

# MEETING MINUTES

**Date:** Wednesday, 04 March 2020  
**Time:** 09:00 – 12:00  
**Location:** Twin Towns Services Club - Visions Room

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## 1.0 Opening, Attendance & Apologies

Chairman, Ron Brent, opened the meeting at 09:02 and welcomed members and observers to the March CACG meeting. The Chairman also acknowledged the traditional custodians of the land on which we met, and paid our respects to their elders, past present and emerging.

Refer to Attachment 1 for attendance and apologies.

## 2.0 Consideration of Previous Minutes/Action List

### *2.1 CACG Meeting held 06 November 2019*

The Chair sought feedback from members on the minutes from the 06 November 2019 meeting.

The minutes were **endorsed and accepted** by the committee.

### *2.1 Action List & Recommendations*

Refer to Attachment 2: ANACC Action List<sup>1</sup> for full details of action items.

#### Action Item 13 – Offset Area Management Plans

- The second of the two Project LIFT Offset Area Management Plans was approved by the Department of the Environment and Energy on November 14. The Project LIFT Offset Public Report was subsequently published on the Gold Coast Airport website on the 12 December with email sent to the CACG with link on 18/12/2019.
- Item updated to **CLOSED** on the action list.

#### Action Item 23 – PFAS

- Airservices will advise the Secretariat when reports are published for circulation to the committee.
- Item updated to **CLOSED** on the action list.

#### Action Item 25 – PFAS

- Airservices advised that the procurement process is in the final stages. They are still hoping for it to occur in March. Characterisation is expected to start in March 2020, pending the finalisation of the contract.

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<sup>1</sup> Members will note amendments to the layout, numbering and information provided in the CACG Action List. Amendments are intended to make tracking, management and close out of actions easier for the Chair, members and the Secretariat. Member understanding is appreciated for editorial errors made in the transition of actions into new format.

- Members requested that a team member from the DSI address the Gold Coast Airport CACG at the next meeting.
- Action item to be **CARRIED TO THE NEXT MEETING.**

#### Action Item 34 – Air Quality Monitoring

- Gold Coast Airport advised that off-airport testing has not commenced yet.
- Action item to be **CARRIED TO THE NEXT MEETING.**

#### Action Item 36 – Airport Southern Access Road

- Gold Coast Airport advised that no substantial progress has been made on this project. GCA will provide an update once able.
- Action item to be **CARRIED TO THE NEXT MEETING.**

#### Action Item 40 – ILS

- The Chair noted that the report is provided as part of the ANACC minutes which are being circulated to the CACG.
- Item updated to **CLOSED** on the action list.

#### Action Item 42 – Offset Area Management Plans

- As per Action Item #13 the Secretariat circulated an email with link to the report on the GCA website.
- Members queried if it is likely to be updated following the bushfires going through the offset areas. Norbert advised that GCA has conducted an assessment to understand the implications of the bush fires on one of the areas and we are still able to meet the requirements of the offset management plan.
- Item updated to **CLOSED** on the action list.

#### Action Item 45 – ILS

- The Department of Infrastructure advised they do not receive ILS detail from Airservices. They can however include runway use in the curfew reports. The Chair to provide feedback to the Department.
- Item updated to **CLOSED** on the action list.

#### Action Item 46 – ILS

- As per Action Item #40.
- Item updated to **CLOSED** on the action list.

#### Action Item 47 – Meeting Minutes

- Minutes sent 12/11/2019.
- Item updated to **CLOSED** on the action list.

#### Action Item 48 – Information Requests

- Letter from the Chair sent to Airservices.
- Item updated to **CLOSED** on the action list.

#### Action Item 49 – Air Quality Monitoring

- Information sent to members on 20/11/2019.

- Item updated to **CLOSED** on the action list.

#### Action Item 50 – Air Quality Monitoring

- Chair wrote to both departments on 09/01/2020. Responses received and included at 8.1 and 8.2.
- Chair to write as suggested by the health departments in their responses to the relevant departments.
- Action item to be **CARRIED TO THE NEXT MEETING**.

#### Action Item 51 – Air Quality Monitoring

- Information sent to members on 20/11/2019.
- Item updated to **CLOSED** on the action list.

#### Action Item 52 – PFAS

- Chair wrote to GCA on 05/01/2020.
- Item updated to **CLOSED** on the action list.

#### Action Item 53 – Meeting Agenda

- Departures over Kingscliff included on March 2020 agenda.
- Item updated to **CLOSED** on the action list.

#### Action Item 54 – Departures

- No feedback provided by members.
- Item updated to **CLOSED** on the action list.

#### Action Item 55 – Noise Monitors

- Chair wrote to ANACC and Airservices.
- Item updated to **CLOSED** on the action list.

#### Action Item 56 – Noise Monitors

- <https://webtrak.emsbk.com/ool3>
- Airservices noted that the temporary noise monitors are in the process of being removed.
- Airservices noted that the locations of monitors will be reconsidered following the end of the post implementation review for the ILS.
- Members asked if Airservices can provide feedback to the committee ahead of the next ANACC on noise monitor locations following the end of the ILS post implementation review. Members noted work should commence now on the review of the noise monitors to the south, including the review of potential locations.
- Members queried if the post implementation review will be provided to the CACG once finalised. Airservices confirmed the CACG will be update throughout the process.
- Item referred to ANACC to follow up and close out. Item updated to **CLOSED** on the action list.

#### Action Item 57 – Runway Usage

- RPT distribution on each runway matches general RPT distribution.
- Members noted that this additional information has been sought for 10 years and is not available.

- Item updated to **CLOSED** on the action list.

#### Action Item 58 – PFAS

- Lindy Smith provided paper which was included in the meeting papers as Item 8.3. PFAS to be further discussed during the meeting.
- Item updated to **CLOSED** on the action list.

#### Action Item 59 – PFAS

- Chair to discuss and confirm with Airservices to see whether the CACG can meet with the successful tenderer for the DSI project.
- Action item to be **CARRIED TO THE NEXT MEETING**.

#### Action Item 60 – ANACC

- Approved by ANACC Committee at meeting on 06/02/2020.
- Minutes included in the CACG March 2020 meeting papers.
- Item updated to **CLOSED** on the action list.

#### Action Item 61 – Environmental Monitoring

- Update included in the Airport Developments presentation.
- Item updated to **CLOSED** on the action list.

#### Action Item 62 – Flight Paths

- The Chair advised he has followed up with Airservices and the response was ‘not at this time’. This is due to an extensive work program for other airports and airspace around the country which has been prioritised considering the work already completed at Gold Coast around flight path reviews recently. Airservices also noted that it is not practical to complete this review within the next two-year work period.
- Members requested a copy of the correspondence to and from Airservices on this issue to be included as part of the minutes for the March meeting as attached.
- Item updated to **CLOSED** on the action list.

### 3.0 Airservices Report

The Chair welcomed Fiona Lawton and Gary Scott to provide the Airservices Report.

Fiona Lawton (Community Engagement Manager) introduced herself to the committee noting following organisational review she is now responsible for the NCIS and will be attending the Gold Coast Airport CACG moving forward. Gary Scott (Director Operations - Terminal Services Brisbane) introduced himself to the committee noting he is responsible for the basin of Brisbane, Gold Coast, Sunshine Coast and Cairns and will also be attending the Gold Coast Airport CACG moving forward.

It was requested that, for each meeting, the committee prioritise two action items out of the CACG so that Airservices know where members want them to focus their time.

With reference to the temporary noise monitors it was noted that Airservices have determined that the sample data collected will be adequate for the post implementation review process and the temporary monitors are in the process of being removed.

Airservices provided an update to the committee on the ILS usage with detail contained in the attached presentation.

Fiona provided the committee with an overview of the Draft Flight Path Design Principles and the community consultation process. Members expressed their concern with the way the Gold Coast workshop was facilitated and the quality of the data coming out of the session. Fiona clarified some facts with the committee regarding the community consultation process:

- Invited 18 people from a recruited public organisation to ensure demographics were appropriate.
- Airservices have had direct correspondence with over 6000 people around the draft principles.
- As part of the process Airservices were seeking engagement from people up to 50km around the airport so the sample size had to be broad. It was also in an effort to cover people that may be impacted by aircraft noise into the future.

Members queried if outcomes from the Draft Flight Path Design Principles community consultation process will be provided to a future CACG meeting to which Fiona advised that public comment will be sought on the proposed principles based on the feedback from the consultation process.

Multiple members continued to share concerns in the process and output as a result of the consultation process. Fiona requested that member feedback is provided in writing through to the registered email address

**ACTION:** Secretariat to recirculate email to the committee with link to the survey and the registered email address for written feedback.

An update was provided to the committee regarding the new and revised Online Reporting and gave a brief overview of how to use the system.

## 4.0 CACG Strategic Work Program

### *4.1 Flights over Kingscliff*

The Chair noted that the CACG needs to ensure it does not duplicate the detail and work covered by the ANACC.

Discussion amongst members regarding the excellent presentation from Scott Stephens from the Gold Coast Airport tower at the last ANACC meeting which assisted members understanding of the process the local controllers follow.

Airservices advised members that 75-80% of aircraft departing of Runway 14 for departure ports to the north or east turn on to the number one NAP preferred heading 070, leaving the 20-25% to go straight ahead due to airspace conflicts.

Consulting the draft ANACC minutes it was requested that the map outlining the scope of Airservices airspace coverage is included as part of the ANACC minutes.

The Chair confirmed that this item will be picked up and progressed at the next ANACC meeting following the productive discussion at the last meeting.

The Chair proposed that members provide some specific questions to Julie Murray and John Hicks regarding this issue to guide the discussion at the ANACC meeting.

**ACTION:** Members to provide written queries regarding Kingscliff Departures (particularly any proposed alternative air traffic management arrangements) to the ANACC Secretariat for collation and circulation to Airservices to respond to at the next ANACC meeting. Julie Murray and John Hicks to decide on priority issues once initial list has been collated.

Airservices flagged with members that the larger the volume of questions and ideas, the longer it will take Airservices to review and respond to proposals.

Members confirmed a **Resolution**: Request Airservices to continue the review of departures over Kingscliff to reduce the options for straight-out departures.

The Chair confirmed this item is to be covered by the ANACC and reported back to the CACG meeting via the regular ANACC Report.

#### *4.2 PFAS Update*

Melanie Layton (Airservices) provided an update to the group on Airservices PFAS management.

Airservices committed to have one of the consultants come to the next CACG to provide an update on the DSI.

Airservices committed to providing the committee with a copy of the 2019 monitoring report once it becomes available.

Lindy Smith provided the committee and Airservices with an overview of her concerns and the content of her paper that was circulated as item 8.3 of the meeting papers. Lindy cited a document that was provided in hard copy to the committee at the last CACG meeting and was not included in the minutes.

**ACTION:** Secretariat to secure an electronic copy of document and include as part of the 04 March 2020 meeting minutes as attached.

GCA Environment Manager, Norbert Benton, provided the committee with feedback around how the airport completes water monitoring as part of general airport operations and as part of capital projects.

The committee repeated its frustration at the slow process and information sharing from Airservices.

**ACTION:** Airservices have committed to coming to the next meeting with responses to Lindy's paper (8.3) along with any other submitted questions that are fed through the CACG Secretariat. Further to this Airservices have committed to asking the appointed consultant attend the next CACG meeting to address the committee.

The committee requested that the questions raised are included in the briefing to the DSI and consultant.

## **5.0 Emergent Issues from Community Representatives**

The Chair opened the floor for feedback from members.

No items were raised by members, noting that some items were raised in response to the action list and other agenda items.

## **6.0 Airport Developments**

Brett Curtis (General Manager Operations & Service Delivery) presented the Airport Developments presentation to the committee noting updates at the airport since the last CACG meeting.

As part of the presentation Brett provided members with an overview of the Hidden Disability Program that had been rolled out. Members provided positive feedback on this initiative.

Member queries regarding the Airport Development presentation:

- Member query regarding the upgrade of airline wheelchairs, as they were noted the need for new suspension. Brett noted this is an airline query but GCA would pass it on.
- Member query asking if there is any mechanism of communication through the booking process to alert passengers that the GCA Hidden Disabilities Program is in place. Brett advised that currently there is not but GCA are actively engaged with domestic airline partners to have this included.
- Member query if there are plans for a children's playground in the new terminal. Brett advised that GCA are looking at different options within the new terminal and noted that works are currently underway to install a play wall in the existing domestic arrivals area.
- Members queried if an observation point would be included in the new terminal. Brett noted that this has not been included in the new terminal at this stage. Brett also noted that the upcoming GCA Hotel will have a rooftop bar which will provide an excellent view of the airfield and coast.
- Members noted that the arrivals pick-up area is a bit of a challenge at times. Brett noted comments and advised that there is currently a lot of work underway in conjunction with the southern entry road as part of a wider project to review the ground transport strategy for the precinct. Brett also provided members with a brief overview of the Ground Transport Interchange project that is currently underway flagging that ground transport is the next big piece of infrastructure for review and action.
- Members queried if thermal scanners were being installed in the terminal as a result of the recent COVID-19 outbreak. Brett advised that GCA are following the direction from the Department of Health and adhering to their requirements.

Norbert Benton (Environment Manager) provided members with an overview of environmental elements as per actions in the Action List. Norbert provided members with an update on sustainability initiatives and the Environmental, Social and Governance (ESG) strategy. Norbert provided members with an overview of materiality assessments noting that GCA is looking to undertake an assessment in the near future with it likely that CACG members will be consulted prior to the next CACG meeting where the results can be presented.

Member queries regarding the Sustainability and ESG presentation:

- Members queried if a green star rating is being sought for the new terminal building as designed. Norbert advised that this was not the case.
- Members noted that the airport produces a significant amount of waste and queried if GCA is considering a zero-waste policy. Norbert advised GCA is reviewing all options as part of ESG strategy.

Norbert provided members with an overview of the water quality monitoring program particularly around the ILS Localiser site with detail around testing parameters. Norbert provided an overview of the results of testing, limitations of the data and provided an explanation of some of the data variances

Member queries regarding the water quality monitoring presentation:

- Members queried what is considered dangerous levels are. Norbert provided members with an overview of the drinking water standards.
- Members queried two sites with higher levels of PFAS seeking clarification on where they are on the site. Norbert provided the locations of the monitoring sites and reiterated limitations to the testing and data.

- Members queried if a summary of the findings particularly around the implications of the PFAS data. Norbert noted that GCA's management practices are to not worsen the existing situation.

## 7.0 ANACC Report

The Chair noted that ANACC minutes were included as part of the CACG meeting papers as per the action from the last CACG meeting.

Jared Feehely, ANACC Chair, provided members with a brief overview of the 06 February 2020 ANACC meeting.

- ANACC Member Nominations
  - o Three-year terms were renewed for a number of members with some members retiring from the committee.
  - o The committee resolved to provide Kingscliff with a seat on the committee and will work to appoint a fifth southern member to the committee.
- Kingscliff Departures
  - o Member were provided with an excellent presentation from Scott Stephens from the local Air Traffic Control tower noting considerations and processes controllers employ.
  - o The group had a solid discussion around the item with a plan to move it forward.
- Airservices Draft Flight Path Design Principles
  - o Members documented a motion voicing their displeasure in the community consultation process (refer to ANACC minutes for the full wording).

## 8.0 Material Correspondence

### *8.1 Letter from Health Northern NSW Local Health District*

Discussed as per Action Item #50.

### *8.2 Letter from Gold Coast Hospital & Health Service*

Discussed as per Action Item #50.

### *8.3 Action Item 58 RE: PFAS Contamination at Gold Coast Airport*

Discussed at Agenda Item 4.2.

### *8.4 Letter from Banora Point & District Residents Association*

Concerned the retirement of Pat Tate from the CACG.

Members unanimously agreed the following **Resolution**: The Committee formally thanks Pat for her service to the CACG and community as part of her valuable participation in the CACG over many years.

**ACTION**: Chair to formally write to Pat to thank her for her participation and contribution in the Gold Coast Airport CACG.

## 9.0 General Business

### *9.1 Strategic Work Program Items for Next Meeting*

The Chair suggested PFAS as the major talking point for the meeting noting commitments from Airservices earlier in the meeting.

Members also suggested a brief update on the Departures over Kingscliff item.



**ACTION:** ANACC report to provide update to the CACG on ANACC progress on the Departures over Kingscliff item.

### *9.2 CACG Dates 2020*

Proposed dates for CACG 2020 meetings:

- Wednesday 22 July 2020
- Wednesday 04 November 2020

### *9.3 Other Business*

Helen Gannon from the Department of Infrastructure noted that additional information has been provided to John Hicks by the Department on emissions and noted it will be provided to the Secretariat to be circulated as an attachment to the minutes from the March meeting as attached.

The Chair flagged with members that moving forward, all committee correspondence is to be sent to the relevant mailbox - CACG ([cacg@gcal.com.au](mailto:cacg@gcal.com.au)) or ANACC ([anacc@gcal.com.au](mailto:anacc@gcal.com.au)). This will ensure correspondence is addressed in a timely manner and filed appropriately.

The Chair also requested that members confirm their contact details with the Secretariat so that distribution and contact lists can be confirmed for the committee.

The Chair closed the meeting at 12:01.

# Attachment 1: Attendance and Apologies

Date: Wednesday, 04 March 2020

## Attendees

Ron Brent (Chair)	Chairman
Jared Feehely (Secretary)	Gold Coast Airport
Brett Curtis	Gold Coast Airport
Melissa Pearce	Gold Coast Airport
Norbert Benton	Gold Coast Airport
Nick Tzannes	Gold Coast Airport
Gary Scott	Airservices Australia
Fiona Lawton	Airservices Australia
Scott Stephens	Airservices Australia
Melanie Layton	Airservices Australia
Candice Cox	Airservices Australia
Kieran Pehm	Aircraft Noise Ombudsman (ANO)
Helen Gannon	Department of Infrastructure
Guy Proctor	Jetstar Airways
Greg Betts	Office of Karren Andrews MP
Emily Neal	Office of Karren Andrews MP
Chris Cherry	Tweed Shire Council
Lindy Smith	Tweed Heads Residents & Ratepayers Association
Arthur Elliott	Cyclades Cres Neighbourhood Watch
Bill Pinkstone	Banora Point & District Residents Association
Anthony Steinfort	Tugun Progress Association
John Hicks	Gold Coast Lifestyle Association
Anna Dennis	Bilinga Neighbourhood Watch
Ian Parsons	Bilinga Neighbourhood Watch
John Sweeney	Banora Point & District Residents Association
Julie Murray	Kingscliff Ratepayers Association
Larry Woodland	Fingal Head Community Association
Ronni Hoskisson	Tweed Residents & Ratepayers Association
John Alcorn	Airport Central Corridor Alliance
Phillip Follent	Tugun West Neighbourhood Watch
Bill Dennis	East Banora Residents Association

## Apologies

Rod Bates	Office of Geoff Provest
David Gray	Bilinga Neighbourhood Watch
Jeff Godfrey	Tweed Residents & Ratepayers Association
Paul Baker	Friends of Currumbin
Peter Barrett	Gold Coast District Neighbourhood Watch
Matt Bender	Gold Coast Airport
Gregory Wyatt	Department of Transport & Main Roads
Nathan Goldman	Department of Transport & Main Roads
Glyn Lewis	Australian Federal Police
Gui Lohmann	Griffith University
Jacqui Cord	Tweed Shire Council
Jodie Bellchambers	Office of Justine Elliot
Rob Anderson	Virgin Australia

## Attachment 2: CACG Action List

No.	Meeting Date	Item	Requirement	Responsible Person	Target Completion Date	Status
25	25/07/2018	PFAS	To investigate if an environmental expert can present to address the CACG about the DSI.	Airservices (Melanie Layton)	<del>04/03/2020</del> 08/07/2020	Airservices advised that the procurement process is in the final stages. They are still hoping for it to occur in March 2020.
34	07/11/2018	Air Quality Monitoring	Provide update at the next meeting on the results of the air quality testing.	Gold Coast Airport (Norbert Benton)	<del>04/03/2020</del> 08/07/2020	Report to be finalised early 2020.
36	07/03/2019	Airport Southern Access Road	GCA to provide an update on the southern access road process.	Gold Coast Airport (Brett Curtis)	<del>04/03/2020</del> 08/07/2020	No progress, to be presented to the next meeting.
50	06/11/2019	Air Quality Monitoring	Write to QLD & NSW health departments for further information on what the state governments are doing, or can do, to monitor emissions from aircraft at Gold Coast Airport.	Chair	04/03/2020	Letters sent to both departments on 09/01/2020. Chair to write as suggested by the health departments in their responses to the relevant departments.
59	06/11/2019	PFAS	Discuss with Airservices to see whether the CACG can meet with the successful tenderer for the DSI project.	Chair/ Airservices (Melanie Layton)	<del>04/03/2020</del> 08/07/2020	Chair to follow up with Airservices to confirm.
63	04/03/2020	Draft Flight Path Design Principles	Secretariat to recirculate email to the committee with link to the survey and the registered email address for written feedback.	Secretariat	06/03/2020	Completed. Email resent on 05/03/2020.
64	04/03/2020	Departures over Kingscliff	Members to provide written queries regarding Kingscliff Departures to the ANACC Secretariat for collation and circulation to Airservices to respond to at the next ANACC meeting. Julie Murray	CACG Members	08/07/2020	

No.	Meeting Date	Item	Requirement	Responsible Person	Target Completion Date	Status
			and John Hicks to decide on priority issues once initial list has been collated.			
65	04/03/2020	PFAS	Secretariat to secure an electronic copy of the hard copy document provided by Airservices at the November 2019 and include as part of the 04 March 2020 meeting minutes.	Secretariat	08/07/2020	
66	04/03/2020	PFAS	Respond to <i>8.3 PFAS Contamination at Gold Coast Airport</i> paper along with questions submitted via the CACG Secretariat. Further to this coordinate for the successful tenderer to attend the next CACG meeting to address the committee as per Action Item #25.	Airservices (Melanie Layton)	08/07/2020	
67	04/03/2020	Pat Tate retirement	Chair to formally write to Pat to thank her for her participation and contribution in the Gold Coast Airport CACG.	Chair	08/07/2020	
68	04/03/2020	Departures over Kingscliff	ANACC report to provide update to the CACG on progress on the Departures over Kingscliff item.	ANACC Chair	08/07/2020	

## CACG Action List - COMPLETED

No.	Meeting Date	Item	Requirement	Responsible Person	Completion Date	Status
13	03/07/2019	Offset Area Management Plans	To provide an update on the offset area management plans once the plans are approved.	Gold Coast Airport (Norbert Benton)	<del>06/11/2019</del> 04/03/2020	The second of the two Project LIFT Offset Area Management Plans was approved by the Department of the Environment and Energy on November 14. The Project LIFT Offset Public Report was subsequently published on the Gold Coast Airport website on the 12 December with email sent to the CACG with link on 18/12/2019.
18	25/07/2018	PFAS	To provide a clarification of markers for different types of PFAS	Airservices (Andrew Collins)	06/11/2019	Completed
20	25/07/2018	PFAS	To provide advice on whether the PFAS Management Plan or a summary may be able to be provided to the CACG.	Airservices (Andrew Collins)	06/11/2019	Provided fact sheet
23	25/07/2018	PFAS	Follow-up to identify the groundwater monitoring and report on the outcome	Airservices (Melanie Layton)	<del>06/11/2019</del> 04/03/2020	Airservices will advise the Secretariat when reports are published for circulation to the committee.
33	07/07/2018	N/A	Rod to provide email to Neil to follow-up	Rod Bates	06/11/2019	Completed.
39	03/07/2019	Meeting Minutes	Circulate final minutes of 07 March 2019 meeting.	Secretariat	01/08/2019	Replaced by Action Item 47.
40	03/07/2019	ILS	Airservices to consider whether a report on ILS arrivals can be provided to CACG meetings.	Airservices (Gary Scott)	04/03/2020	The report is provided as part of the ANACC minutes which are being circulated to the CACG.
41	03/07/2019	Information Requests	Chair to follow up with Rod Bates and Julie Murray on questions they have	Chair	06/11/2019	Rod Bates response provided.

No.	Meeting Date	Item	Requirement	Responsible Person	Completion Date	Status
			put to Airservices on which they are still awaiting a response. Due August 2019			Julie Murry response superseded by Item 48.
42	03/07/2019	Offset Area Management Plans	When the report in relation to the airports offsets becomes available, the secretariat will provide a link to the website.	Gold Coast Airport (Norbert Benton)	04/03/2020	The second of the two Project LIFT Offset Area Management Plans was approved by the Department of the Environment and Energy on November 14. The Project LIFT Offset Public Report was subsequently published on the Gold Coast Airport website on the 12 December with email sent to the CACG with link on 18/12/2019.
43	03/07/2019	PFAS	Andrew Collins to give formal response to John to consider whether the successful tenderer for DSI can be asked to consult specifically with relevant members of this CACG prior to designing the investigation. The group also requested that in the next master plan, GCA make a commitment to significantly strengthen attention on the PFAS issue.	Airservices (Andrew Collins)	06/11/2019	Unlikely that the tenderer would consult with individual members.
44	03/07/2019	Noise Monitors	Provide instructions to the committee on how to access the noise monitor results online.	Airservices (Anthony Nugent)	06/11/2019	New item to address this in more detail at item 56
45	03/07/2019	ILS	The Chair to follow up with Department of Infrastructure on whether the Curfew Quota movements report can identify any	Chair	04/03/2020	The Department advised they do not receive ILS detail from Airservices. They can however include runway use in the curfew

No.	Meeting Date	Item	Requirement	Responsible Person	Completion Date	Status
			ILS arrivals and the reasons for their curfew arrival.			reports. The Chair to provide feedback to the Department.
46	03/07/2019	ILS	Airservices to consider whether a report on ILS arrivals can be provided to CACG meetings.	Airservices (Gary Scott)	04/03/2020	As per Action Item #40.
47	06/11/2019	Meeting Minutes	The correct versions of minutes of the March and July meetings to be emailed to members within a week of this meeting.	Secretariat	13/11/2020	Minutes sent 12/11/2019
48	06/11/2019	Information Requests	Write to AsA to emphasise the importance of responding to the information requests regarding departing flights over Kingscliff, and potential conflict situations that give rise to the departing flights going over Kingscliff.	Chair	04/03/2020	Letter from the Chair sent to Airservices.
49	06/11/2019	Air Quality Monitoring	Provide more information on Federal Government consideration of aviation emissions to be circulated to committee.	Eleanor Dun (DITCRD)	04/03/2020	Information sent to members on 20/11/2019.
51	06/11/2019	Air Quality Monitoring	Provide links to an ICAO report on health consequences of living near airports. Members to consider the material.	Eleanor Dun (DITCRD)	04/03/2020	Information sent to members on 20/11/2019
52	06/11/2019	PFAS	Write to Gold Coast Airport formally requesting that more detail on PFAS, and more explicit clarification of how traffic growth will be managed, be included in the next Master Plan.	Chair	04/03/2020	Chair wrote to GCA on 05/01/2020.
53	06/11/2019	Meeting Agenda	Increasing departures over Kingscliff to be put on March 2020 Agenda.	Chair/ Secretariat	04/03/2020	Departures over Kingscliff included on March 2020 agenda.

