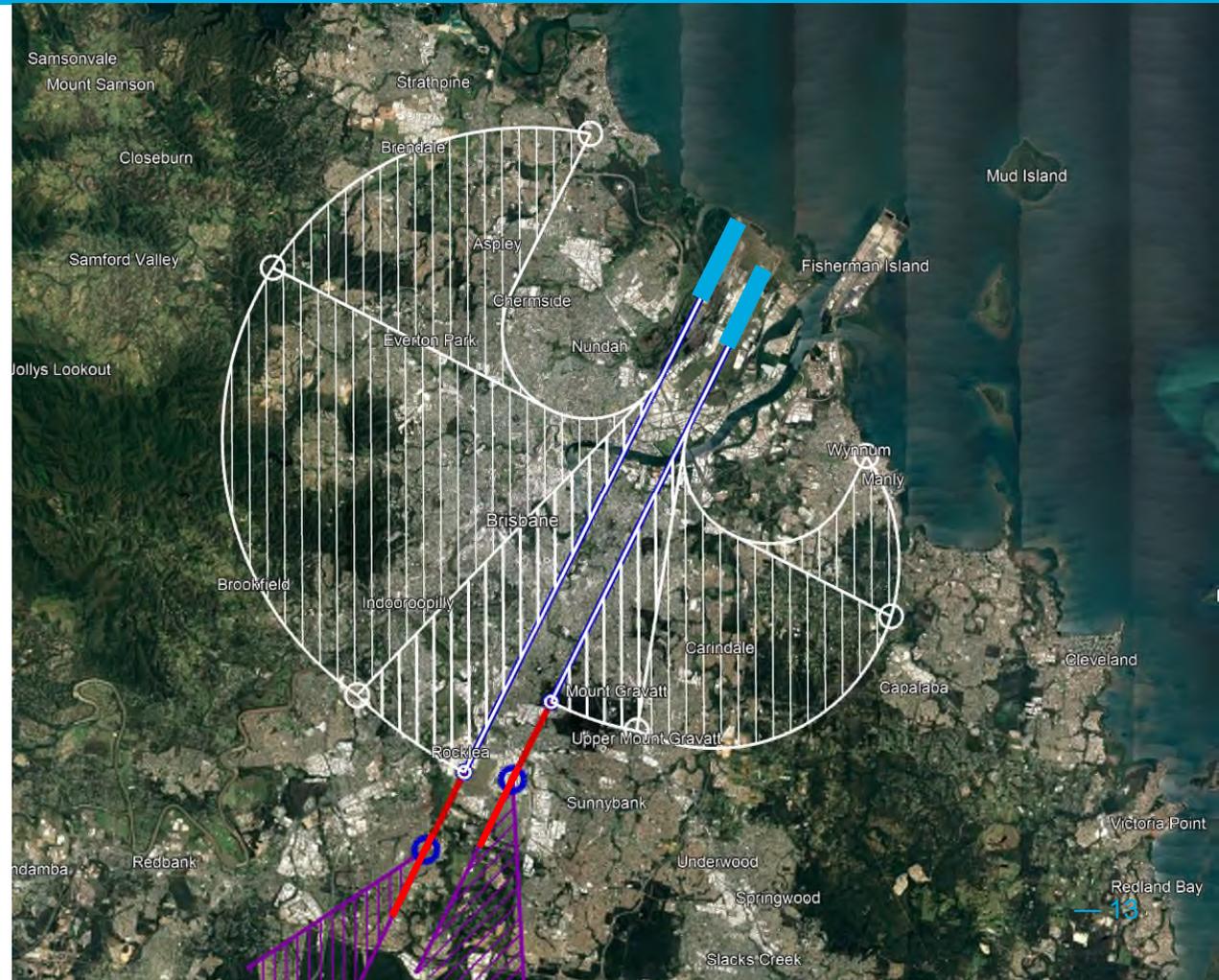


# CURVED ARRIVAL FLIGHT PATHS

## CURVED SHORT APPROACH

- **RNP-AR:** Required Navigation Performance – Authorization Required.
- New procedure style with much short aligned final segment
- No available to all aircraft/ all operators.
- Approach can join in hatched area
- Must consider other operations in the area.

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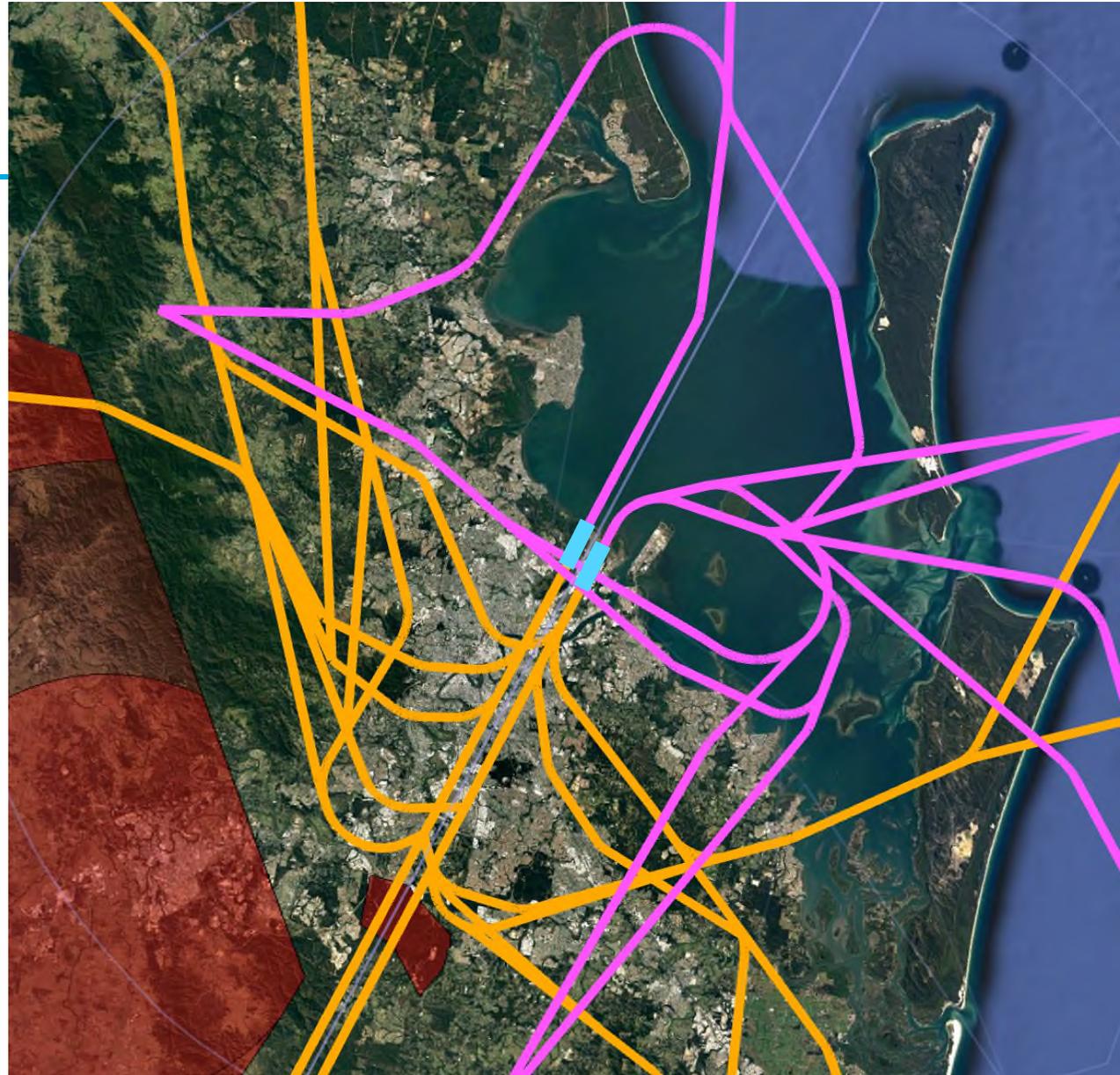


# SIDS AND STARS

## TERMINAL AREA CONGESTION

- This image shows all tracks in use for RWY01 mode.
- **SID** – Standard Instrument **Departure**  
Connects the runway, to the route that will take the aircraft to the destination.
- **STAR** – Standard Arrival Routes  
Connects the aircraft from the route it has arrived on, to the approach procedure onto the runway.

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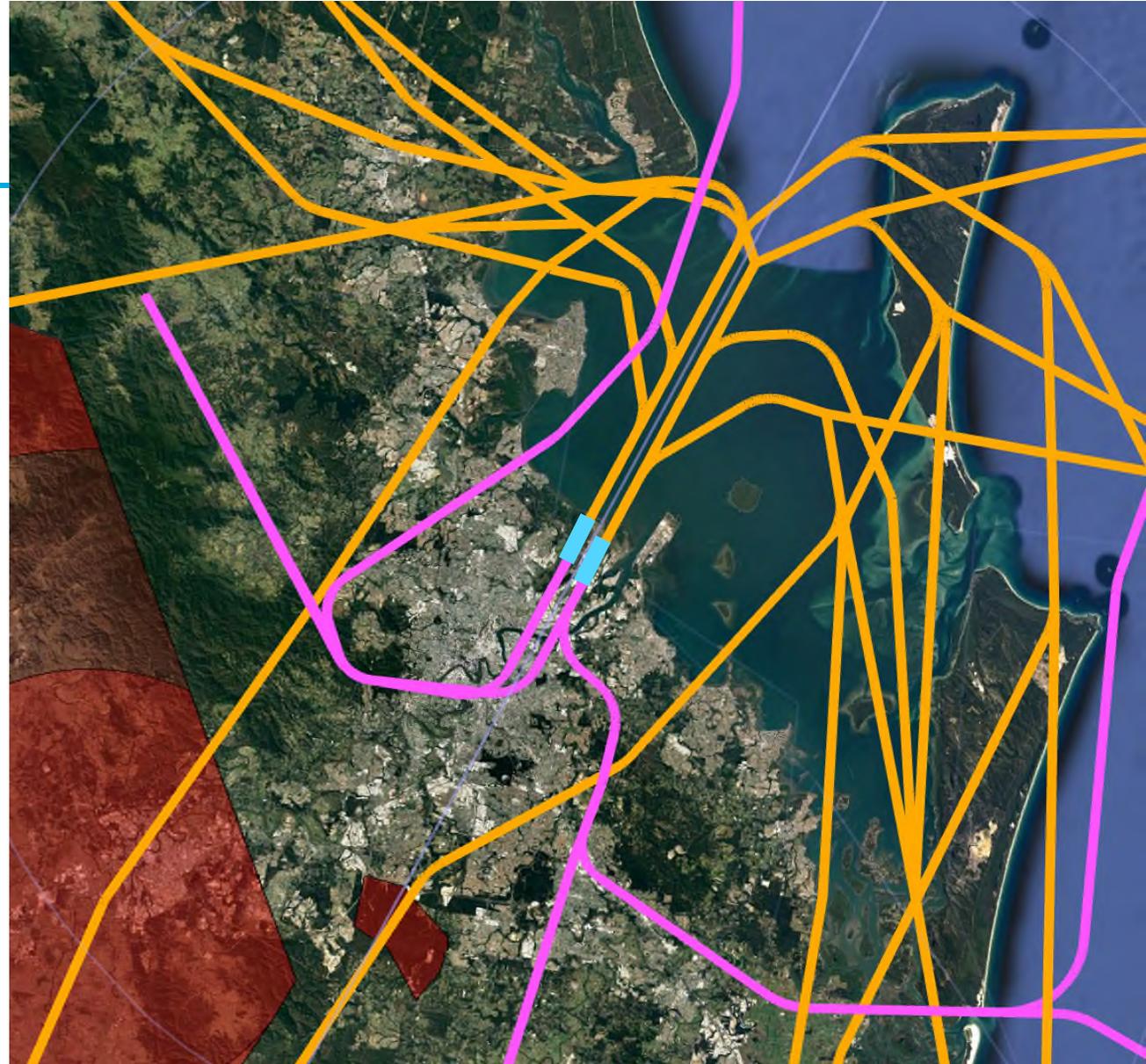


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## TERMINAL AREA CONGESTION

- Complexity of RWY19 Mode
- Restricted areas are shown in Red.
- All **Arrivals** and **Departures** are separated either vertically or laterally for safety and ease of management of the airspace by Air Traffic Control.
- All **Arrivals** and **Departures** have Continuous Climb or Continuous Descent procedures prioritised for efficiency.
- Invisible considerations include emergency break-out procedures and missed approach procedures.

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THANK  
YOU



s 47F

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**From:** s 47F  
**Sent:** Tuesday, 26 October 2021 4:07 PM  
**To:** MCCLURE Phil; s 47F  
**Cc:** BAPAF; Government Relations; s 47F  
**Subject:** FW: Brisbane PIR Advisory Forum meeting slides  
**Attachments:** 211025\_Brisbane PIR Advisory Forum meeting (updated with departure profiles).pptx

OFFICIAL

Hi Phil s 47F

Please find attached a copy of the presentation from s 47F presented at the Advisory Forum yesterday.

Regards

s 47F



s 47F

**From:** s 47F  
**Sent:** Monday, 25 October 2021 1:50 PM  
**To:** s 47F  
**Cc:** Government Relations  
**Subject:** RE: Any presentations for the BAPAF meeting today? [SEC=OFFICIAL]  
**Attachments:** 211025\_Brisbane PIR Advisory Forum meeting FINAL.pptx

OFFICIAL: Sensitive

Hi s 47F

Presentation attached. Please note the last three slides are "just in case" questions are asked, so don't need to be used if not needed. This is anything after the "Other Information" title slide.

s 47F

s 47F

s 47F



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**From:** s 47F  
**Sent:** Monday, 25 October 2021 1:02 PM  
**To:** s 47F  
**Subject:** RE: Any presentations for the BAPAF meeting today? [SEC=OFFICIAL]

**OFFICIAL**

All good 😊

OFFICIAL

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**From:** s 47F  
**Sent:** Monday, 25 October 2021 1:59 PM  
**To:** s 47F  
**Subject:** RE: Any presentations for the BAPAF meeting today? [SEC=OFFICIAL]

OFFICIAL

Hi s 47F

I am just getting the information on descent profiles finalised and will have it ready then. Can I send it about 1.30 Brisbane time?

s 47F

s 47F

s 47F



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**From:** s 47F <[s 47F@infrastructure.gov.au](mailto:s 47F@infrastructure.gov.au)>  
**Sent:** Monday, 25 October 2021 11:21 AM  
**To:** s 47F  
**Subject:** Any presentations for the BAPAF meeting today? [SEC=OFFICIAL]

OFFICIAL

Hi s 47F,

Hope you are well. If you have a presentation for the BAPAF meeting this afternoon, we have functioning IT this time – I am able to share it on the screen if you can send it through in advance.

Regards

s 47F

s 47F

Director • QLD & NT Airports, Airport Building Control & Safeguarding • Airports Branch

s 47F @infrastructure.gov.au

s 47F

GPO Box 594 Canberra, ACT 2601

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

infrastructure.gov.au



*I would like to acknowledge the traditional custodians of this land on which we meet, work and live.*

*I recognise and respect their continuing connection to the land, waters and communities.*

*I pay my respects to Elders past and present and to all Aboriginal and Torres Strait Islanders.*

**OFFICIAL**

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Disclaimer

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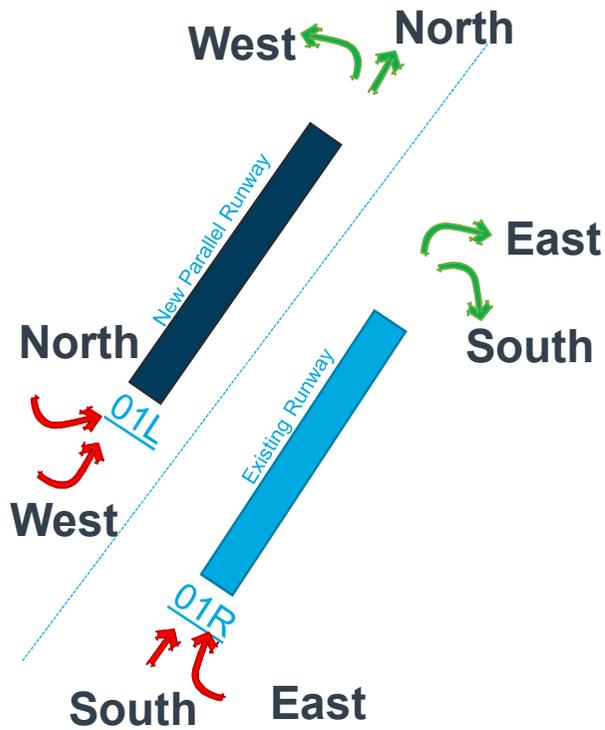
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# OPERATIONS INFORMATION

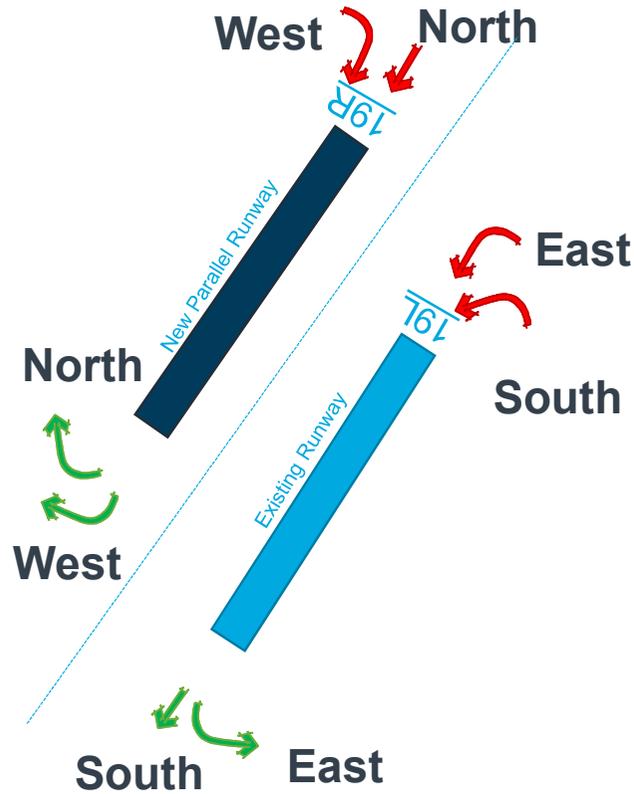
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# COMPASS ARRIVALS AND DEPARTURES