No.	Meeting Date	Item	Requirement	Responsible Person	Completion Date	Status
54	06/11/2019	Departures	Provide details of occurrences of flights operating over the Wollumbin/Mt Warning area to the CACG Secretariat and Airservices for review.	Julie Murray	04/03/2020	No feedback provided by members.
55	06/11/2019	Noise Monitors	Write to ANACC with a copy to Airservices requesting that ANACC pursue the issue of reinstatement of the southern noise monitor as a priority, pointing out reference to the West Tweed monitor in the Master Plan.	Chair	04/03/2020	Chair wrote to ANACC and Airservices.
56	06/11/2019	Nosie Monitors	Airservices to provide a direct link to the Noise monitor page on the website	Airservices (Gary Scott)	04/03/2020	URL link to the noise monitor page. <a href="https://webtrak.emsbk.com/ool3">https://webtrak.emsbk.com/ool3</a>
57	06/11/2019	Runway Usage	Airservices to provide data on runway usage for each runway, specifically divided up for RPT aircraft.	Airservices (Gary Scott)	04/03/2020	RPT distribution on each runway matches general RPT distribution.
58	06/11/2019	PFAS	Provide written questions to identify the reports not published, seasonality issues & fluctuating PFAS levels, yearly testing and testing on the western boundary. Questions will include comments around testing on the western side at the fire station.	Lindy Smith	04/03/2020	Lindy provided paper. Refer Agenda Item 8.3.
60	06/11/2019	ANACC	Ask the Gold Coast Airport ANACC if it can share draft minutes with the CACG prior to the CACG for members to consider issues prior to CACG meetings.	Chair/ ANACC	04/03/2020	Approved by ANACC Committee at meeting on 06/02/2020. Minutes included in the CACG March 2020 meeting papers.



No.	Meeting Date	Item	Requirement	Responsible Person	Completion Date	Status
61	06/11/2019	Environmental Monitoring	Provide an update on environmental monitoring at the ILS localizer monitoring site	Gold Coast Airport (Norbert Benton)	04/03/2020	Update included in the Airport Developments presentation.
62	06/11/2019	Flight Paths	Write formally to Asa to consider whether it can undertake a full review of Gold Coast flight paths.	Chair	04/03/2020	Airservices have advised that this is not practical at this time. Airservices also noted that it is not practical to complete this review within the next two-year work period.

## 2.0 Action Item 62 - CACG Letter\_ASA re. Nov CACG meeting follow up\_04.01.2020

AirServices Australia  
Alan Woods Building  
25 Constitution Avenue  
Canberra, ACT, 2600

Attention Mr Nugent and Ms Welsh

Dear Mr Nugent and Ms Welsh

### **Re: Gold Coast CACG**

I am writing to follow up on discussions we held on the action list from the last Gold Coast Airport CACG. I note your advice that with the demands from other CACGs and from individuals will necessarily limit your capacity to investigate and pursue matters arising in the GCA CACG. I understand that you have capacity to pursue only one or two major issues from each CACG meeting.

In keeping with this advice, and to follow up on a series of action items from the last CACG I seek your advice on the following matters.

### **Departures over Kingscliff**

As discussed in our recent phone conference, there has been a long running issue concerning aircraft that are heading east or north, proceeding over Kingscliff rather than turning east sooner (over Fingal Head). This should be dealt with thoroughly so that CACG members are able to accept the outcome on the basis that it has been properly pursued by Airservices. The issue is perhaps principally one for the ANACC but has been raised over an extended period in the CACG. To address the issue properly it is important to ensure that all concerned have a clear understanding of the circumstances that give rise to the 'straight ahead departures' that would otherwise turn to the east earlier.

Given the complexity of the air traffic arrangements that lead to decisions about where these aircraft must fly to ensure safe and efficient air travel we have agreed that a detailed presentation will be provided to both the ANACC and the CACG. Following such a presentation the CACG will hopefully be in a position to determine what if anything it would like to see happen to address the concerns of the Kingscliff community.

### **Noise monitors**

Ms Welsh has provided a comprehensive report on the noise monitor issue. I will use this report to respond to the next CACG meeting on this issue. I believe it answers all the questions raised except perhaps one, whether or if a comprehensive review of Gold Coast Airport noise monitoring is scheduled or anticipated. If you could let me know the situation, or alternatively if there are any further searches for a suitable southern site planned, I will deal with the issue from the Chair. It would seem that regardless of your answers to the questions about a review or further searches, the only action open to the CACG is to provide, via the Chair, **new** suggestions for a location for the Southern monitor. Let me know if I have misunderstood the situation.

I would consider those to two issues to be the matters you are pursuing from the last meeting. I am happy to defer all other issues raised. On the other hand I may be able to deal with most of the

remaining issues myself with perhaps only very limited and simple additional information from you. My understanding of these issues is as follows:

1. Can a report on ILS arrivals be provided to the ANACC (and through it to the CACG)? If you can provide a 'yes' or 'no' response I will provide it and close this issue.
2. Can a direct link to the noise monitor page on the web be provided to the CACG? This action requires no response as I will arrange for this link to be included in the action list report for the next meeting against this action item.
3. Can the runway usage data identify the proportion of RPT aircraft? I presume that the distribution of runway usage and RPT usage are roughly in line. This would mean that anyone is able to get the desired data by extrapolating from the RPT usage for the airport (which I understand is publicly reported by the airport). This would simply involve calculating the number of RPT movements as a percentage of total movements and applying this to the published runway usage data. Therefore, if you can confirm that you are not aware of any reason that RPT usage should to be unevenly distributed across runways I can finalise this issue when responding on the action list.
4. Some, but not all, community members of the CACG are keen to see a comprehensive flight path review. I understand that Airservices is about to commence some consultations on air traffic design. I also understand that no comprehensive review of Gold Coast airspace is currently planned. Unless you are aware of a planned comprehensive review I can also deal with this issue from the Chair under 'Action List' and it can be closed off. The response would seem to be that no review is currently planned and that Airservices has noted the wish of some CACG members for such a review. This will be considered by Airservices (along with factors such as the numerous changes and trials that have occurred at the Gold Coast) when scheduling future reviews.

Please let me know if there is anything in the above that causes you concern. Also please rest assured that if any of the information that I have asked for under items 1, 3 and 4 above involves any significant effort you should not pursue it and I will defer the matter for future meetings until it fits within the 'two significant issues' parameter.

Thank you for your efforts in trying to reduce the extent of unproductively repeated issues at CACG meetings, and your efforts in trying to provide the meetings with thorough and constructive responses to the issues that are being raised.

Yours sincerely



Ron Brent



## Airservices Australia Response to Action Items from Gold Coast CACG

### Meeting 6 November 2019

Dear Mr Brent

I am writing regarding the action items allocated to Airservices at the last CACG meeting of 6 November 2019.

The action items raised for Airservices at the last meeting as per the minutes were as follows:

1. *The increasing number of departures over Kingscliff is to be included on the March CACG Agenda as a specific item. Additionally item 48 in the minute table states: Write to ASA to emphasise the importance of responding to the information requests regarding departing flights over Kingscliff, and potential conflict situations that give rise to the departing flights going over Kingscliff.*
2. *Julie to provided details of occurrences of flights over the Wollumbin/Mt Warning area to the CACG secretary & ASA for review (item 54)*
3. *ASA to provide a direct link to the Noise monitor page on the website (item 56)*
4. *ASA to provide the Runway data on runway usage for each runway, specifically divided up for RPT aircraft (item 57)*
5. *RB to write formally to ASA to consider whether it can undertake a full review of Gold Coast flight paths*
6. *Airservices to consider whether a report on ILS arrivals can be provided to CACG meetings (this item is duplicated as item 40 and 46 in the minute table)*

The action items listed for Airservices Specialist Environment (PFAS) Team will be addressed separately, as they are not within the remit of this office.

In Airservices presentation to the Gold Coast CACG on 7 November 2018, we advised that Airservices attends 24 separate CACG related meetings Australia wide and must ensure that our resources are spread fairly and equitably. We requested going forward that the CACG must prioritise which two action items are of most urgency to members. Airservices will commit to the first priority and will endeavour to complete both, dependent upon resourcing.

Airservices requests the Chair to remind members of this requirement going forward. CACG members should be aware that not all airports have two meetings; and that Airservices has provided this request to all CACG and associated meetings Australia wide including the Gold Coast ANACC.

1. *The increasing number of departures over Kingscliff is to be included on the March CACG Agenda as a specific item. Additionally item 48 in the minute table states: Write to ASA to emphasise the importance of responding to the information requests regarding departing flights over Kingscliff, and potential conflict situations that give rise to the departing flights going over Kingscliff.*

Airservices has committed to providing a presentation of why this requirement is necessary using WebTrak. This presentation was also provided at the ANACC meeting of 6 February 2020.

Airservices has provided information on this procedure, which is required to safely separate departing traffic from the inbound RNP AR route. These meetings were:

- ANACC 26 October 2017
- CACG 22 November 2017
- CACG 7 March 2018

Runway heading is the second allowable option in Airservices Noise Abatement Procedures (NAP) between Gold Coast Tower and Approach. Airservices has been transparent in its use to both the ANACC and the CACG. In fact, it is included in Airservices Review of Gold Coast Airport Noise Abatement Procedures of August 2012. This report is still available on our website at: <http://www.airservicesaustralia.com/publications/noise-reports/noise-abatement-procedure-reviews/>. Please refer to page 10, 14D, SE 121-140 (clockwise).

Airservices must continue to tactically manage air traffic to assist in separating aircraft. Airservices role above all else is to ensure safety and while we do try to accommodate community concerns whenever it is safe and feasible to do so, this is not the case in this instance.

Airservices advises that questions on individual flights turning over Kingscliff, and why they did so will not be continually answered in either the CACG or the ANACC forums. The correct forum to direct these concerns is Airservices Noise Complaints and Information Service (NCIS). This is also to ensure there is a central register of communications to and from the community. The NCIS is the appropriate place for this because all correspondence can be stored in the complaints management system database. This also allows issues to be tracked and reported on. At any time, the CACG or ANACC forum can request a complaint analysis of this issue as an action item.

Airservices also requests that individual CACG members cease requesting information outside the CACG forum from Airservices attendees. All requests for information from Airservices should be raised in the CACG meeting, this is to ensure, that they can be formally minuted, an official Airservices response is provided and Airservices responses and actions are transparent and can be tracked.

2. *Julie to provide details of occurrences of flights over the Wollumbin/Mt Warning area to the CACG secretary & ASA for review (item 54)*

On 26 February, Airservices was forwarded the following by the Gold Coast Secretariat, from Ms Murray.

*Hi Jared,*

*Sorry for the delay in replying. I intend to be at the meeting on Wednesday.*

*Has Airservices provided the map (?) showing where the flights are going over Cudgen? We haven't seen that yet.*

*Is it possible to get a % of where the planes departing south actually go? For the last month would be good.*

*Cheers, Julie*

Neither of our two attendees who attended the meeting of 6 November know what Ms Murray is referring too. If it is about this action item, then to date, this is the only correspondence we have received regarding this issue.

Going forward, Airservices would need this action item to be prioritised and specific date periods to be requested (bearing in mind a larger period, may prohibit Airservices completing the request). Additionally, short-term feedback on such requests may lead to Airservices advising that not enough time be provided for us to complete the action item.

Concerning the percentage question, it would assist Airservices in understanding, what the relevance of the destination of the aircraft has to Ms Murray. The current meteorological patterns across Australia may cause an aircraft to plan a different route to avoid upper level winds. There is no requirement against this. For example in winter months an aircraft departing Sydney for Perth, may head south towards Melbourne, before turning west. In summer months, they will track directly west.

Later correspondence from the Secretariat, leads us to believe that the map Ms Murray is requesting is on our website at: <http://www.airservicesaustralia.com/about/our-facilities/air-traffic-service-centres/>.

3. *ASA to provide a direct link to the Noise monitor page on the website (item 56)*

Airservices new interactive format reporting is designed for CACG members and individuals to determine what issues are concerning their suburbs. Airservices presentation for the meeting of 4 March 2020 will provide members with more detail on the new format reporting.

The link Airservices provides to all CACGs and associated meetings Australia wide is to Airservices website at: <http://www.airservicesaustralia.com/aircraftnoise/airports/>. This is because a third party provides the online reporting. At times, both the third party and/or Airservices requirements may change, as it did over the Christmas period of 2019. Airservices at the time was unsure whether or not the handover period would be seamless and this was notified on our website. If Airservices only provided the third party link, it would no longer be valid. Airservices will always ensure the link on our website is correct.

4. *ASA to provide the Runway data on runway usage for each runway, specifically divided up for RPT aircraft (item 57)*

Airservices provides the Movements at Australian Airports reports on our website at <http://www.airservicesaustralia.com/publications/reports-and-statistics/movements-at-australian-airports/>. This is not something that Airservices will be progressing.

5. *RB to write formally to ASA to consider whether it can undertake a full review of Gold Coast flight paths*

Airservices is currently committed to a post implementation review (PIR) of the implementation of the Gold Coast ILS. Airservices also is committed to many flight path changes around Australia. Many of these are safety changes required by the Civil Aviation Safety Authority (CASA). CASA also conduct reviews into airspace management Australia wide, when certain triggers are reached; such as number of movements or increased safety concerns.

Airservices will not be progressing this request and cannot see that this will be included in our work program within the next two years.

6. *Airservices to consider whether a report on ILS arrivals can be provided to CACG meetings (this item is duplicated as item 40 and 46 in the minute table)*

Airservices committed to providing this report to the Gold Coast ANACC until the PIR is completed. As a measure of good faith, we have included it in our presentation for the meeting of 4 March 2020.

As the report is included in the ANACC minutes, Airservices suggests the CACG request this information in the ANACC Chair's report at the CACG forum.

Additionally, in your personal correspondence to Airservices of 4 January 2020, you raised the following question.

7. *whether or if a comprehensive review of Gold Coast Airport noise monitoring is scheduled or anticipated*

Airservices response to the action items from the Gold Coast CACG meeting 6 March 2019 (attached for your reference) states: *Airservices can now advise that, once the ILS post-implementation review is completed, Airservices plans to conduct a review of the Gold Coast permanent noise-monitoring network. This is scheduled for 2020. In this review, potential sites for an additional permanent noise monitor on the Gold Coast will be identified. All potential sites that meet the criteria for placement will be considered; this review will not be restricted to seeking a site in the Tweed Heads area. In line with our standing commitment to both the CACG and the ANACC, community feedback will be sought on the identified sites.*

The Gold Coast Noise Monitoring Review will not be commenced until the Gold Coast ILS PIR has been completed. This is to ensure that all impacted communities are considered, in the subsequent Noise Monitoring Review. Airservices would not expect the Noise Monitoring Review to commence until late 2020 or possibly 2021. When Airservices is ready to commence the Noise Monitoring Review as stated above, we will engage with both the CACG and ANACC forums, for suitable identified sites.

Airservices has repeatedly advised both the CACG and ANACC forums that the sewage treatment site is not suitable and it will not be considered in the Noise Monitoring Review.

Your personal correspondence also raises four separate questions numbered one to four. I have addressed these below.

1. Answered in point 6 above
2. Answered in point 3 above
3. Answered in point 4 above, additionally in the link provided above, I am assuming the RPT aircraft of concern are jet aircraft. These would be in the categories of “between 7 tonnes and 136 tonnes” and “over 136 tonnes” listed in the Movements at Australian Airports reports
4. Answered in point 5 above.

Mr Brent, thank you for corresponding directly with Airservices to assist us in ensuring that all action items have been answered. We also appreciate you advising us of the two priority items that you were pursuing for this meeting. We hope that providing you with all of the above prioritising Airservices action items within the CACG forum will be a simpler process.

Yours sincerely

Jenny Welsh

**National Noise Complaints and Information Service Senior Investigator**

Airservices Australia

e [ncis.investigators@airservicesaustralia.com](mailto:ncis.investigators@airservicesaustralia.com)



**GOLD COAST AIRPORT CACG UPDATE - NOVEMBER 2019  
AIRSERVICES PFAS ACTIVITIES AT GOLD COAST AIRPORT**

**Airservices PFAS management approach**

The focus of Airservices national PFAS program is to:

- Conduct site investigations across civilian airports to understand the scope and scale of any potential PFAS contamination resulting from Airservices’ historic operations;
- Undertake management actions at airports to monitor, mitigate and manage PFAS contamination at airports including monitoring and waste management; and
- Undertake research and development to identify practicable solutions to manage PFAS contamination.

Airservices is working with relevant Commonwealth and State/Territories authorities to establish a nationally consistent framework for the ongoing management of PFAS within Australia.

Airservices transitioned to entirely PFAS-free foam at civilian airports including the Gold Coast in 2010.

**Investigation work undertaken by Airservices at the GCA**

In October 2017 Airservices completed a targeted PFAS investigation at the eastern side of Gold Coast Airport, including sampling spear bores of properties adjacent to the Airport, to better understand any potential off-airport impacts which may be directly related to historic aviation firefighting operations.

The investigation concluded the health risk associated with the use of groundwater from the tested spear bores for recreational and irrigation use was low. Airservices provided the results of this analysis to the residents of the properties and the findings were also provided to GCA and the Queensland Intergovernmental Committee on PFAS. The results were also publicly released on the Airservices website. It should also be noted that the Queensland Department of Environment and Heritage Protection advises that bores should not be use as drinking water sources or for recreation use.

This targeted investigation off-site followed investigations and sampling conducted at the GCA and within the Cobaki Broadwater in 2016 and 2017. These investigations found no detections or low levels of PFAS in soil and water at the perimeter of the airport, and no detection in the Cobaki Broadwater, including in fish.

**Questions to be answered for the November 2019 CACG**

Number	Question	Airservices response
18	To provide a clarification of markers for different types of PFAS	<p>There has been a variety of different PFAS used in foams over the years. In some instances, the type of PFAS used has been unique to a product, such as PFOS and 3M Lightwater. However, in many instances the PFAS used in different foam products has been the same. In the latter circumstance, it is not possible to differentiate between whether a detected PFAS, common to two products both of which have been used at a site, came from one foam source or the other.</p> <p>The types of PFAS used in foam products has also changed over time. Modern foams tend to use shorter chain PFAS or other PFAS forms, while older products often used fully fluorinated PFAS such</p>



		<p>as PFOS and PFOA. These fully fluorinated PFAS are also the ultimate breakdown products of many other PFAS.</p> <p>All of this makes “fingerprinting” almost impossible to do, particularly with legacy impacts where PFAS has had time to transform.</p> <p>Ultimately, the key to identifying a source is to conduct further investigations to determine linkages from the source to the impacted site or receptor. The analogy is tracing a leaking cup of coffee from the person sitting at their desk back to the kitchen where they made the coffee.</p>
20	<p>To provide advice on whether the PFAS Management Plan or a summary may be able to be provided to the CACG.</p>	<p>The PFAS Management Plan (PMP) is an internal working document relating to Airservices sites that is being developed in consultation with the airport. The PMP does not address management of PFAS impact by other sources.</p> <p>The PMP is a live document which will continually evolve as knowledge and understanding improves and new technologies arise that present possible management solutions.</p> <p>Whilst there is currently no nationally approved and identified one stop shop solution for remediation, as part of our national management program, Airservices is undertaking a number of trials in technologies to manage PFAS including field trials of water treatment technologies, soil immobilisation treatment, and investigations into stormwater treatment.</p> <p>The operational requirements of the airport, including the regulatory requirement to have ARFF services available will need to be considered as part of any proposed management actions.</p> <p>The PMP is not able to be shared with the CACG, however we can advise the following:</p> <ul style="list-style-type: none"> <li>• The PMP contains actions regarding monitoring of PFAS impacts at the airport – which is conducted yearly.</li> <li>• The PMP contains actions regarding investigations into managing PFAS impacts to minimise if not prevent migration off-site.</li> </ul> <p>One focus of the PMP is to manage runoff and groundwater flow to Coolangatta Creek. An example of a possible solution is AquaGate. This is an aggregate (rock) that can be used to hold a PFAS adsorbent product like RemBind. Combined, this technology may be able to be placed within a gabion cage structure in Coolangatta Creek to “filter off” PFAS as water moves down the creek. Airservices is currently undertaking a laboratory trial on this technology to determine if this is feasible.</p>

23	<p><b>Follow up to identify the groundwater monitoring and report on the outcome.</b></p>	<p>Airservices undertakes yearly groundwater monitoring at the airport as part of its management activities on PFAS. Airservices monitoring at the airport to date indicates stable conditions. The groundwater monitoring conducted by Airservices currently supports the evidence from the PSI and subsequent targeted investigations.</p> <p>GCA has indicated permission for the 2018 monitoring report to be provided to the CACG and, as such, Airservices will provide a copy to the Chair following this meeting.</p> <p>However, we note that the situation at the airport has changed, with the completion of some major projects such as the terminal expansion, and this may impact future results.</p> <p>Monitoring at the airport was conducted in October 2019, and Airservices envisages receiving and providing a report to the GCA by the end of 2019. Airservices notes that GCA need to provide permission for Airservices to provide reports. As the monitoring is not on Airservices land, Airservices must defer to the Airport on this matter regarding sharing of the results.</p>
25	<p><b>To investigate if an environmental expert can present to address the group about the DSI.</b></p>	<p>Airservices is undertaking a more detailed site investigation (DSI) to determine the source, nature and scale of contamination caused by historic firefighting activities at the airport.</p> <p>The detailed site investigation will include:</p> <ul style="list-style-type: none"> <li>• further testing on-airport to determine potential migration pathways and further off-site testing; and</li> <li>• stakeholder engagement and communications activities associated with further testing.</li> </ul> <p>The DSI will assist Airservices to characterise PFAS contamination caused by Airservices and will support the identification of actions to manage PFAS contamination on airport. Airservices will continue to monitor stormwater and groundwater on site whilst this work is being undertaken.</p> <p>Airservices is currently in the final stages of the Tender Evaluation for the Gold Coast DSI. Airservices expects to award a successful tenderer in December this year and to have a contractor ready to liaise with the airport in early 2020.</p> <p>One of the first actions will be to obtain all relevant information from the airport and other key stakeholders on PFAS investigations undertaken so far at and adjacent to the airport.</p> <p>Airservices can request a team member from the successful contractor to address the CACG about the DSI process. Airservices envisages this would be at the March 2020 CACG.</p>

## **Airservices engagement on PFAS management at Gold Coast Airport**

### Investigation material available to the public

- Further groundwater sampling report October 2017
- Biota sampling report March 2017
- Preliminary site investigation report October 2016
- Preliminary sampling report October 2016

### Communication collateral available

- Gold Coast Airport information sheet
- Media statement spear bore sampling
- Media statement biota sampling March 2017
- Media statement preliminary site investigation November 2016

### Community forums

- Updates provided to Gold Coast CACGs since 2016
- Airservices presented at Gold Coast community forum in March 2017

Questions on Notice: A series of Questions on Notice received and responded to in June 2018.

PFAS comms email: 37 queries/issues have been raised via the PFAS Comms email.

Media: more than 70 media enquiries responded to in relation to historical PFAS use at the Gold Coast Airport the last three years.

Airservices will continue to engage and communicate with the GCA and relevant Commonwealth, State authorities, and the Gold Coast community throughout the investigation process through:

- the provision of information to GCA, the Gold Coast CACG, local media (when requested), the Gold Coast Council, the Queensland Government and the Commonwealth;
- liaising directly with residents and providing personal results if sampling is undertaken off site; and
- publishing detailed reports, information sheets and media releases on the Airservices website on new investigations including the intended Detailed Site Investigation.



# Gold Coast CACG

**4 March 2020**

Gary Scott  
Director of Operations Terminal Brisbane  
Fiona Lawton  
Community Engagement Manager

# Airservices Update

- Action items
- Gold Coast ILS Noise Monitor Update
- Gold Coast ILS usage Update
- Draft Flight Path Design Principles Update
- Online reporting
  - New Interactive reporting
  - 2019 Year in Review
- RNP AR use update
- WebTrak Presentation – Flights over Kingscliff

# Action Items

- Airservices responded directly to the Chair on all minuted action items, questions raised by the Chair to Airservices and correspondence through the Secretariat
- Airservices requests that two action items be prioritised for this and future meetings

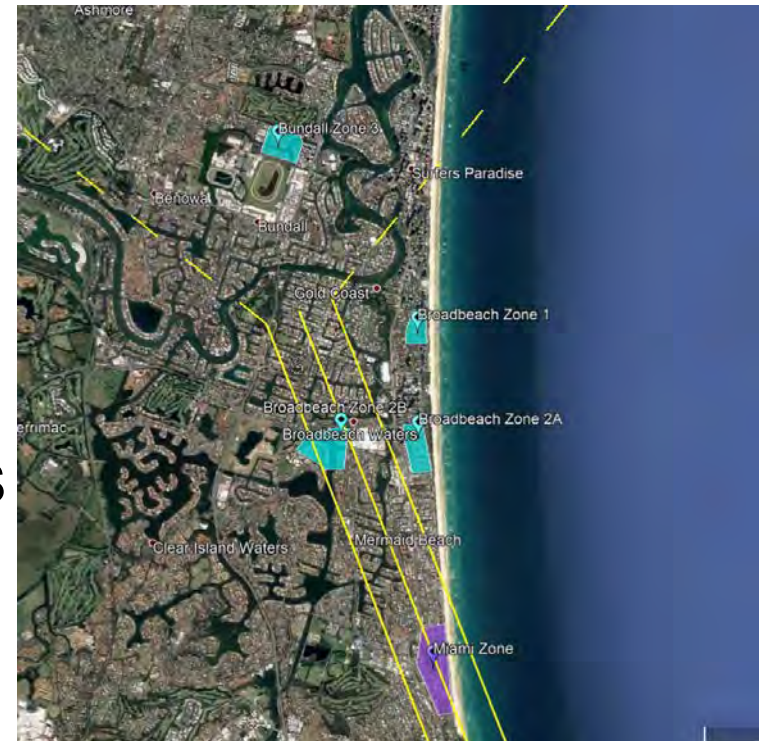
# Temporary Noise Monitor Update

Two short-term noise monitors are currently installed to monitor the Gold Coast ILS, they commenced 28 October 2019.

An initial review of the data in mid January 2020 has confirmed that a sufficient sample to support the post-implementation review (PIR) had been obtained during this monitoring.

Current weather is likely to result in further ILS usage during February and Airservices extended the monitoring until the end of February. This will provide a larger sample to support the PIR.

The data is available to view on WebTrak, including three months of historical data.



# ILS Usage Update

Since its inception on February 28<sup>th</sup> to January 31 2020, a period of 327 days:

- 1.3% of all arriving jets (251 individual arrivals) used the ILS
  - 98.7% of all arriving jets utilised other approaches
  
- The ILS has also been used 345 times by light aircraft (piston-driven or light turbo-prop) predominately for training purposes
  - This averages to 1 per day of 4.2% of all light aircraft approaches
  - Training flights are limited to 09:00 – 17:00



# Draft Flight Path Design Principles

- On 14 January 2020, Airservices commenced a national stakeholder consultation on *Draft Flight Path Design Principles* that will shape how we design, develop and implement flight path changes into the future.
- We have sought views from a broad cross section of the Australian community, including industry stakeholders, CACGs, community members, noise sensitive sites (schools, aged care services etc.), national parks, areas of environmental and Aboriginal and Torres Strait Islander significance.



**Draft Flight Path Design Principles** 



**Safety principles**

- Principle 1 - The safety of air navigation must be the most important consideration.
- Principle 2 - Flight paths must be designed in accordance with Australian and international design standards established in International Civil Aviation Organisation (ICAO) PANS-OPS, and Australian Civil Aviation Safety Regulations Part 173.



**Noise and community impact principles**

- Principle 6 - Noise should be concentrated as much as possible over non-residential and other non-noise sensitive areas and establishments.
- Principle 7 - Where residential areas are exposed to noise, it should be fairly shared whenever feasible and practicable.
- Principle 8 - Noise Abatement Procedures and Fly Neighbourly Procedures should be optimised to achieve the lowest possible overall impact on the community.
- Principle 9 - Aircraft operations that are conducted at night or on weekends should be treated as being more sensitive than those which occur during the daytime or on weekdays.
- Principle 10 - Both current and expected future noise exposure shall be taken into account when considering flight path design changes.
- Principle 11 - To the extent practicable, distribute flight paths so that residential areas overflown by aircraft arriving on a particular runway do not also experience overflight by aircraft departing from the runway in the reciprocal direction.



**Environmental principles**

- Principle 3 - Minimise the effect on the environment through designs that effectively manage emissions, fuel consumption and greenhouse gases, limiting these whenever practicable.
- Principle 4 - To the extent practicable, protect areas of Matters of National Environmental Significance (MNES), local cultural heritage and areas of natural beauty, considering the noise, emissions and visual impacts of the change.
- Principle 5 - Design flight path changes that deliver efficiency while minimising the noise effects of aircraft operations through continuous descent operations(CDO), continuous climb operations (CCO) and unrestricted flight paths.



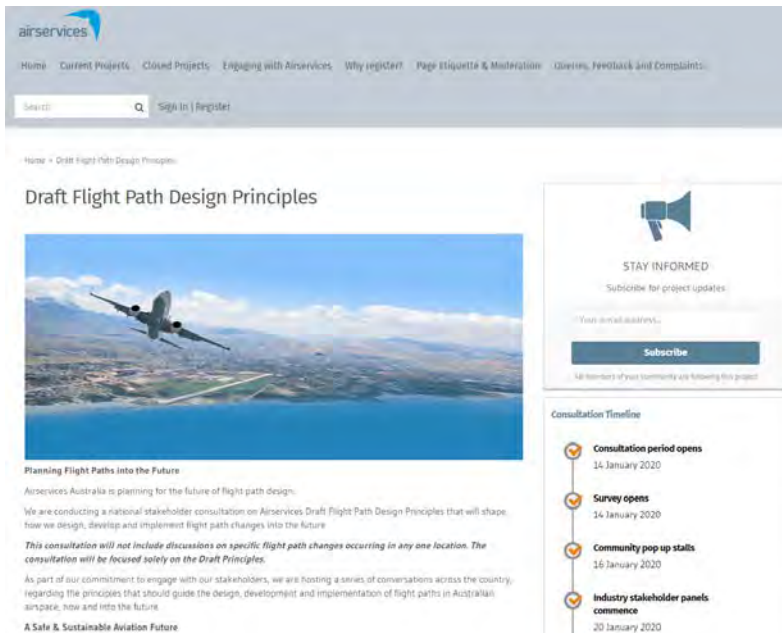
**Operational principles**

- Principle 12 - Consider the impact of flight path options on airport capacity and overall network operations.
- Principle 13 - Flight paths will accommodate differing aircraft performance as specified in ICAO PANS-OPS.
- Principle 14 - Design flight paths to facilitate access to all eligible airspace users.

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# Draft Flight Path Design Principles

- We used a range of approaches to engage with stakeholders.
- A key component of the consultation was hosted through our Engage Airservices website. The survey was closed 9 February 2020.
- Due to a high level of interest the survey has reopened Monday 24 Feb until midnight AEST Monday 9 March
- We are aiming to finalise the principles in mid 2020.



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Home > Draft Flight Path Design Principles

## Draft Flight Path Design Principles

**Planning Flight Paths into the Future**

Airservices Australia is planning for the future of flight path design. We are conducting a national stakeholder consultation on Airservices Draft Flight Path Design Principles that will shape how we design, develop and implement flight path changes into the future.

**This consultation will not include discussions on specific flight path changes occurring in any one location. The consultation will be focused solely on the Draft Principles.**

As part of our commitment to engage with our stakeholders, we are hosting a series of conversations across the country regarding the principles that should guide the design, development and implementation of flight paths in Australia's airspace, now and into the future.

**A Safe & Sustainable Aviation Future**

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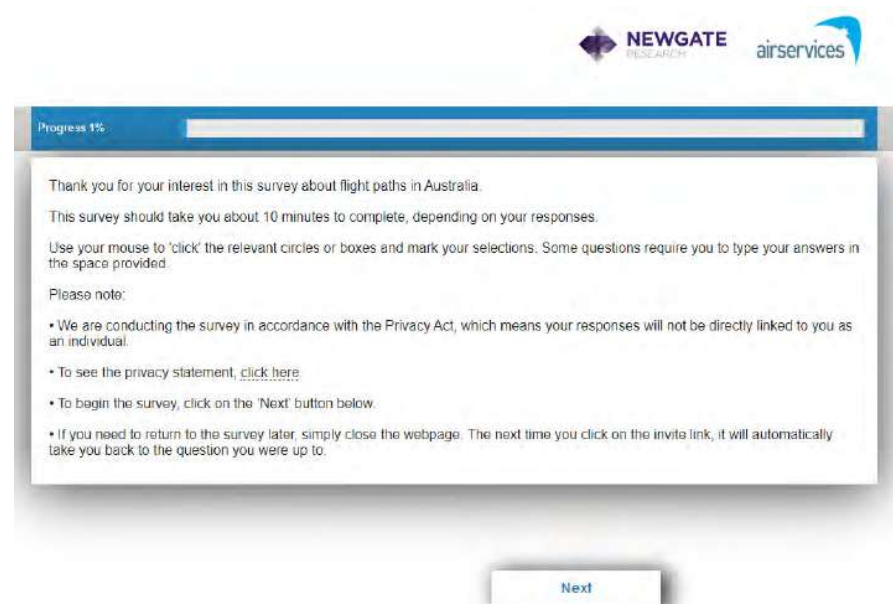
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**Consultation Timeline**

- Consultation period opens**  
14 January 2020
- Survey opens**  
14 January 2020
- Community pop up stalls**  
16 January 2020
- Industry stakeholder panels commence**  
20 January 2020



NEWGATE RESEARCH airservices

Progress 1%

Thank you for your interest in this survey about flight paths in Australia.

This survey should take you about 10 minutes to complete, depending on your responses.

Use your mouse to 'click' the relevant circles or boxes and mark your selections. Some questions require you to type your answers in the space provided.

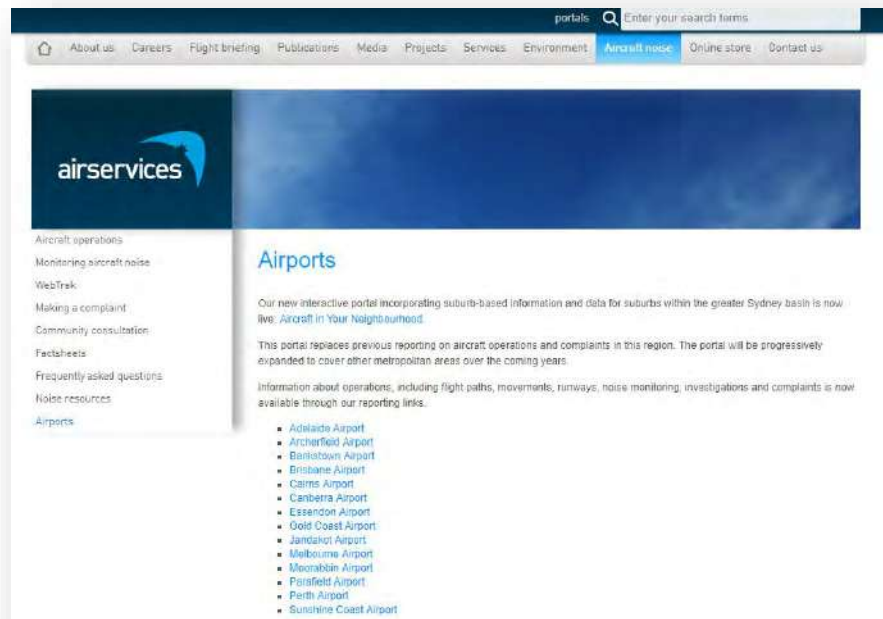
Please note:

- We are conducting the survey in accordance with the Privacy Act, which means your responses will not be directly linked to you as an individual.
- To see the privacy statement, [click here](#)
- To begin the survey, click on the 'Next' button below.
- If you need to return to the survey later, simply close the webpage. The next time you click on the invite link, it will automatically take you back to the question you were up to.

**Next**

# Airservices Online Reporting

- The link to the online reporting is:  
<http://www.airservicesaustralia.com/aircraftnoise/airports/>
- Select Gold Coast, then select complaints



# New Format Online Reporting

- The new format was effective from October 2019, is provided monthly rather than quarterly and replaces Airservices quarterly reporting, both online and for the Gold Coast CACG
- Monthly information is updated on the 10<sup>th</sup> business day of each month
- Airservices will continue to provide commentary both online and to the Gold Coast CACG, on increased complainants, issues or other complainant investigations by the NCIS

# New Format Online Reporting

- Yearly reviews will continue to be provided
- Any issues that are not noise related will not be included in this reporting
- This format is sourced directly from the NCIS database, and is based on contacts received in the calendar month
- As the NCIS updates issues and case classifications during the course of their investigation into a contact, it is possible that slight variations will occur in the reporting to the previous month, when the current month is uploaded

# New Format Online Reporting

- The previous information is displayed at the top of the page, when you select complaints

## Changes to our complaint-reporting format

The new interactive reporting below (effective October 2019) will be monthly, rather than quarterly. New data will be available on the 10th business day of each month.

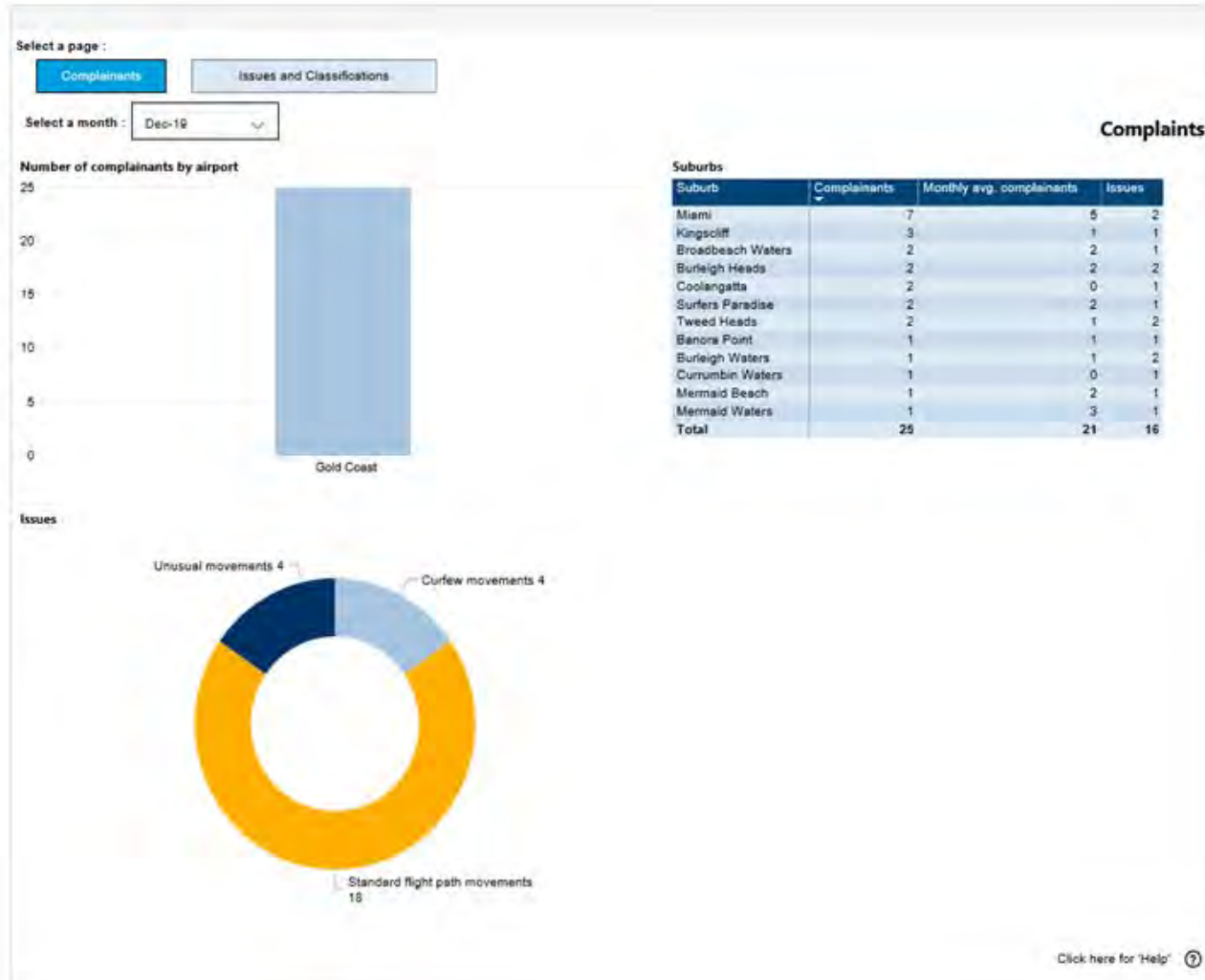
Use this interactive tool to explore the issues raised by residents from different suburbs. Read an explanation of [issues and classifications](#) used in complaint reporting.

Help is provided on both the Complainants and Issues and Classification Screens in the bottom right hand corner of the screen.

If the NCIS have identified something new or unusual in the data, an explanation will be provided in a dated accordion below the interactive reporting. Previous quarterly reporting to January 2016 is under the accordion "Archived". Yearly reviews of complainant numbers and issues will continue to be provided.

**Note:** monthly complaints data describes the complaints lodged in that calendar month. Depending on when in the month the matter was lodged, the investigation may not have been completed within the same month. Where an investigation reveals that the issue or classification initially assigned to the matter was not the most appropriate one, this will be corrected. This may result in incremental changes to issue or classification counts for a previous month. Additionally, complainant numbers are now for each month. Previously if a complainant contacted the NCIS each month in a quarter that was reported as one complainant, if you are adding the number of complainants each month, this may not provide a realistic interpretation of the total number of complainants. If you select a month where there were no complainants, nothing will be displayed.

# New Format Online Reporting









# New Format Online Reporting




select a page :

Select a month :

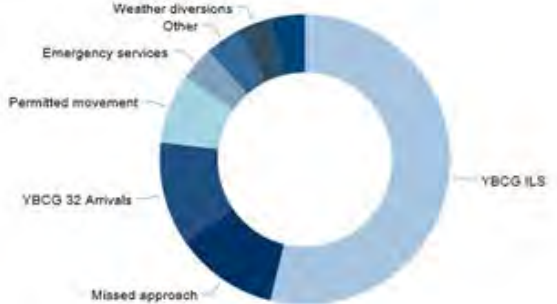
### Issues and Classifications

**Issues**



Issue Type	Count
Standard flight path movements	18
Unusual movements	4
Curfew movements	4

**Classifications**



**Suburbs**

Suburb	Complainants	Last 12 months Avg. Complainants	Issues
Miami	7	5	2
Kingscliff	3	1	1
Broadbeach Waters	2	2	1
Burleigh Heads	2	2	2
Coolangatta	2	0	1
Surfers Paradise	2	2	1
Tweed Heads	2	1	2
Banora Point	1	1	1
Burleigh Waters	1	1	2
Currumbin Waters	1	0	1
Mermaid Beach	1	2	1
Mermaid Waters	1	3	1
<b>Total</b>	<b>25</b>	<b>21</b>	<b>16</b>

# New Format Online Reporting



Select a page :

Complainants

Issues and Classifications

Select a month :

Dec-19

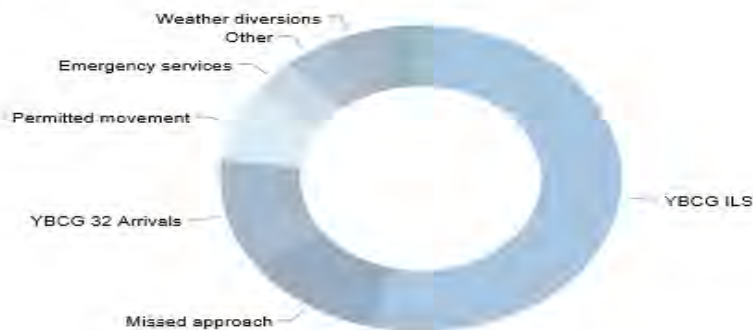
## Issues and Classifications

### Issues



Standard flight path movements  
14

### Classifications



### Suburbs

Suburb	Complainants	Last 12 months Avg. Complainants	Issues
Miami	6	5	1
Broadbeach Waters	2	2	1
Surfers Paradise	2	2	1
Burleigh Heads	1	2	1
Burleigh Waters	1	1	1
Mermaid Beach	1	2	1
Mermaid Waters	1	3	1
<b>Total</b>	<b>14</b>	<b>18</b>	<b>7</b>

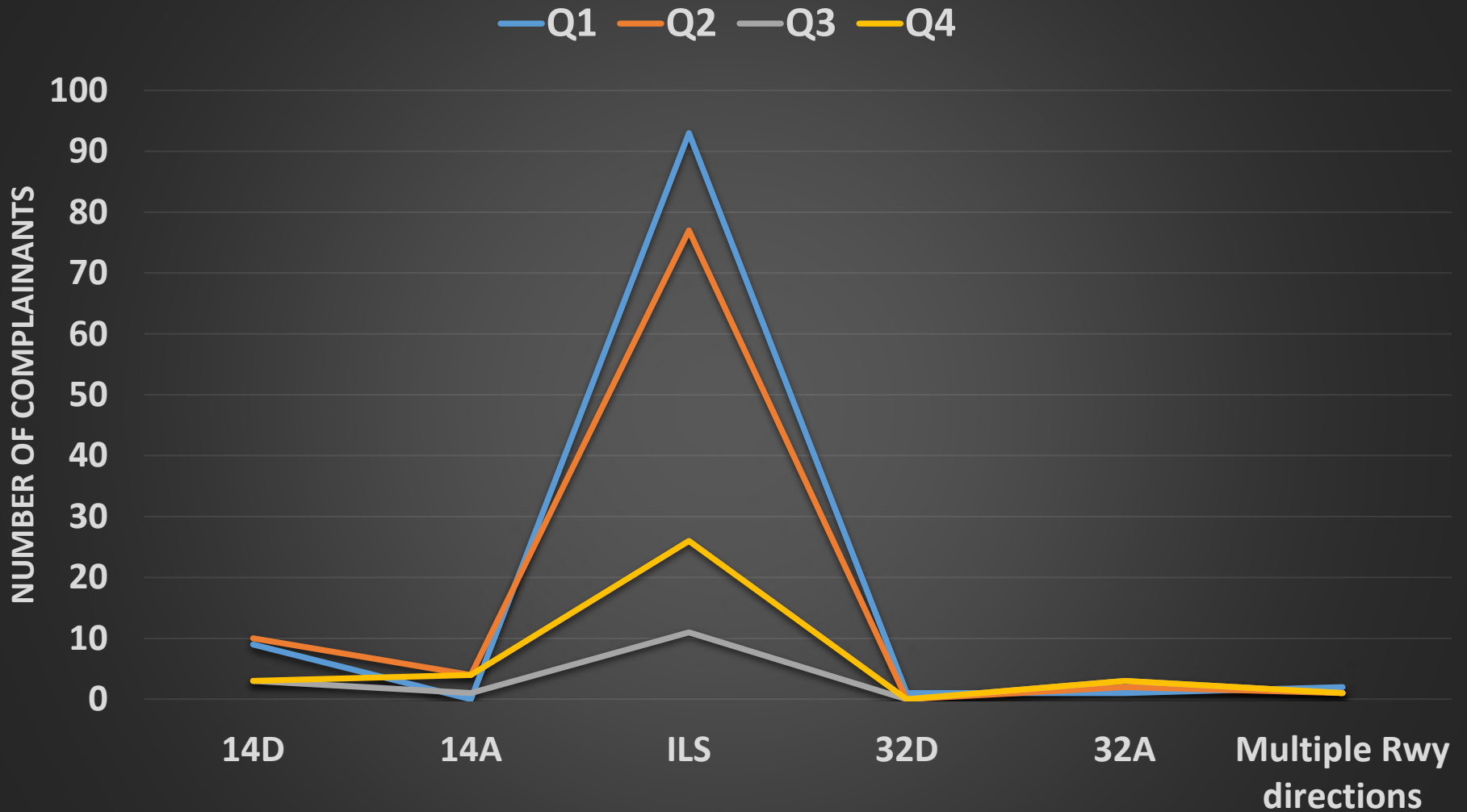


# 2019 Year in Review

## Complainants

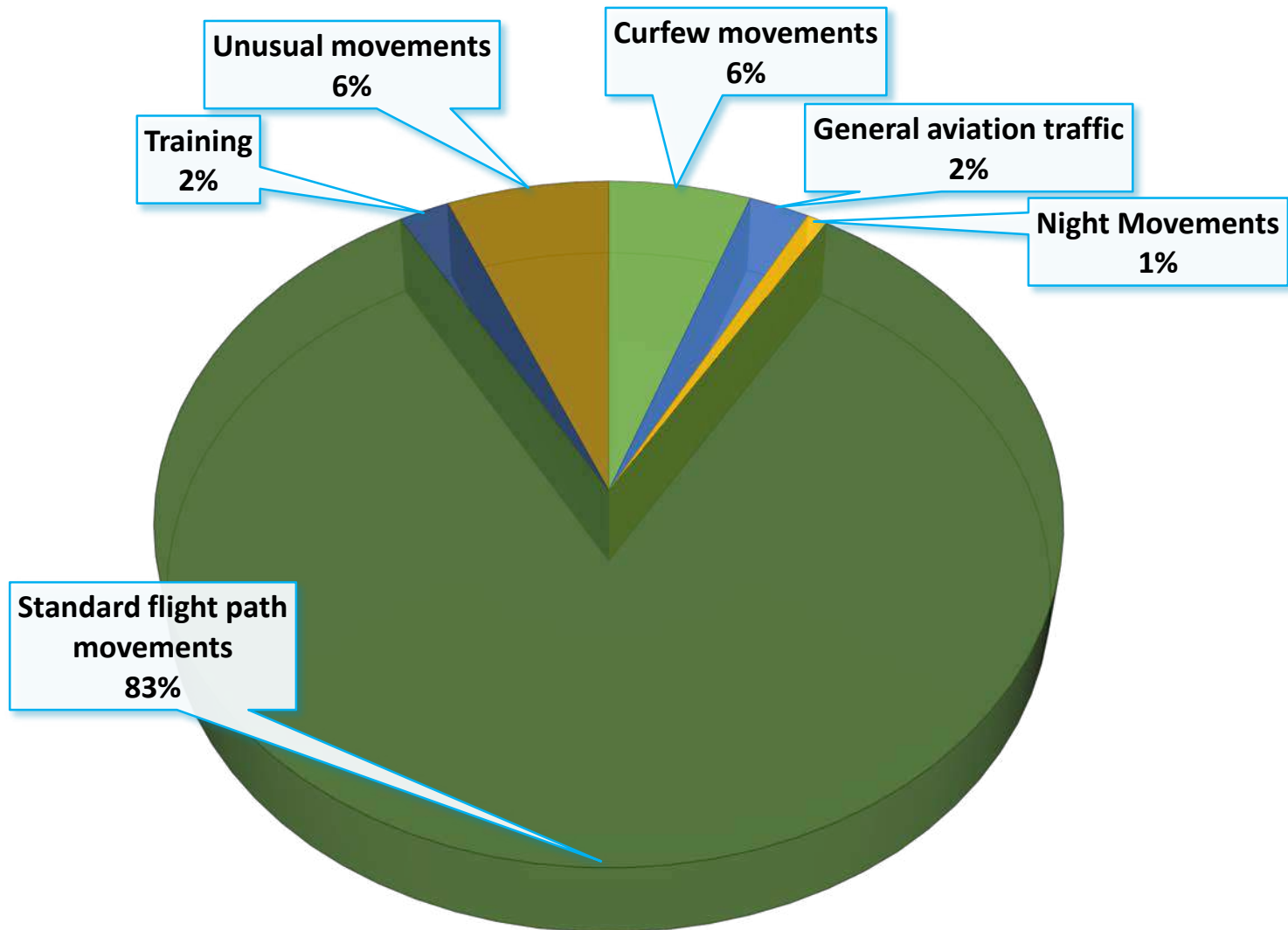
- 248 individual complainants an increase from 143 in 2018
- Increase due to implementation of the ILS – affecting 164 complainants