**RWY 01 Operations**



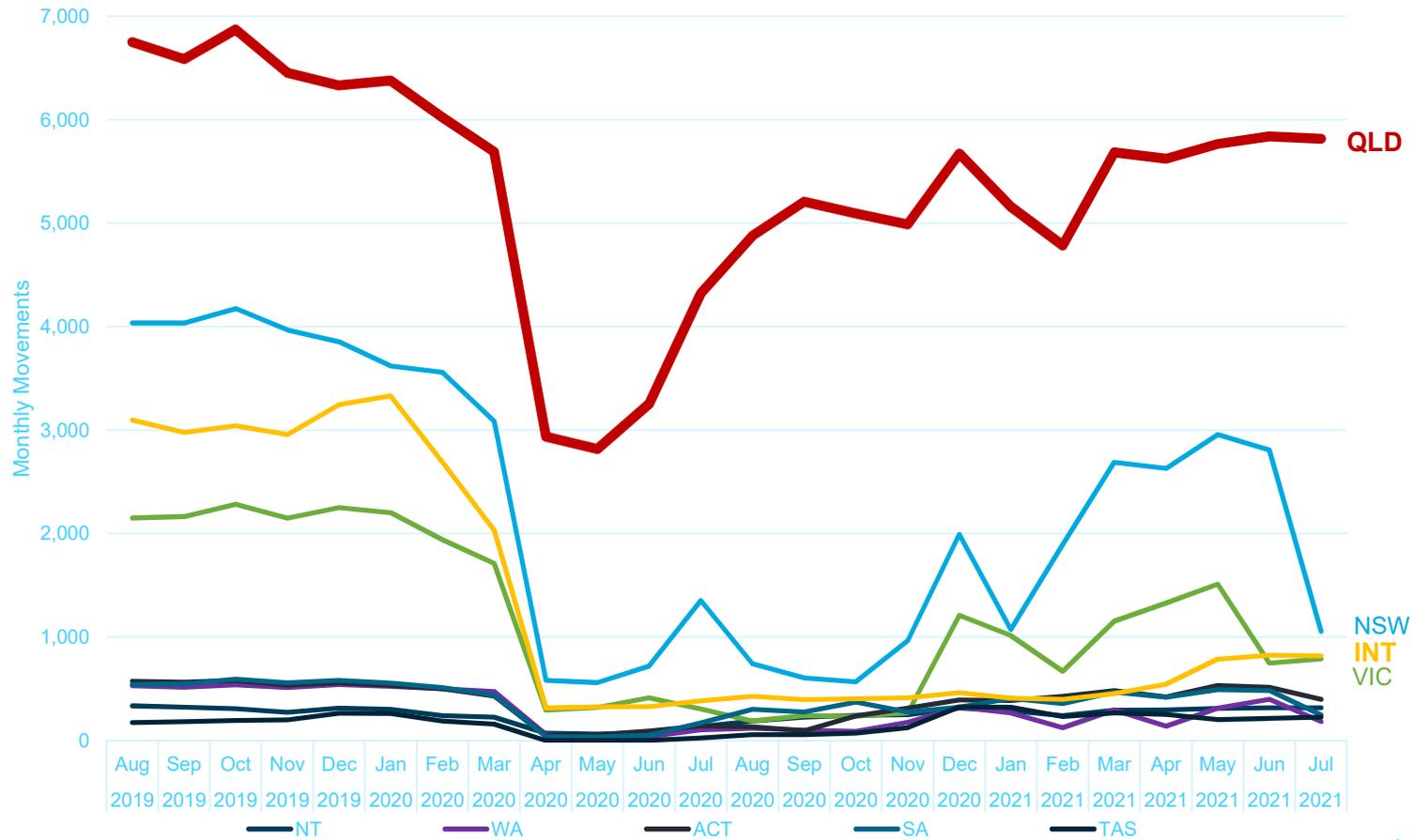
**RWY 19 Operations**

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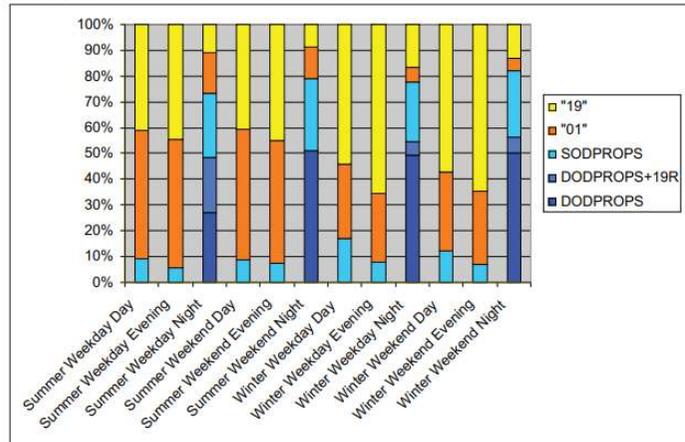
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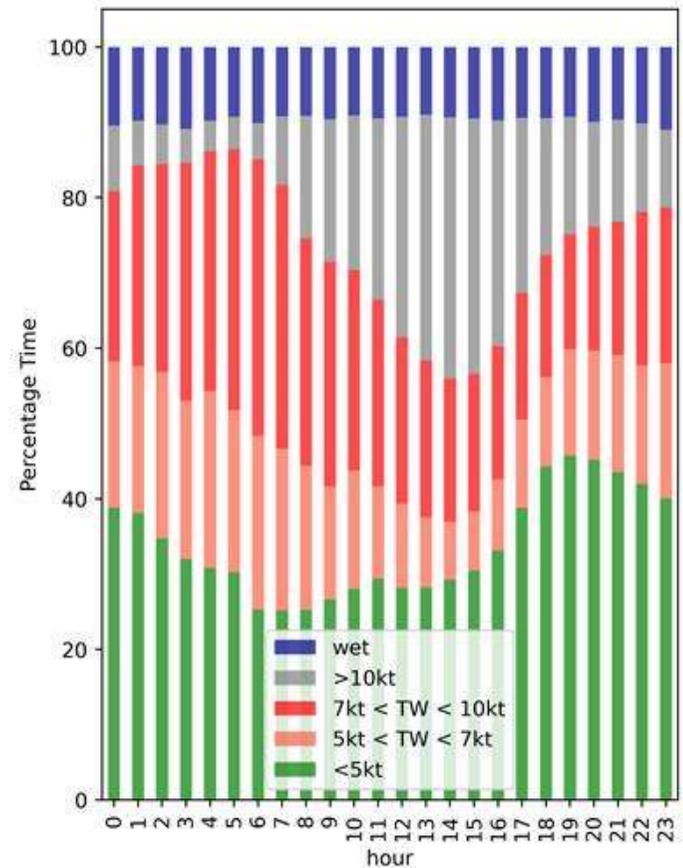
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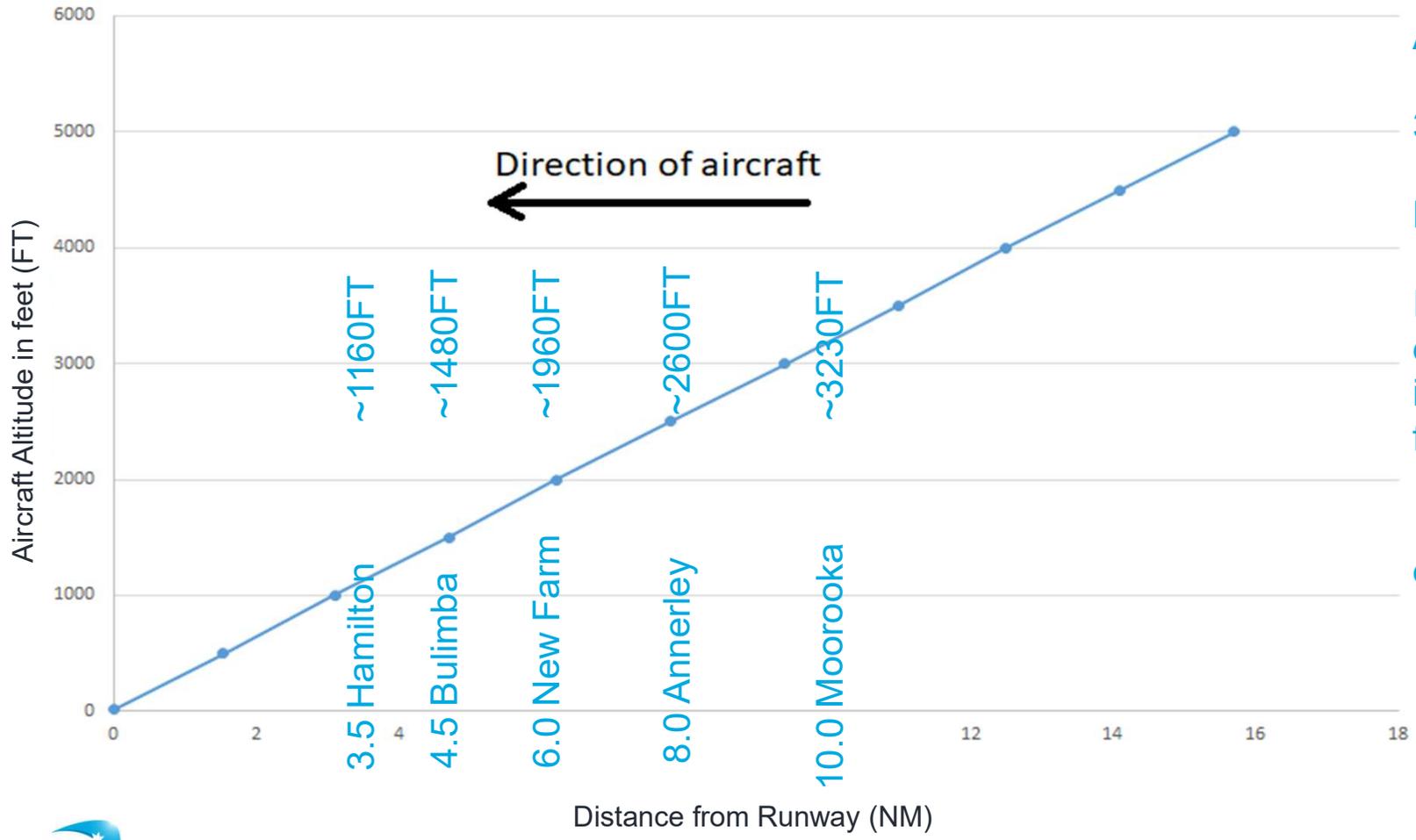


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# FLIGHT PATH DESIGN

# DECENT PROFILE

Aircraft Descent Profile



Aircraft arrive on 3° slope

3° is International Standard

Maximum arrival is 3.5°

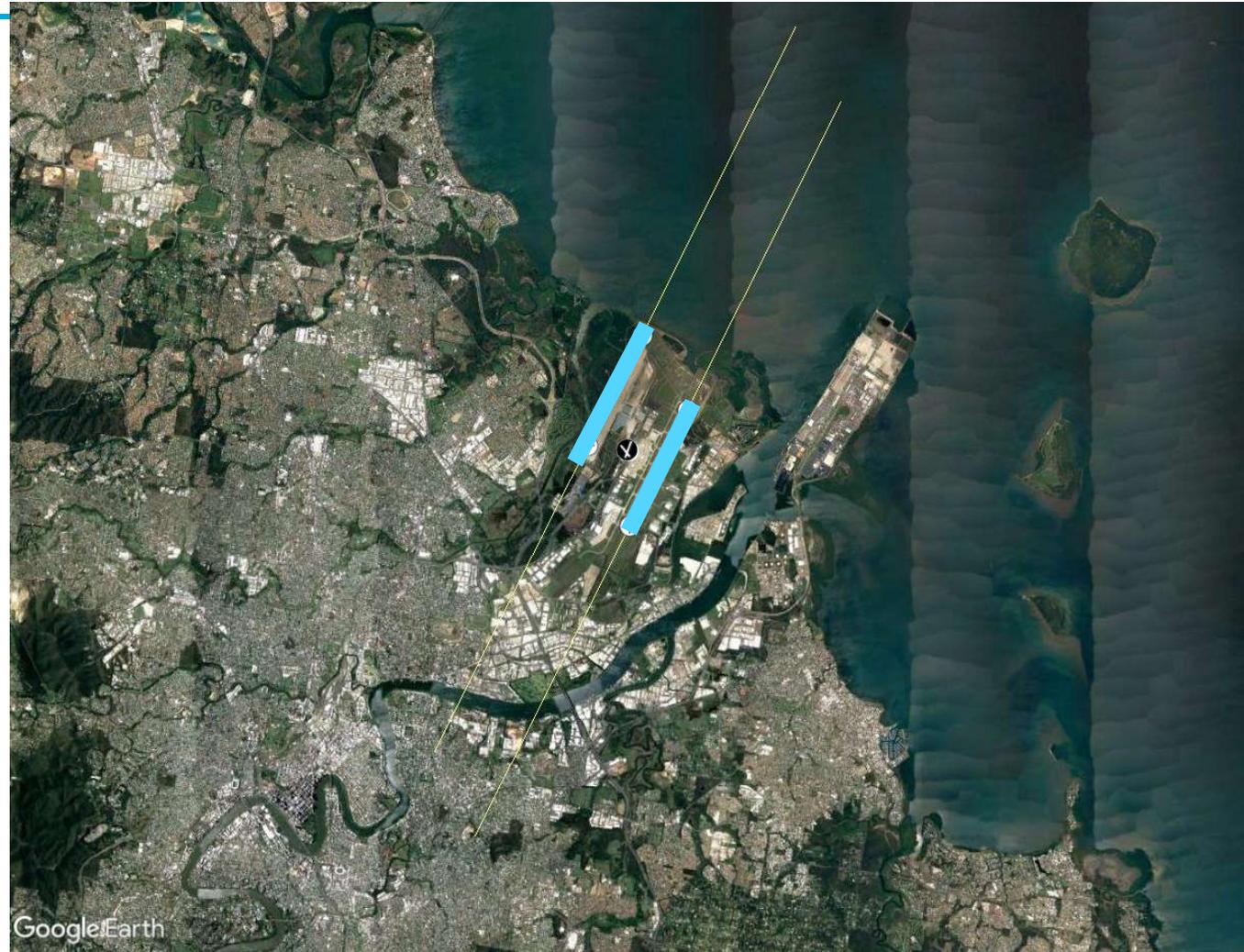
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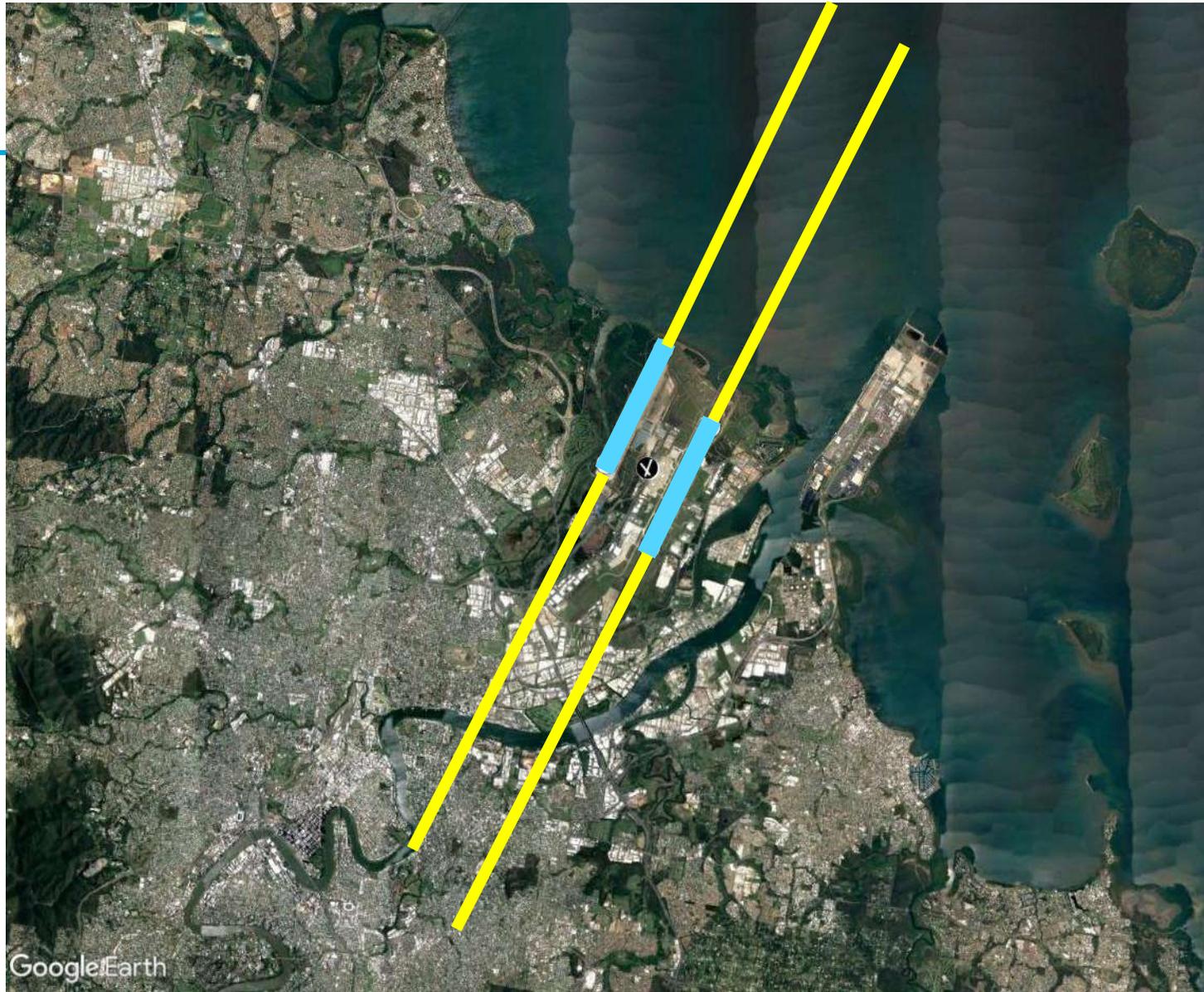
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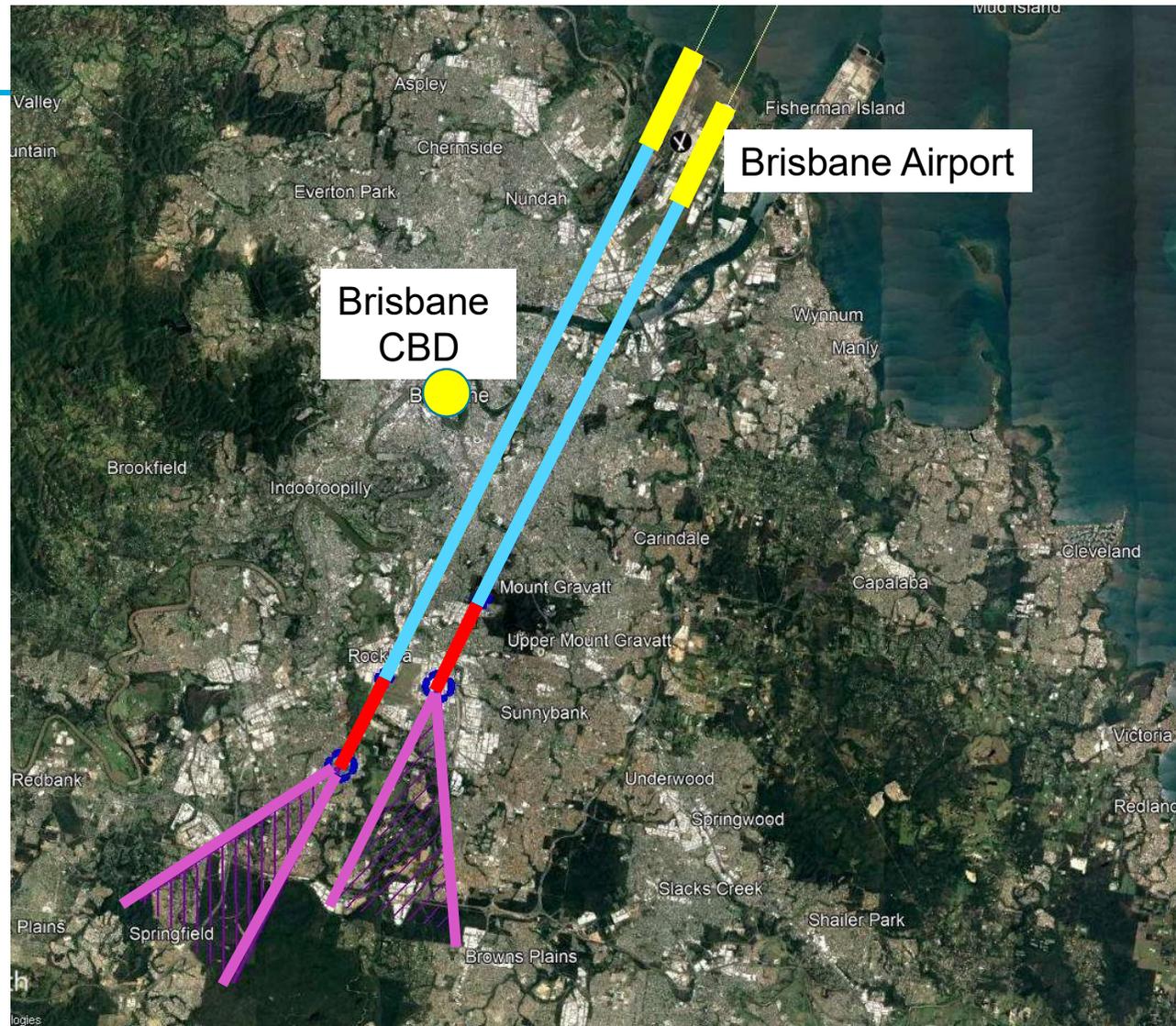


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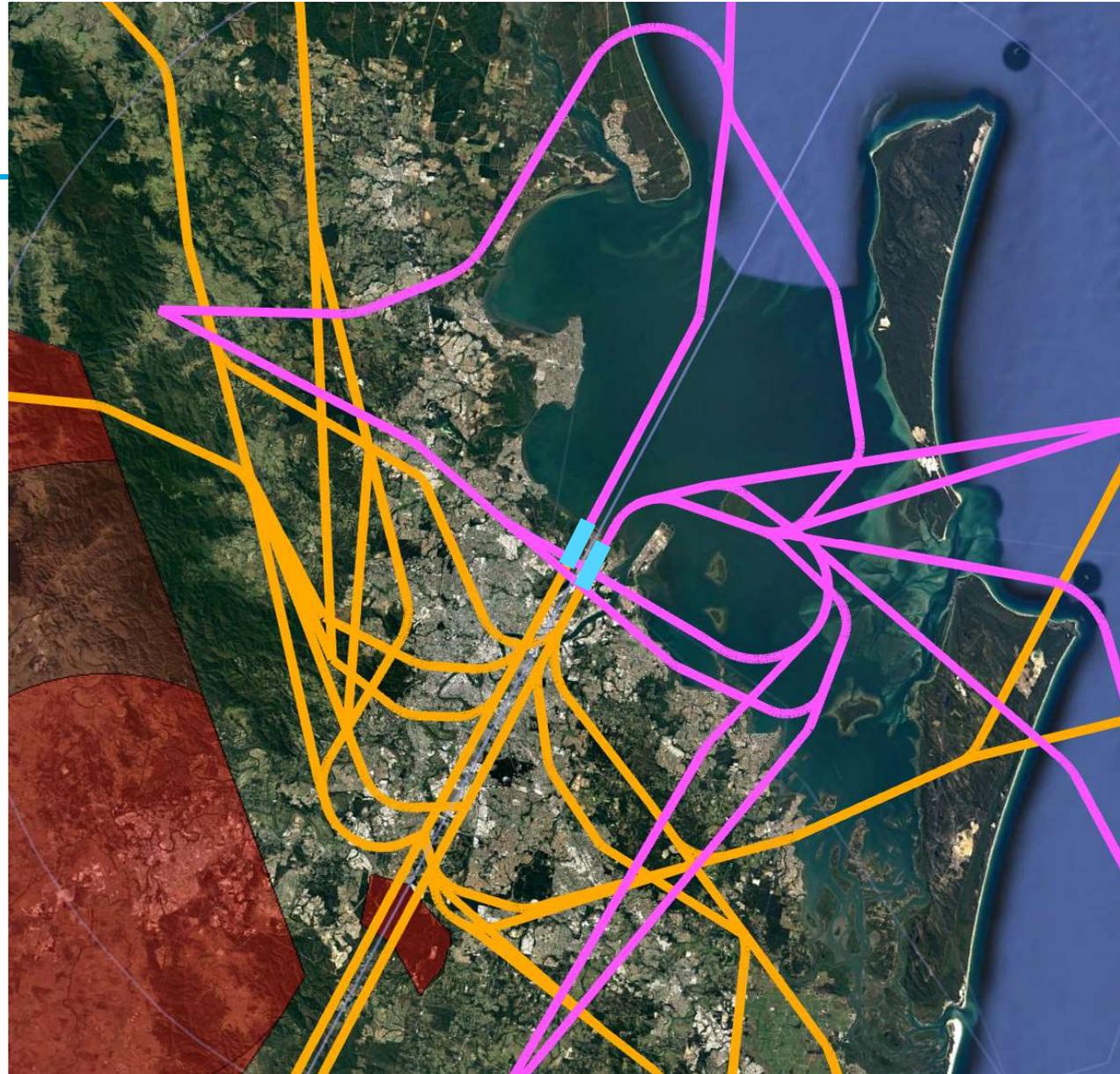