# Runway and ILS Usage



# 2019 Year in Review

## Issues



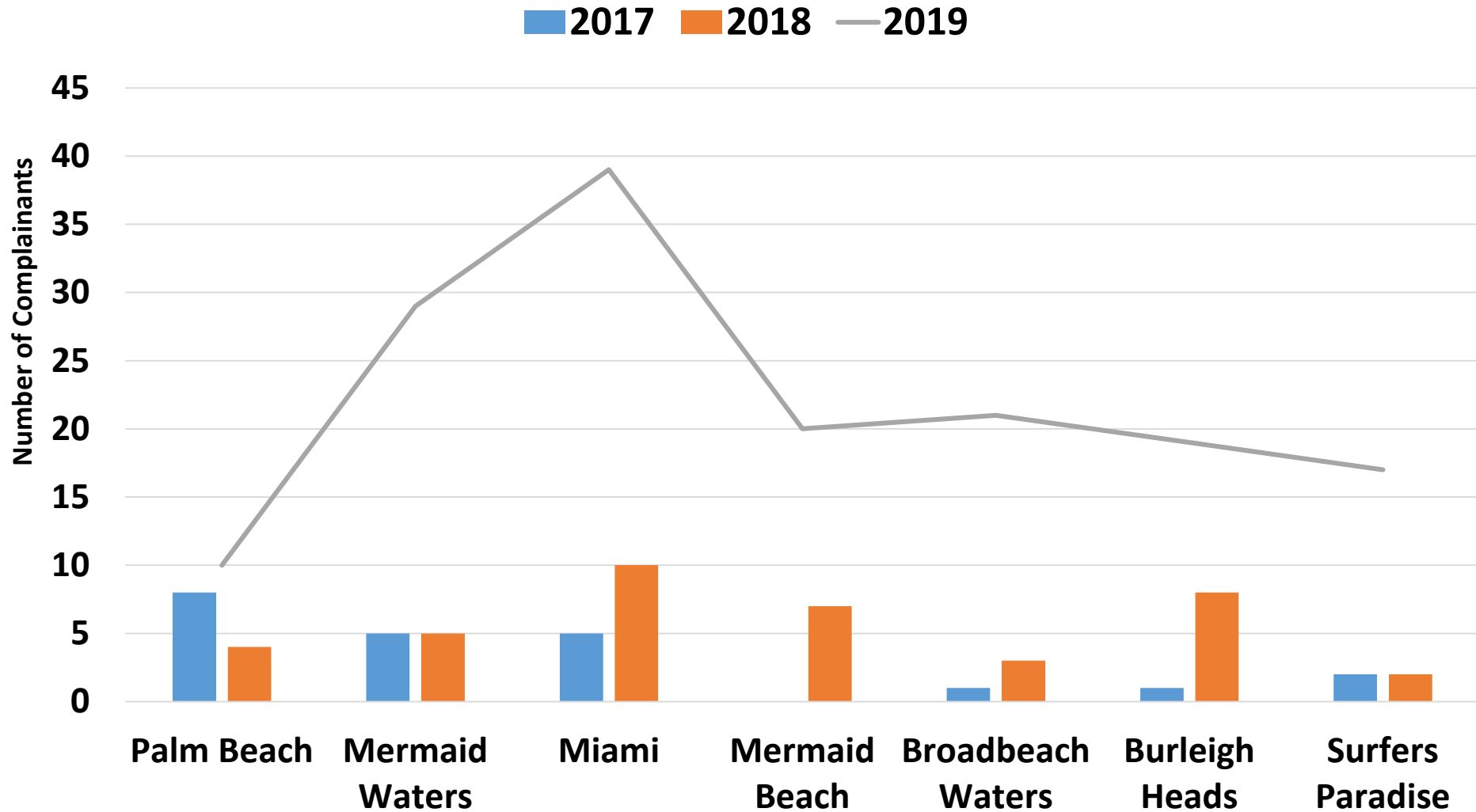
# 2019 Year in Review

## Suburbs



- 43 suburbs recorded complainants
- 19 suburbs recorded a single complainant
- Suburbs recording the most complainants:
  - Miami (39), mainly concerned with ILS operations
  - Mermaid Waters (29), ILS
  - Broadbeach Waters (21), ILS and standard flight path movements
  - other suburbs were all north of the airport and were concerned with ILS operations

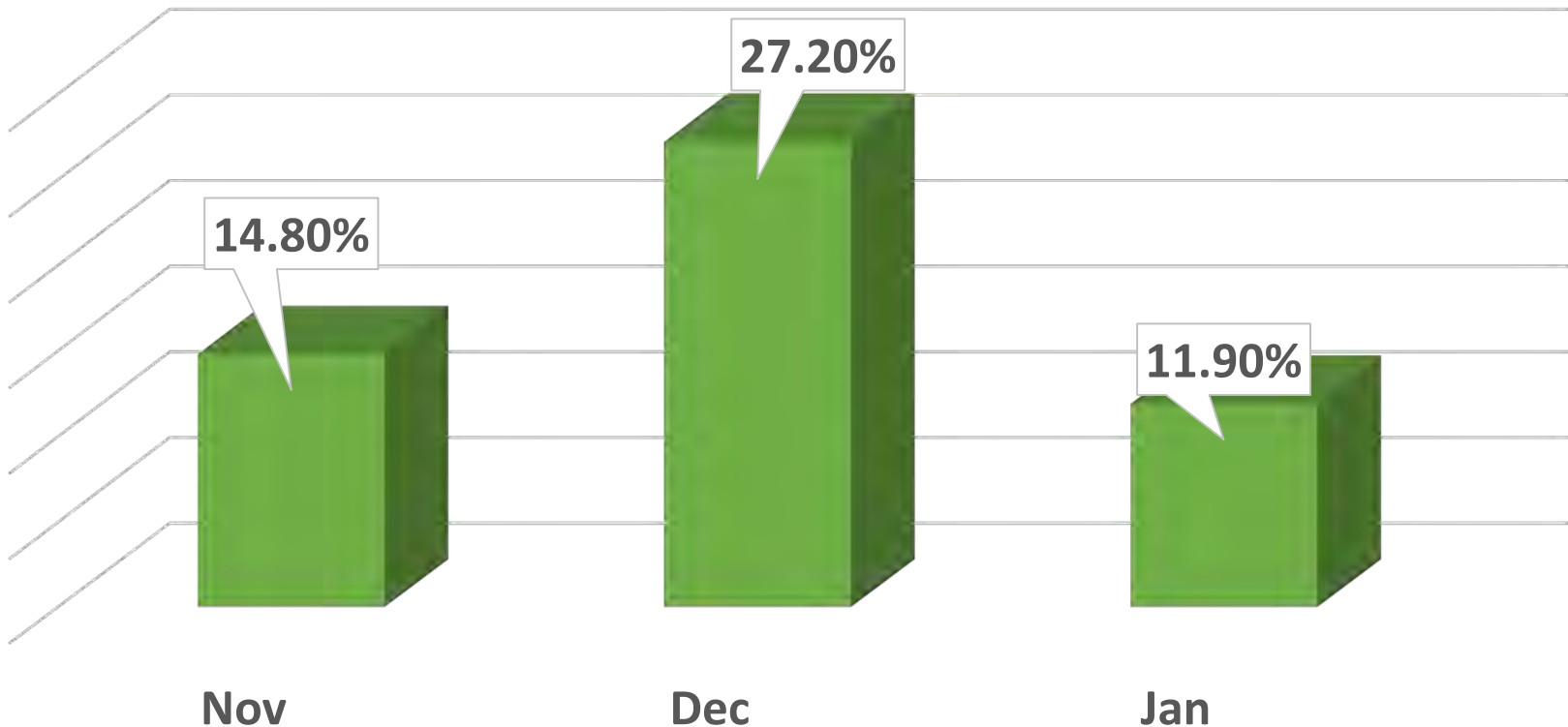
# 2019 Year in Review Suburbs





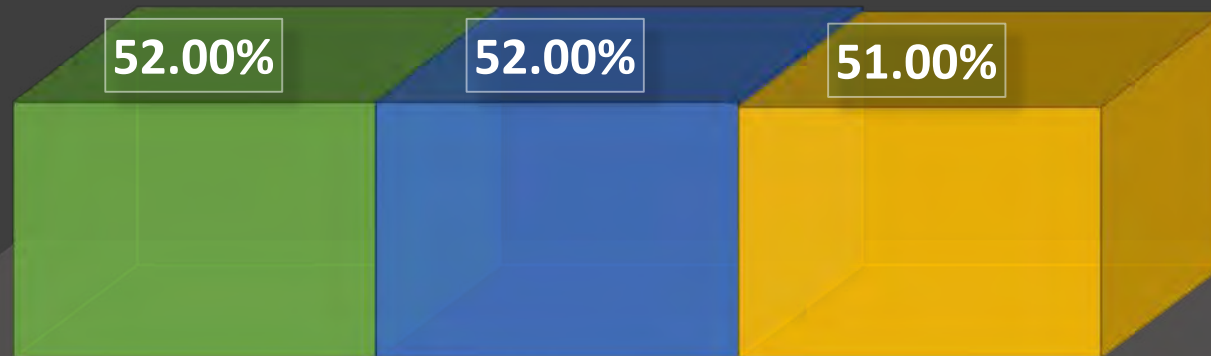
# RNP AR (Smart Tracking) use – Nov, Dec, Jan.

Total Number of RNP flights at Gold Coast



# RNP AR (Smart Tracking) use – Nov, Dec, Jan.

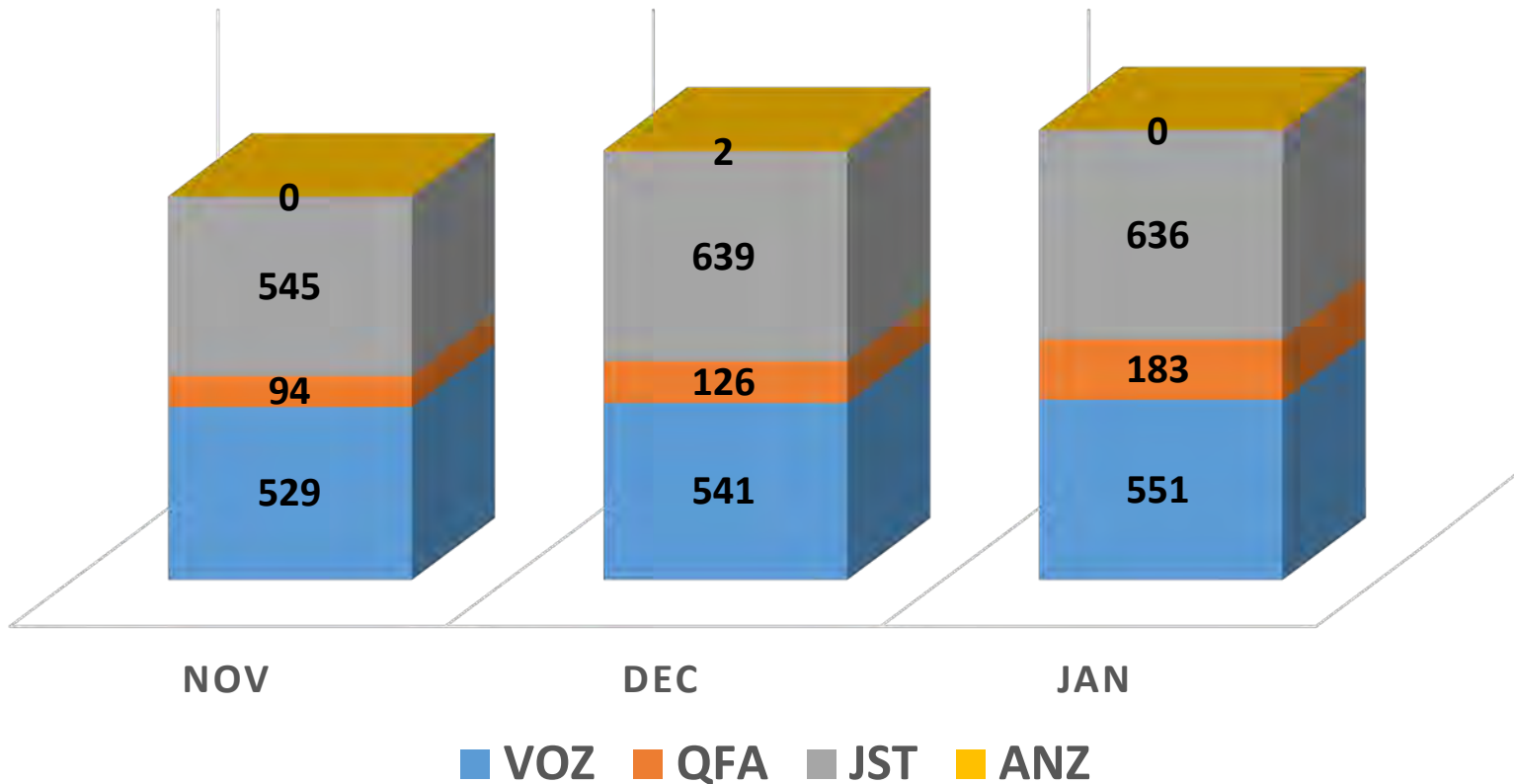
Percentage of all RNP Arrivals



■ Nov ■ Dec ■ Jan

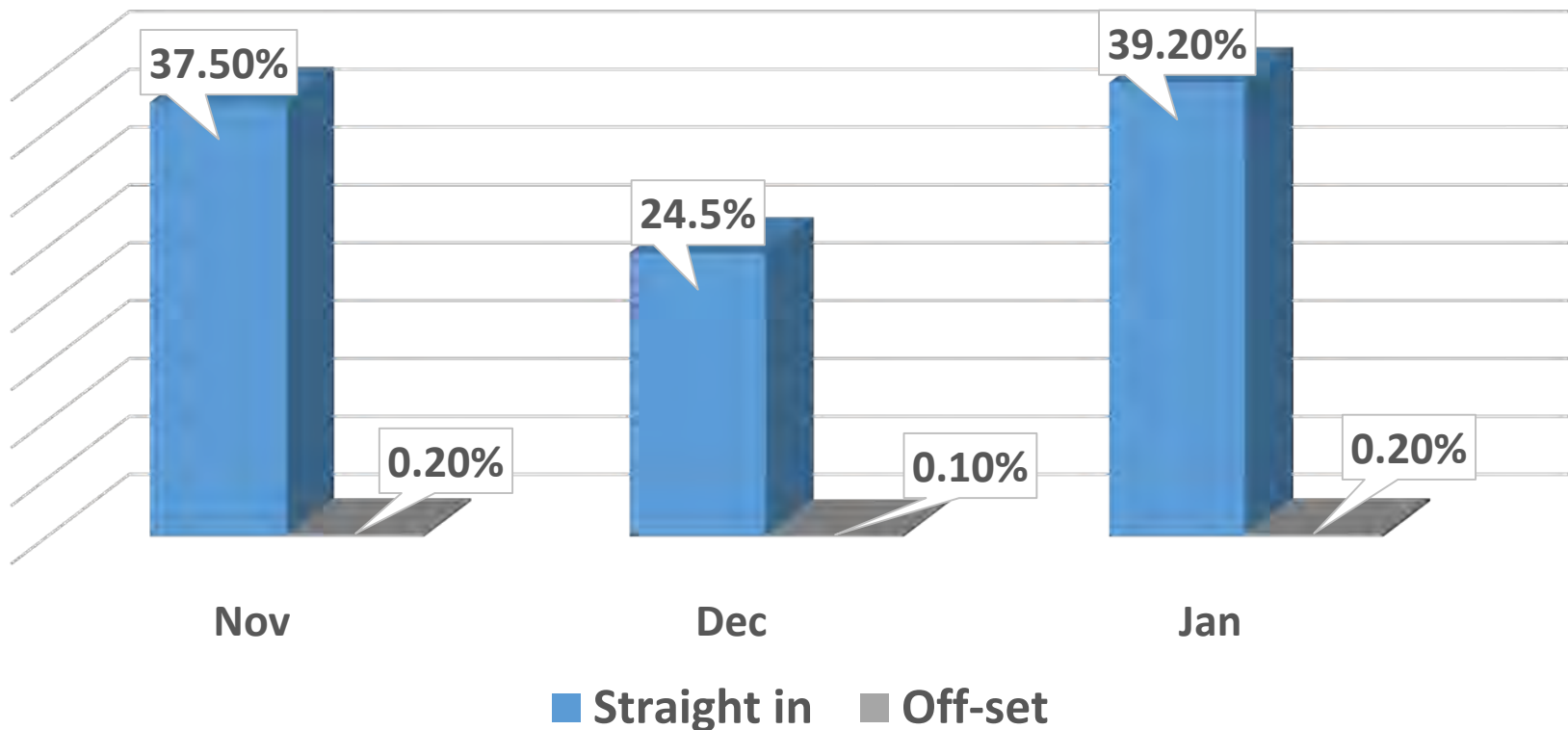
# RNP AR (Smart Tracking) use – Nov, Dec, Jan

## Number of RNP flights by Airline



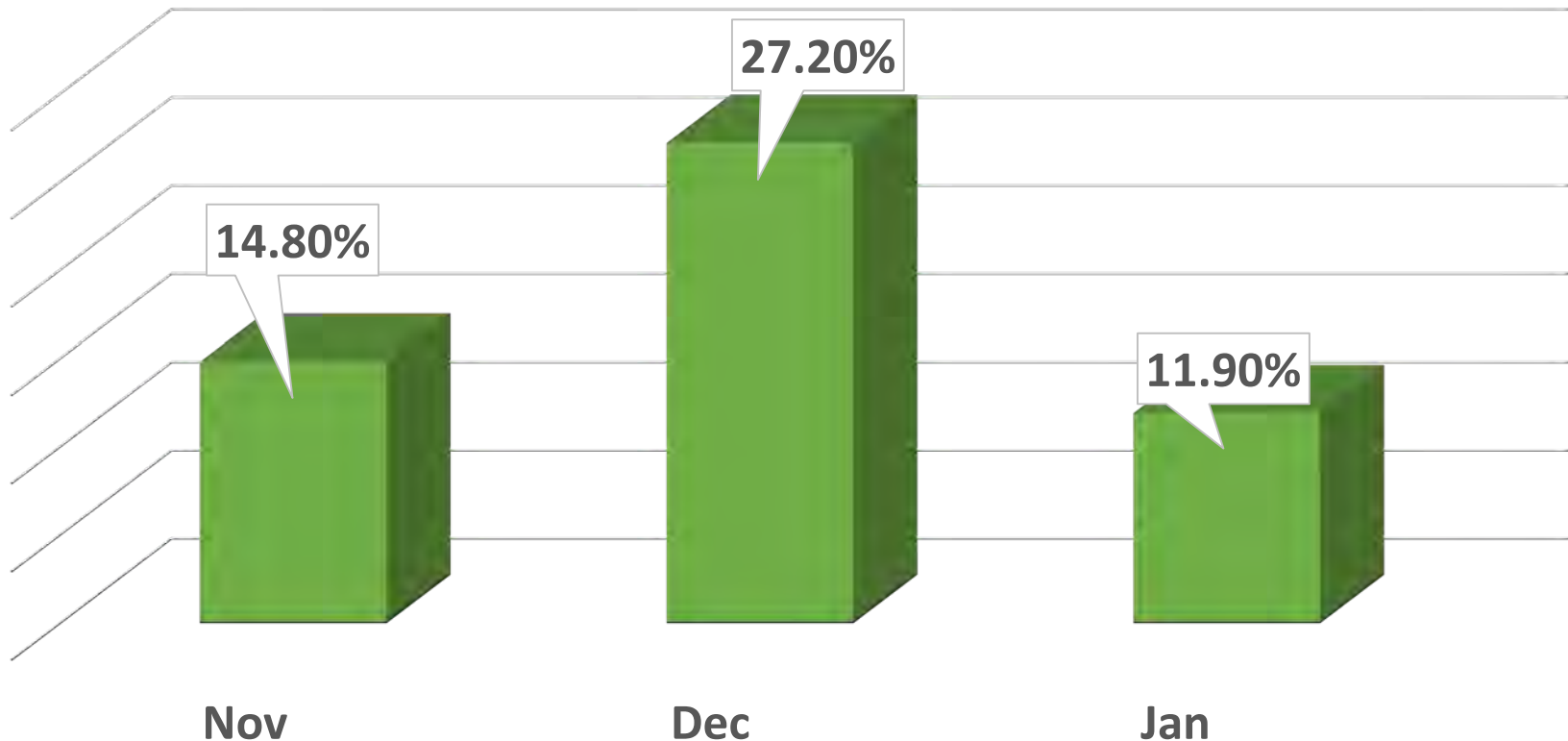
# RNP AR (Smart Tracking) use – Nov, Dec, Jan

RWY 32 use as a % of all Arrivals



# RNP AR (Smart Tracking) use – Nov, Dec, Jan

RWY 14 RNP use as a % of all arrivals



# WebTrak Presentation

## Flights over Kingscliff



- While Airservices is attempting to use WebTrak to assist the CACG members in understanding why ATC direct flights to track over Kingscliff, Airservices notes that this was never the intended use of WebTrak
- WebTrak has many limitations and our third party provider advises of these under the section DATA ACCURACY AND COMPLETENESS
- The statements under this section indicate that WebTrak can be subject to errors. WebTrak was never designed as a definitive source of knowledge, but rather a tool to assist the public to understand aircraft movements over their homes
- Real time events that affect ATC decisions are not displayed on WebTrak and were never meant to be
- <http://www.airservicesaustralia.com/aircraftnoise/webtrak/>

# Gold Coast ANACC ATC

- The rules –standards
- The process –aims
- The limitations
- Example flight

# Rules - technique

## Strategic v Tactical Separation

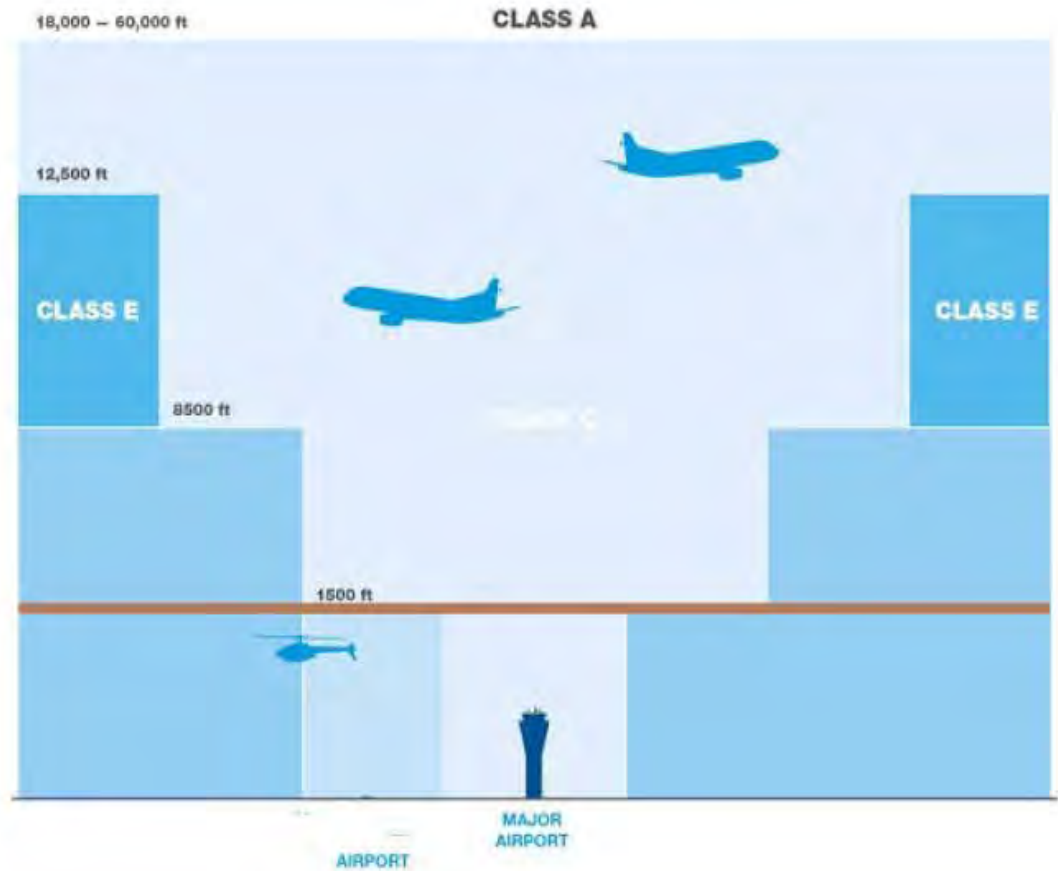
Safety based on applying rule sets for minimum distances – either horizontal or vertical.

- Time, vertical (altitude) radar (distance) or visual (tower)
- Must always have one separation standard – and be able to prove it
- 3nm – 1000ft
- One controller to another – different rules
- Always L070 - always have a plan B



# Gold Coast - airspace

- Gold Coast tower
- 7nm (13 km )
- 1500 ft
- 12 Staff
- 1 SMC/Clearance
- 1 ADC Tower
- 1 Supervisor





# Process – ‘coordination’

ATC1 Clearance issued to aircraft (Dep - ~30 mins)

ATC1 Aircraft pushback (Dep – 8)

ATC1 Aircraft taxi – Brisbane aware (Dep 2-5)

ATC2 Plan traffic at taxi – where – how – when (plan B)

ATC2 Aircraft ready for departure

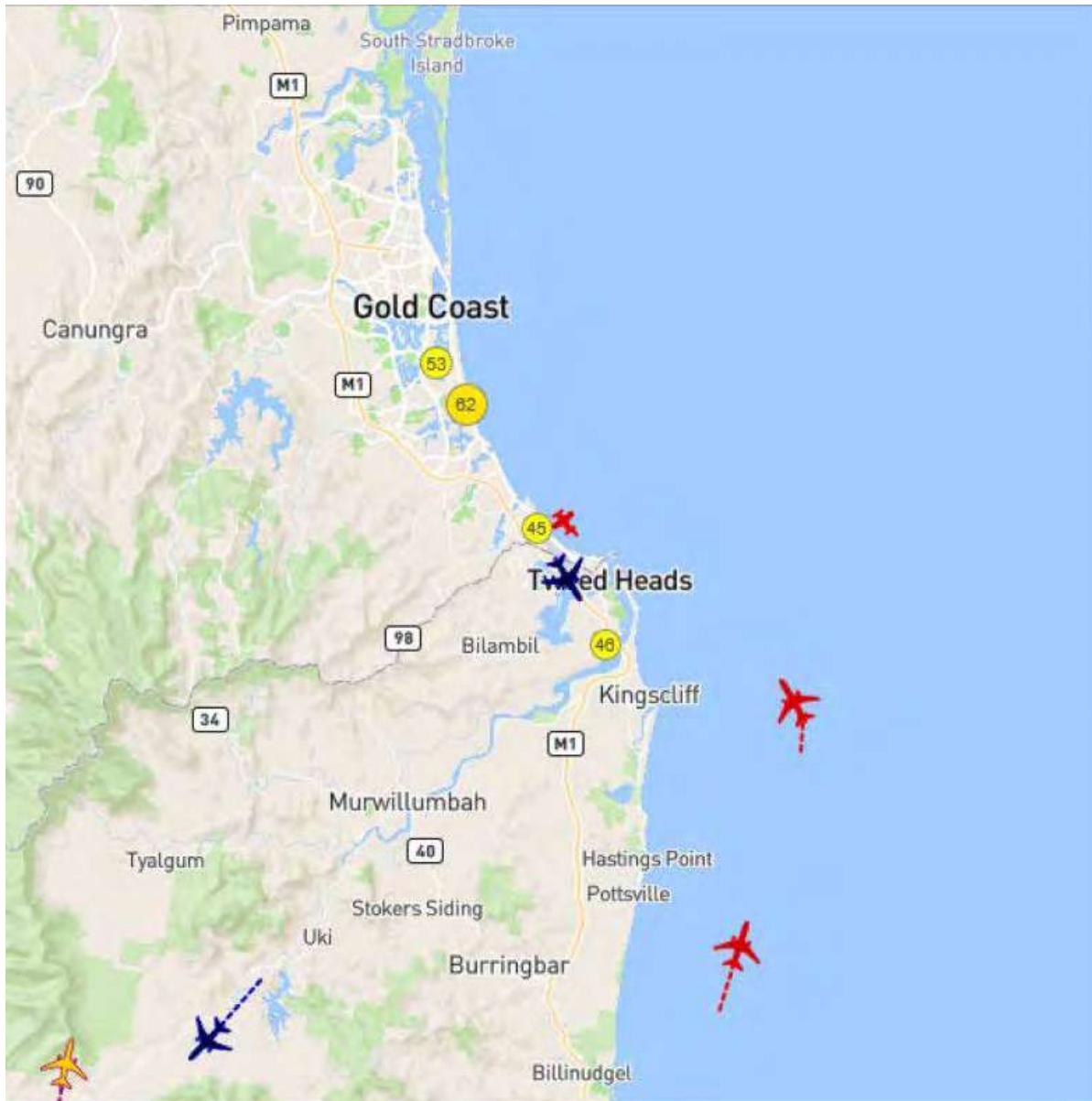
-> ATC3 ‘Next Dodo 1 - require’

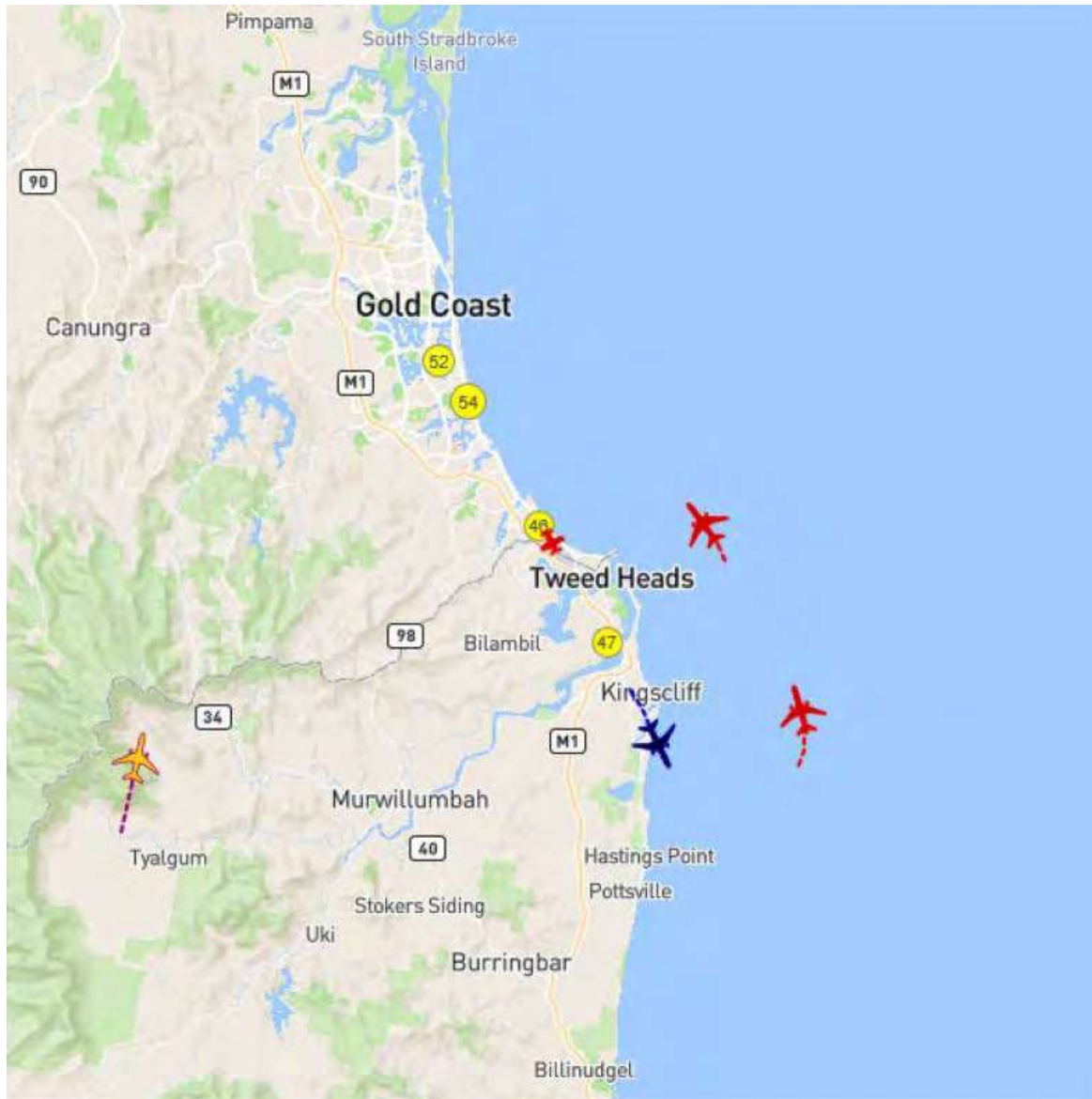
ATC3 Options L070 or H140 unless ATC 2 requires something –  
“2 Minutes”

Air traffic control will issue the flight with departure instructions – the pilot will only change for operational reasons or due to weather.

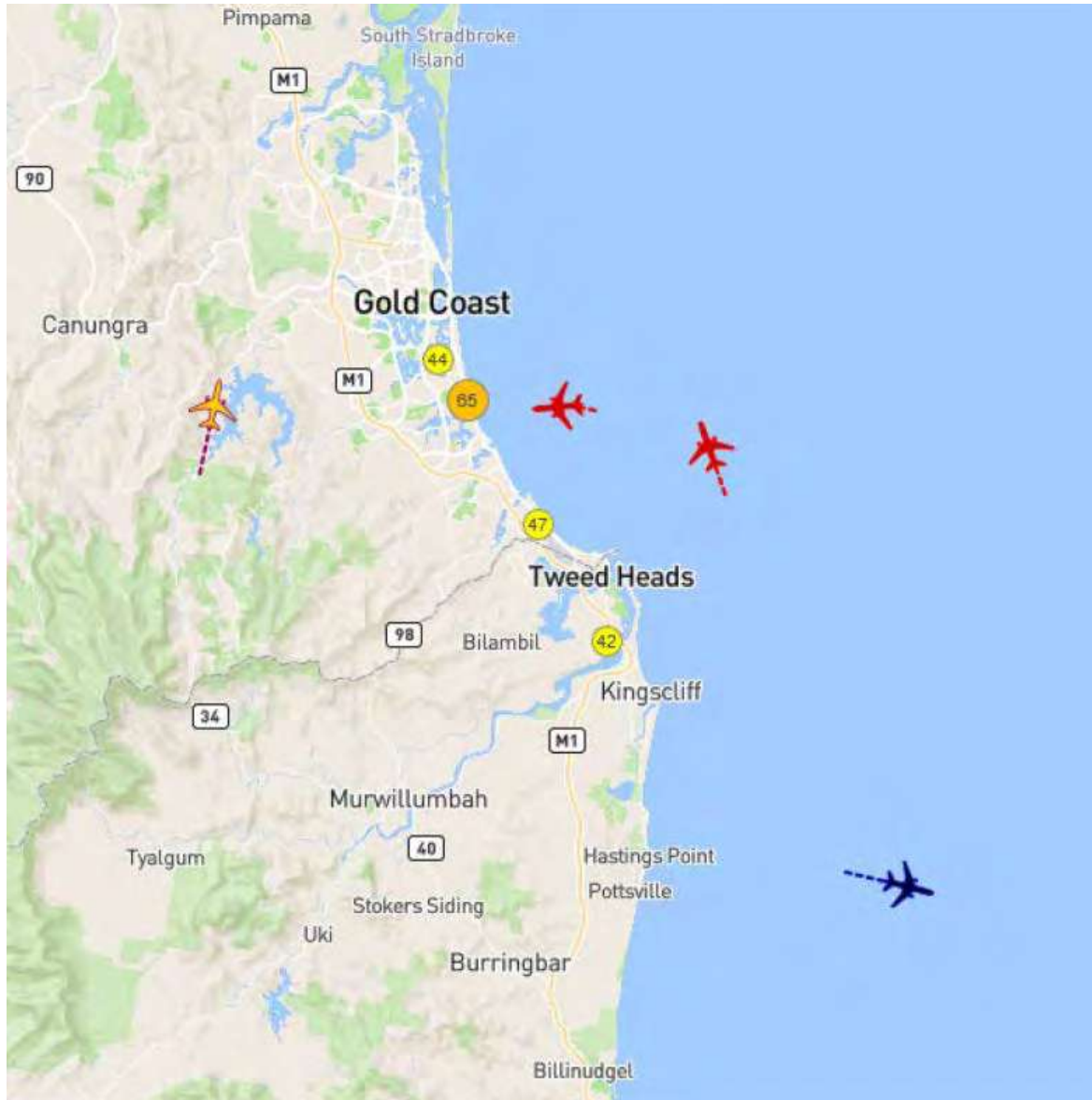
# Limitations

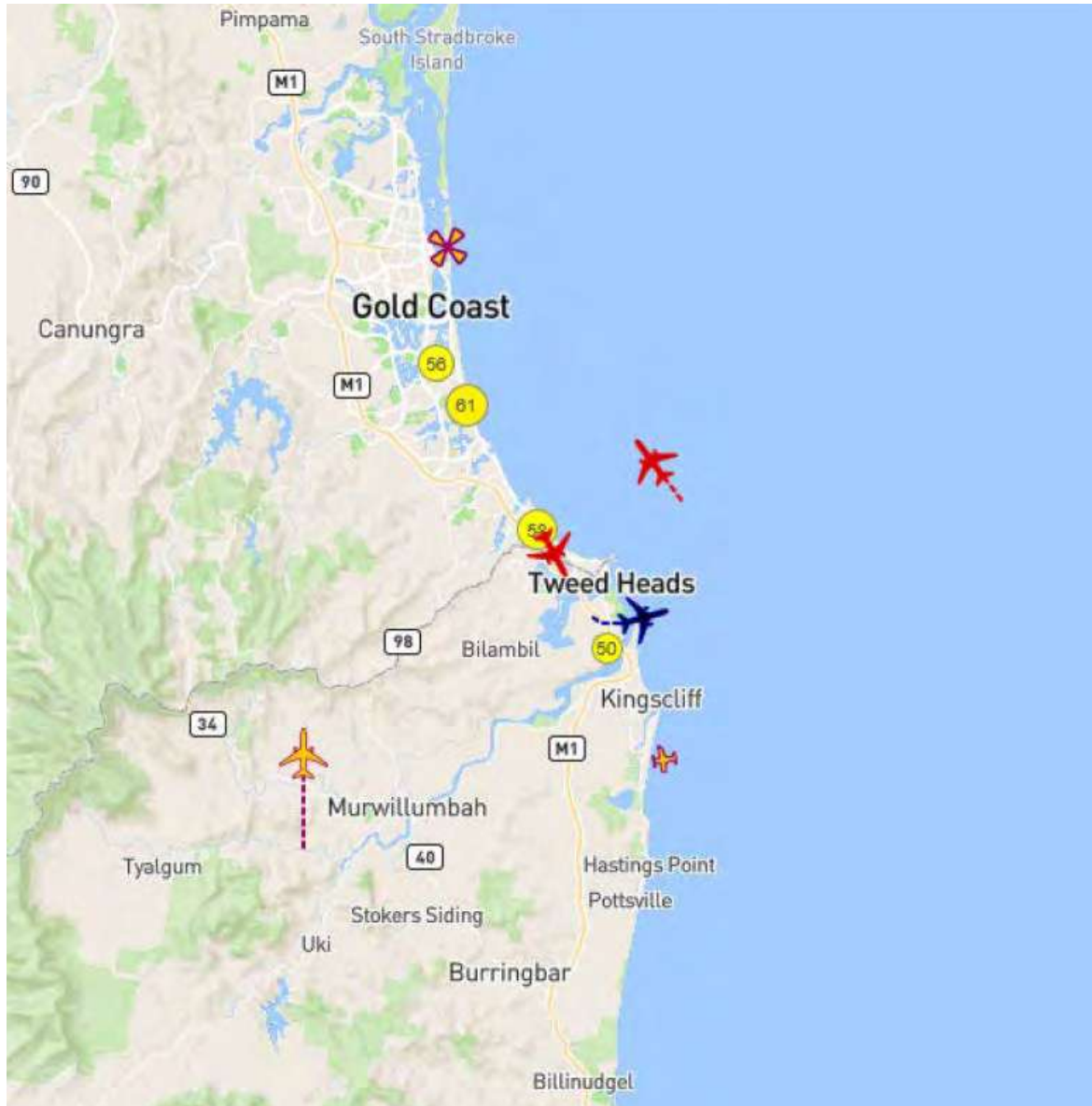
- Airport design - Taxiway system
- Other traffic
- Route network - airspace
- Visibility - weather
- Experience – P - roundabout













# Action items this meeting

- Airservices requests the CACG to determine the priority of the two action items for this meeting

# Gold Coast Airport

March 2020 CACG Presentation – Operations and  
Development



## Passenger numbers

- October = 598,000 (up 3% on prior year)
- November = 531,000 (up 1% on prior year)
- December = 610,000 (up 5% on prior year)
- **Total Passenger Numbers for 2019 = 6.51m** (similar to prior year)
- January = 644,000 (up 1% on prior year)



## RPT Flight numbers (arrivals and departures)

- October = 3,579 or 808pw
- November = 3,184 or 743pw
- December = 3,698 or 835pw
- **Total RPT flight numbers for 2019 = 40,624**
- January = 3,801 or 858pw



## Seoul Service

- Service commenced 8 December 2019
- Over 5,900 Korean passport arrivals over Dec / Jan
- Estimated to have introduced \$25m into the local economy
- Service to be suspended 7 March 2020 due to COVID-19

# HEALTH WARNING

## CORONAVIRUS (COVID-19)

**I'VE TRAVELLED OVERSEAS.  
WHAT IF I FEEL SICK LATER?**



**FEVER**



**COUGH**



**CALL A DOCTOR**



**LIST YOUR  
TRAVEL HISTORY**



Australian Government  
Department of Health

[www.health.gov.au](http://www.health.gov.au)

## COVID-19

- Restrictions in place for foreign travellers who have left or transited through mainland China or Iran.
- Queensland Health have introduced screening protocols for arriving international services
- Queensland Health recommend good hand and respiratory hygiene
- Additional measures currently in place at GCA including hand sanitisers being provided in the terminal





## Hidden disabilities programme launch

Gold Coast Airport has launched a comprehensive programme to assist passengers with a hidden disability. The programme includes:

- Self-guided education tools to help with pre-planning prior to a flight, including passenger journey videos and social stories

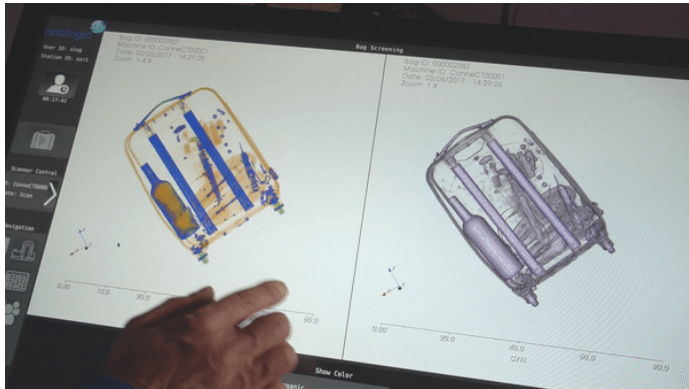


## Hidden disabilities programme launch

- Terminal facilities that offer a low sensory experience
- Lanyard identification program
- My Airport activity book
- Therapy dog program







## Enhanced security screening technology

Government initiative to introduce enhanced security screening technology to major

Australian airports

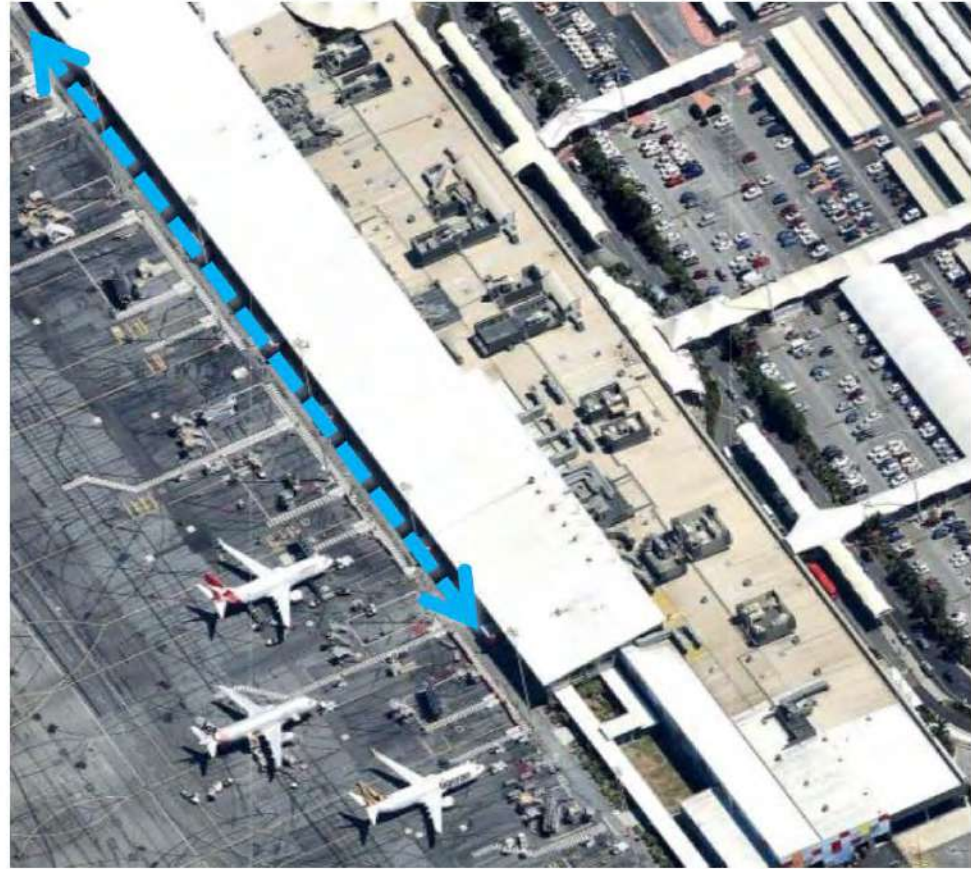
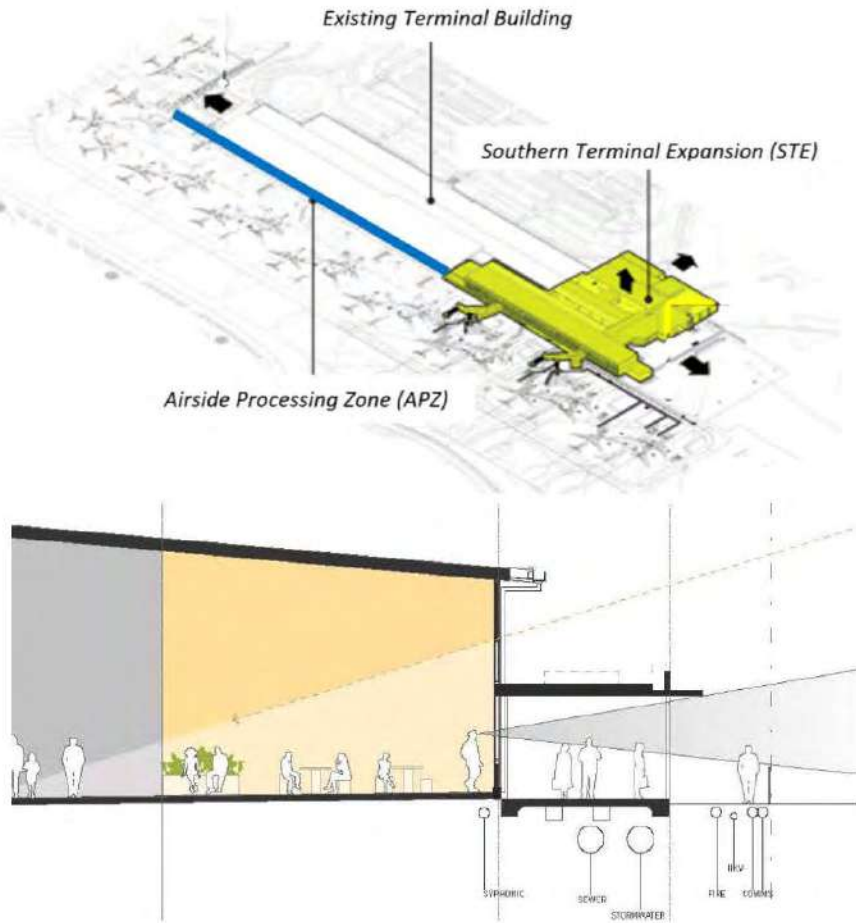
➤ Includes:

- CT X-ray screening equipment
- Body scanners

➤ Two new lanes to be introduced late March 2020 at GCA

➤ An additional two lanes to be introduced May 2020 at GCA





- Works to commence March 2020
- Approximately 12 months to complete

## Airside Processing Zone





Project LIFT – Southern Terminal Extension





Project LIFT – Southern Terminal Extension





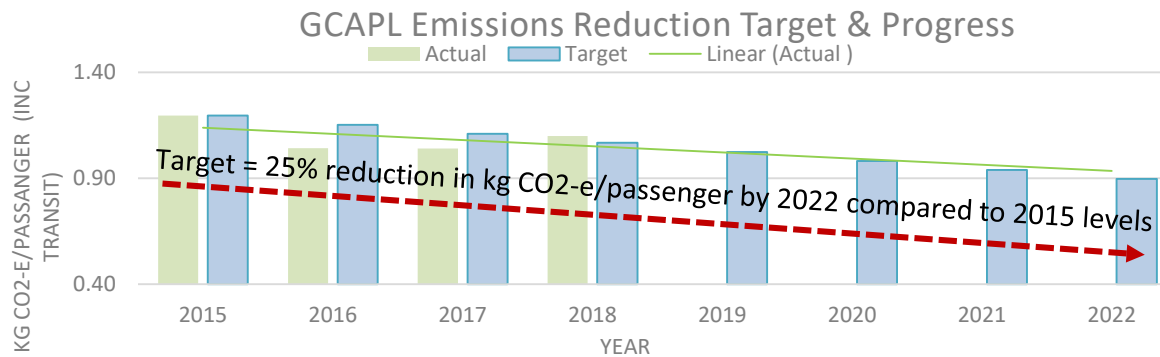
Airport Hotel

# Gold Coast Airport

March 2020 CACG Presentation - Environment

# Sustainability / ESG

- Level 1 Airport Carbon Accreditation - 2016
- Emissions Management Plan & Emissions Reduction Target – 2017 (Approved 2018)
- Level 2 Airport Carbon Accreditation - 2017
- Achieved 4/5 GRESB Rating – FY18 Reporting Period
- Sustainability Linked Loans - 2019
- ESG Strategy Currently Being Developed – Materiality Assessment