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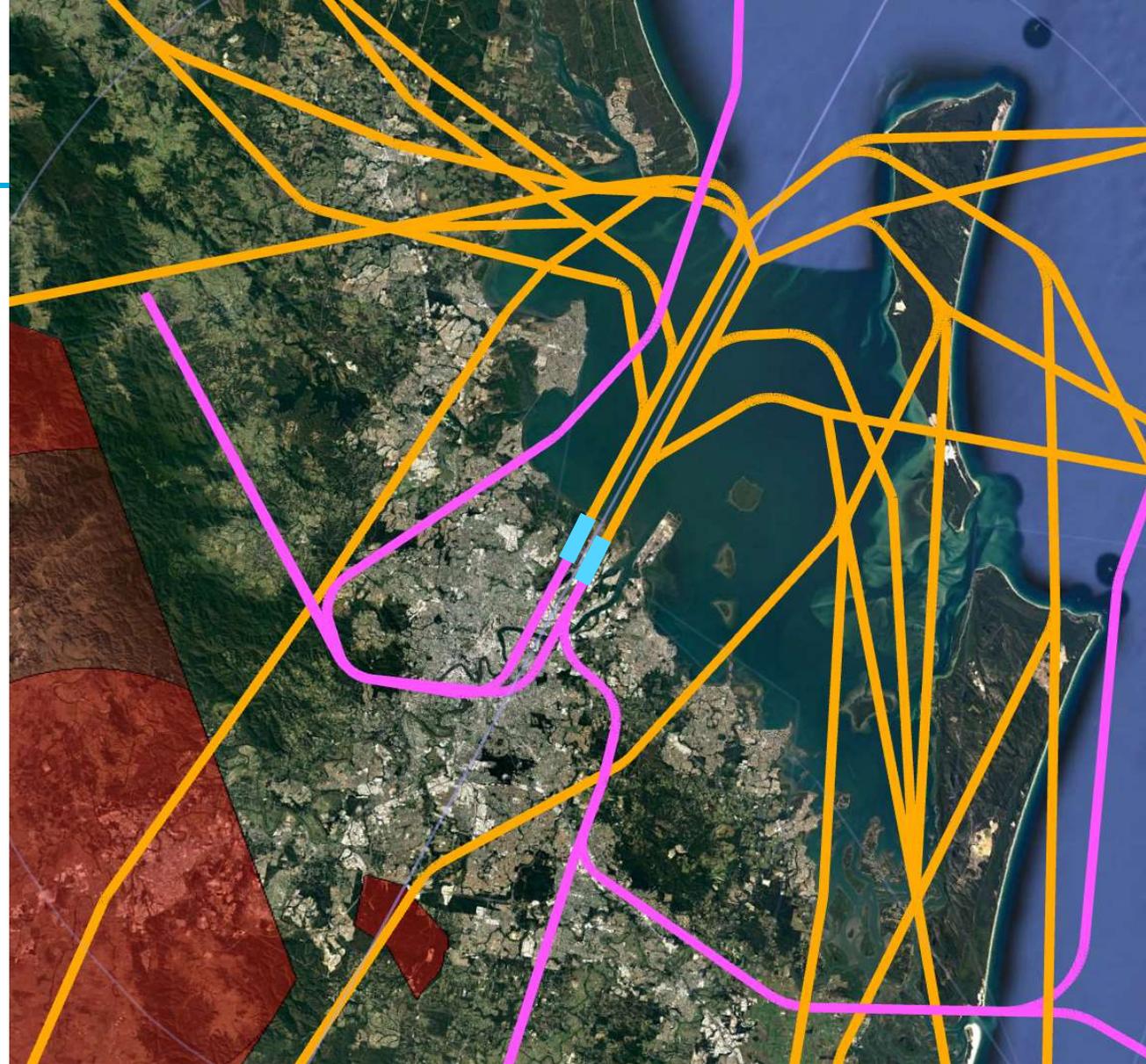


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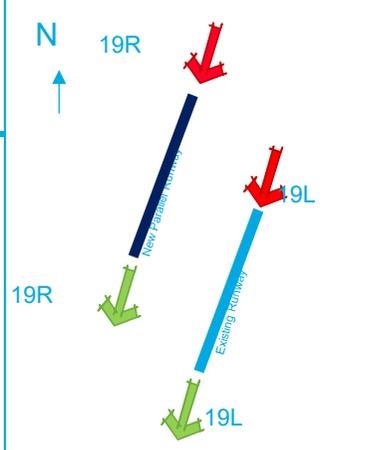


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# OTHER INFORMATION

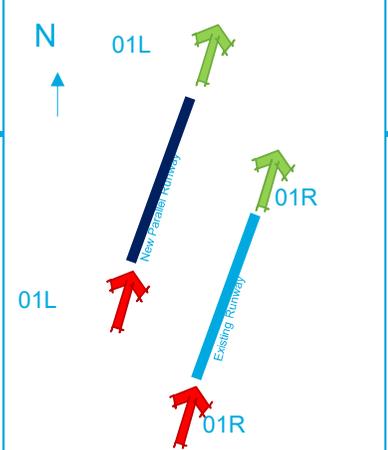
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### Parallel Ops 19



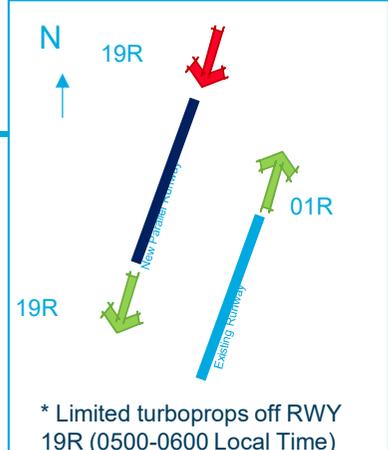
19L/R ARR  
19L/R DEP

### Parallel Ops 01



01L/R ARR  
01L/R DEP

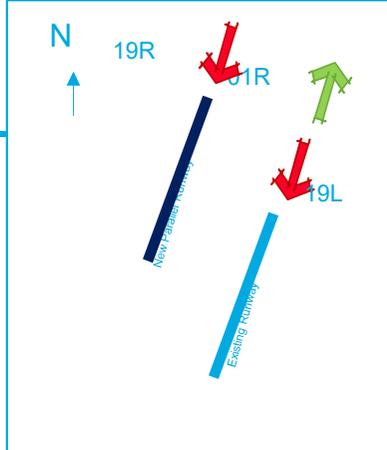
### SODPROPS



\* Limited turboprops off RWY 19R (0500-0600 Local Time)

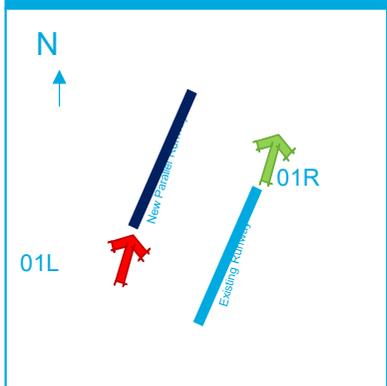
19R ARR  
01R / 19R\* DEP

### Reciprocal Runway



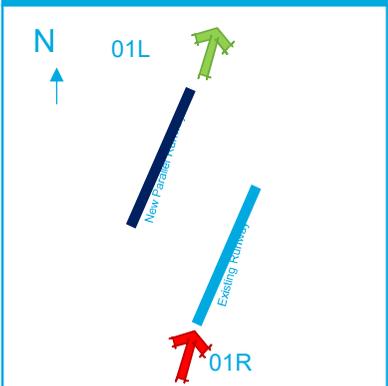
19L/R ARR  
01R DEP

### Segregated Parallel 01



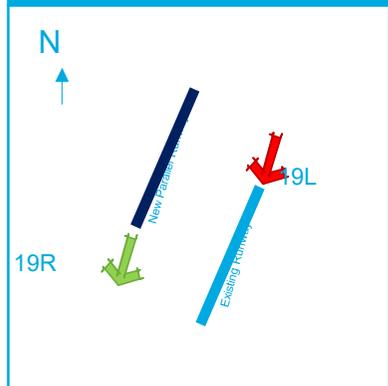
01L ARR  
01R DEP

### Segregated Parallel 01



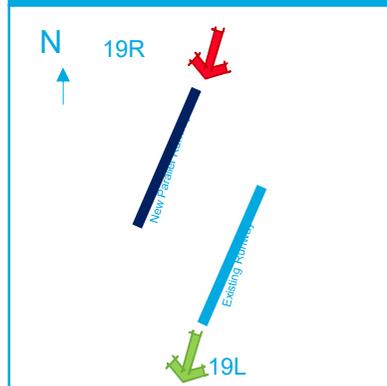
01R ARR  
01L DEP

### Segregated Parallel 19



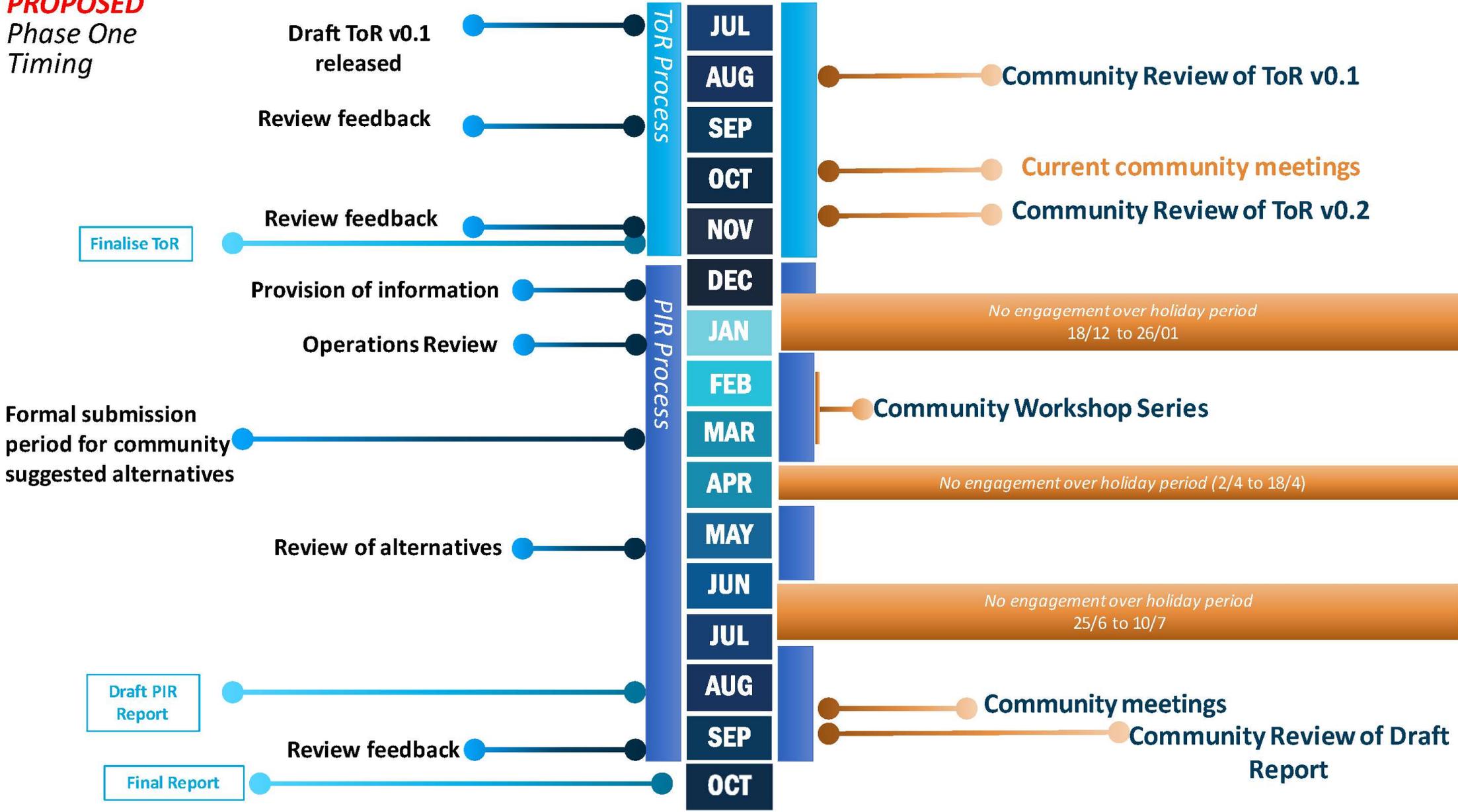
19L ARR  
19R DEP

### Segregated Parallel 19



19R ARR  
19L DEP

**PROPOSED**  
Phase One  
Timing



# NOISE MONITORING

## NOISE MONITORING LOCATIONS

- There are 14 fixed noise monitor terminals (NMT) around Brisbane
- 12 fixed NMTs are outside airport
- The NMTs will be used as the basis for PIR analysis
- Temporary NMT is available during the PIR to capture noise data



OFFICIAL

THANK  
YOU



s 47F

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**From:** s 47F  
**Sent:** Monday, 18 October 2021 3:08 PM  
**To:** s 47F  
**Cc:** BAPAF; MCCLURE Phil; s 47F  
**Subject:** HPE CM: RE: Noise monitor locations  
**Attachments:** Noise monitor locations.PNG  
**Categories:** Saved in RM

OFFICIAL

Hi s 47F

Please find attached a map of the current noise monitor locations. Airservices are looking at the installation of a temporary noise monitor in Samford/Upper Brookfield. Having a noise monitor at this location may not meet the standard for long term noise monitoring. BAC are also moving their temporary noise monitor to the same location, it has currently been used in Nudgee Beach.

Regards

s 47F



s 47F

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**From:** s 47F  
**Sent:** Monday, 18 October 2021 3:19 PM  
**To:** s 47F  
**Cc:** BAPAF; MCCLURE Phil; s 47F  
**Subject:** HPE CM: RE: Noise monitor locations

**Categories:** Saved in RM

OFFICIAL

Hi s 47F

Just a clarification on noise monitors:

BAC monitor has been on Balmoral Hill (near Bulimba) and is going to Upper Brookfield on Friday.

Forward program advised by BAC is as follows:

- Upper Brookfield: in situ for 8 weeks
- Cedar Creek: To be installed within two weeks of the completion of Upper Brookfield (approx. mid Jan)
- Northgate: To be installed within two weeks of the completion of Cedar Creek (approx. mid march)

Given BAC are going to Upper Brookfield, Airservices will look to make use of the BAC monitoring.

Regards

s 47F



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**From:** s 47F  
**Sent:** Monday, 18 October 2021 4:08 PM  
**To:** s 47F  
**Cc:** BAPAF@infrastructure.gov.au; MCCLURE Phil ; s 47F  
**Subject:** RE: Noise monitor locations

Hi s 47F

Please find attached a map of the current noise monitor locations. Airservices are looking at the installation of a temporary noise monitor in Samford/Upper Brookfield. Having a noise monitor at this location may not meet the standard for long term noise monitoring. BAC are also moving their temporary noise monitor to the same location, it has currently been used in Nudgee Beach.

Regards

s 47F





# BRISBANE'S NEW RUNWAY



Presentation to the BAPAF

Monday 25 October



s 47G

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s 47F

s 47G

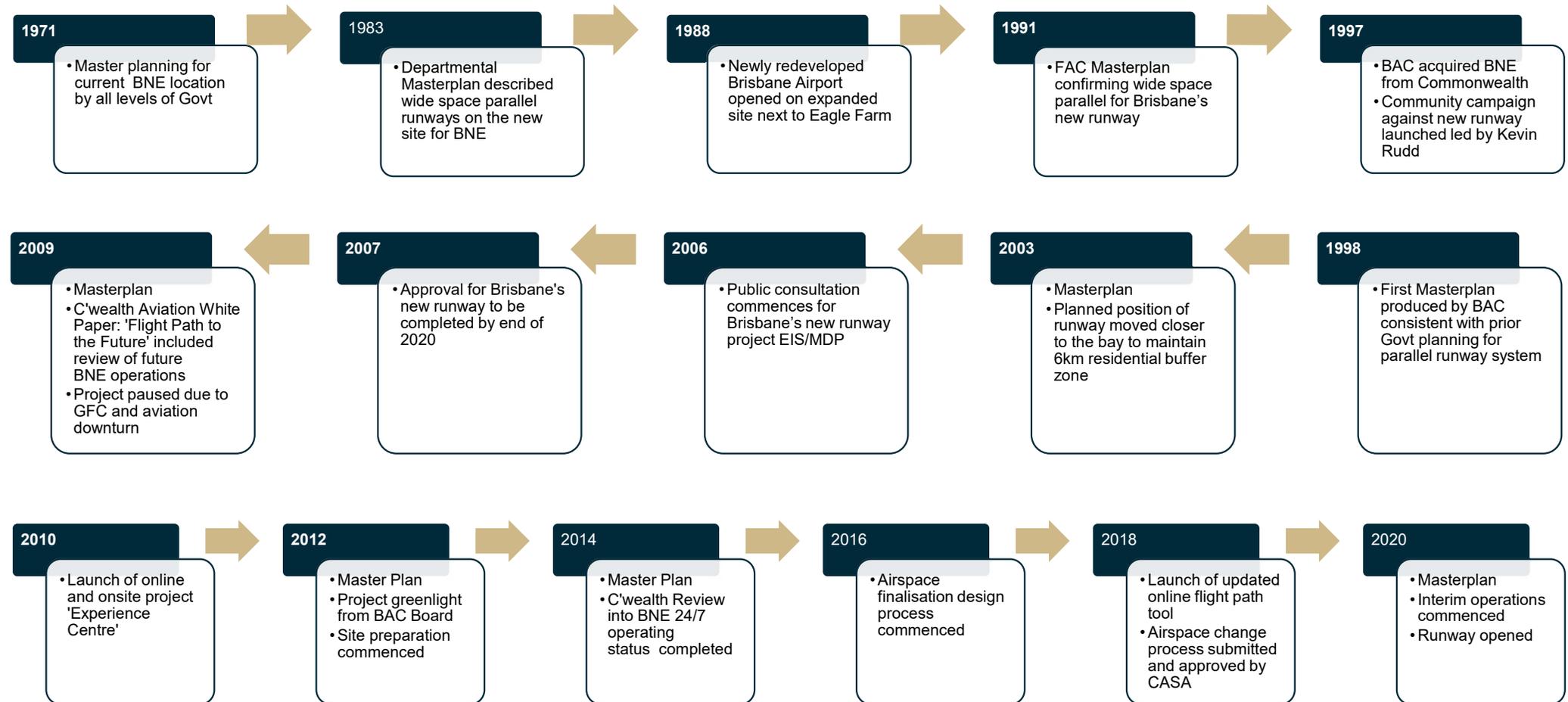
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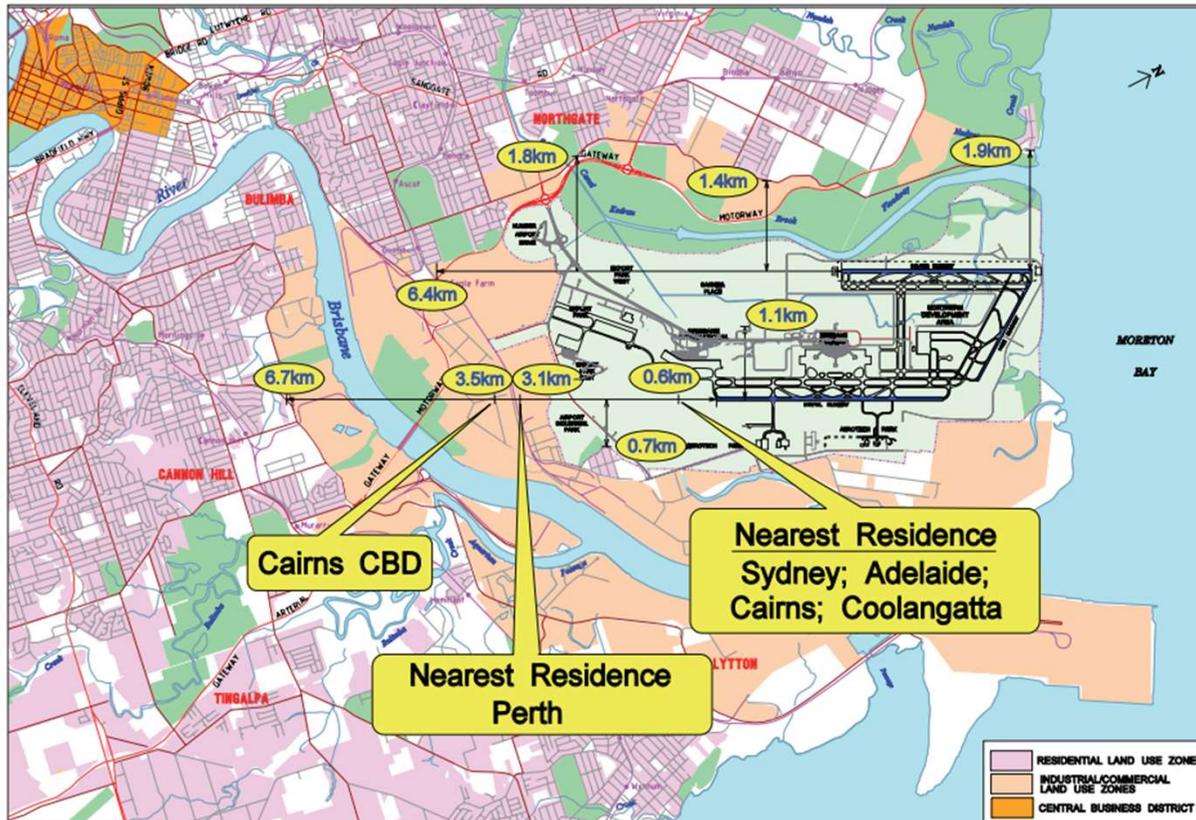
s 47F

# HISTORY OF BRISBANE'S NEW RUNWAY



# POSITIONING OF RUNWAYS TO MINIMISE NOISE

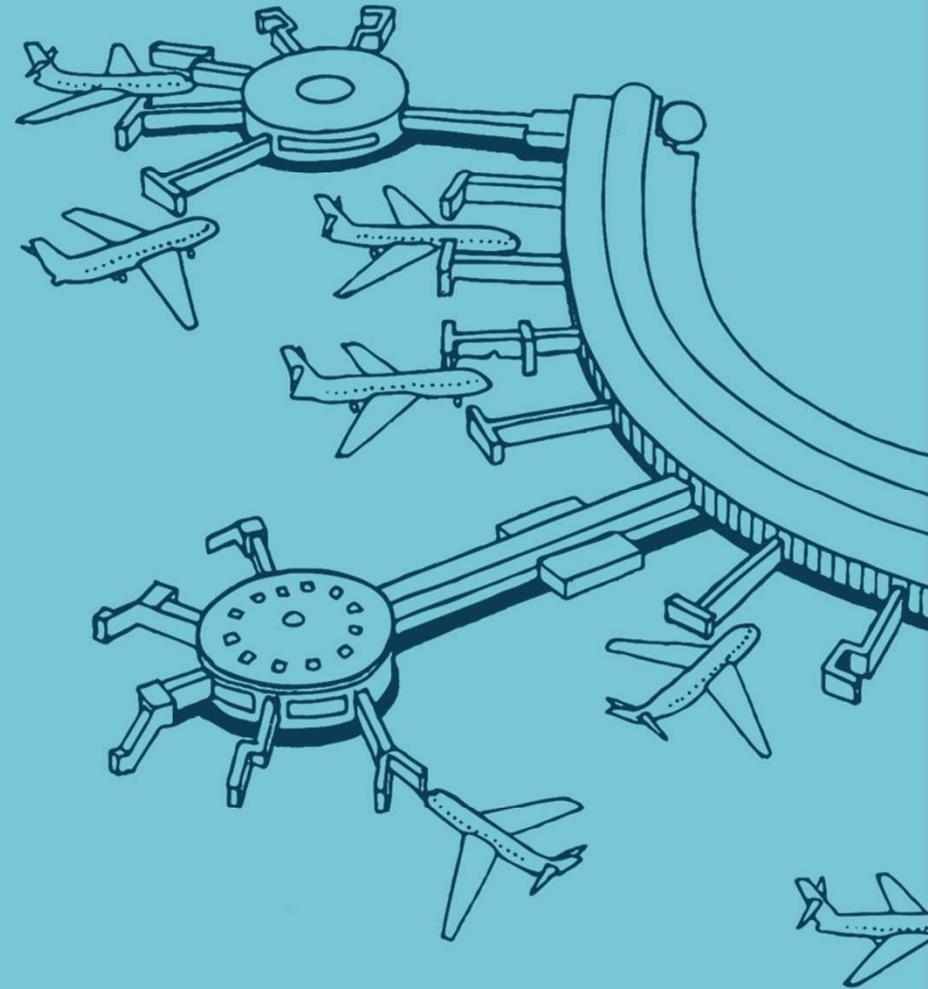
**Figure 1.1c:** Brisbane Airport has the Largest Buffer Zone of any Capital City Airport in Australia.



From the 1970s, planning for Brisbane Airport focused on maximising long-term efficiency and capacity while minimising noise impacts

- 2km spacing allows independent operations
- Buffer of 6km to nearest resident
- Maximises opportunity to keep flights over the bay

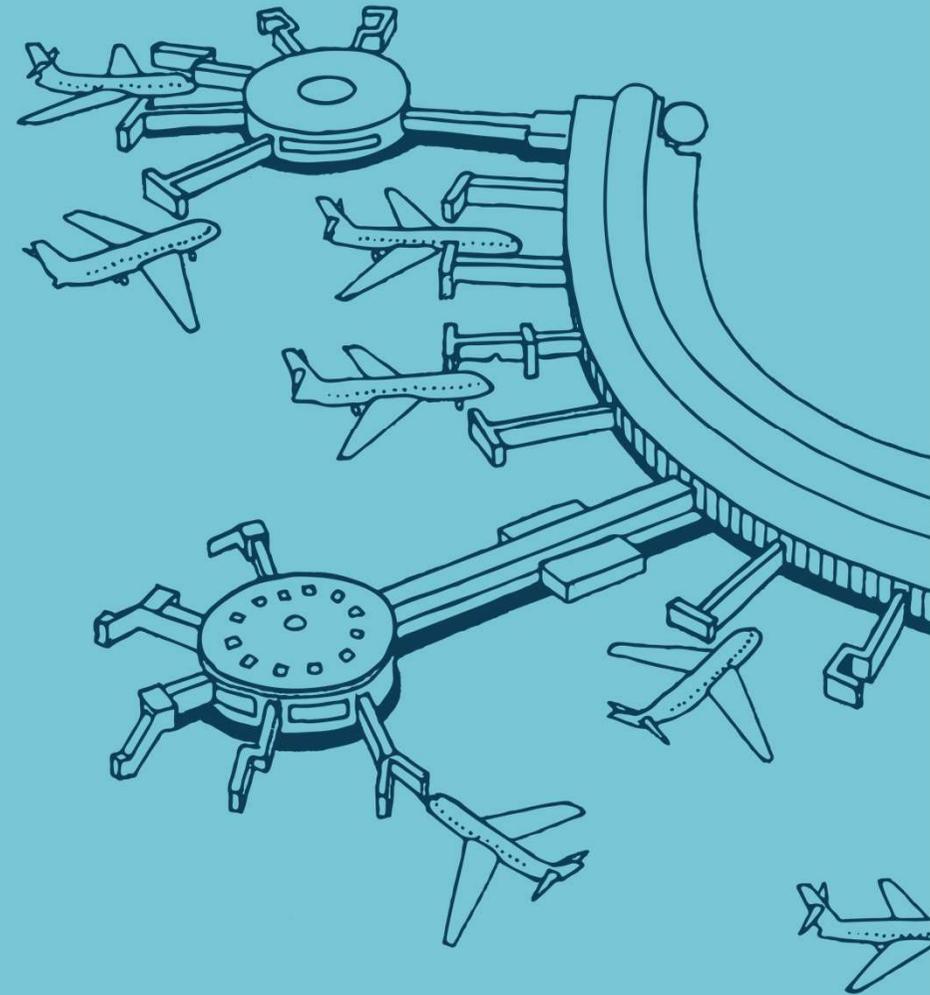
# EIS CONSULTATION



# PROJECT EIS/MDP ENGAGEMENT (NOV 2006 – FEB 2007)

- 322 hard copies of the Draft EIS/MDP distributed to libraries, MP and Cr Offices and available on the Brisbane Airport website
- 3,913 comprehensive information kits compiled and distributed
- 22,709 visits to the project website
- 220 information requests
- 128 formal submissions lodged through the online form
- 324 emails received through the Enquiry Email ([info@bacnpr.com.au](mailto:info@bacnpr.com.au))
- 282 calls to the Free Call Information Line (1800 737 075)
- 135 media stories across print, radio and television.
- 110 ads placed across The Australian, The Courier Mail, Quest Community Newspapers, and The Redland Times
- 161 visitors to the Community Information Centre that opened Monday to Saturday for the public comment period
- Displays in 19 shopping centres and libraries as a distribution point for Draft EIS/MDP Information Kits.
- 12 Community Information Sessions across North, South and Western Suburbs
- 16 Fact Sheets distributed prior to the public comment period
- 2,237 copies of “24-hour operation at Brisbane Airport” factsheet distributed via mail, email and posted on the project website
- 9 alerts to database regarding the public comment period
- 14 Australian Government elected representatives, 10 State Government representatives, 9 Local Government Representatives, 7 community groups, and 10 business groups briefed and consulted with during the 90-day period.
- 196 formal submissions received
- REACH surveys indicated that BAC connected with around 500,000 of an estimated 690,000 stakeholders within 20km of BNE
- AC Neilson Omnibus survey indicated 68% reach across the Brisbane community of 1,400,000 residents

# POST EIS COMMUNITY ENGAGEMENT



# BAC'S APPROACH TO EXTERNAL COMMUNICATIONS

BAC is committed to honest, inclusive and comprehensive community and stakeholder communication that goes above and beyond the legislative requirements imposed through the approval process.

- **TRUTH** – providing accurate information to the public about the aircraft noise that will result from the new runway
- **CLARITY** – providing clear and understandable information to the public about aircraft noise and the changes that will result from the runway
- **UNDERSTANDING** - understanding that for some people aircraft noise is a significant annoyance and that they deserve to know that we will do the best we can to minimise that
- **ADVOCACY**– promoting the community and economic benefits of the airport and the runway project

# COMMUNICATIONS PLAN OVERVIEW



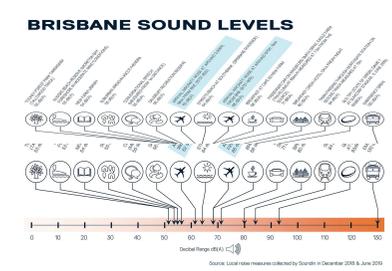
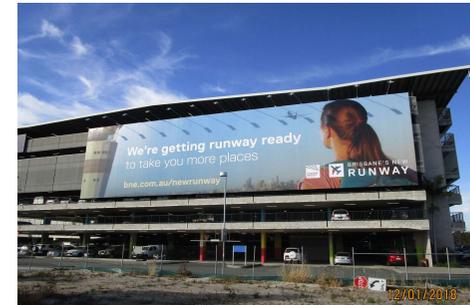
**Awareness** – building community awareness around the need to accommodate future growth, and benefits

**Education** – building awareness around the runway development and impacts

**Stabilisation** – managing community response to runway opening

# ENGAGEMENT STATS

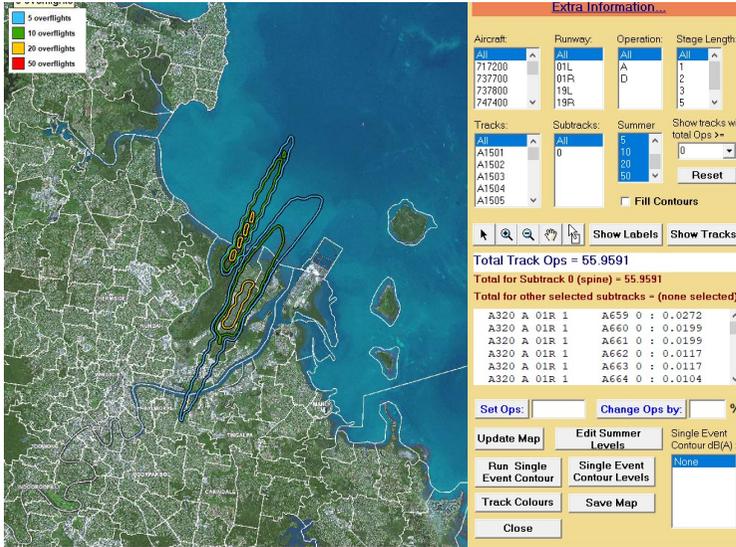
- 54 Community Information Exchanges
- 138 community group presentations
- 13 regional roadshows (inc Longreach, Cairns, Dalby)
- 537 on-site bus tours
- 68 email newsletters sent to on average 300,000 BNE newsletter subscribers
- 7 x waves of awareness and perception research
- 85 x videos
- 175 x billboard placements
- 1,066 x radio advertisements
- 42 x community news advertisements
- 27 X letterbox drops to a total distribution of 614,195 households
- 10 x BNE Blog posts
- 7 x project renders
- 10 x updated graphics
- 20 x fact sheets
- 4 x architectural models
- 7 editions of Take-Off newsletter (average send of 7,000)
- 500 hours use of mobile information centre 17,000 visitors at 77 events
- Social media campaign across BAC/BNE platforms



## RESULTS TO OPENING

- 65,000 visitors to onsite discovery centre and mobile education unit
- 166,170 visits to Flight Paths Tool since 2018
- 385,801 Flight Paths web page views
- 800,000+ views of video content on YouTube
- 55.3 million impressions from ad campaigns (March 2020)
- 10.5 million impressions from realestate.com.au campaign (March 2020)
- 67,521 readers of realestate.com.au editorials (June 2020)
- 12,000 subscribers to Take-Off newsletter
- 2000+ runway site tours and presentations

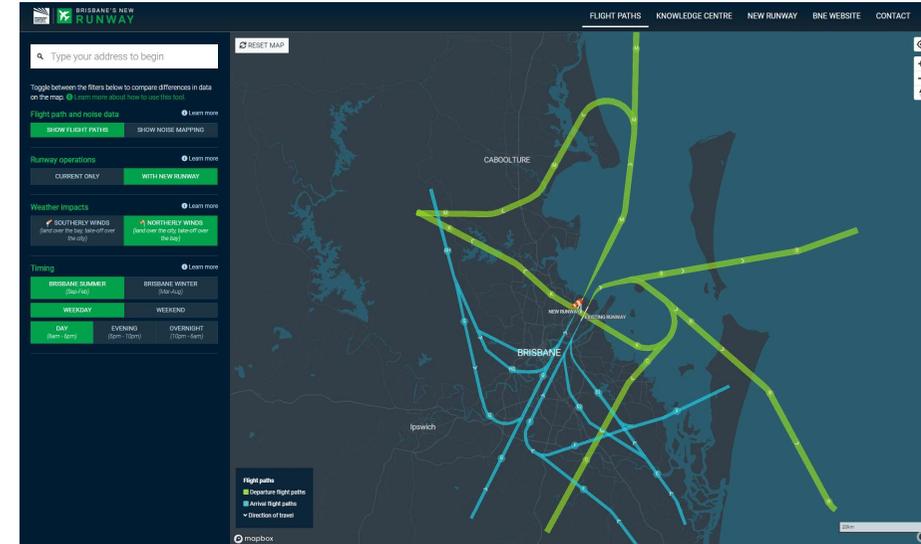
# TRANSPARENT NOISE INFORMATION PACKAGE, EXPERIENCE CENTRE ONLINE, FLIGHT PATH TOOL



Transparent Noise Information Package  
2006 - 2009



Experience Centre Online  
2009 - 2018



Flight Path Tool  
2018 - present

# FESTIVALS, DISCOVERY CENTRE AND MOBILE INFORMATION CENTRE - BENNY

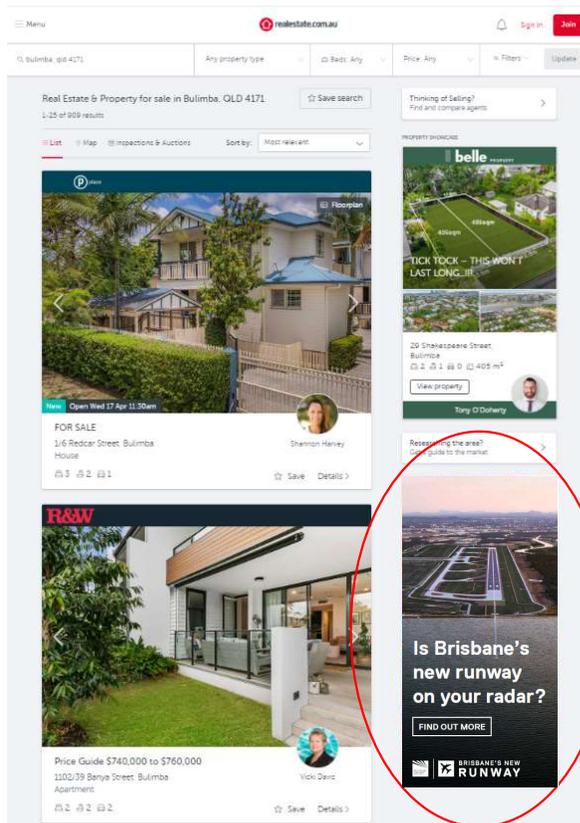


# REALESTATE.COM.AU CAMPAIGN

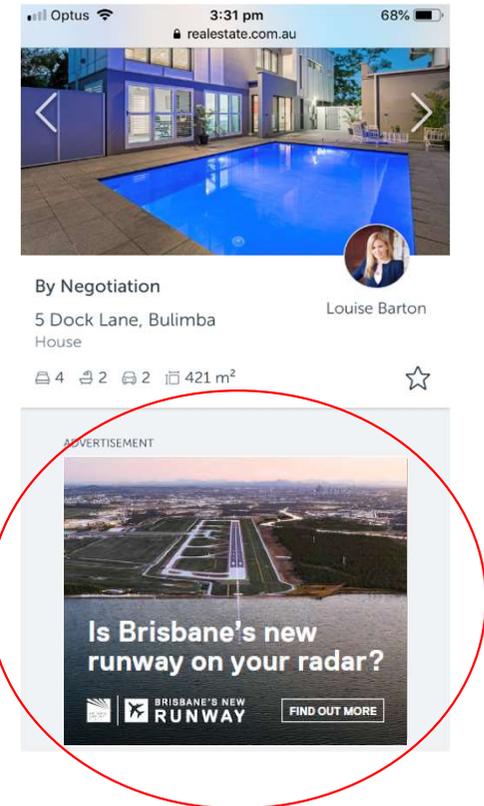
Content article:



Search results page (desktop):



Property details page (mobile):



Brisbane's new runway

# LETTERBOX DROPS

Letterbox drop to 205k Brisbane residents about Brisbane's new runway and the flight paths (Mid-March 2020)



Connect the world.  
Create the future.

Brisbane Airport is an essential driver in the long term growth of Brisbane and Queensland.

**24 million** passengers per year

**24,000** people work at Brisbane Airport

Brisbane's new runway means we have the capacity to grow for many decades to come.

**3.3km** long and 60m wide

**12km** of taxiways

**360ha site** 2.5 x the size of Brisbane CBD

**\$1.1 billion** private investment

Brisbane's new runway will open on 12 July 2020. Find more information at [bne.com.au/newrunway](http://bne.com.au/newrunway).

Cover: An artist's impression of Brisbane Airport in 2020.

**BRISBANE AIRPORT AUSTRALIA**

Important information about  
**Brisbane's new runway**

**Dear Resident**

On Sunday 12 July 2020, the new runway at Brisbane Airport will open. This is unquestionably good news for the millions of Queenslanders whose lives and livelihoods depend on domestic and international air connections.

A new runway also means new flight paths over Brisbane. These new flight paths have been designed with two core principles in mind:

- To safely accommodate airspace in South East Queensland (which also includes flight paths for the Gold Coast, Sunshine Coast, Toowoomba, Amberley, Archerfield and other smaller airfields);
- To minimise, wherever possible, noise impacts on residents.

The following page has tips on how you can find out more detailed information on what these new flight paths mean for you at your home or work.

I hope this information is useful to you.

Sincerely,  
**Gert-Jan de Graaff**  
CEO  
Brisbane Airport Corporation

**Are you runway ready?**

Brisbane's new runway will open on 12 July 2020. Below is a checklist to help you get runway ready.

**1 Search your address in the Flight Path Tool**

A new runway on the ground means a change in flight paths above. The Flight Path Tool allows you to search any address in Brisbane to see if it is under any Brisbane Airport current, or future, flight paths.

There is also an extensive Knowledge Centre containing information about flight paths and aircraft noise.

The Flight Path Tool and Knowledge Centre can be accessed via [bne.com.au/flightpaths](http://bne.com.au/flightpaths).

**2 Talk to Team BNE at 'Benny'**

Team BNE is on the road with our mobile information centre, 'Benny', to help you get the facts on the new runway and what it means for you.

We are sharing information on flight paths and aircraft noise, the runway construction process, Brisbane Airport's history and much more.

Find the latest schedule of Benny locations at [bne.com.au/benny](http://bne.com.au/benny) or contact us on (07) 3406 3000.