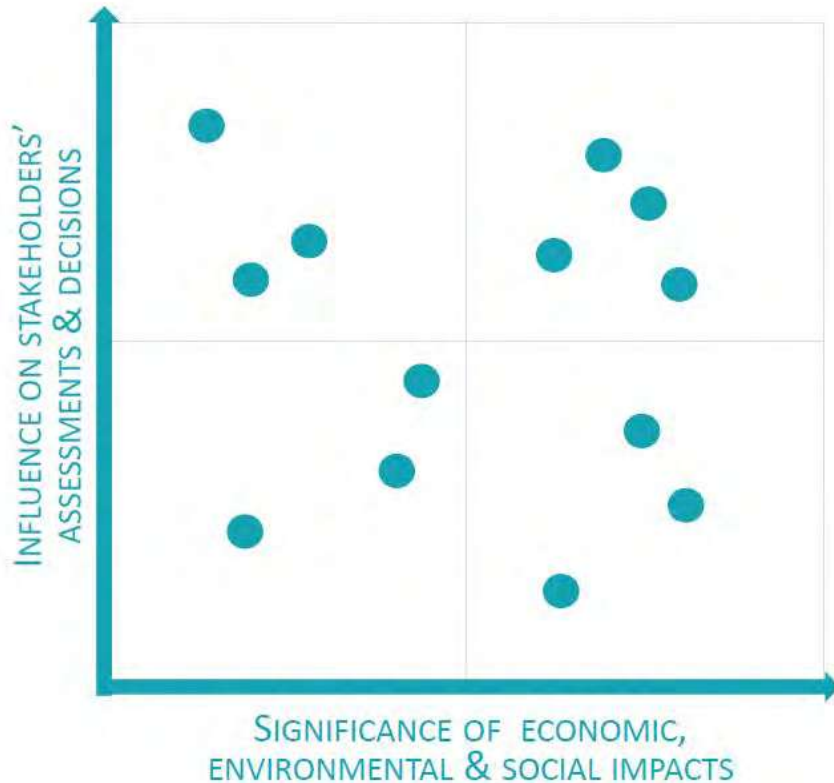
Currently in Place

Being Progressed/Considered

For Consideration



# Materiality Assessment



- **Governance & Management**
  - Corporate Governance & Transparency
  - Economic Performance
- **Environment**
  - Energy & Climate
  - Biodiversity
  - Waste
  - Water
- **Social**
  - Employee & HR Management
  - Local Community Consultation
  - Customer Satisfaction



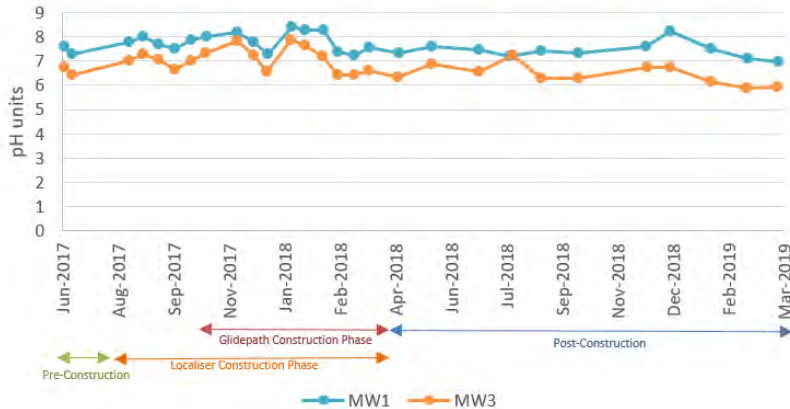
# ILS WQM Sites & Parameters



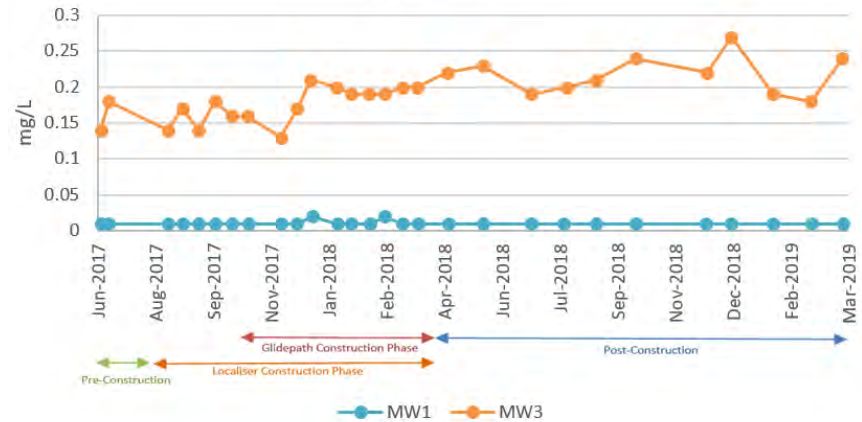
Sites	Frequency	Parameters
GW - 2 SW - 7	<b>Pre-Con</b> June 2017 <b>During Con.</b> Aug 17 – March 18 •SW- in situ weekly, lab monthly •GW – fortnightly •Post storm event monitoring	• <b>Physicochemical</b> – pH, EC, DO, TSS etc. • <b>Nutrients</b> – phosphorus, nitrogen, ammonia etc. • <b>Metals</b> – Al, Fe, Zn etc. • <b>Anions &amp; cations</b> – bicarbonate, chloride, sodium etc. • <b>Hydrocarbons</b> • <b>PFAS</b>
	<b>Post Con.</b> Apr 18 – Mar 19 • SW & GW monthly	
	<b>Operational</b> Oct 19 - ongoing •SW & GW biannual •Up to 2 post storm events	

# ILS WQM Results - Groundwater

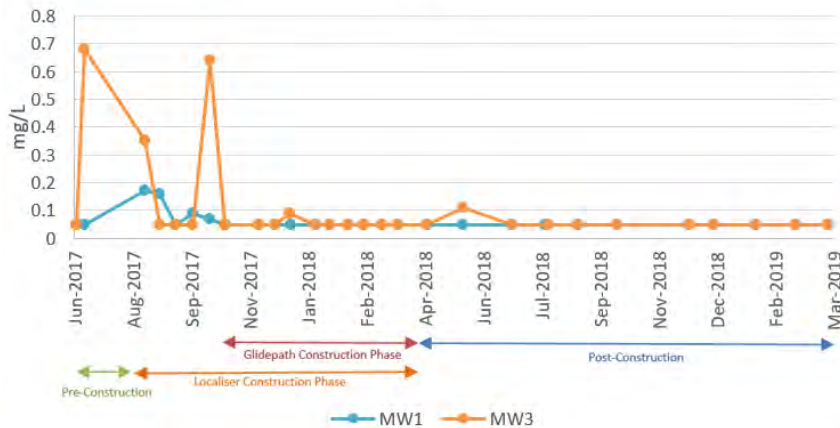
pH



Aluminium



Iron

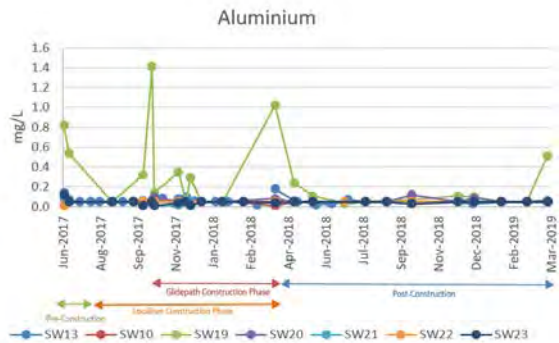
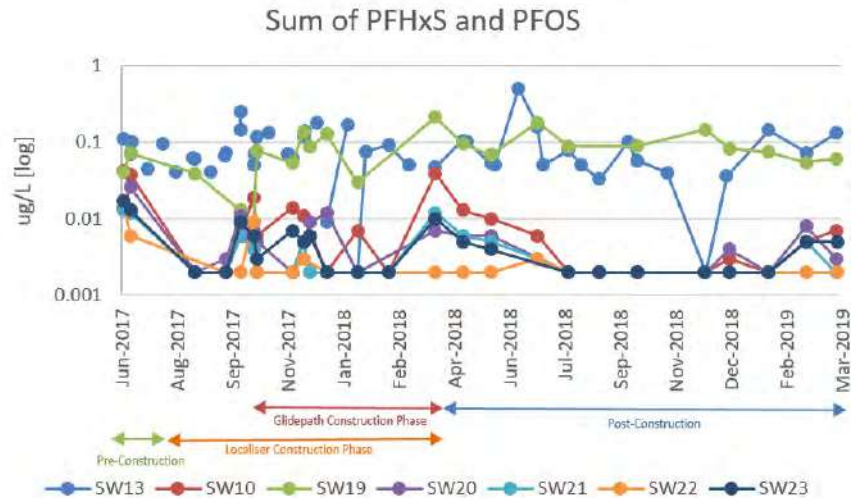
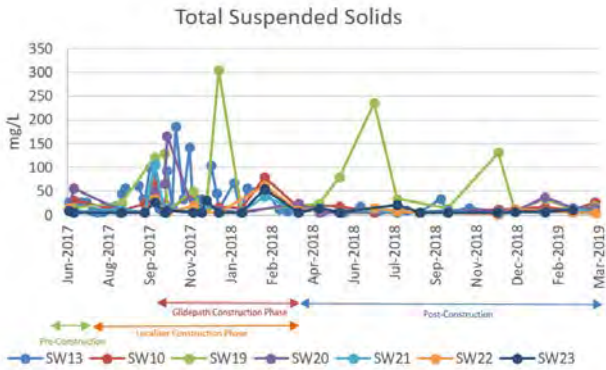
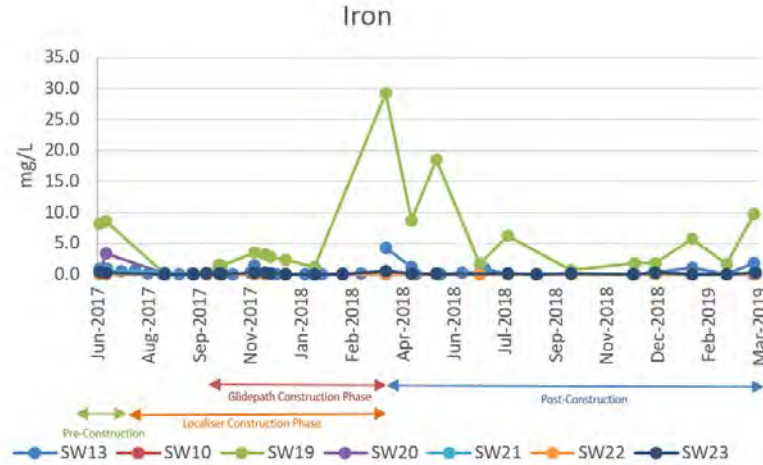
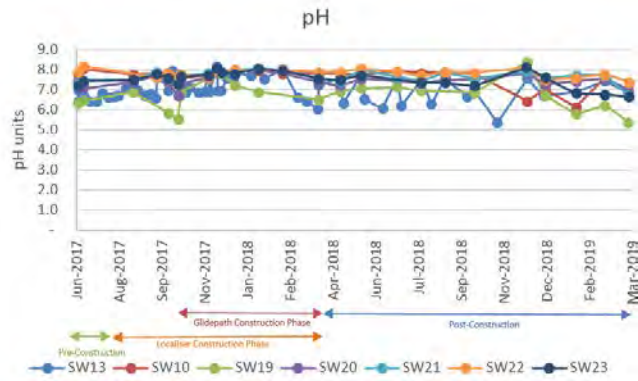


Sum of PFHxS and PFOS





# ILS WQM Results – Surface Water



# Airport Noise Abatement Consultative Committee (ANACC)



## MEETING MINUTES

**Date:** Thursday, 06 February 2020  
**Time:** 09:00 – 12:00  
**Location:** Twin Towns Services Club - Visions Room

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### 1.0 Opening and Welcome

Chairman, Jared Feehely, opened the meeting at 09:13 and welcomed members and observers to the February meeting.

The Chairman announced that Jemma Bishop no longer works at Gold Coast Airport and as a result Laura Zambon will be assisting until a permanent replacement is recruited.

The committee expressed their thanks to Jemma for her assistance with the committee and asked their thanks be formally noted.

### 2.0 Attendance and Apologies/Proxies

Refer to Attachment 1

#### *2.1 Member nomination update*

The Chair provided an update on the nomination process.

- Garth Threlfall has retired from the ANACC with Paul Baker stepping into this position.
- Audra Topping is stepping down from the ANACC with Anthony Steinfert filling her position from Tugun.
- Confirmed renomination of Lindy Smith, John Hicks, Bill Pinkstone, Peter Barrett, David Gray and John Alcorn.
- Have received no response from Barry Jephcote. The Secretariat has attempted to contact the SECCA group and since no response was received to these enquiries in conjunction with the lack of attendance at prior committee meetings, Gold Coast Airport are assuming that the community group is no longer active or operating.

The Chair noted that the secretariat received limited if any detail on representative organisation/association meetings which was requested as part of the nomination process. Members are to provide this detail to the secretariat for records.

**ACTION:** Committee representatives to provide the secretariat with details on organisation/association meetings i.e. meeting dates, times and location.

The Chair advised that due to no response from Barry Jephcote representing the SECCA group, Gold Coast Airport is considering the potential to provide a seat for both Kingscliff and East Banora/Fingal Heads with East Banora representing themselves and Fingal on the ANACC. This proposal would result in five northern and five southern seats on the committee creating an even representation, which has been a concern of members for some time. Member feedback on the proposal:

- John Alcorn raised concerns regarding a small population like Fingal having a specific representative when there is no one representing areas such as Bilambil and Terranora which have larger populations.
- John Alcorn suggested broadening the membership of existing members allowing other small communities such as Round Mountain or Oxley Cove to be represented by the current members of ANACC. The population of Fingal has changed dramatically in numbers and their concerns should be represented through the Kingscliff representative.
- Lindy supports Fingal having representation because of the proximity to the airport and the forecasted growth which Fingal would be impacted by.
- John Alcorn noted in the past the Fingal community was represented by Kingscliff. John noted that members should consider all resident's issues regardless of their representative area. John noted the ANACC should aim to do the best for all of the communities as a committee and should be looking at the best outcome for the whole community.
- Brett Curtis reiterated that Gold Coast Airport are only proposing to put another voice on the committee. To enable this there needs to be an active association or community group of which there is in Kingscliff and Banora Point. If there are resident concerns in areas that do not have active association or community groups, they can contact the airport, ANAAC Chair or ANACC members.

**MOTION:** The Chair raised a motion to the committee to include a seat for Kingscliff on the ANACC.

Moved by Bill Pinkstone, seconded by John Hicks.

**MOTION:** The Chair raised a motion to include a seat for another southern representative on the ANACC. The exact representative or community group will be determined outside of the February meeting.

Moved by Bill Pinkstone, seconded by Julie Murray.

**ACTION:** Secretariat to facilitate coordination of fifth southern ANACC representative with members to determine most relevant representative organisation.

Larry Woodland (Observer) addressed the ANACC to introduce himself. Larry would like to put his name forward to be the voice for the Fingal area as Helen, due to health reasons, is stepping back from this position. Larry stated this his attention will not just be on Fingal, but the whole district. He has a lot of support from the community and they are very interested and active in this space.

## *2.2 Farewell and thank you to past members*

The Chair noted a farewell and thank you to past members with a special mention to both Garth and Audra for their contribution over their tenure on the committee.

The Chair advised members that the secretariat had received a resignation letter from Rob Anderson at Virgin Australia who is returning to full time flying duties. Members expressed their thanks to Rob for his participation and assistance over the years. The Chair noted Virgin are working through the process for Rob's replacement and should have a new representative for the next ANACC meeting.

**MOTION:** Members raised a motion for the ANACC to write to Virgin Australia and express the committee's gratitude to Rob Anderson for his years of support to the ANACC and the communities they represent.

Moved by Bill Pinkstone, seconded by Julie Murray.

**ACTION:** Secretariat to write to Virgin Australia CEO regarding Rob Anderson's resignation from the committee recognising his contribution.

The Chair also passed on information received from Russell McArthur at the Department of Infrastructure Transport, Cities and Regional Development advising that the Department is currently going through a restructure which may change their representative on the ANACC. Russell noted that the Department will continue to provide reports throughout the restructure process. The secretariat will advise members of the Department's representative once this has been finalised.

### 3.0 Acceptance of Previous ANACC Meeting Minutes

The Chair sought feedback from members on the minutes from the 10 October 2019 meeting.

The minutes were **endorsed and accepted** by the committee.

Following some of the challenges associated with the renomination process members suggested that the ANACC member list is provided at each meeting to ensure the secretariat always holds accurate and current records.

**ACTION:** Secretariat to update the ANACC member list and provide it as part of registration for each meeting to ensure it is up-to-date and current.

John Hicks noted that the attachments were missing from the previous minutes as well as the presentations which had not been sent out, noting they should be sent with the meeting agenda papers.

**ACTION:** The Secretariat to update minutes following the meeting and resend with all of the relevant attachments.

### 4.0 Business Arising from Previous Minutes

Refer to Attachment 2: ANACC Action List<sup>1</sup> for full details of action items.

#### Action Item 2 - Kingscliff Departures

- Discussed later in the meeting at item *8.0 Airservices Australia Reporting*.
- Action item to be **CARRIED TO THE NEXT MEETING**.

#### Action Item 1 - Flight track trial pre/post trial data

- The Chair asked Lindy if she had an update on the action item. Lindy advised there was no update yet.
- Action item to be **CARRIED TO THE NEXT MEETING**.

#### Action Item 5 - Diversion Data

- The Chair noted that Virgin Australia had advised prior to the meeting that diversion data is not practical to provide. Guy Proctor from Jetstar advised that similarly to Virgin this data is not something that they can easily collate and therefore provide.
- Item updated to **CLOSED** on the action list.

---

<sup>1</sup> Members will note amendments to the layout, numbering and information provided in the ANACC Action List.

Amendments are intended to make tracking, management and close out of actions easier for the Chair, members and the secretariat. Member understanding is appreciated for editorial errors made in the transition of actions into new format.

#### Action Item 6 - ATC Data and Kingscliff Flight Data

- Discussed later in the meeting at item *8.0 Airservices Australia Reporting*.
- Action item to be **CARRIED TO THE NEXT MEETING**.

#### Action Item 3 - Webtrak

- The Chair asked Lindy if she had an update on the action item. Lindy advised that while there had been some movement on the item there was not enough to close it out. Lindy noted that she is still waiting for a comprehensive response from Airservices.
- The Chair asked Lindy if by virtue of the fact that when signing into Webtrak you acknowledge that information provided may not be 100% accurate does that answer her query, this was deemed to not be sufficient.
- Airservices noted that some aircraft tracks that are deliberately hidden - Defence, Police or government agencies.
- Members acknowledged Airservices point however queried if an RPT aircraft departs Runway 14 and deviates to the east or west by ~500m Webtrak does not display this.
- Airservices confirmed the aircraft locations displayed on Webtrak are reliant on location data received from the aircraft, this location is only updated and displayed in set time intervals. Airservices noted that Webtrak smooths the aircraft's track as it takes snapshots of the path at lesser frequencies than the ATC radar.
- Members queried if when reviewing noise complaints NCIS use Webtrak or ATC radar records. Airservices advised that NCIS will use ATC records for technical reviews.
- Members queried if all future aircraft will be trackable on Webtrak. Airservices advised they cannot answer that but currently a very high percentage are tracked.
- Action item to be **CARRIED TO THE NEXT MEETING**.

**ACTION:** Airservices to confirm the time intervals location data is provided for Webtrak.

#### Action Item 8 - Gold Coast Airport Lease Document

- The Chair advised that it is not appropriate to release the Gold Coast Airport lease document.
- Item updated to **CLOSED** on the action list.

General feedback from members on the action list and process:

- John Alcorn noted that action items need to remain on the action list until they are completed. John advised that there is an action item missing from the current action list in relation to RNAV from approximately two meetings ago.

**ACTION:** John Alcorn to provide detail around RNAV action for committee to confirm if this is closed.

- Members discussed separation of flights out to sea and sought feedback from Airservices regarding how far off the coast they are responsible for. Members noted a pictorial view of what air space Airservices look after would be useful.

**ACTION:** Airservices to provide a map of the areas they are responsible for by the next CACG meeting 04 March 2020 if possible.

**ACTION:** Further to Action Item 17 (above) Airservices to provide a map outlining the airspace the Gold Coast Airport tower is responsible for and the interaction with Defence exclusion zones.

## 5.0 Correspondence

The Chair provided members with a general overview of enquiries for the period with most relating to changes to operations as a result of the bushfires and significant weather events along with standard curfew operations which are expected at this time of the year.

Refer to Attachment 3 for full details.

## 6.0 General Aviation Update

Peter Long of Air Gold Coast provided the committee with an update on General Aviation activity.

Key points included:

- Total flying hours have been down since the last ANACC meeting mostly due to reduced visibility around the region and the Christmas break.
- The three flying schools at the airport are doing off-airport training to share the work around the other aerodromes.
- Moving forward, February and March are normally the wettest part of the year and members can expect a subsequent reduction in activity.
- No specific noise enquiries since the last ANACC meeting.

Further to the General Aviation update, Peter advised members that he coordinates the ANZAC Day flypast on behalf of the RSL Club and will be seeking a curfew dispensation from the Department of Infrastructure for yet to be determined aircraft to take-off at 05:50am ANZAC Day.

**MOTION:** Members raised a motion of support from the Gold Coast ANACC for the Department of Infrastructure to grant a curfew dispensation for ANZAC Day flypast activities.

Moved by Bill Pinkstone, seconded by David Gray.

**ACTION:** Peter Long to email the ANACC Secretariat, Gold Coast Airport and Airservices Australia (Gold Coast Air Traffic Control) to seek a letter of endorsement/support for the curfew dispensation application.

Bill Pinkstone noted that he has received multiple reports from residents regarding consistent business jet movements around 01:00 QLD time, up to three times a week for the last few months. Bill queried if there was a new freight aircraft operating from the airport during curfew. The Chair advised that the airport has recently hosted some light business jets (Learjet) undertaking scanning of bush fire affect areas. It was noted that the DITCRD curfew report notes these Learjet movements.

**ACTION:** Chair to follow-up with Bill outside of the meeting to review jet movements.

## 7.0 Department of Infrastructure Update

The Chair provided the Department of Infrastructure, Transport, Cities and Regional Development update with notes provided ahead of the meeting. Key points included:

- Concerns from the Department that there are too many issues which are not resolved at ANACC and are then being discussed at CACG without full consideration. This duplication contradicts the purpose of the Strategic Work Program.
- Resolution to the doubling up of items covered at ANACC and CACG would leave the Department to be better resourced to discuss individual issues and seek resolution where possible.



The Chair tabled the Department's Curfew Summary report for members consideration. Members queried why dispensations are being granted and these movements are not covered under the quota system. It was clarified that the quota system is for Virgin Australia and Jetstar to operate within.

**ACTION:** Chair to follow-up the Department regarding how the quota system works and what timeline the system is based on (calendar or financial year).

## 8.0 Airservices Australia Reporting

Chris McCormack presented the Airservices Australia update to the committee. Refer to attached slides for full details.

Chris McCormack provided the committee with an overview of ILS usage since the last meeting, noting that 1.3% of all arriving jets used the ILS since it was commissioned. John Hicks requested that the ILS usage data be provided in tabulated form following the meeting.

**ACTION:** Airservices to provide the secretariat with tabulated data on ILS usage for distribution to the committee.

John Alcorn requested more detail around flights using the Runway 32 offset approach in comparison to the environmental assessment undertaken prior to its introduction. Airservices confirmed that the use of this approach has been restricted and therefore usage has been minimal.

**ACTION:** Southern members to discuss and further investigate the restricted use of the Runway 32 offset approach to consider allowing additional flights to use it. Members are to provide feedback at the next ANACC meeting.

Members discussed the Airservices Australia Draft Flight Path Design Principles voicing concerns regarding the community engagement process and recent community workshop held in Surfers Paradise on Monday, 03 February 2020.

**MOTION:** Members requested that the minutes specifically record the dissatisfaction of the committee in the approach Airservices Australia have undertaken in this community engagement process for the draft principles. Members question the credibility of the results due to the approach of the community workshop, particularly in relation to paid participation of some attendees. Members were of the belief that the consultation process should have included the Gold Coast Airport CACG.

Moved by John Hicks, seconded by Julie Murray.

**ACTION:** Secretariat to resend the link to the draft flight path design principles online survey and the email address for written submissions.

Discussion amongst members regarding the management of resident complaints to ANACC representatives and the communication of these complaints or queries through to NCIS.

**ACTION:** Bill Pinkstone to provide the secretariat suggestion regarding resident complaints and the best way of communicating these to NCIS.

Scott Stephens from Airservices Australia spoke to the departures over Kingscliff agenda item and in relation to action items 2 and 6. Scott provided a detailed overview of the process the air traffic controllers follow in the tower outlining the process that precedes any decision a controller makes.

Members discussed as traffic at the airport increases how is Airservices going to resolve conflict in the air. Members sought feedback if the ANACC can support controllers in representation to stop conflicts moving forward or put something in place that avoids conflicts all together.

Airservices noted that while RNP approaches are good they also have restrictions in that once the aircraft commences on the approach controllers cannot move the aircraft.

Members suggested a way to fix this challenge is to redesign the arrival track to be further out over sea. Airservices noted that if the arrivals are moved further out over sea, with aircraft coming in at approximately a 3% angle, they would be higher off the coast and the conflict would still exist but in a different location.

Members queried if there is a Runway 32 arrival that is north of Kingscliff and south of Fingal. Airservices confirmed that that is the offset route, which based on consultation at the time controllers can only use it for north-bound arrivals which is currently only around one flight a day.

Members queried the height range that aircraft departing on track 070 pass over the top of the conflicting flight path and what is the height of the inbound aircraft.

**ACTION:** Airservices to investigate if it is possible to demonstrate the conflict between aircraft departing 070 and arriving aircraft.

Members discussed the noise monitors with southern members requesting the permanent noise monitor at Tweed Heads is reinstated. Airservices advised that following the ILS post implementation review all noise monitors around Gold Coast Airport would be reviewed.

## 9.0 Strategic Work Program

### *9.1 SWP Item 4.11 Management of increasing RPT movements at GCA*

Due to timing this item was omitted.

### *9.2 SWP Item 3.1 There is no validation of noise exposure models used in the Master Plan*

Due to timing this item was omitted.

### *9.3 Strategic Work Program item for the next meeting*

Members agreed to finalise Strategic Work Program items 4.11 and 3.1 at the next meeting with a brief update on both. Members also agreed to continue the discussion regarding departures over Kingscliff in an effort to close these action items.

**ACTION:** John Hicks to submit to the secretariat focus points ahead of the next meeting regarding Strategic Work Program items 4.11 and 3.1 along with departures over Kingscliff.

## 10. ILS Update

Item covered under *Section 8.0 Airservices Australia Reporting*.

## 11. General Business

### *11.1 Departures over Kingscliff*

Item covered under *Section 8.0 Airservices Australia Reporting* and by presentation from Scott Stephens of Airservices Australia.

### *11.2 General discussion and actions*

The Chair noted the continued poor attendance and communication from members, excluding Lindy Smith, for the ANACC Sub-Committee. Discussion amongst members regarding this, with the Chair

determining that if once again there is no response or attendance for the next meeting, the Chair will assume members do not believe the sub-committee is required. Members noted that previously Airservices have participated in the sub-committee meeting and it would be beneficial if Airservices could attend the meetings again.