**3 Stay up to date on Brisbane's new runway**

If you're interested in staying up to date about the runway construction, learning more about flight paths and aircraft noise, or being the first to know about our Community Open Day and Fun Run, sign up to our Take-off eNews at [bne.com.au/takeoff](http://bne.com.au/takeoff).

s 47G

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s 47F

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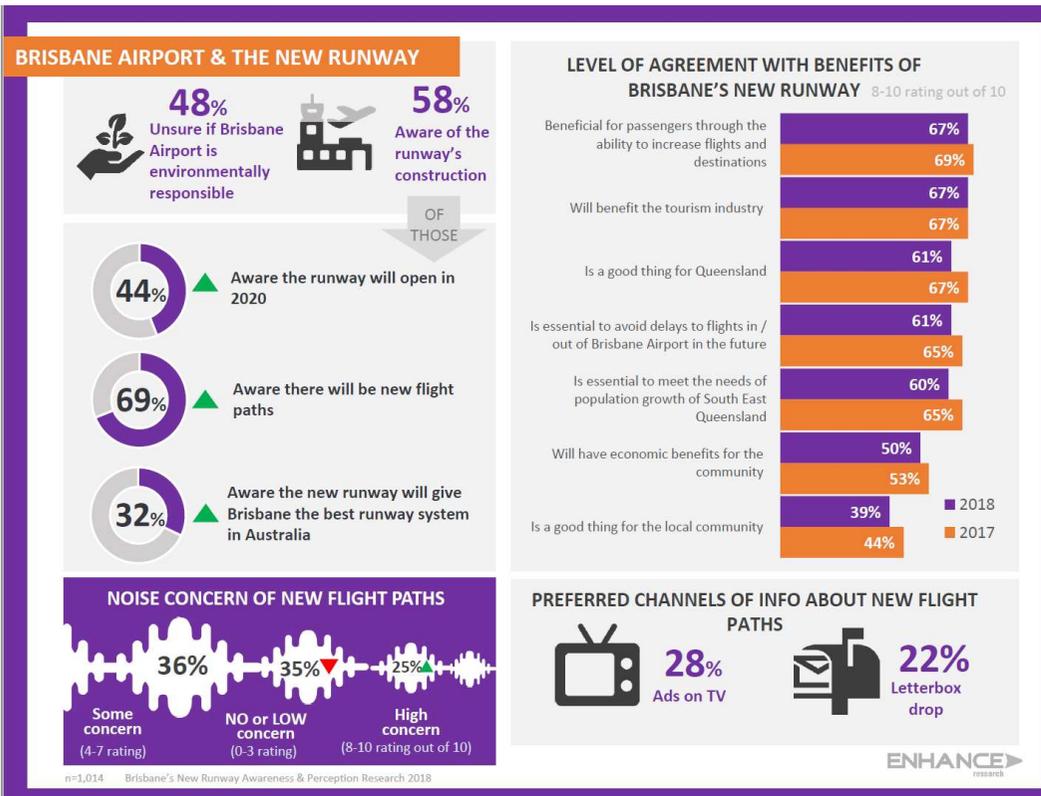
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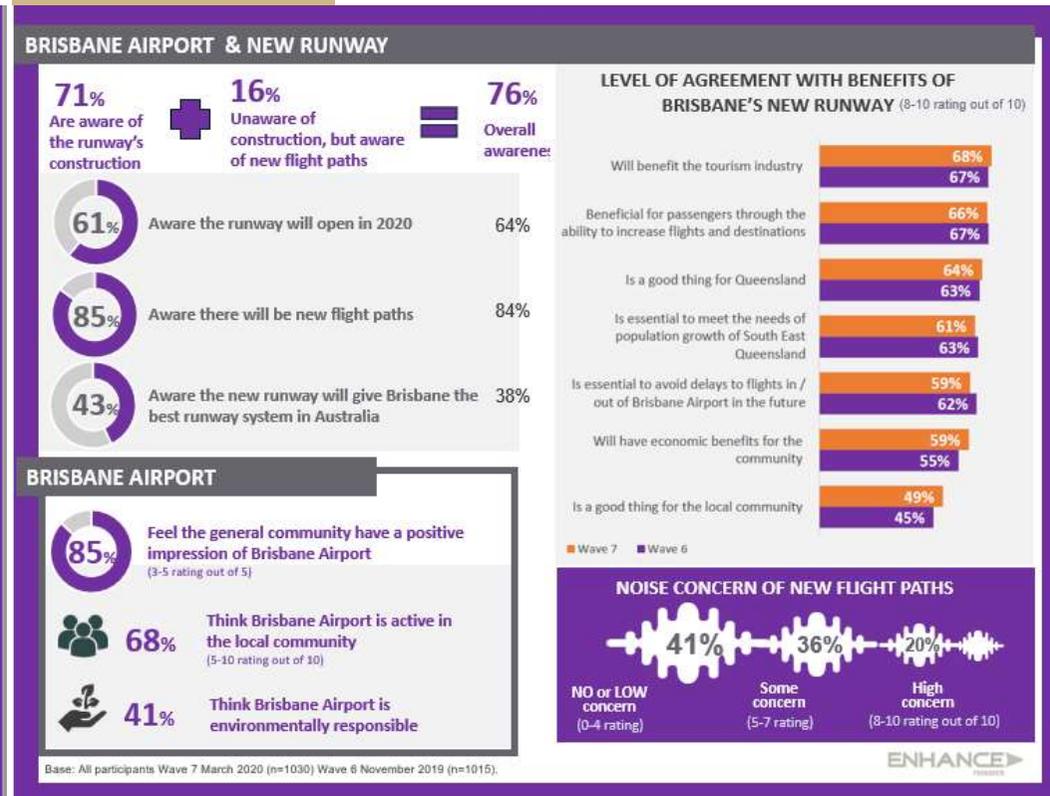
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# ACTIVITY BASED ON RESEARCH

April 2018

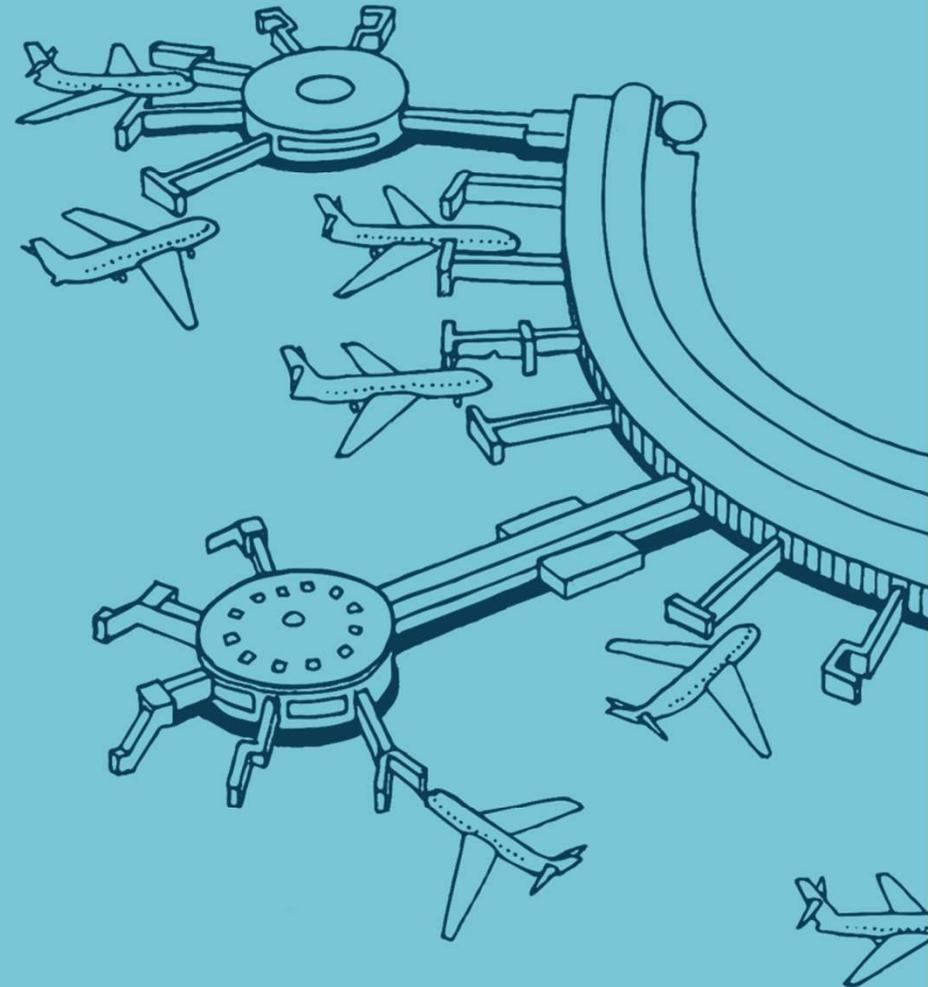


March 2020



Brisbane's new runway

# AIRSPACE DESIGN



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# BAC BRIEF TO ASA FOR THE EIS (2005-2007)

- BAC commissioned Airservices to develop the Airspace Architecture and Airspace Procedures for the EIS/MDP
- Flight path development considered safety, air traffic management requirements, and environment (noise)
- BAC's brief to Airservices included:
  - Given the strategic location of the airport adjacent to Moreton Bay, and the planned 2km spacing between runways, consider available procedures to maximise over the bay use to minimise community overflight, particularly between 10pm and 6am and in periods of low traffic
  - Safety is paramount
  - Maintain existing flight path corridors to the extent possible
  - No operations to and from the southern end of the new runway between 10pm and 6am
  - Noise should be shared fairly, where possible
  - Flight paths must be fit for purpose to enable traffic demand to be processed in a safe, orderly and expeditious manner
  - New flight paths or existing flight path changes to occur over water where possible, especially where aircraft are below 5000ft
  - Minimise residential overflight
  - Operations at night or on weekends should be treated as more sensitive than at other times when comparing options
  - Residential areas overflown by a departure flight path should not, to the extent practicable, also be overflown by aircraft on arriving flight path
  - Options that allow for a gradual change from the current to planned procedures should be given preference
  - No suburb, group or individual can demand or expect to be exempt from aircraft noise exposure

# CONCEPT OF OPERATIONS - AIRSPACE PROCEDURES

- Operations to or from the **south and east** will generally be assigned the legacy runway – 01R / 19L
- Operations to or from the **north and west** will generally be assigned the new runway – 01L / 19R
- No jet operations to or from the south to the new runway between 10.00pm and 6.00am (consistent with the EIS) - limited turbo-prop operations from 5.00am
- Over bay operations to be the preferred mode overnight (10pm – 6am) – weather conditions permitting.



Brisbane's new runway

# AIRSPACE DESIGN FINALISATION – PRINCIPLES (2016 - 2018)

- Safety
- Minimisation of environmental (noise) impact – including maximum use of over the bay operations
- Efficiency
- Reliability/consistency of operation
- Existing flight paths retained to the extent practical
- Utilise the benefits of the latest GPS based navigation technology
- Compliance with current regulatory requirements and standards
- Consistency with the Airspace Architecture & Airspace Procedures presented in the 2007 EIS/MDP
- Unrestricted operations for other SEQ Airports (Sunshine Coast, Gold Coast, Toowoomba, Archerfield, Amberley etc)
- The design considers modern fleet capabilities and performance, evolving airspace management practices and standards, and the significant advantages delivered by satellite-based navigation technologies

# AIRSPACE DESIGN OPTIONS - ARRIVALS

Three options assessed

- Open Standard Instrument Arrivals – STARs (with open STAR, pilot disconnects autopilot and given headings to fly by air traffic control to intercept the centreline of the runway)
- Point Merge (arcs are designed to be flown to allow air traffic control to fine tune landing order ie turn the aircraft in towards the runways from a point on the arc)
- Closed STARs (aircraft in autopilot unless landing or taking off, most predictable and consistent option for pilot and air traffic control)

Closed STAR option chosen for final design

- The finalised design adopts a Closed Star solution for the arrival operations of jet aircraft through to joining the final approach.
- Closed STARs deliver predictability, separation in design, reduced chance of human error, consistencies and efficiencies for modern fleet in utilising the Flight Management System capabilities to reduce fuel burn and emissions and provides optimised Continuous Descent Arrivals – CDAs.
- This provides safety and environmental benefits.
- Flexibility included to facilitate older jet aircraft and turbo-prop aircraft to either fly a closed STAR connected to an Instrument Landing System approach or an open STAR to a visual or radar vectored approach to join final.

# AIRSPACE DESIGN - DEPARTURES

- Performance Based Navigation (PBN) Standard Instrument Departures (SIDs) for all jet aircraft – aircraft flown on autopilot after take-off on a predictable GPS path
- Radar Standard Instrument Departures for non-jet aircraft to facilitate separation with jet aircraft – this type of departure includes an air traffic control heading to be flown once airborne to facilitate either a jet departure behind or separation with other aircraft in the air and is generally a standard heading
- Performance Based Navigation Standard Instrument Departures and STAR design ensures that jet departures and arrivals are separated while those flight paths are being flown – crossovers are designed with 1000ft separation
- Standard Instrument Departures climb gradients consulted with airlines and simulated to ensure capabilities in all payload and weather conditions, to achieve the best possible climb performance particularly to the south.

# AIRSPACE DESIGN - OUTCOMES

- Brisbane's New Runway increases the capacity of over the bay operations
  - Previous over the bay operations on a single runway limited to 10-12 movements per hour
  - Parallel runway operations (with 2km spacing) allows around 50 movements per hour (same wind dependency – up to 5 knots and runway must be dry)
- Closed STARs and PBN SIDs enhance safety outcomes and efficiencies by ensuring capable modern aircraft are in optimised (auto pilot) configuration and air traffic controller interactions are minimised
- Continuous Descent Approaches and Continuous Climb Operations reduce environmental impacts (noise and emissions) through the minimisation of level segments of flight at low altitudes, particularly when utilising the latest navigation technology
- In general, the Airspace Design increases the altitude of operations in the BNE Extended Manoeuvring Area
- The Airspace Design does not impact the operations for the other Airports in South East Queensland
- Overall, the design is safer, more efficient, and increases the availability of over the bay operations

# NOISE ABATEMENT PROCEDURES (NAPS)

- The NAPs define:
  - Over the bay operations at night are the priority runway nominated mode between 10pm and 6am, and preferred when operations allow at other times particularly in the evening, and early morning at the weekend
  - The southern end of the new runway cannot be used between 10pm and 6am except for turbo prop departures after 5am if they would cause delays to other operations, or critical operational issues like runway closures or severe weather
  - Preferred Runway 19 operating direction (depart to the south and arrive over the bay) with up to 5kt tailwind
  - Noise Abatement Departure Procedures (NADP) must be flown for Runway 19 departures (to the south)
  - For departures to the south, all jet aircraft must comply with minimum clean speed or max IAS 250kt below 10,000ft (to maximise climb performance)
  - Between 10pm and 6am arriving jet aircraft arriving must not descend below 5000ft until over water from the north, and non-jet must not descent below 3000 ft until over water
  - All aircraft must not descend below 3000ft until established on the centreline of the legacy runway when landing from the south
  - When departing to the north between 10pm and 6am, all aircraft will be contained over the bay until leaving 5000ft
  - Intersection departures are not allowed between 10pm and 5pm during daylight saving and 10pm and 6am at other times
  - Use of reverse thrust is to be minimised where operationally acceptable when landing on the NPR at night
  - Minimum flap settings are to be used where operationally acceptable for the final stages of flight on arrival to reduce airframe noise

# UK NATS PEER REVIEW (2017)

- Commissioned by BAC
- UKNATS conducted extensive analysis of the airspace design against global best practice over 5 months in 2017.
- Review concluded:
  - *“There has been a significant amount of work put into this by the ASA team and as a result, the fundamental airspace design is sound. Our analysis did not therefore find any significant red flags.”* UKNATS

Category \ Mode	SODPROPS	19	01
Capacity	<ul style="list-style-type: none"> <li>• Handles traffic with minimal delays</li> <li>• Balanced runway demand</li> <li>• Lowest overall departure taxi time</li> <li>• Higher delays than Compass modes.</li> <li>• Sensitive to excess departure demand</li> <li>• Can only operate in specific conditions.</li> </ul>	<ul style="list-style-type: none"> <li>• Lowest overall delays.</li> <li>• Well balanced runways in grown traffic.</li> <li>• Capable of handling 2040 traffic.</li> <li>• Sensitive to Runway balance</li> </ul>	<ul style="list-style-type: none"> <li>• Generally low delays with spikes of delay in the grown traffic</li> <li>• Capable of handling 2040 traffic</li> <li>• Sensitive to Runway balance</li> </ul>
Environmental Efficiency (SID/STAR Efficiency)	<ul style="list-style-type: none"> <li>• Lowest overall SID/STAR efficiency</li> <li>• SID ~74%</li> <li>• STAR ~ 66%</li> </ul>	<ul style="list-style-type: none"> <li>• High SID/STAR efficiency</li> <li>• SID ~81%</li> <li>• STAR ~ 85%</li> </ul>	<ul style="list-style-type: none"> <li>• High SID/STAR efficiency</li> <li>• SID ~83%</li> <li>• STAR ~ 81%</li> </ul>
Noise (Over Water)	<ul style="list-style-type: none"> <li>• All flights besides turboprop departures (06:00-22:00) are over water.</li> </ul>	<ul style="list-style-type: none"> <li>• All Arrivals over water</li> <li>• All Departures overland</li> </ul>	<ul style="list-style-type: none"> <li>• All Departures overwater</li> <li>• All Arrivals overland</li> </ul>
Fuel CCO/CDO/Level Off	<ul style="list-style-type: none"> <li>• Overall low conflicts in Baseline and Grown models.</li> <li>• High percentage of CCO and CDO Operations.</li> </ul>	<ul style="list-style-type: none"> <li>• Overall low conflicts in Baseline and Grown models.</li> <li>• High percentage of CCO and CDO Operations.</li> </ul>	<ul style="list-style-type: none"> <li>• Overall low conflicts in Baseline and Grown models.</li> <li>• High percentage of CCO and CDO Operations.</li> </ul>
ATC Workload	<ul style="list-style-type: none"> <li>• Lowest Ground ATC Complexity</li> </ul>	<ul style="list-style-type: none"> <li>• Increased ground controller complexity.</li> <li>• Imbalanced runway demand can affect ATC Workload</li> </ul>	<ul style="list-style-type: none"> <li>• Increased ground controller complexity.</li> <li>• Imbalanced runway demand can affect ATC Workload</li> </ul>

# UK NATS DESIGN ANALYSIS

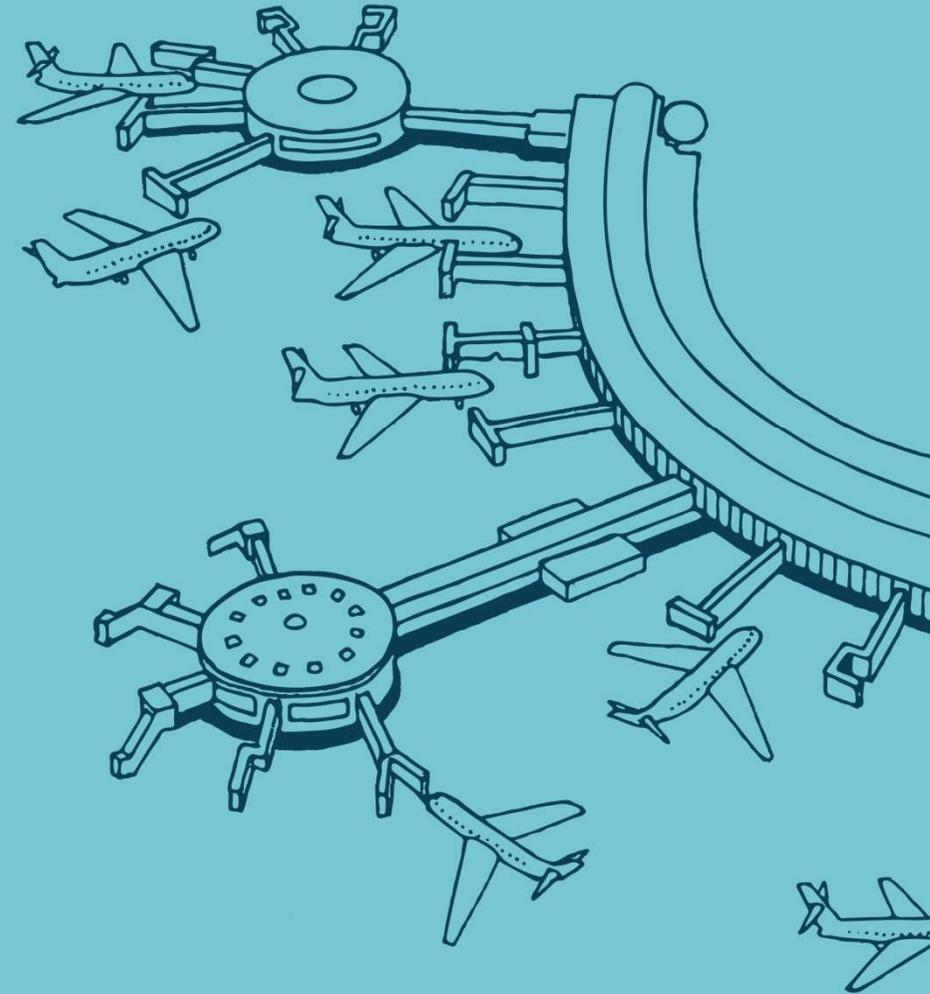
“Airspace design is inherently filled with a set of trade-offs. The trade-offs, in terms of the main criteria of capacity, environmental efficiency, noise, fuel and ATC workload have emerged from our simulation analysis as follows:

- **Runway Modes** - The compass modes of operation for Runways 01/19, in which aircraft are assigned a runway based on their direction of travel, have the capacity to support both the opening day and 2040 forecast traffic levels without significant delays. Over water modes, designed for night-time noise relief, have the capability to meet the capacities as detailed in the EIS.
- **Efficiency** - This examined the efficiency of the main operating modes by comparing the actual track-distance flown on the departure and arrival routes against the optimum distance. During Compass-modes both Runway 01 and Runway 19 have good overall efficiency for both departures and arrivals. Although being highly beneficial from a noise perspective, SODPROPS (over water night-time operations) had lower efficiency because of the need to ensure safe separation between departing and arriving traffic.
- **Over the Bay Operations** - Where possible (given the direction of the runway in use), routing aircraft over water is maximised and the climb and descent phases ensure that operations over land are conducted in accordance with the requirements of the EIS.
- **Fuel Efficiency** - Procedures allow almost all flights to achieve consistent continuous-climbs and continuous descents. This indicates a design that maximises fuel efficiency and minimises low level noise created by level flight below 5000’.”

# NAP RESULTING FROM NOISE IMPROVEMENT TRIAL (2019)

- For departures to the south, all jet aircraft must comply with minimum clean speed or max IAS 250kt below 10,000ft (to maximise climb performance)
- If pilot requests cancellation of standard instrument departure (published flight path), a steeper climb will be required through the selection of NADP1
- Noise abatement departure procedures (NADP) required for all jet departures including radar departures
- Use, as the final flap setting, the minimum certified flap setting approved by the operator for the applicable conditions

# POST OPENING



# CHALLENGES

- COVID has had a significantly reduced the traffic and fleet mix which has resulted in the airspace not being operated as anticipated
- Border closures have resulted in proportional use of the runways inconsistent with what was communicated to the community
  - Higher percentage of aircraft on the new runway, due to majority of traffic being intrastate flights (north and west)
  - Runways were designed so aircraft would be shared 60 per cent on the Legacy and 40 per cent on the new runway
- Reduced traffic has added to community concern regarding what it will be like when aircraft movements return to "normal"
- Turbo props have become a higher proportion of the fleet mix at BNE. The varied and flexible nature in which they operate has caused community concern
  - Without the constraints of significant jet traffic, the spread of turbo props is greater than normal. This has been addressed with a temporary Noise Abatement Procedure until operations are normalised.
- With more community members working at home, the numbers of hours exposed to aircraft noise has increased
- Only the burdens of aviation are being felt, and none of the benefits (holiday travel, new routes and destinations) 

s 47G

---

s 47F

s 47G

s 47F

# AIRCRAFT NOISE & PERFORMANCE IMPROVEMENT WORKING GROUP

Members include representative BAC, Airservices, Virgin, Qantas, Air New Zealand, Rex, and RFDS.

## Purpose

Established to continuously review how aircraft operations impact on the broader Brisbane community and what improvements can be developed to minimise the impact.

## Core objectives include:

- Review and address performance against Noise Abatement Procedures (NAP) and BAC/Airservices agreed airspace operating plan, and tracking compliance
- Review effectiveness of NAP and develop/investigate improvements to minimise noise impacts associated with Brisbane Airport operations in the short, medium, and long term.
- Provide technical support to Airservices Brisbane's New Runway Post Implementation Review
- Provide a mechanism to review navigation performance issues and technical support to resolve
- Communicate effectively, keeping the Brisbane Airport Community Aviation Consultation Group and any other relevant engagement fora informed about Group initiatives

# COMMUNITY RESPONSE TO DATE

4,163

Number of submissions

1,477

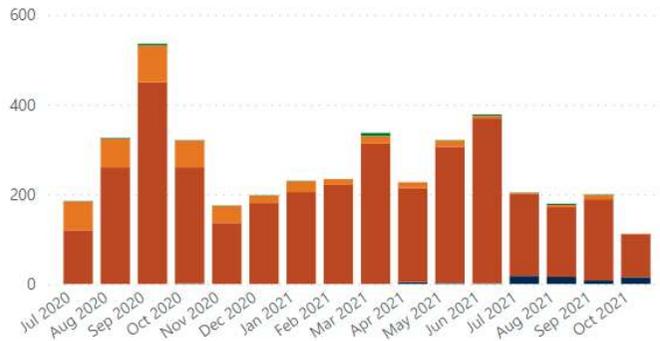
Number of complainants

2.82

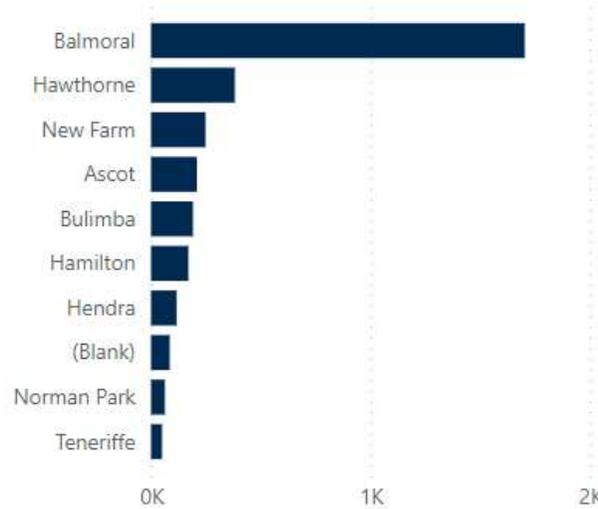
Average submissions per complainant

Submissions by month and sentiment

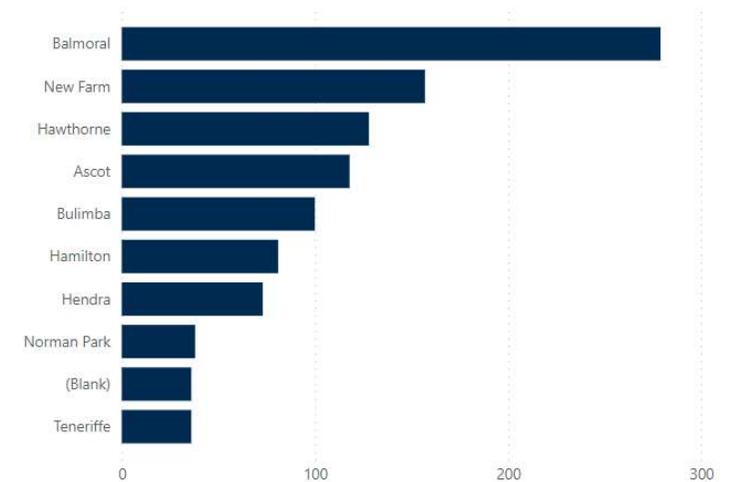
Sentiment ● (Blank) ● Negative ● Neutral ● Positive



Top 10 suburbs by submissions

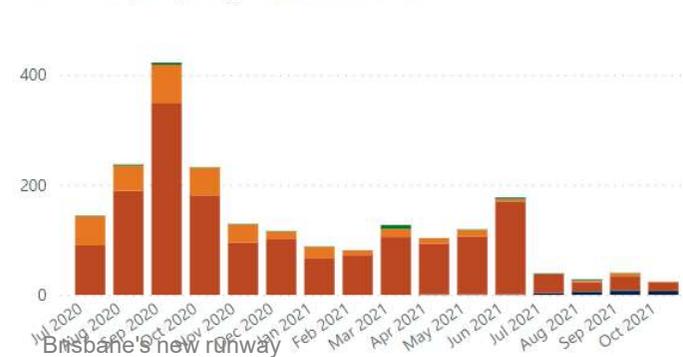


Top 10 suburbs by complainants



Complainants by month and sentiment

Sentiment ● (Blank) ● Negative ● Neutral ● Positive



# COMMITMENT TO THE COMMUNITY

BAC and Airservices is committed to continuous improvement of noise mitigation for the greater community, with safety always being the first priority



## TURBO PROP

Turbo prop operations have continued to be monitored. They were part of the Australian Noise Exposure Forecast (ANEF) and N70 calculations.

Working with BAC, Airservices implemented a temporary Noise Abatement Procedure to move operations on or south of the river during peak traffic times.

This is aligned with the EIS and community messaging.



## SODPROPS

Airservices continues to maximise Simultaneous Opposite Direction Parallel Runway Operations (SODPROPS) at night to increase over-the-bay operations.

Data shows >25% of all SODPROPS operations have occurred outside the hours of 10pm and 6am, including up to 9.30am on some mornings.



## HEIGHTS AND FREQUENCY OF OPERATIONS

BAC are reviewing the utilisation of flight paths, frequency of operations and heights of aircraft across several communities including:

- Samford
- Upper Brookfield
- New Farm
- Bulimba/Balmoral



## 7 KNOT TAILWIND

BAC, with Airservices support, is developing a proposal for the Civil Aviation Safety Authority (CASA) to consider, that proposes to extend the tailwind criteria for runway use to 7 knots (KT) to enable increased over-the-bay operations.

The (existing) 10KT tailwind criteria was included in the EIS.



## NADP MONITORING

Monitoring of Noise Abatement Departure Procedures (NADP) to ensure height compliance of operations over community.



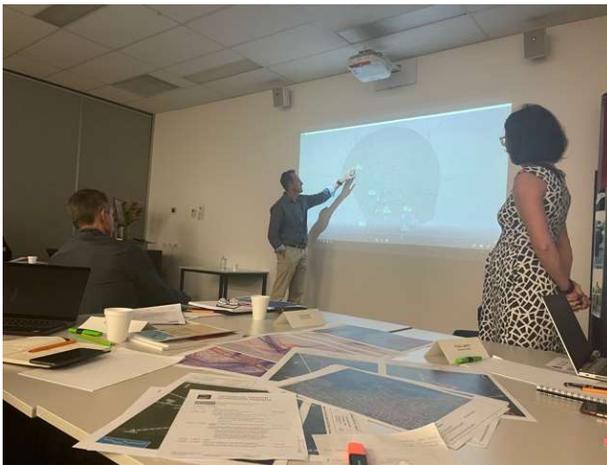
## COMMUNITY NOISE MONITOR

BAC has purchased a noise monitoring terminal that will be deployed at different locations across Brisbane.

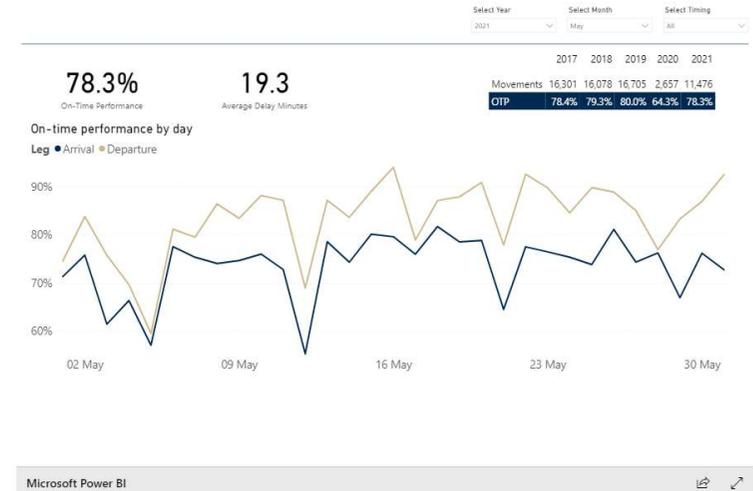
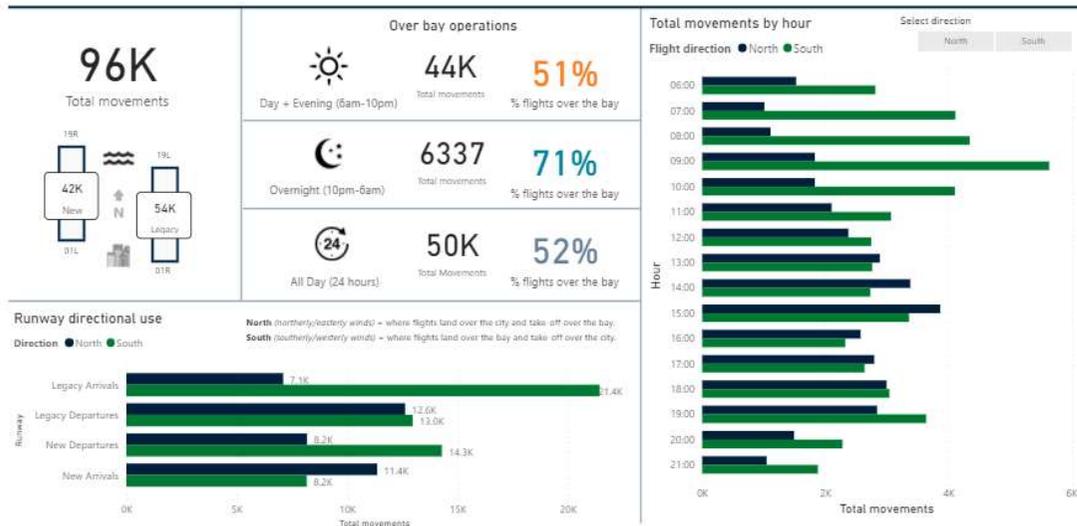
The monitor will allow BAC to observe the noise abatement procedures, investigate improved noise outcomes, and share this information with the community.

# COMMUNITY AND POLITICAL ENGAGEMENT

- Mobile information centre visits to Hamilton, Bulimba (twice), New Farm, Carindale, Chermside and Samford (COVID allowing)
- In person briefings
- Phone call and email response lines
- Technical Airspace Design Workshop
- Advice provided to local representatives on current noise mitigation activities and actions arising from Technical Briefing – briefings provided
- Federal Member and Senator briefings



# COMMUNITY DASHBOARDS - ONLINE



## BNE Runway Operations 2021

### FLIGHTS OVER THE BAY

SEPTEMBER	
☾ 10pm – 6am	66%
☀ 6am – 10pm	51%
🕒 24 hours	53%

### FLIGHTS OVER THE CITY/SUBURBS

SEPTEMBER	NEW RUNWAY	LEGACY RUNWAY
☾ 10pm – 6am	0.1%	34%
☀ 6am – 10pm	38%	11%
🕒 24 hours	33%	14%

### YEAR TO DATE (JAN – SEP)

☾ 10pm – 6am	71% (64%*)
☀ 6am – 10pm	51% (49%*)
🕒 24 hours	52% (51%*)

### YEAR TO DATE (JAN – SEP)

☾ 10pm – 6am	0.1%	29%
☀ 6am – 10pm	29%	21%
🕒 24 hours	26%	21%

Percentages are averaged for times specified & may be rounded.  
\*same period last year

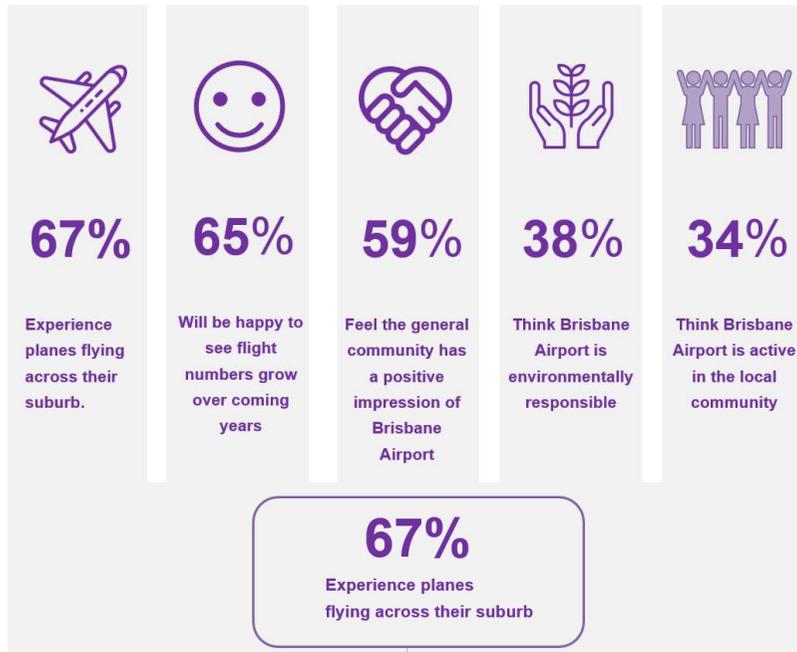
Detailed runway operational data available at [bne.com.au/runway](http://bne.com.au/runway)

## Runway Usage Forecast

The mode of operation of the runway system is determined by the wind speed and direction at the airport. This chart provides planned modes of operation based on the weather forecast at Brisbane Airport for the next 54 hours.

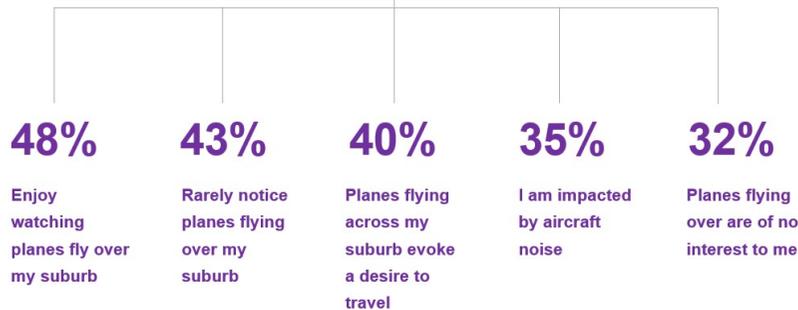
Start date and time	End date and time	Weather forecast	Wind forecast (knts)	Mode of operation	Description
16-Jun-21 12:00:00 AM	16-Jun-21 6:00:00 AM	No rain and southerly winds over 5 knots	5.82	Limited parallel '19' operations	Limited simultaneous parallel operations utilised if there are southerly winds.  All flights land over the bay onto both runways and take-off over the city from the legacy runway only.
16-Jun-21 6:00:00 AM	16-Jun-21 10:00:00 AM	Southerly winds	5.82	Parallel '19' operations	Simultaneous parallel operations where all flights land over the bay and take-off over the city from both runways.  This means arrivals and departure on both runways at the same time in a southerly flow of traffic.
16-Jun-21 10:00:00 AM	16-Jun-21 1:00:00 PM	Southerly winds	7.98	Parallel '19' operations	Simultaneous parallel operations where all flights land over the bay and take-off over the city from both runways.  This means arrivals and departure on both runways at the same time in a southerly flow of traffic.
16-Jun-21 1:00:00 PM	16-Jun-21 6:00:00 PM	Northerly winds	9.98	Parallel '01' operations	Simultaneous parallel operations where all flights land over the city and take-off over the bay from both runways.  This means arrivals and departure on both runways at the same time in a northerly flow of traffic.

# COMMUNITY PERCEPTION RESEARCH



**67%**  
Experience planes flying across their suburb

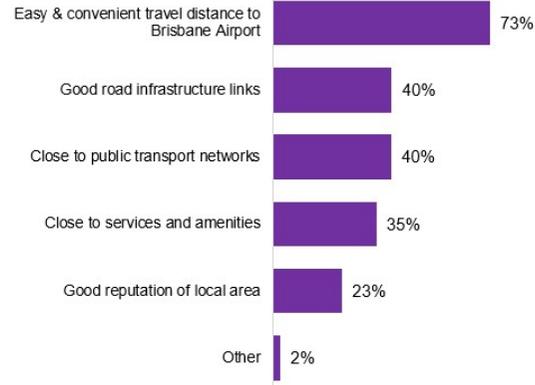
of this...



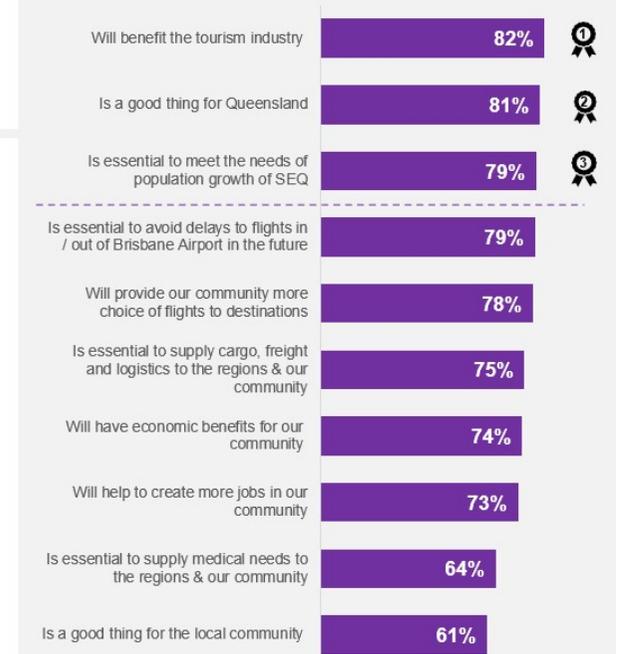
**73%**

Residents feel the main benefit of living close to the airport is convenient travel to Brisbane Airport itself\*

## BENEFITS OF LIVING NEAR THE AIRPORT\*



## LEVEL OF AGREEMENT: BENEFITS OF BRISBANE AIRPORT



s 47F

**From:** s 47F  
**Sent:** Monday, 25 October 2021 12:28 PM  
**To:** s 47F  
**Cc:** s 47F  
**Subject:** RE: Any presentations for the BAPAF meeting today? [SEC=OFFICIAL]

s 47F

s 47F is just finalising it now and will send to you. Thank you!

We'll be taking copies as handouts as well – there's a lot of content in the slides we wont necessarily speak to but which I think will be of interest to them.

s 47F

---

**From:** s 47F <[REDACTED]@infrastructure.gov.au>  
**Sent:** Monday, 25 October 2021 11:21 AM  
**To:** s 47F  
**Cc:** s 47F  
**Subject:** Any presentations for the BAPAF meeting today? [SEC=OFFICIAL]

OFFICIAL

Hi s 47F,

Hope you are well. If you have a presentation for the BAPAF meeting this afternoon, I am able to share it on the screen if you can send it through in advance.

Regards

s 47F

s 47F

Director • QLD & NT Airports, Airport Building Control & Safeguarding • Airports Branch

s 47F [@infrastructure.gov.au](mailto:[REDACTED]@infrastructure.gov.au)

s 47F

GPO Box 594 Canberra, ACT 2601

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[infrastructure.gov.au](http://infrastructure.gov.au)



*I would like to acknowledge the traditional custodians of this land on which we meet, work and live.  
 I recognise and respect their continuing connection to the land, waters and communities.  
 I pay my respects to Elders past and present and to all Aboriginal and Torres Strait Islanders.*

OFFICIAL

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**Brisbane Airport's Community Giving Fund.**

Now seeking applications from community groups in need of funding.

**APPLY NOW**

**GIVING BAC** 

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s 47F

**From:** s 47F  
**Sent:** Monday, 25 October 2021 1:03 PM  
**To:** s 47F  
**Subject:** RE: Any presentations for the BAPAF meeting today? [SEC=OFFICIAL]

s 47F has shared a OneDrive for Business file with you. To view it, click the link below.

 [BAPAF Presentation 25.10.21.pptx](#)

Hi s 47F

I have just sent this file via hightail under s 47F. This file size is large.

Also attached via a cloud link here as well.