**ACTION:** Chair to follow up with Airservices to understand if local ATC team are able to participate in ANACC sub-committee meetings.

**ACTION:** ANACC sub-committee members to respond to email correspondence regarding attendance at upcoming meetings.

Anthony Nugent informed members that further to advice at the previous ANACC meeting this would be his last meeting as he is to finish up with Airservices Australia early in 2020. Members expressed their thanks to Anthony for his contribution to the committee during his tenure, and the support he has provided to the Gold Coast and Northern NSW community. Members requested a letter be drafted and forwarded to the Airservices Australia CEO outlining the committee's appreciation.

**ACTION:** Secretariat to write to Airservices Australia CEO regarding Anthony Nugent's retirement from the committee recognising his contribution.

The Chair raised with members the action from the CACG meeting requesting draft ANACC minutes be provided to the CACG ahead of their meeting for context of the discussion at ANACC. Members supported this proposal with the secretariat to provide them in draft ahead of the CACG meeting.

The Chair noted with members that moving forward, all committee correspondence is to be sent to the relevant mailbox - ANACC ([anacc@gcal.com.au](mailto:anacc@gcal.com.au)) and CACG ([cacg@gcal.com.au](mailto:cacg@gcal.com.au)). This will ensure correspondence is addressed in a timely manner.

## 12. Remaining Meeting Dates for 2020

Proposed dates for ANACC 2020 meetings:

- Thursday, 04 June 2020
- Thursday, 15 October 2020

The Chair closed the meeting at 12:40.

# Attachment 1: Attendance and Apologies

Date: Thursday, 06 February 2020

## Members

Jared Feehely (Chair)	Gold Coast Airport
Laura Zambon (Secretary)	Gold Coast Airport
Melissa Pearce	Gold Coast Airport
Brett Curtis	Gold Coast Airport
Anthony Nugent	Airservices Australia
Chris McCormack	Airservices Australia
Scott Stephens	Airservices Australia
Peter Long	General Aviation (Air Gold Coast)
Guy Proctor	Jetstar Airways
Anthony Steinfort	Tugun Progress Association
Julie Murray	Kingscliff Ratepayers Association
John Alcorn	Airport Central Corridor Alliance
John Hicks	Gold Coast Lifestyle Association
Peter Barrett	Gold Coast District Neighbourhood Watch
Lindy Smith	Tweed Heads Residents & Ratepayers Association
David Gray	Bilinga Neighbourhood Watch
Paul Baker	Friends of Currumbin
Bill Pinkstone	Banora Point & District Residents Association

## Observers

Larry Woodland	Fingal Head Community Association
Pat Tate	Banora Point & District Residents Association
Val Kirk	Kingscliff

## Apologies

Barry Jephcote	SECCA
Matt Bender	Gold Coast Airport
Jacqui Cord	Tweed Shire Council
Jodie Bellchambers	Office of Justine Elliot
Josh Ireland	Department of Infrastructure
Tania Macdonald	Department of Infrastructure
Russell McArthur	Department of Infrastructure
Rob Anderson	Virgin Australia

## Attachment 2: ANACC Action List

No.	Meeting Date	Item	Requirement	Responsible Person	Target Completion Date	Status
1	22/06/2017	Flight track trial pre/post trial data	Airservices to provide the pre-during and post-trial data for review. The data was provided to the committee.	Lindy Smith	<del>06/02/2020</del> 04/06/2020	OPEN. Item reopened by Lindy. Lindy to provide detail around required information to close item.
2	26/10/2017	Kingscliff Departures	Review of flight paths departing over Kingscliff and the reasoning behind why aircraft are turning at certain points.	Julie Murray/ Airservices Australia	<del>06/02/2020</del> 04/06/2020	OPEN. Item reopened by Julie. Airservices to investigate the possibility of providing a track map.
3	21/06/2018	Webtrak	Clarification on parameters on Webtrak My Neighbourhood. More details needed to clarify action.	Lindy Smith	<del>06/02/2020</del> 04/06/2020	HOLD. Lindy has put a query to Airservices, awaiting response. Lindy to update group.
6	07/02/2019	ATC Data and Kingscliff Flight Data	Provide context around aircraft conflicts for straight-ahead departures off Runway 14. Julie to provide specific examples for Airservices to provide overview of situation.	Julie Murray/ Airservices Australia	<del>06/02/2020</del> 04/06/2020	OPEN. Airservices provided presentation at 06/02/2020 meeting. Julie to provide overview of detail required to close item.
10	06/02/2020	Member Nominations	Committee representatives to provide the secretariat with details on organisation/association meetings i.e. meeting dates, times and location.	ANACC Members	04/06/2020	OPEN.
11	06/02/2020	Member Nominations	Secretariat to facilitate coordination of fifth southern ANACC representative with	Secretariat	04/06/2020	OPEN.

No.	Meeting Date	Item	Requirement	Responsible Person	Target Completion Date	Status
			members to determine most relevant representative organisation.			
12	06/02/2020	Member Nominations	Secretariat to write to Virgin Australia CEO regarding Rob Anderson's resignation from the committee recognising his contribution.	Secretariat/ Chair	04/06/2020	OPEN.
13	06/02/2020	ANACC Member List	Secretariat to update the ANACC member list and provide it as part of registration for each meeting to ensure it is up-to-date and current.	Secretariat	04/06/2020	OPEN.
15	06/02/2020	Webtrak	Airservices to confirm the time intervals location data is provided for Webtrak.	Airservices	04/06/2020	OPEN.
16	06/02/2020	RNAV Action Item	John Alcorn to provide detail around RNAV action for committee to confirm if this is closed.	John Alcorn	04/06/2020	OPEN.
17	06/02/2020	ATC Coverage	Airservices to provide a map of the areas they are responsible for, by the next CACG meeting 04 March 2020 if possible.	Airservices	04/03/2020	OPEN.
18	06/02/2020	ATC Coverage	Airservices to provide a map outlining the airspace the Gold Coast Airport tower is responsible for and the interaction with Defence exclusion zones.	Airservices	04/06/2020	OPEN.
19	06/02/2020	ANZAC Day curfew dispensation	Peter Long to email the ANACC Secretariat, Gold Coast Airport and Airservices Australia (Gold Coast Air Traffic Control) to seek a letter of endorsement/support for the curfew dispensation application.	Peter Long	04/06/2020	OPEN.
20	06/02/2020	Curfew Movements	Chair to follow-up with Bill Pinkstone regarding reports of curfew jet movements.	Chair	04/06/2020	OPEN.

No.	Meeting Date	Item	Requirement	Responsible Person	Target Completion Date	Status
21	06/02/2020	Curfew Movements	Chair to follow-up the Department regarding how the quota system works and what timeline the system is based on (calendar or financial year).	Chair	04/06/2020	OPEN.
22	06/02/2020	ILS Usage	Airservices to provide the secretariat with tabulated data on ILS usage for distribution to the committee.	Airservices	06/03/2020	OPEN.
23	06/02/2020	Runway 32 Offset Approach	Southern members to discuss and further investigate the restricted use of the Runway 32 offset approach to consider allowing additional flights to use it. Members are to provide feedback at the next ANACC meeting.	Southern ANACC Members	04/06/2020	OPEN.
25	06/02/2020	Resident Noise Complaints delivered to ANACC Members	Bill Pinkstone to provide the secretariat suggestion regarding resident complaints and the best way of communicating these to NCIS.	Bill Pinkstone	04/06/2020	OPEN.
26	06/02/2020	Runway 14 Departures	Airservices to investigate if it is possible to demonstrate the conflict between aircraft departing 070 and arriving aircraft.	Airservices	04/06/2020	OPEN.
27	06/02/2020	June 2020 Meeting Agenda	John Hicks to submit to the secretariat focus points ahead of the next meeting regarding Strategic Work Program items 4.11 and 3.1 along with departures over Kingscliff.	John Hicks	04/06/2020	OPEN.
28	06/02/2020	ANACC Sub-Committee	Chair to follow up with Airservices to understand if local ATC team are able to participate in ANACC sub-committee meetings.	Chair	04/06/2020	OPEN.

No.	Meeting Date	Item	Requirement	Responsible Person	Target Completion Date	Status
29	06/02/2020	ANACC Sub-Committee	ANACC sub-committee members to respond to email correspondence regarding attendance at upcoming meetings.	ANACC Sub-Committee Members	04/06/2020	OPEN.
30	06/02/2020	Member Nominations	Secretariat to write to Airservices Australia CEO regarding Anthony Nugent's retirement from the committee recognising his contribution.	Secretariat/ Chair	04/06/2020	OPEN.

## ANACC Action List - COMPLETED

No.	Meeting Date	Item	Requirement	Responsible Person	Target Completion Date	Status
4	25/10/2018	Fingal Head Noise Monitor	Neil to check the calibration of the monitor due to Banora Point levels being higher than Fingal and request additional data.	Airservices Australia	N/A	CLOSED. Calibrations were checked, Banora Point monitor had technical issues, but maintenance had them fixed.
5	07/02/2019	Diversion Data	Are Virgin Australia and Jetstar able to provide diversion data for a 3-month period.	Virgin Australia & Jetstar	06/02/2020	CLOSED. Data is not practical to provide.
7	07/02/2019	ILS Post Implementation Review	Airservices Australia and Gold Coast Airport to note the expectations of the Gold Coast Lifestyle Association when planning for and compiling the ILS Post Implementation Review report.	Airservices Australia & Gold Coast Airport	N/A	CLOSED. Installation of temporary noise monitors will help provide further data for the review. Works on the



No.	Meeting Date	Item	Requirement	Responsible Person	Target Completion Date	Status
						review have already commenced.
8	10/10/2019	Gold Coast Airport Lease Document	Enquire if a portion of the lease document can be released to the ANACC.	Gold Coast Airport	06/02/2020	CLOSED. Lease document is commercial in confidence and is not appropriate for release.
9	10/10/2019	DIRD Curfew Report	Secretariat to circulate report following the meeting.	Secretariat	12/10/2019	CLOSED. Report circulated to members.
14	06/02/2020	Meeting Minutes - 10 October 2019	The Secretariat to update minutes following the meeting and resend with all of the relevant attachments.	Secretariat	08/02/2020	CLOSED. Packaged minutes from October 2019 sent 07/02/2020.
24	06/02/2020	Airservices Draft Flight Path Design Principles	Secretariat to resend the link to the draft flight path design principles online survey and the email address for written submissions.	Secretariat	06/03/2020	CLOSED. Original not sent. Email forwarded to members on 25/02/2020.

## Attachment 3: Correspondence

In	Category	Out
11/10/19 Vivienne (Duranbah) to GC Enquiries	F, N	11/10/19 JFeehely to Vivienne
24/10/19 Colleen (Banora Point) to GC Enquiries	F, RPT, N	28/10/19 JFeehely to Colleen
28/10/19 Colleen (Banora Point) to JFeehely	C	28/10/19 JFeehely to Colleen
07/11/19 Constituent via Karen Andrews MP (Burleigh Waters) to CACG	H, N	13/11/19 JFeehely to constituent via Karen Andrews MP
08/11/19 Tracey (Kingscliff) to GC Enquiries	F, C, N	15/11/19 JFeehely to Tracey
11/11/19 Nela (Mermaid Waters) to GC Enquiries	N, F	11/11/19 JFeehely to Nela
10/11/19 Peter (Mermaid Waters) to GC Enquiries	N, F	11/11/19 JFeehely to Peter
12/11/19 Christina (Burleigh) to GC Enquiries	F, RPT, N	12/11/19 JFeehely to Christina
18/11/19 JFeehely to JMurray (KR&PA)	O	18/11/19 JMurray (KR&PA) to JFeehely
	O	18/11/19 JFeehely to Tracey (Kingscliff)
19/11/19 Roslyn (Tweed Heads) to GC Enquiries	F, C	22/11/19 JFeehely to Roslyn
02/12/19 David (Currumbin Waters) to GC Enquiries	F, RPT	02/12/19 JFeehely to David
04/12/19 Elizabeth (Terranora) to GC Enquiries	LA	04/12/19 MRobinson to Elizabeth
	LA	10/12/19 JFeehely to Elizabeth
14/12/19 JMurray to JFeehely	F	14/12/19 JFeehely to ANugent and CMcCormack
16/12/19 CMcCormack to JFeehely	F	16/12/19 JFeehely to JMurray
16/12/19 Barry (Tweed Heads) to GC Enquiries	LA	16/12/19 JFeehely to Barry
17/12/19 George (Coolangatta) to GC Enquiries	LA, N, C	17/12/19 JFeehely to George
18/12/19 JMurray to JFeehely	F	14/12/19 JFeehely to ANugent and CMcCormack
18/12/19 CMcCormack to JFeehely	F	18/12/19 JFeehely to JMurray
23/12/19 Rick to GC Enquiries	N, F	23/12/19 BCurtis to Rick
23/12/19 Donna (Tugun) to GC Enquiries	F	24/12/19 JFeehely to Donna
21/01/20 Debra (Currumbin) to GC Enquiries	F	21/01/20 JFeehely to Debra
24/01/20 Sasha (Tugun) to GC Enquiries	F, RPT, N	29/01/20 JFeehely to Sasha
26/01/20 Vicki to GC Enquiries	LA, N	29/01/20 JFeehely to Vicki
28/01/20 JFeehely to ANACC Sub-Committee	O	

Category Legend			
C	Curfew	H	Helicopter
F	Flight Path	LA	Light Aircraft
G	General	RPT	Regular Public Transport
N	Noise	O	Other



## AIRCRAFT OPERATIONS DURING GOLD COAST AIRPORT CURFEW

1 October to 31 December 2019

### SUMMARY

Dispensations Granted	Pre-curfew Taxi Clearance	Curfew Quota Movements	Emergency & Search/Rescue Movements	Permitted Jet Movements	Permitted Propeller Driven Aircraft	Diversions
6	4	2	11	24	27	1

#### Dispensation

- There were six dispensations approved during the October to December 2019 period.
  - On 4 October 2019 Virgin Australia flight VA545 was granted a dispensation to land no later than 11:25pm. The aircraft landed at 11:11pm.
  - On 13 October 2019 Virgin Australia flight VA761 was granted a dispensation to land no later than 11:25pm. The aircraft landed at 11:11pm.
  - On 13 October 2019 Jetstar Airways flight JQ446 was granted a dispensation to land no later than 11:40pm. The aircraft landed at 11:07pm
  - On 16 October 2019 Jetstar Airways flight JQ446 was granted a dispensation to land no later than 11:30pm. The aircraft landed at 11:04pm.
  - On 20 December 2019 Jetstar Airways flight JQ447 was granted a dispensation to depart no later than 11:30pm. The aircraft departed at 11:29pm.
  - On 21 December 2019 Jetstar Airways flight JQ449 was granted a dispensation to depart no later than 11:30pm. The aircraft departed at 11:26pm.

#### Pre-curfew Taxi Clearance

- There were four pre-curfew taxi clearance movements.
  - Jetstar Airways flight JQ449 departed at 11:01pm on 6 December 2019.
  - A bombardier Challenger aircraft departed at 11pm on 11 December 2019.
  - Tigerair Australia flight TT573 departed at 11:09pm on 20 December 2019.
  - Jetstar Airways flight JQ449 departed at 11pm on 31 December 2019.

### Curfew Quota movements

- There were two curfew quota movements conducted by airlines during the October to December 2019 period.
  - Jetstar Airways flight JQ446 arrived at 11:03pm on 4 October 2019.
  - Jetstar Airways flight JQ188 arrived at 11:19pm on 2 December 2019.

### Diversions

- There was one diversion to Gold Coast Airport.

### Emergencies/Search and Rescue

- There were eleven aeromedical flights, using such aircraft as Beechcraft Super King Air's, a Eurocopter AS350B3 and an AgustaWestland AW139 helicopter.

### Other approved aircraft movements:

- There were 26 approved propeller driven aircraft movements. These aircraft included: 9 x Cessna 172's; 5 x Beechcraft Super King Air's; 4 x Cessna Caravan's; 2 x Saab 340's; 1 x Cirrus SR22; 1 x Beechcraft Baron; 1 x Cessna Skylane; 1 x Cessna Skywagon; 1 x Cessna 414 and 1 x Dash8.
- There were 24 business jet movements. These were from 16 x Learjet 35's; 3 x Global Express's; 2 x Falcon 900's; 2 x Cessna 525A's and 1 x Cessna 525.

### Runway usage October to December 2019

	October	November	December	Totals
<b>Runway 14 Arrivals</b>	4	9	5	<b>18</b>
<b>Runway 14 Departures</b>	5	4	14	<b>23</b>
<b>Runway 32 Arrivals</b>	4	7	3	<b>14</b>
<b>Runway 32 Departures</b>	3	4	4	<b>11</b>
<b>Runway 35 Arrivals</b>	0	1	0	<b>1</b>
<b>Helipad Arrivals</b>	1	0	2	<b>3</b>
<b>Helipad Departures</b>	1	0	4	<b>5</b>



# Gold Coast ANACC

6 February 2020

Chris McCormack – ATC Line Leader

Anthony Nugent – ATC Line Leader

# Airservices Update

- WebTrak Presentation – Flights over Kingscliff
- Gold Coast ILS Noise Monitor Update
- ILS Usage update
- RNP AR use
- Flight Path Design Consultation
- New interactive Online reporting
- 2019 Year in Review

# WebTrak Presentation

## Flights over Kingscliff



- While Airservices is attempting to use WebTrak to assist the ANACC members in understanding why ATC direct flights to track over Kingscliff, Airservices notes that this was never the intended use of WebTrak
- WebTrak has many limitations and our third party provider advises of these under the section DATA ACCURACY AND COMPLETENESS
- The statements under this section indicate that WebTrak can be subject to errors. WebTrak was never designed as a definitive source of knowledge, but rather a tool to assist the public to understand aircraft movements over their homes
- Real time events that affect ATC decisions are not displayed on WebTrak and were never meant to be
- <http://www.airservicesaustralia.com/aircraftnoise/webtrak/>

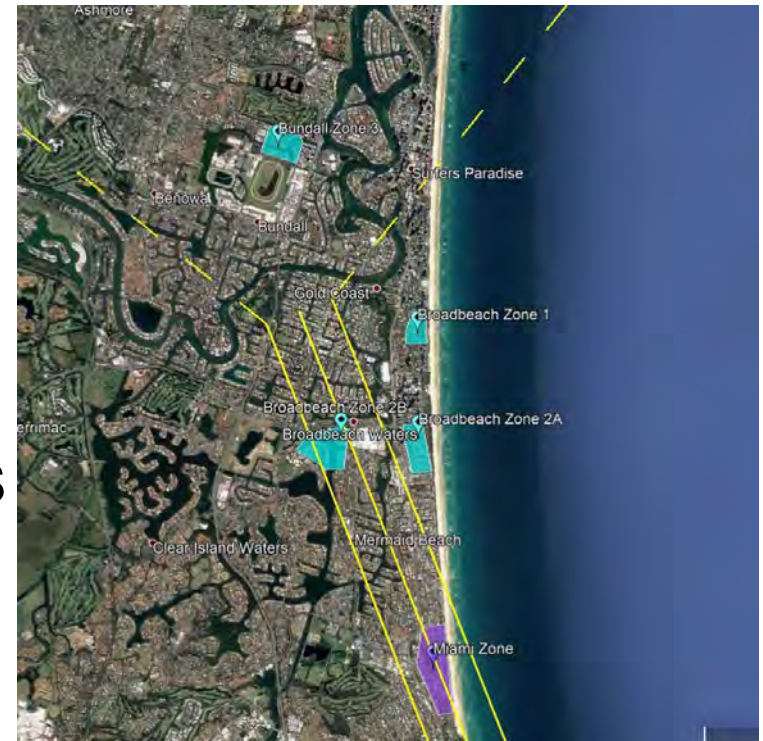
# Temporary Noise Monitor Update

Two short-term noise monitors are currently installed to monitor the Gold Coast ILS, they commenced 28 October 2019.

An initial review of the data in mid January 2020 has confirmed that a sufficient sample to support the post-implementation review (PIR) had been obtained during this monitoring.

Current weather is likely to result in further ILS usage during February and Airservices will extend the monitoring until the end of February. This will provide a larger sample to support the PIR.

The data is available to view on WebTrak, including three months of historical data.





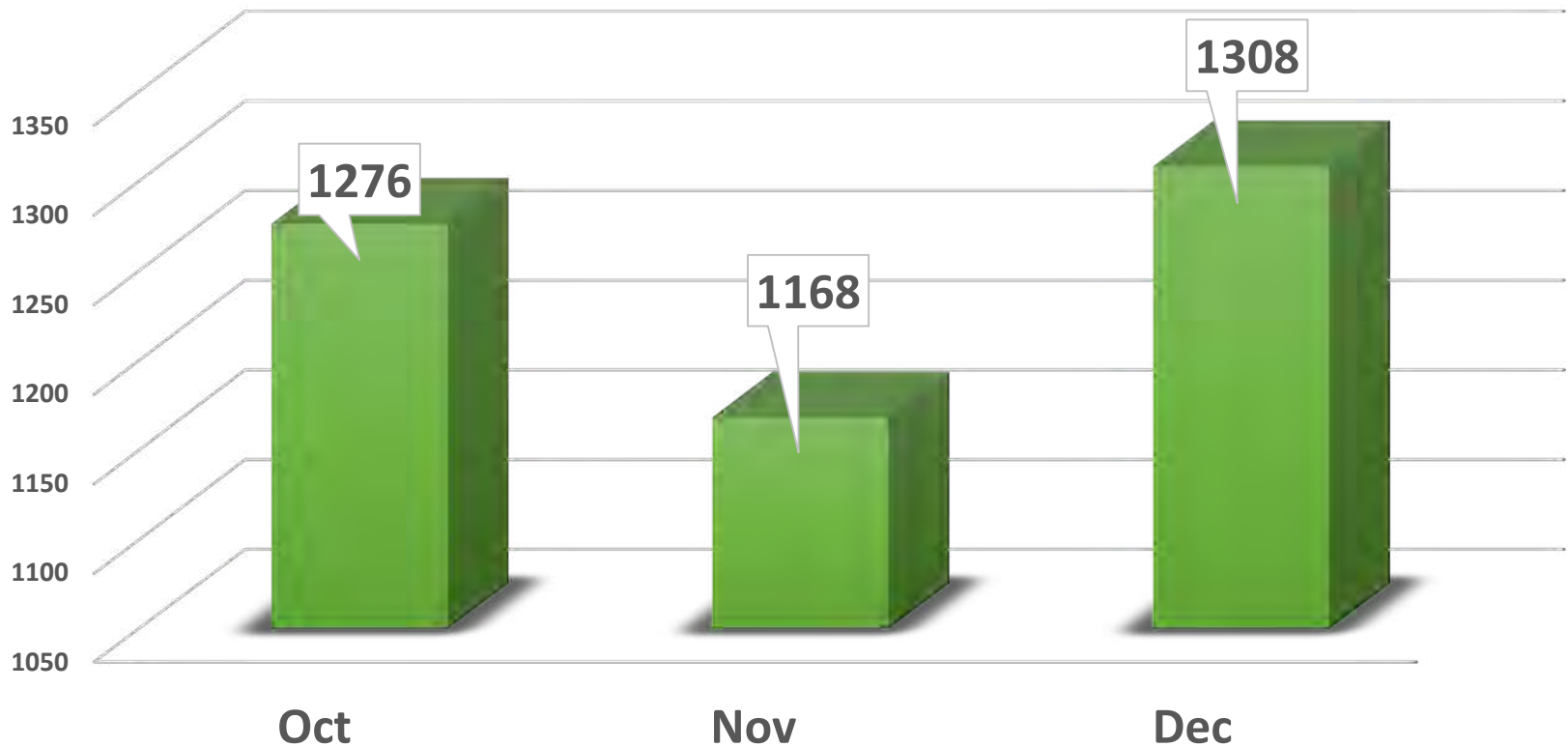
# ILS Usage Update

Since its inception on February 28<sup>th</sup> to January 31 2020, a period of 327 days:

- 1.3% of all arriving jets (251 individual arrivals) used the ILS
  - 98.7% of all arriving jets utilised other approaches
  
- The ILS has also been used 345 times by light aircraft (piston-driven or light turbo-prop) predominately for training purposes
  - This averages to 1 per day of 4.2% of all light aircraft approaches
  - Training flights are limited to 09:00 – 17:00

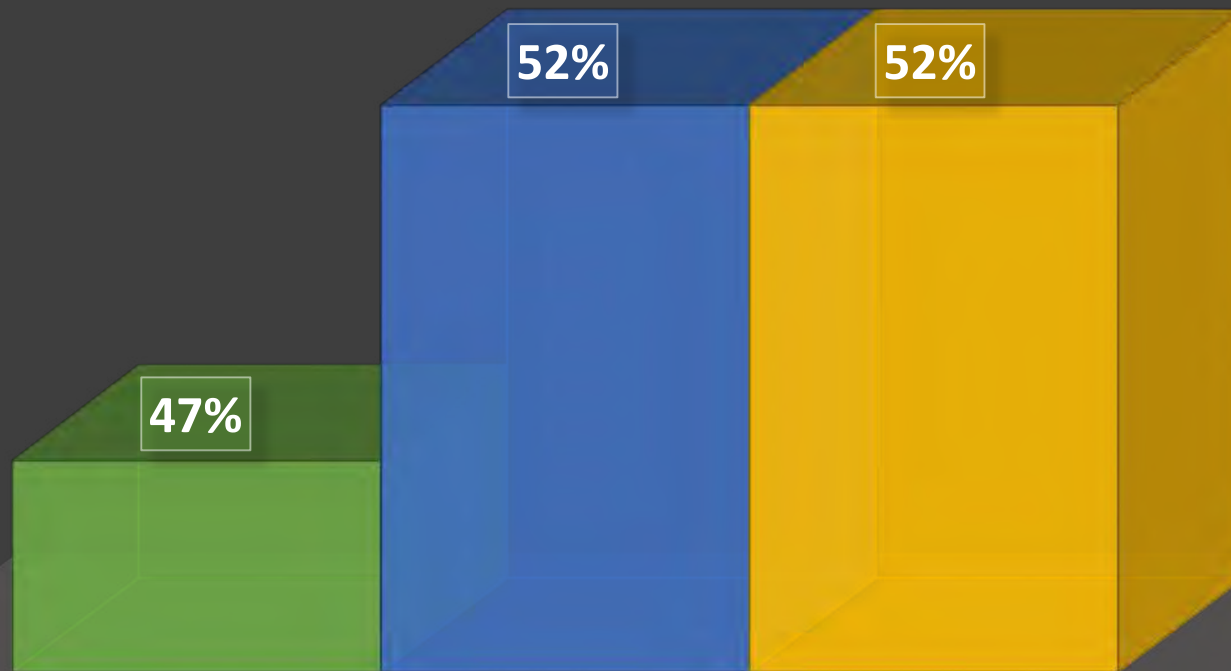
# RNP AR (Smart Tracking) use – Oct – Dec 2019