Let me know if you have any issues

Cheers

s 47F

s 47F

s 47F

s 47F  
s 47F

s 47F  
W [www.bne.com.au](http://www.bne.com.au)

Brisbane Airport Corporation Pty Ltd  
11 The Circuit, Brisbane Airport QLD 4008  
PO Box 61, Hamilton Central QLD 4007 Australia



*We acknowledge the Turrbal people, the Traditional Custodians of the land on which we work and pay respect to their Elders past, present and emerging.*

---

**From:** s 47F @infrastructure.gov.au>  
**Sent:** Monday, 25 October 2021 11:21 AM  
**To:** s 47F  
**Cc:** s 47F  
**Subject:** Any presentations for the BAPAF meeting today? [SEC=OFFICIAL]

OFFICIAL

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Regards

s 47F

s 47F

Director • QLD & NT Airports, Airport Building Control & Safeguarding • Airports Branch

s 47F @infrastructure.gov.au

s 47F

GPO Box 594 Canberra, ACT 2601

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OFFICIAL

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s 47F

**From:** s 47F  
**Sent:** Monday, 25 October 2021 12:01 PM  
**To:** s 47F  
**Subject:** BAC Presentation

s 47F has shared 1 file.



1 file • 58.2 MB total

"Hi s 47F let me know if this doesnt work"



BAPAF Presentation 25.10.21.pptx

PPTX

58.2 MB

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s 47F

**From:** MCCLURE Phil  
**Sent:** Tuesday, 19 October 2021 3:19 PM  
**To:** s 47F  
**Cc:** BAPAF  
**Subject:** Fwd: Attendees [SEC=OFFICIAL]

OFFICIAL

OFFICIAL

**From:** s 47F  
**Date:** Tuesday, 19 October 2021 at 4:17:00 pm  
**To:** "MCCLURE Phil" <[Phil.McClure@infrastructure.gov.au](mailto:Phil.McClure@infrastructure.gov.au)>  
**Cc:** s 47F, s 47F  
**Subject:** Attendees

Phil

Attending the Forum briefing will be:

- s 47F
- s 47F
- s 47F

We will have a powerpoint presentation so let us know the best way to manage that for the day.

Thanks so much.

s 47F

s 47F

s 47F  
s 47F  
W [www.bne.com.au](http://www.bne.com.au)

Brisbane Airport Corporation Pty Ltd  
11 The Circuit, Brisbane Airport QLD 4008  
PO Box 61, Hamilton Central QLD 4007 Australia



*We acknowledge the Turrbal people, the Traditional Custodians of the land on which we work and pay respect to their Elders past, present and emerging.*

# Brisbane Airport's Community Giving Fund.

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Thursday, 11 November 2021

Mr Ross Musgrove  
Chair  
Brisbane Airport PIR Advisory Forum

C/O s 47F, Department of Infrastructure, Transport, Regional Development and Communications, s 47F @infrastructure.gov.au

Dear Ross,

Thank you for the opportunity for Brisbane Airport Corporation (BAC) to present to the Brisbane Airport PIR Advisory Forum (BAPAF). I hope the information we provided you will be useful as you navigate this process over the coming months.

As I hope we made plain in our discussions with you, BAC is fully committed to working with the BAPAF and the PIR, and we remain ready to assist at any point should you need us. Most particularly, s 47F s 47F for the new runway from prior to the EIS/MDP process right through to opening, is more than happy to provide you with any further background or insights relating to the EIS/MDP, the concept of design and operations, or answer any other technical questions. s 47F will also be available should you need s 47F

Additionally, I am happy to arrange for the members of the BAPAF to view the operations of the two runways from the Brisbane Airport Hotels Rooftop Sky Lounge. This 'aerial' perspective will allow members to gain a greater understanding of how the on-ground operations connect with the operation of the flight paths. If this would be of interest, please let me know.

One of the questions raised by Professor Baker in our meeting related to the considerations made to the airspace design following the EIS Community Consultation Period. We were not able to answer that fully on the day but below is a table which provides that detail. Additionally, the community feedback from the EIS/MDP process was factored in the decision to operate the Brisbane Airport Airspace as Closed Stars.

Suggestions from EIS Public Comment Period	Action
Operations: Flight paths should be designed so most aircraft fly over the bay all the time or use uninhabited corridors	<p>The airspace design has mandated over the bay as a priority between 10pm and 6am, and where operations and weather allow at other times to maximise over the bay use.</p> <p>Flight corridors must be aligned with the runway to a certain distance to meet regulatory requirements and then connect with existing routes.</p>

	Areas of lower population density or “green space” were considered and included where possible and flight paths kept over water as much as possible.
Height: Aircraft should fly higher on flight paths than they do	<p>The option of increasing the arrival gradient to greater than 3 degrees was considered but the regulator has a standardised approach to this in Australia and that is to stick with the 3 degrees for safety reasons.</p> <p>Prior to runway opening, BAC initiated a trial of the departure climb settings available in jet aircraft with the results on our website. Any jet departure in a southerly direction must select a noise abatement departure procedure to minimise noise impacts.</p>
Height: Aircraft to fly higher over Manly when departing RWY01R	The airspace design kept departures over water initially to gain some height before crossing the coast
Noise: Requests to mitigate lateral noise and reverse thrust on new runway	The noise abatement procedures published 21 May 2020 include minimising the use of reverse thrust at night when landing on the new runway
Noise: Requests that a noise management plan be implemented	<p>The EIS/MDP includes a draft Parallel Runway Operating Plan that was updated as a result of the submissions.</p> <p>This update included:</p> <ul style="list-style-type: none"> <li>No reverse thrust on the new runway at night</li> <li>Inclusion of the runway modes to be used at night when over the bay operations were not available</li> <li>To ensure the southern end of the new runway was not to be used between 10pm - 6am.</li> </ul> <p>BAC and Airservices established the Technical Noise and Environment Working Group to take community feedback into account to help develop the Noise Abatement Procedures that prescribe how the runways and flight paths would be used to minimise noise and overflight impacts, taking into account the Parallel Runway Operating Plan</p>

Ross, on-going, continuous improvement when it comes to aircraft noise management and mitigation must be a priority for the entire aviation industry - airports, airlines and air services providers.

BAC is firmly of the view that this must continue beyond the timeframe of the PIR, and indeed should be occurring throughout that period as well. We would welcome the assistance of the BAPAF in ensuring all parties who have a role to play in delivering operational improvements, both on the ground and in the air, make this commitment.

Please don't hesitate to contact me at any time if there's anything else you need.

Yours sincerely

s 47F

s 47F



PRESENTATION TO THE

**Brisbane Airport**

**Post Implementation Review**

**Advisory Forum**

**06 December 2021**

# WHO AM I?

- s 47F [Redacted]

# WHAT IS AusALPA?

- We are the safety and technical voice of Australia's professional pilots, dedicated to providing the highest quality safety advice to all aviation stakeholders
- We represent more than 7,100 of Australia's professional pilots
- We are the Member Association for Australia of the International Federation of Airline Pilots Associations (IFALPA)

## WHAT IS IFALPA?



- IFALPA is the global voice of pilots
- IFALPA represents over 100,000 pilots worldwide
- IFALPA has permanent observer status to the ICAO Air Navigation Commission

# MEASURES FOR MANAGING IMPACTS OF AIRCRAFT NOISE

- We recognise the political sensitivity of noise
- Almost everything that we do for operational efficiency also minimises noise
- Engine technology has dramatically reduced aircraft noise
- There is a safety limit beyond which noise abatement schemes create unnecessary risk

# MANAGING AIRCRAFT NOISE AT BRISBANE

- SODROPs: Increase tailwind from 5 knots
- Compass Mode: Nominated Runways
- RNP-AR vs ILS Approaches

# WHY KEEP 5 KNOTS OF TAILWIND?

- The anemometers do not provide accurate wind information for 19R and 19L (Pilots and ATC Reports).
- The wind given by ATC at RWY 01 threshold may not be the same along the runway and may disagree with the windsock.
- The wind information displayed to pilots at 200/500 feet can be inaccurate.
- Information provided on the ATIS will be “historical”
- One engine inoperative missed approach may not meet performance requirements
- **5 knots provides a safety buffer!**

# TAILWIND OPERATIONS > 5 KNOTS

## THE REGULATORY POSITION Pt 1

A proposal to the International Civil Aviation Organisation (ICAO) to increase the limit to 7 knots TW was not supported by the ICAO Air Navigation Commission:

EB 2014/21  
AN 13/2.5

6 June 2014

**PROPOSED AMENDMENT TO THE PROCEDURES FOR  
AIR NAVIGATION SERVICES — AIR TRAFFIC MANAGEMENT  
(PANS-ATM, DOC 4444) RELATING TO A WIND CRITERIA**

1. On 28 February 2013, State letter AN 13/2.5-13/17 was circulated to States and international organizations on a proposal for amendment of the *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM, Doc 4444) arising from the Twelfth Meeting of the Operations Panel Working Group of the Whole (OPSP/WG-WHL/12), to allow an increase in the crosswind component from 15 to 20 knots and an increase in the tailwind component from 5 to 7 knots for the purpose of runway-in-use selection.
2. After carefully reviewing safety concerns expressed in responses from Member States and selected international organizations, it was decided that the proposed amendment to the PANS-ATM be deferred until a safe and viable means to increase the tailwind component becomes available. The item has therefore been withdrawn from the work programme for the time being.

# TAILWIND OPERATIONS > 5 KNOTS

## THE REGULATORY POSITION Pt 2

The current Manual of Air Traffic Services (MATS) and the Manual of Standards for CASR Part 172 have a maximum of 5 knots, including gusts:

Existing MATS 12.2.1.3 (reflects CASR MOS Part 172)

### Crosswind/tailwind limitations

Do not nominate a runway for use when:

Runway conditions	Wind
Completely dry	Crosswind exceeds 20kt including gusts
	Tailwind exceeds 5 kt including gusts
Not completely dry	Crosswind exceeds 20 kt including gusts
	There is a tailwind component

# TAILWIND OPERATIONS > 5 KNOTS THE REGULATORY POSITION Pt 3

After a recent review, CASA did not approve the proposal to increase the 5 knots TW:



# WHAT ARE THE SAFETY CONCERNS?

Our concerns regarding SODPROPS proposal to increase the TW limit from 5 knots on RWY 01L/19R are:

1. Wind gradients (the wind is not homogeneous or linear)
2. quartering tailwind
3. long landings; or
4. runway excursions.



**Runway Excursion  
Joint Safety Analysis and  
Implementation Team**



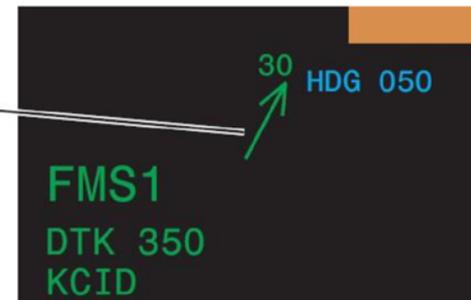
**Final Report  
Analysis and Recommendations**

*February 12, 2015*

## Wind Magnitude and Direction Display

A wind vector and speed readout show if the FMS detects a significant amount of wind. The wind vector is an arrow that turns to show the wind direction. Wind speed numerically shows (in knot next to the arrow).

Wind Speed/Direction



# WHAT ARE THE OPERATIONAL CONCERNS?

Our concerns regarding SODPROPS proposal to increase the TW limit from 5 knots on RWY 01L/19R are:

1. Go-arounds due to unstable approaches
  - a. More noise generated
  - b. Request for into wind runway
2. “Hot brakes” and greater brake “wear and tear”
  - a. Possible “blown tyres”...aircraft disabled on runway
3. Requirement to use Full Reverse
  - a. Engine Wear and Tear
  - b. Can affect warranty
  - c. More Noise
4. Delays when aircraft requests into wind runway for operational reasons (Heavy weight take-off/long range operations)

# COMPASS MODES

YBBN/BNE  **JEPPESSEN** BRISBANE, QLD, AUSTRALIA  
BRISBANE INTL 22 JAN 21 (10-1P) **AIRPORT BRIEFING**

## AIR TRAFFIC FLOW MANAGEMENT PROCEDURES

### Parallel Operations Runway Assignment

#### Departures

- a. Rwy 01L/19R for all jet aircraft to routes North and West, and
- b. Rwy 01R/19L for all jet aircraft to routes South and East.

#### Arrivals

- a. Rwy 01L/19R for all jet aircraft to routes North and West, and
- b. Rwy 01R/19L for all jet aircraft to routes South and East.

#### Aircraft arriving via ENLIP

- a. Rwy 01L/19R for all aircraft arriving via ENLIP STAR.

# Compass Flight Paths (SODROPS IFPs)

SODPROPS Instrument Flight Procedures:

1. STARs connected to RNP AR or ILS (3D approaches),
2. All STARs connected to ILS from south and east, and all STARs connected to ILS and RNP from SW, west and north.
3. Departures via RNAV ASISO SID.

Issues:

1. Pilot may not be assigned the most suitable approach or runway
2. Track miles may be increased (greater fuel burn)

**Bottom Line: Despite the “optimum” NAP flight paths, the aircraft still has to fly an approach and land, so the concerns about the type of approach and tailwind remain.**

# ILS vs RNP-AR

- All QF, JQ and VA aircraft are capable of both approaches
- QF Link (Q400) will soon be able to conduct RNP-AR
- F100/Dash8/RFDS cannot do RNP-AR
- International aircraft normally given the ILS
- Higher Minima (280FT/1500m; 430FT/2400m) on RNP-AR vs ILS (200FT/800m)

# ILS vs RNP-AR

- RNP is generally the preferred option in good weather, or even moderate weather without thunderstorms.
- For very low cloud base, low vis, or moving thunderstorms, ILS is definitely the preferred option.
- ILS provides lower minima and better manoeuvre capability
- Being on the localiser and glide path is the best position to obtain visual reference and prevents go arounds.

# Why Do ATC Go For ILS rather than RNP?

- Pilots like the RNP, because it's the shorter track.
- However ATC finds it difficult to sequence ILS and RNP at the same time, because the software doesn't project future times/separation on those separate tracks.
- It is hard for the controller to separate someone on the RNP at 8 miles and someone on the ILS at 3 miles.
- In high workload situations, ATC tend to go for the ILS for ease of sequencing
- ATC haven't, or only recently have, gone to independent arrivals. This was simply a training/work supply issue
- **Enhancements:** Software upgrades to enable separation with people on different approaches to same runway; and independent arrivals to parallel runways

# AusALPA's Summary

- The increase in tailwind component for aircraft operating on Runway 01/19 creates an inherent risk for flight crews.
- Pilots need to have the option to select either the ILS approach or the RNP-AR and not be sequenced for RNP approaches due to noise abatement only.
- Enhancements should enable a better mix of approaches.
- With recency issues, direct tracking is not a safety priority at this time.

# Questions

Thank you the opportunity to speak to you today.

Any follow-up questions can be directed to

s 47F

or

s 47F

s 47F

---

**From:** s 47F  
**Sent:** Thursday, 9 December 2021 4:26 PM  
**To:** BAPAF; MCCLURE Phil; s 47F  
**Cc:** s 47F  
**Subject:** RE: Brisbane Airport Post Implementation Review Advisory Forum [SEC=OFFICIAL]  
**Attachments:** 211206 AusALPA Presentation to BAPIRAF.pdf

Dear Phil,

Please find attached the PDF copy of the AusALPA presentation.

I have reformatted some of it for clarity, but the content remains the same.

Please let me know if you require any further information.

Kindest regards,

s 47F

s 47F | **Australian Airline Pilots Association**  
Suite 6.01, Level 6, 247 Coward Street, Mascot NSW 2020

s 47F

---

**From:** BAPAF  
**Sent:** Thursday, 9 December 2021 15:46  
**To:** s 47F ; BAPAF ; MCCLURE Phil ; s 47F  
**Cc:** s 47F  
**Subject:** RE: Brisbane Airport Post Implementation Review Advisory Forum [SEC=OFFICIAL]

**OFFICIAL**

Thank you very much s 47F .

Kind regards,

**BAPAF Secretariat**

[BAPAF@infrastructure.gov.au](mailto:BAPAF@infrastructure.gov.au)

GPO Box 594 Canberra, ACT 2601

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**OFFICIAL**

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**From:** s 47F  
**Sent:** Thursday, 9 December 2021 2:17 PM  
**To:** BAPAF <[BAPAF@infrastructure.gov.au](mailto:BAPAF@infrastructure.gov.au)>; MCCLURE Phil <[Phil.McClure@infrastructure.gov.au](mailto:Phil.McClure@infrastructure.gov.au)>; s 47F  
**Cc:** s 47F <[s47F@infrastructure.gov.au](mailto:s47F@infrastructure.gov.au)>  
**Subject:** RE: Brisbane Airport Post Implementation Review Advisory Forum [SEC=OFFICIAL]

Dear Phil,

I will send it through to you shortly.

Kindest regards,

s 47F

s 47F  
Australian Airline Pilots Association  
Suite 6.01, Level 6, 247 Coward Street, Mascot NSW 2020  
s 47F

---

**From:** BAPAF <[BAPAF@infrastructure.gov.au](mailto:BAPAF@infrastructure.gov.au)>  
**Sent:** Wednesday, 8 December 2021 17:18  
**To:** s 47F <[s47F@infrastructure.gov.au](mailto:s47F@infrastructure.gov.au)>; MCCLURE Phil <[Phil.McClure@infrastructure.gov.au](mailto:Phil.McClure@infrastructure.gov.au)>; s 47F  
**Cc:** s 47F <[s47F@infrastructure.gov.au](mailto:s47F@infrastructure.gov.au)>; BAPAF <[BAPAF@infrastructure.gov.au](mailto:BAPAF@infrastructure.gov.au)>  
**Subject:** RE: Brisbane Airport Post Implementation Review Advisory Forum [SEC=OFFICIAL]

**OFFICIAL**

Dear s 47F,

We are contacting you to enquire if it's possible to obtain a copy of the Power Point presentation used during the discussion with the Forum on Monday?

Kind regards,

**BAPAF Secretariat**  
[BAPAF@infrastructure.gov.au](mailto:BAPAF@infrastructure.gov.au)  
GPO Box 594 Canberra, ACT 2601



**OFFICIAL**

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**From:** s 47F  
**Sent:** Tuesday, 30 November 2021 9:55 AM  
**To:** MCCLURE Phil <[Phil.McClure@infrastructure.gov.au](mailto:Phil.McClure@infrastructure.gov.au)>; s 47F  
**Cc:** s 47F <[s47F@infrastructure.gov.au](mailto:s47F@infrastructure.gov.au)>; BAPAF <[BAPAF@infrastructure.gov.au](mailto:BAPAF@infrastructure.gov.au)>  
**Subject:** RE: Brisbane Airport Post Implementation Review Advisory Forum [SEC=OFFICIAL]

Thanks Phil!

Kindest regards,

s 47F

s 47F  
Australian Airline Pilots Association  
Suite 6.01, Level 6, 247 Coward Street, Mascot NSW 2020  
s 47F

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**From:** MCCLURE Phil <[Phil.McClure@infrastructure.gov.au](mailto:Phil.McClure@infrastructure.gov.au)>  
**Sent:** Tuesday, 30 November 2021 10:25  
**To:** s 47F  
**Cc:** s 47F <[s47F@infrastructure.gov.au](mailto:s47F@infrastructure.gov.au)>; BAPAF <[BAPAF@infrastructure.gov.au](mailto:BAPAF@infrastructure.gov.au)>; s 47F  
**Subject:** RE: Brisbane Airport Post Implementation Review Advisory Forum [SEC=OFFICIAL]

**OFFICIAL**

Thanks s 47F,

s 47F – we have scheduled your discussions with the Forum for 11.45am (NSW time – 10.45am Qld time) next Monday for around ½ hour. We will send through details of the Team link shortly.

The Forum will be interested in discussing operations at Brisbane Airport, including the compass model and implications for pilots from initiatives to lessen or spread aircraft noise impacts on communities.

Regards,

**Phil McClure**

Assistant Secretary • Airports Branch • Domestic Aviation & Reform Division  
[phil.mcclure@infrastructure.gov.au](mailto:phil.mcclure@infrastructure.gov.au)  
P +61 2 6274 6289 • s 47F  
GPO Box 594 Canberra, ACT 2601

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*I would like to acknowledge the traditional custodians of this land on which we meet, work and live.  
I recognise and respect their continuing connection to the land, waters and communities.  
I pay my respects to Elders past and present and to all Aboriginal and Torres Strait Islanders.*

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**From:** s 47F  
**Sent:** Monday, 29 November 2021 5:01 PM  
**To:** MCCLURE Phil <[Phil.McClure@infrastructure.gov.au](mailto:Phil.McClure@infrastructure.gov.au)>  
**Cc:** s 47F <[s47F@infrastructure.gov.au](mailto:s47F@infrastructure.gov.au)>; BAPAF <[BAPAF@infrastructure.gov.au](mailto:BAPAF@infrastructure.gov.au)>; s 47F  
**Subject:** RE: Brisbane Airport Post Implementation Review Advisory Forum [SEC=OFFICIAL]

Hi Phil,

I apologise for the delayed response.

s 47F will be representing AusALPA and, given the current uncertainties around domestic borders, will meet by video link. s 47F, should you require any background.

I have included s 47F email address so that you can coordinate timings and the relevant meeting links. Could I ask that you continue to include me as an info addressee so that I can act as backstop should things change.

Regards,

s  
47F

s 47F

s 47F

**Australian Airline Pilots' Association (Member of IFALPA)**

Suite 6.01, Level 6, 247 Coward Street, Mascot NSW 2020

s 47F

[www.ausalpa.org.au](http://www.ausalpa.org.au)



---

**From:** MCCLURE Phil [<mailto:Phil.McClure@infrastructure.gov.au>]  
**Sent:** Monday, 15 November 2021 5:17 PM  
**To:** s 47F  
**Cc:** s 47F; BAPAF  
**Subject:** Brisbane Airport Post Implementation Review Advisory Forum [SEC=OFFICIAL]

**OFFICIAL**

s 47F,

I am emailing in regard to the [Brisbane Airport Post Implementation Review Advisory Forum](#), an independent Forum established by the Australian Government to provide input and advice to an Airservices Australia review of airspace operations at Brisbane Airport, and report to the Deputy Prime Minister. The Airports Branch in the Department of Infrastructure is providing Secretariat support to the Forum.

The Forum has had presentations from Airservices, Brisbane Airport, CASA and the Aircraft Noise Ombudsman and is interested in having a discussion with the Australian Airlines Pilots' Association in relation to flights paths and operational requirements at Brisbane Airport.

If possible, we would hope to organise for an AusALPA representative to meet with the Forum members on the morning of Monday, 6 December 2021. The meetings are in Brisbane and we can arrange for you to meet remotely via video link if the appropriate representative is not Brisbane based.

If you could please let me know if an AusALPA representative is available for that day, we can provide further details on arrangements.

For your information, the Forum members are:

- Mr Ross Musgrove, Chair (ex-Local Government)
- The Hon Robert Borbidge AO (former Queensland Premier)
- Ms Claire Moore (former Queensland Senator)
- Mr Nigel Chamier (Chair of the Brisbane Airport Community Aviation Consultation Group)
- Mr Douglas Baker (Academic from QUT)

Happy to discuss.

Regards,

**Phil McClure**

Assistant Secretary • Airports Branch • Domestic Aviation & Reform Division  
[phil.mcclure@infrastructure.gov.au](mailto:phil.mcclure@infrastructure.gov.au)  
P +61 2 6274 6289 • s 47F  
GPO Box 594 Canberra, ACT 2601

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*I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respects to Elders past and present and to all Aboriginal and Torres Strait Islanders.*

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# Noise Amelioration Programs at Australian federal leased airports

November 2021

This note has been prepared by the Department of Infrastructure, Transport, Regional Development and Communications at the request of, and for the information of, the Brisbane Airport Post Implementation Review Advisory Forum.

## Overview

Sydney and Adelaide Airport have both been subject to Noise Amelioration Programs. The Programs were in effect at different time periods but largely followed the same criteria.

The Programs were funded by an aircraft noise levy under the *Aircraft Noise Levy Act 1995* and the *Aircraft Noise Levy Collection Act 1995*. The levies were imposed on operators of jet aircraft using the airport. Airlines passed the cost on to passengers through ticket prices. The Airport did not financially contribute to the Program.

Australian airports use Australian Noise Exposure Forecasts (ANEF) to map areas of higher noise impacts around the airport based on forecast aircraft movements on an average day. The ANEF index is derived through detailed calculations which take account of factors such as numbers of aircraft movements, time of day/night, type of operation (take-off, landing or circuit), runway used, aircraft type and flight path. The higher the ANEF, the greater the noise impact. ANEFs are not directly comparable to N-contours, which measure the average number of noise events above a certain decibel level per day.

The Australian Standard AS2021 (current version 2015) Acoustics—Aircraft noise intrusion— Building siting and construction sets out design targets for residential dwellings outside the ANEF 30 contour as 50 db(A) in bedrooms and 60 db(A) in other living areas of the dwelling. However, the design standards apply to new dwellings and it is more difficult to achieve better noise outcomes when retro-fitting residences with noise insulation measures. Construction of new residential dwellings are 'unacceptable' under the AS2021 above the ANEF 25 contour.

## Sydney (Kingsford-Smith) Airport Noise Amelioration Program

The Sydney Airport Noise Amelioration Program (the Program) was introduced in November 1994.

### **Program parameters**

The program committed to voluntarily acquire all residences, churches and child care centres in the ANEF 40 contour zone by the end of 1996.

Residential properties in the then ANEF 30 contour and public buildings such as schools, churches, day care centres and hospitals in the ANEF 25 contour were eligible for financial and technical assistance under the program.

## Outcomes

The Program was completed in the early 2000s and the airport levy ceased on 1 July 2006, once it had recovered all expenditure incurred in the program (\$421.1 million).

Overall, the Program insulated 4083 residential dwellings and 99 public buildings, including 27 schools, 29 child care facilities, 7 nursing homes/hostels and 36 churches. 147 residential dwellings and one church were voluntarily acquired.

For residential dwellings, there was no noise reduction target for insulation projects set (seemingly due to the wide variance in achievability in existing dwellings).

## Map of eligible areas

The Department has been unable to locate a digital ANEF map indicating eligible areas for financial or technical support under the Program.

# Adelaide Airport Noise Amelioration Program

The Adelaide Airport Noise Insulation Program was introduced in May 2000.

## Program parameters

Residential properties in the ANEF 30 contour and public buildings such as schools, churches, day care centres and hospitals in the ANEF 25 contour were eligible for assistance under the program.

## Outcomes

The Program was completed in 2011 and the airport levy ceased on 31 March 2010, once it had recovered all expenditure incurred in the program (\$52.2 million funded through levies, with insulation for one additional church funded through the 2015-16 Budget for \$2.5 million).

Overall, the Program insulated 648 residential dwellings and 9 public buildings.

## Map of eligible areas - Adelaide



# Noise Amelioration Programs at other Australian federal leased airports

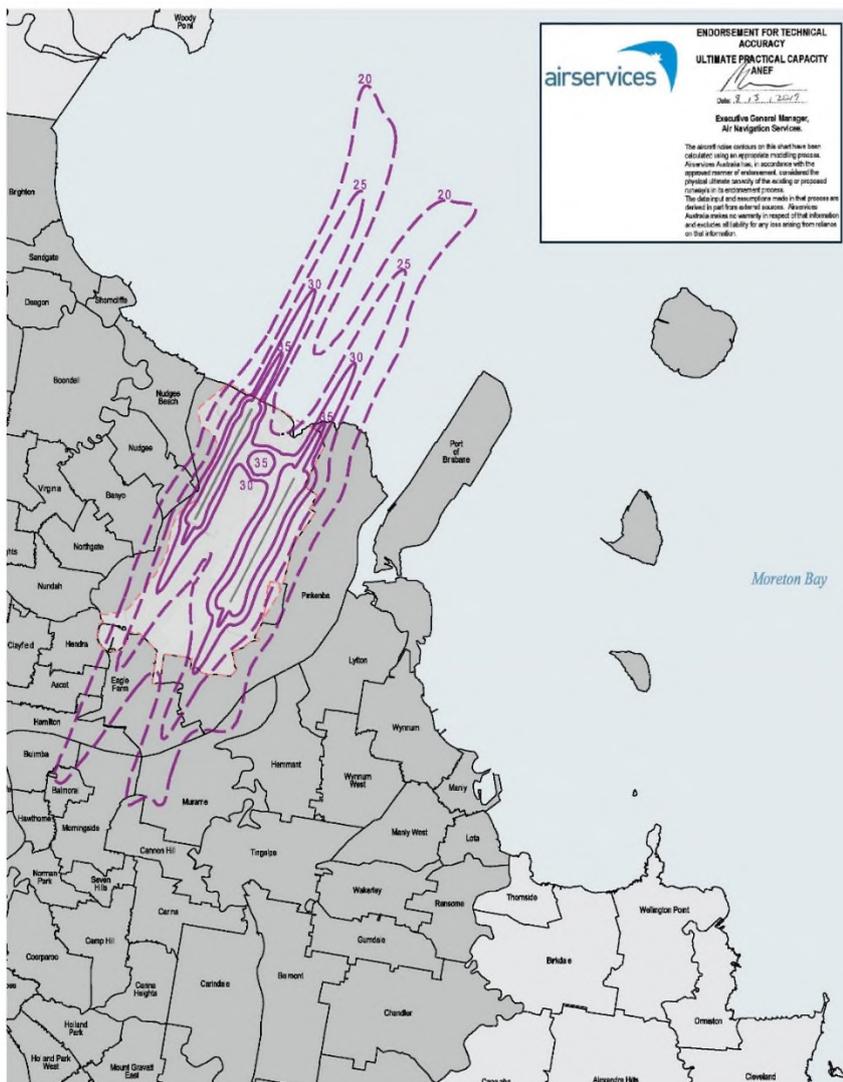
Calls for a noise amelioration scheme for Perth Airport were dismissed in the then-Government's response to the Rural and Regional Affairs and Transport References Committee inquiry into Airservices Australia's management of aircraft noise in 2010. The Government response noted:

The Aircraft Noise Insulation Programs implemented in Sydney and Adelaide provided insulation measures for public buildings in the 25 Australian Noise Exposure Index (ANEI), for houses in the 30 ANEI and for voluntary acquisition above the 40 ANEI. Residences in Perth in the vicinity of the aircraft flight paths introduced as a result of the Western Australian Route Review Project lie well outside these noise contours.

In May 2018 Western Sydney Airport Corporation announced that \$75 million has been allocated for noise amelioration for Western Sydney Airport, funded through a \$445 million environmental offset fund. In addition, new residential developments will not be permitted where the ANEF exceeds 20, a more stringent requirement than at Kingsford Smith Airport where development is restricted above ANEF25.

## Brisbane Airport 2020 Master Plan ANEF map

For information, below is a copy of the endorsed ANEF for Brisbane Airport set out in the 2020 Master Plan. The majority of residential dwellings fall outside the ANEF 25.



This Ultimate Capacity ANEF is a land use planning tool of relevance to state and local planning authorities.



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**Basic Chronology**

- 27 May 2005 Airservices refer to the Minister for the Environment – EIS advised
- 2006/07 EIS public consultation on concept flight paths
- July 2017 Preliminary Design completed
- Aug 2017 *Preliminary Design Review Report* – did not include comparison of MDP/EIS concept and preliminary design
- Nov 2017 Final flight path design completed within EIS boundary
- 29 Mar 2018 NPR Noise Modelling Assumptions document completed to agree approach to modelling of final flight paths (AirBiz document but involved ASA and BAC in development) – note document was finalised on this date following application in EAs
- 23 Mar 2018 EA 1318 Airspace Change over Moreton Bay**
- 24 Apr 2018 EA 1316 Airspace Change over Archerfield**
- 26 Apr 2018 EA 1319 Airspace Change over Redcliffe**
- 26 Apr 2018 EA 1320 Airspace Change over Deception Bay**
- Pre May 2018 *Brisbane NPR Flight Path Summary* document completed including comparison of EIS and final flight paths
- Pre May 2018 BAC Noise Footprint Comparison – completed by Airservices, BAC and AirBiz after 7 workshops to assess the final design within the EIS assessed area.** This then compared concept and final flight paths within the EIS boundary. It found there was no significant difference between the concept and final flight path design in the area assessed by the EIS
- 29 May 2018 *Critical Design Review Report* – compared MDP/EIS concept and final design and noted there was not a “significant” difference between the two designs
- 7 May 2018 Airservices wrote to Minister for the Environment advising support of BAC Noise Footprint Comparison document – no “significant” difference between the two designs
- 18 Jun 2018 EA 1340 Changes to Routes Associated with Brisbane NPR (37 routes)**
- 9 Aug 2018 Airservices wrote to Minister endorsing conclusion in Noise Footprint Comparison – no difference
- 21 Dec 2018 EA 1353 SIDs and STARS outside the EIS boundary**
- 28 Jun 2019 EA 1340 (v2) Changes to Routes Associated with Brisbane NPR (42 routes)**
- 6 Dec 2019 Supplementary report to EA 1353 SIDS and STARS outside the EIS boundary**

\*Environmental Assessments noted in bold for ease of identification



## The operation of 10 knots at Brisbane Airport

To support the activities of the Brisbane Airport PIR Advisory Forum, Brisbane Airport Corporation (BAC) has compiled the history of, and references to, 10 knot downwind operations at Brisbane Airport.

### Runway modes of operation at the time of the EIS/MDP

At the time of development of the EIS/MDP, Brisbane Airport airspace was operating primarily in one of the three modes described below. The mode used was dependent on weather conditions on any given day.

- 01' mode, in which jet aircraft arrived from the south and depart to the north on the main runway, with a very small number of operations, generally by non-jet aircraft, on the cross runway in the north-westerly ('32') direction;
- '19' mode, in which jet aircraft arrived from the north and depart to the south on the main runway, with a significant number of operations, generally by non-jet aircraft, on the cross runway in the south-easterly ('14') direction; and
- 'Reciprocal Runway Operations' mode, in which all jet aircraft departed to the north and arrived from the north on the main runway – that is all operations occurred over Moreton Bay. This mode was the priority mode between 10pm and 6am.

The 'Reciprocal Runway Operations' mode was a low capacity 'nose-to-nose' mode only used for noise abatement at night between the hours of 10.00pm and 6.00am. It was used when:

- The tailwind component of the wind was less than 10 knots (~18 km/hr);
- The runway was dry; and
- The total number of aircraft movements was less than 12 per hour to allow sufficient spacing between departures and arrivals

Brisbane Airport was operating with 10 knots tailwind while in the Reciprocal mode and had been since the late 1980's.

### 10 knot and 5 knot assumptions used for the Runway modes of operation in the EIS/MDP

Below is the draft operating plan which was featured in the EIS/MDP

**Table 10.4a:** Weekday Operations – Monday to Friday.

WEEKDAY OPERATIONS – Monday to Friday		
Day Mode (6am to 8pm)	1.	Mode 1: SODPROPS (downwind up to 5 knots) – ‘passive’ i.e. at Airservices Australia discretion to be used if air traffic are low for an extended period
	2.	Mode 6: RWY19 Mixed Parallel
	3.	Mode 2: RWY01 Mixed Parallel
Evening Mode (8pm to 10pm)	1.	Mode 1: SODPROPS (downwind up to 5 knots) – ‘active’ i.e. to be used if available
	2.	Mode 6: RWY19 Mixed Parallel
	3.	Mode 2: RWY01 Mixed Parallel
Night Mode (10pm to 6am)	1.	Mode 1: SODPROPS (downwind up to 5 knots) – ‘active’
	2.	Mode 11: DODPROPS (downwind 5 to 10 knots) – ‘active’
	3.	Mode 12: DODPROPS + 19R non-jet departures
	4.	Mode 9: RWY19 Semi-mixed Parallel – departures RWY19L only (or Mode10b)
	5.	Mode 4: RWY01 Semi-mixed Parallel – arrivals RWY01R only (or Mode 10a)

**Table 10.4b:** Weekend Operations – Saturday and Sunday.

WEEKEND OPERATIONS – Saturday and Sunday		
Day Mode (8am to 8pm)	1.	Mode 1: SODPROPS (downwind up to 5kts) – ‘passive’ i.e. at Airservices Australia discretion
	2.	Mode 6: RWY19 Mixed Parallel
	3.	Mode 2: RWY01 Mixed Parallel
Evening Mode (8pm to 10pm)	1.	Mode 1: SODPROPS (downwind up to 5kts) – ‘active’ i.e. must be used if available
	2.	Mode 6: RWY19 Mixed Parallel
	3.	Mode 2: RWY01 Mixed Parallel
Night Mode (10pm to 6am)	1.	Mode 1: SODPROPS (downwind up to 5 knots) – ‘active’
	2.	Mode 11: DODPROPS (downwind 5 to 10 knots) – ‘active’
	3.	Mode 12: DODPROPS + 19R non-jet departures
	4.	Mode 9: RWY19 Semi-mixed Parallel – departures RWY19L only (or Mode10b)
	5.	Mode 4: RWY01 Semi-mixed Parallel – arrivals RWY01R only (or Mode 10a)
Early Morning (6am to 8am)	1.	Mode 1: SODPROPS (5 knots) – ‘active’ i.e. must be used if available
	2.	Mode 6: RWY19 Mixed Parallel
	3.	Mode 2: RWY01 Mixed Parallel

The operating modes featured in the EIS/MDP for the New Parallel runway were based on the following conditions:

**Mode 1 – SODPROPS (Simultaneous Opposite Direction Parallel Runway Operations):** A low to medium capacity mode with operations over Moreton Bay with some non-jet departures permitted from runway 19R (5am to 10pm only). This was and still is BAC’s preferred operating mode for noise mitigation when traffic movement numbers and weather conditions permit. While this mode results in extra track miles for aircraft to and from the south, and fewer track miles for aircraft to and from the north, it is the preferred mode as it overflies the least number of people.

Mode use and availability is summarised as follows:

- Weather conditions: Visual with up to 5 knots tailwind and dry runway only.
- During the day and evening, use is limited to low movement periods (weather permitting).
- Use of SODPROPS is conditional on the number of arriving and departing aircraft. When the total number of aircraft exceeds 55 in a single hour, SODPROPS mode would not be available.
- Alternative non-jet departure

- **Mode 11 – DODPROPS (Dependent Opposite Direction Parallel Runway Operations):** A low-capacity mode with all jet movements departing or landing over Moreton Bay for night time (10pm and 6am) noise mitigation. It replaced the reciprocal runway operations (single runway night time mode) in place for the old runway system with landings and departures segregated on separate and distinct runways ie departures from runway 01R and arrivals on runway 19R. An aircraft would not be permitted to take off from runway 01R until an aircraft landing on runway 19R was safely on the ground which reduced the capacity relative to SODPROPS.

Mode use and availability is summarised as follows:

- Weather conditions: Visual with up to 10 knots tailwind and dry runway only.
  - Restricted to use in the night period only (10pm to 6am).
  - This reciprocal mode has a low capacity of 20 movements per hour, comprising of 10 arrivals and 10 departures, with arrivals and departures dependant on each other for separation and safety reasons.
- **Mode 12 – DODPROPS with Limited Non-Jet Departures off 19R:** A low capacity night time (10pm to 6am) DODPROPS mode similar to Mode 11 with all jet movements departing or landing over Moreton Bay for noise mitigation but with non-jet aircraft departures permitted from runway 19R after 5am when the aircraft departure movement rate exceeds Mode 11 runway capacity.

Mode use and availability is summarised as follows:

- Weather conditions: Visual with up to 10 knots downwind and dry runway only.
- Restricted to use in the night period only (10pm to 6am).
- Mode 12 is a low-capacity mode similar to Mode 11 comprising of 10 arrival movements per hour and 10 jet departures per hour but will permit additional limited non-jet (low noise) departures off runway 19R to maintain over-bay operations for jet aircraft if departure movements exceed capacity for Mode 11 (10 departures per hour). Arrivals and departures are still dependant on each other for separation and safety reasons.

### **Change to the local dispensation for the operation of 10 knots at Brisbane Airport**

Brisbane Airport Corporation received advice from Airservices Australia on the 18 July 2016 "CASA does not support the runway nomination criteria of 10 Knots downwind as previously advised by [s 47F](#) on 7 June 2016."

### **New Parallel Runway Airspace Design: Noise Footprint Comparison to the 2007 Environmental Impact Statement and Major Development Plan.**

In 2018, Brisbane Airport Corporation supplied to relevant authorities including the Department of Infrastructure, Transport, Regional Development & Communication, CASA, and Airservices Australia a detailed report outlining the changes to the airspace design that had occurred since the EIS/MDP. Below is the table summary of the changes which was included in the document.

TABLE 1:  
**SUMMARY OF OBSERVABLE DIFFERENCES BETWEEN THE NOISE MODELLING  
COMPLETED FOR THE EIS/MDP AND THE LATEST AIRSPACE DESIGN**

Issue	Impact	Location	Comment
Reduction in anticipated aircraft movements/delay in reaching anticipated traffic level	Reduction of expected noise impact for specific year	All	2020 day of opening scenario is now being compared with EIS 2015 scenario
Aircraft fleet developments	Reduction in noise due to quieter aircraft	All	Although quieter aircraft were anticipated in 2007, they were not able to be modelled by the FAA INM as the model did not contain those types at the time
Introduction of smart tracking (RNP arrivals) in 2011 and 2015	Reduction in impact on most northerly approach, increase in smart tracking from the south-east, reduction in aircraft using Instrument Landing System (ILS)	South-east approaches to existing runway 01/19	Not related to new runway project. Already assessed by Airservices consistent with the EPBC Act
Changes established by CASA relating to tailwind limits for runway nomination for over-water operations	Changed circumstances around authorisation of Airservices' ability to nominate a tailwind runway of up to 10 knots in excess of the International Civil Aviation Organisation (ICAO)/CASA 5 knot criterion. Subsequent need for an increase in movements to the south at night	Southern suburbs	Largely offset by other reductions. Not related to new runway project  Airservices still able to offer a tailwind runway up to 10 knots where requested by pilot.
Changes in FAA INM	Very minor expansion of lateral boundaries, small shift from existing runway to new runway	Lateral boundaries of the N70 contours, east and west of the airport	Very minor changes, offset by other reductions

## References in supporting documentation

### EIS/MDP

- Volume D – Airspace, Chapter D2: Background to Airspace Architecture,
  - 2.7 Runway modes of Operation
- Volume D – Airspace, Chapter D3: Airspace Architecture
  - 3.3.1.1 Mode 1 - SODPROPS
  - 3.3.1.2 Mode 11 - DODPROPS
  - 3.3.1.3 Mode 12 – DODPROPS with Limited Non-Jet Departures off 19R
- Volume D – Airspace, Chapter D5: Noise Assessment
  - 5.2.2 Constraints on Mode Selection
  - 5.2.5 Special Night Time Operating Modes
- Volume D – Airspace, Chapter D10: Operational Noise Management Plan
  - 10.4.2 Rules for Mode Selection – Active versus Passive
  - Table 10.4a

**New Parallel Runway Airspace Design: Noise Footprint Comparison to the 2007 Environmental Impact Statement and Major Development Plan.**

- Executive Summary
  - Table 1: Summary of observable differences between the noise modelling completed for the EIS/MDP and the latest Airspace Design
- Chapter 3: Results of the noise modelling
  - Table 6: Summary of influences on noise modelling results