Total Number of RNP Flights at Gold Coast



# RNP AR (Smart Tracking) use – Oct – Dec 2019

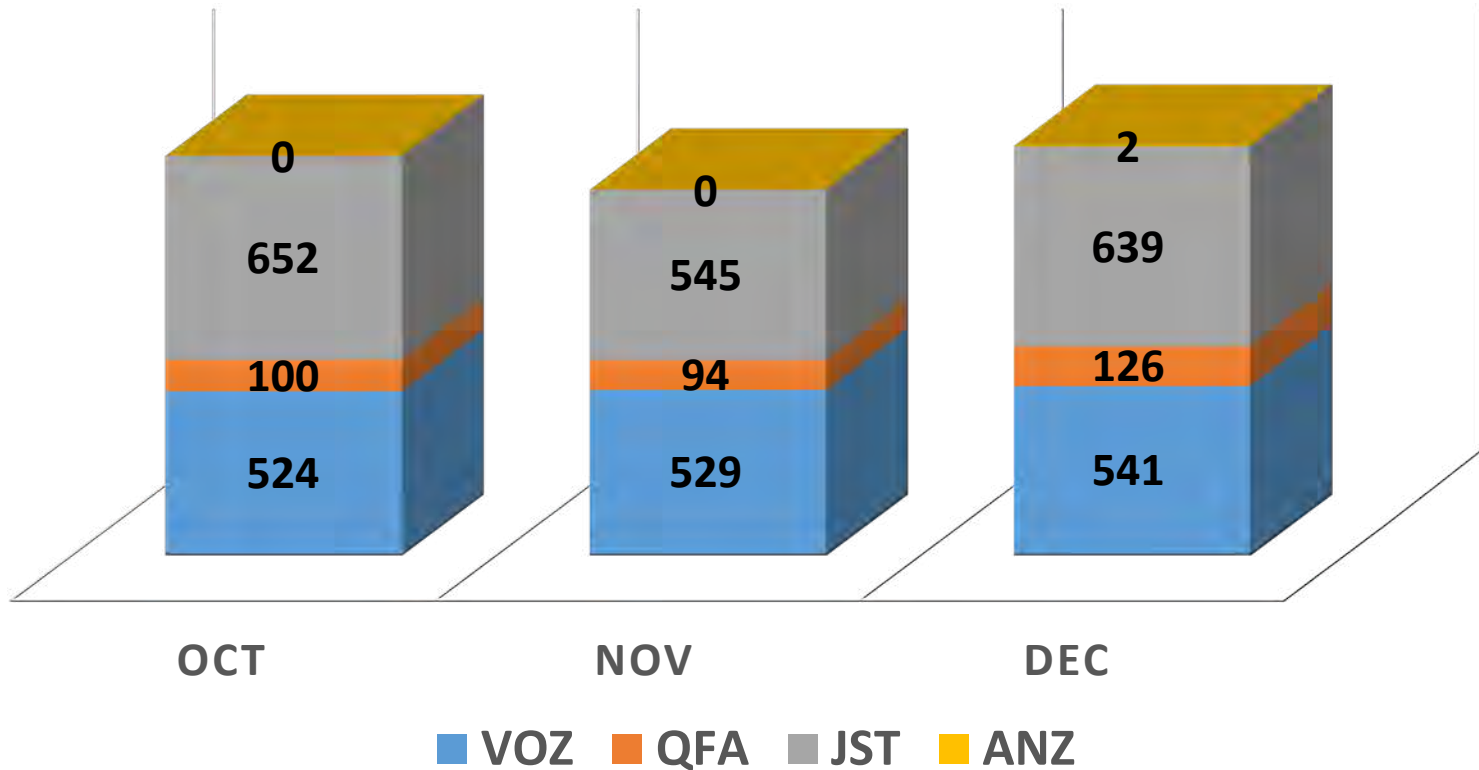
Percentage of all RNP arrivals



■ Oct ■ Nov ■ Dec

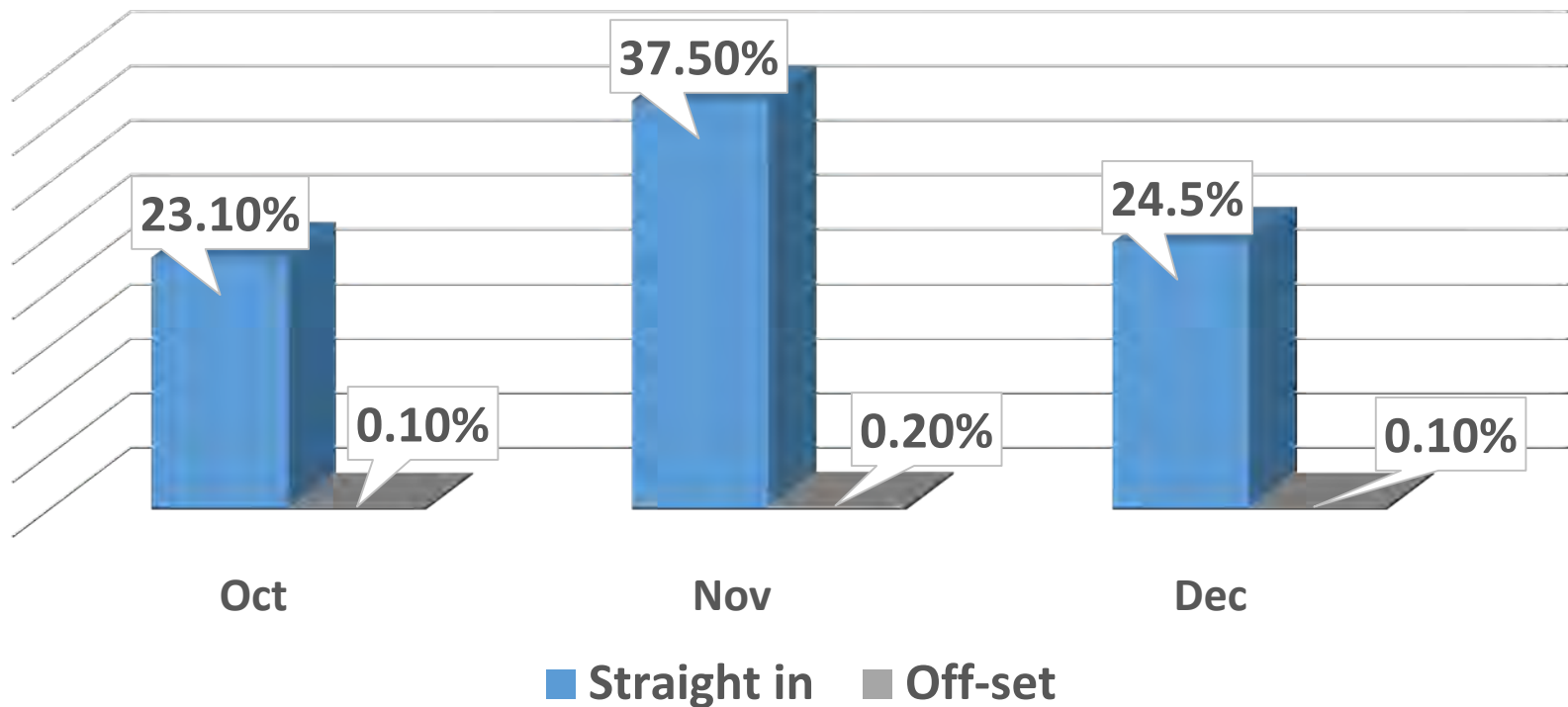
# RNP AR (Smart Tracking) use – Oct – Dec 2019

Number of RNP flights by airline



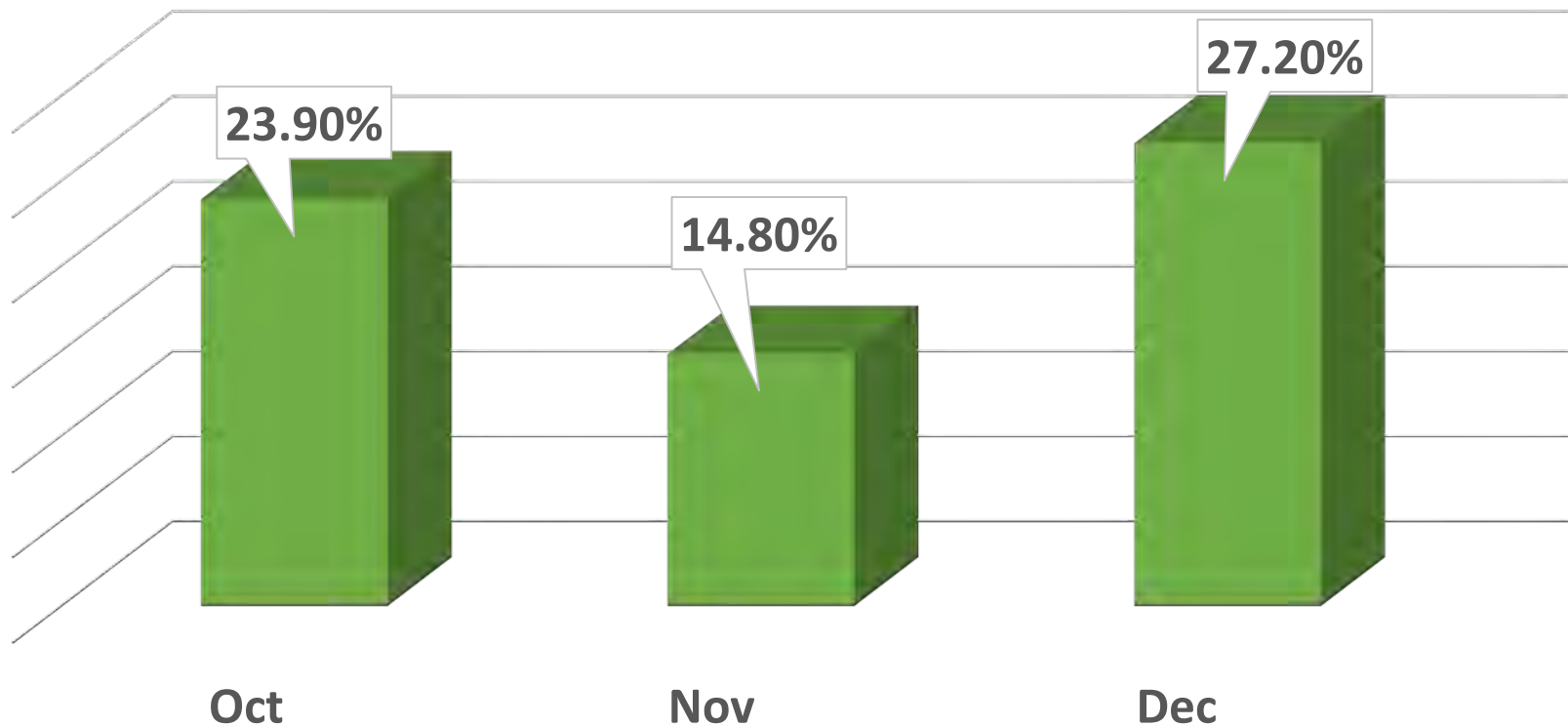
# RNP AR (Smart Tracking) use – Oct – Dec 2019

RWY 32 use as a % of all Arrivals



# RNP AR (Smart Tracking) use – Oct - Dec 2019

RWY 14 RNP use as a % of all arrivals



# Draft Flight Path Design Principles

- On 14 January 2020, Airservices commenced a national stakeholder consultation on *Draft Flight Path Design Principles* that will shape how we design, develop and implement flight path changes into the future.
- We are seeking views from a broad cross section of the Australian community, including industry stakeholders, CACGs, community members, noise sensitive sites (schools, aged care services etc.), national parks, areas of environmental and Aboriginal and Torres Strait Islander significance.

**airservices**

## Draft Flight Path Design Principles



**Safety principles**

- Principle 1 - The safety of air navigation must be the most important consideration.
- Principle 2 - Flight paths must be designed in accordance with Australian and international design standards established in International Civil Aviation Organisation (ICAO) PANS-OPS, and Australian Civil Aviation Safety Regulations Part 173.



**Noise and community impact principles**

- Principle 6 - Noise should be concentrated as much as possible over non-residential and other non-noise sensitive areas and establishments.
- Principle 7 - Where residential areas are exposed to noise, it should be fairly shared whenever feasible and practicable.
- Principle 8 - Noise Abatement Procedures and Fly Neighbourly Procedures should be optimised to achieve the lowest possible overall impact on the community.
- Principle 9 - Aircraft operations that are conducted at night or on weekends should be treated as being more sensitive than those which occur during the daytime or on weekdays.
- Principle 10 - Both current and expected future noise exposure shall be taken into account when considering flight path design changes.
- Principle 11 - To the extent practicable, distribute flight paths so that residential areas overflown by aircraft arriving on a particular runway do not also experience overflight by aircraft departing from the runway in the reciprocal direction.



**Environmental principles**

- Principle 3 - Minimise the effect on the environment through designs that effectively manage emissions, fuel consumption and greenhouse gases, limiting these whenever practicable.
- Principle 4 - To the extent practicable, protect areas of Matters of National Environmental Significance (MNES), local cultural heritage and areas of natural beauty, considering the noise, emissions and visual impacts of the change.
- Principle 5 - Design flight path changes that deliver efficiency while minimising the noise effects of aircraft operations through continuous descent operations(CDO), continuous climb operations (CCO) and unrestricted flight paths.



**Operational principles**

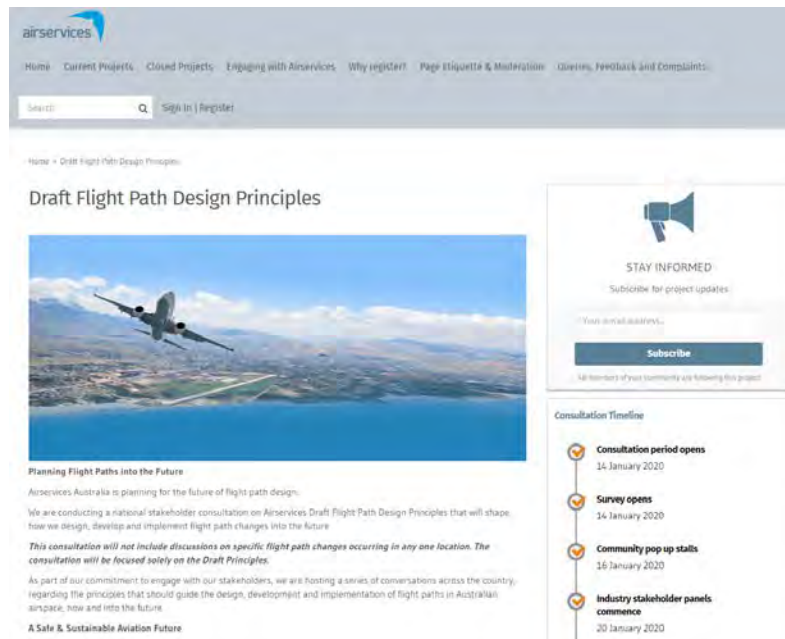
- Principle 12 - Consider the impact of flight path options on airport capacity and overall network operations.
- Principle 13 - Flight paths will accommodate differing aircraft performance as specified in ICAO PANS-OPS.
- Principle 14 - Design flight paths to facilitate access to all eligible airspace users.

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January 2020

# Draft Flight Path Design Principles

- We are using a range of approaches to engage with stakeholders.
- A key component of the consultation is the [Online Survey\(External link\)](#) hosted through our Engage Airservices website. The survey is open until 9 February 2020.
- We are aiming to finalise the principles in mid 2020.




airservices

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Home » Draft Flight Path Design Principles

## Draft Flight Path Design Principles



**Planning Flight Paths into the Future**

Airservices Australia is planning for the future of flight path design. We are conducting a national stakeholder consultation on Airservices Draft Flight Path Design Principles that will shape how we design, develop and implement flight path changes into the future.

*This consultation will not include discussions on specific flight path changes occurring in any one location. The consultation will be focused solely on the Draft Principles.*

As part of our commitment to engage with our stakeholders, we are hosting a series of conversations across the country regarding the principles that should guide the design, development and implementation of flight paths in Australian airspace, now and into the future.

A Safe & Sustainable Aviation Future





**STAY INFORMED**

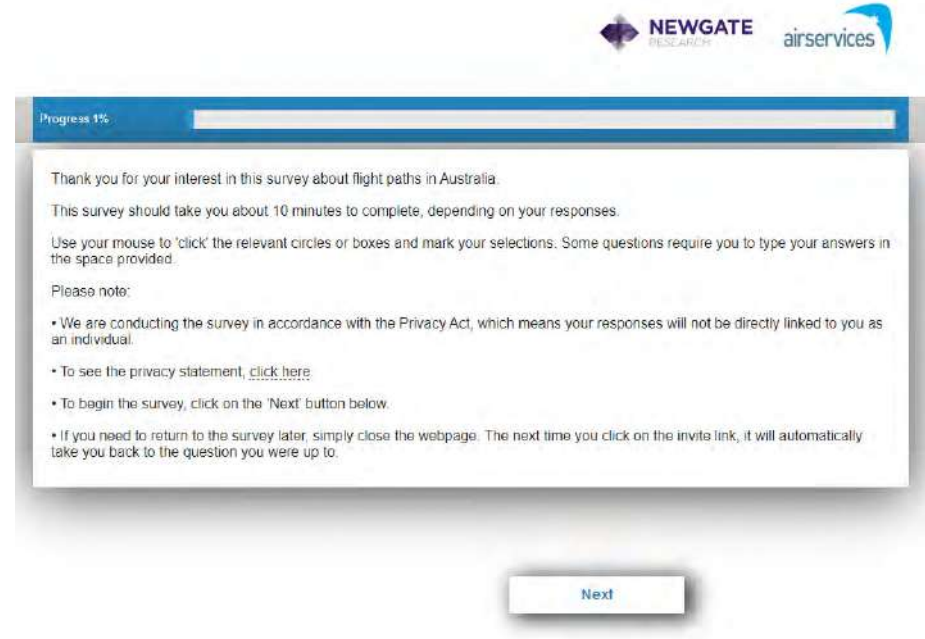
Subscribe for project updates.

\*Your email address\*

All comments of your comments are following this project

**Consultation Timeline**

-  **Consultation period opens**  
14 January 2020
-  **Survey opens**  
14 January 2020
-  **Community pop up stalls**  
16 January 2020
-  **Industry stakeholder panels commence**  
20 January 2020



Progress 1%

Thank you for your interest in this survey about flight paths in Australia.

This survey should take you about 10 minutes to complete, depending on your responses.

Use your mouse to 'click' the relevant circles or boxes and mark your selections. Some questions require you to type your answers in the space provided.

Please note:

- We are conducting the survey in accordance with the Privacy Act, which means your responses will not be directly linked to you as an individual.
- To see the privacy statement, [click here](#).
- To begin the survey, click on the 'Next' button below.
- If you need to return to the survey later, simply close the webpage. The next time you click on the invite link, it will automatically take you back to the question you were up to.



# New Format Online Reporting

- Now accessible from this page:  
<http://www.airservicesaustralia.com/aircraftnoise/airports/>
- The new format was effective from October 2019, is provided monthly rather than quarterly and replaces Airservices quarterly reporting, both online and for the Gold Coast ANACC
- Monthly information is updated on the 10<sup>th</sup> business day of each month
- Airservices will continue to provide commentary both online and to the Gold Coast ANACC, on increased complainants, issues or other complainant investigations by the NCIS

# New Format Online Reporting

- Yearly reviews will continue to be provided
- Any issues that are not noise related will not be included in this reporting
- This format is sourced directly from the NCIS database, and is based on contacts received in the calendar month
- As the NCIS updates issues and case classifications during the course of their investigation into a contact, it is possible that slight variations will occur in the reporting to the previous month, when the current month is uploaded

# New Format Online Reporting

- The following information is displayed at the top of the page, when you select complaints

## Changes to our complaint-reporting format

The new interactive reporting below (effective October 2019) will be monthly, rather than quarterly. New data will be available on the 10th business day of each month.

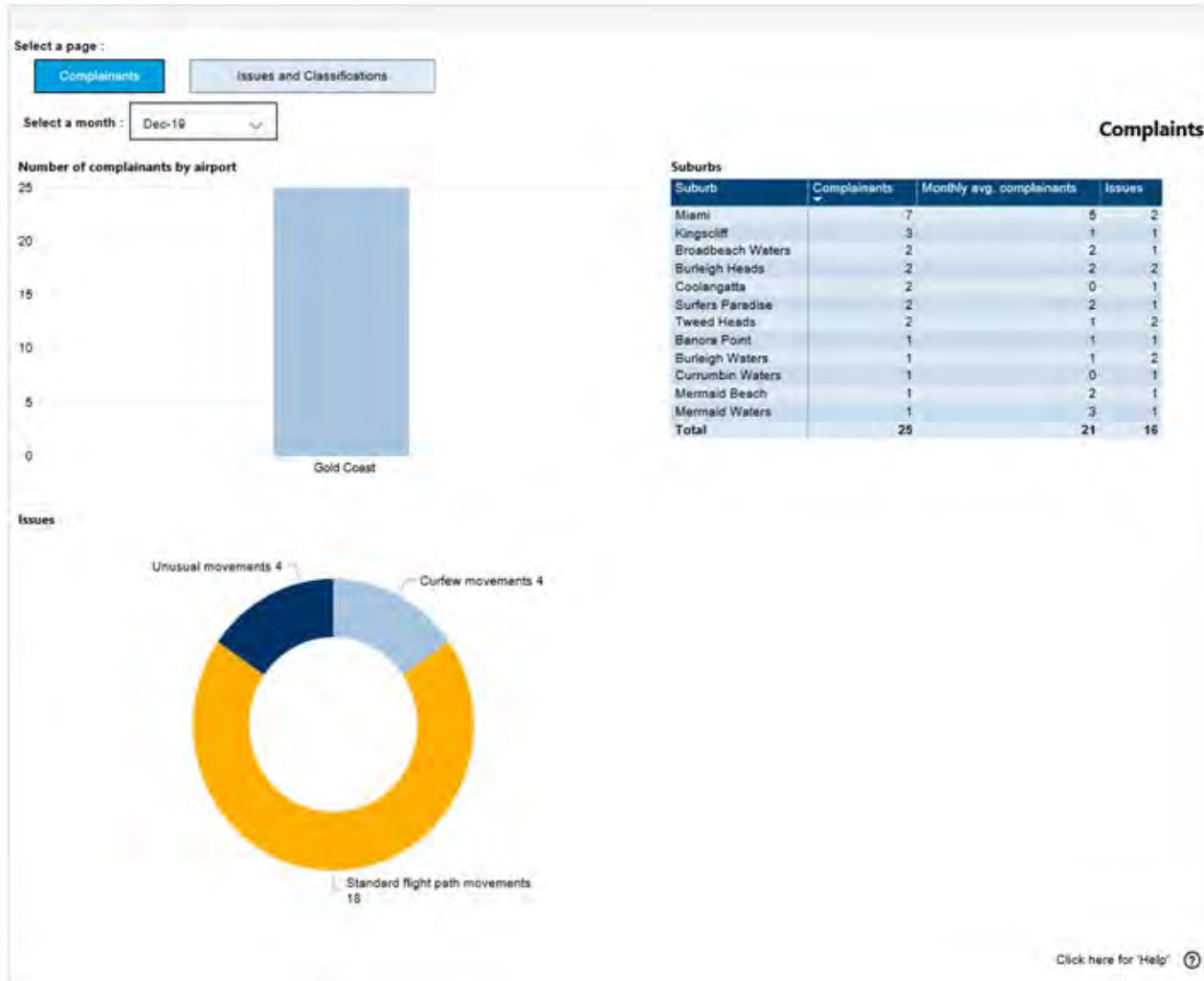
Use this interactive tool to explore the issues raised by residents from different suburbs. Read an explanation of [issues and classifications](#) used in complaint reporting.

Help is provided on both the Complainants and Issues and Classification Screens in the bottom right hand corner of the screen.

If the NCIS have identified something new or unusual in the data, an explanation will be provided in a dated accordion below the interactive reporting. Previous quarterly reporting to January 2016 is under the accordion "Archived". Yearly reviews of complainant numbers and issues will continue to be provided.

Note: monthly complaints data describes the complaints lodged in that calendar month. Depending on when in the month the matter was lodged, the investigation may not have been completed within the same month. Where an investigation reveals that the issue or classification initially assigned to the matter was not the most appropriate one, this will be corrected. This may result in incremental changes to issue or classification counts for a previous month. Additionally, complainant numbers are now for each month. Previously if a complainant contacted the NCIS each month in a quarter that was reported as one complainant, if you are adding the number of complainants each month, this may not provide a realistic interpretation of the total number of complainants. If you select a month where there were no complainants, nothing will be displayed.

# New Format Online Reporting




# New Format Online Reporting

Select Page

Select a page :  
Complaints | Issues and Classifications

Select a month : Dec-19

Number of complainants by month



Select a month

Use these buttons to change pages


Click on an airport to show associated suburbs and issues

Hover over any chart element to see more details

Click on an issue to show the suburbs and airports associated with that issue

Suburb	Complainants	Monthly avg. complainants	Issues
Miami	7	5	2
Kingscliff	1	1	1
Broadbeach Waters	2	2	1
Burleigh Heads	2	2	2
Wynnum	0	0	1
Wynnum Bassett	2	2	1
Wynnum	1	1	2
Wynnum	1	1	1
Wynnum	0	0	1
Wynnum	0	0	1
Wynnum	0	0	1
Wynnum	2	2	18

Issues



Standard flight path movements: 18

Curfew movements: 4

Updown movements: 4

Exit 'Help' ?

# New Format Online Reporting




select a page :

Select a month :

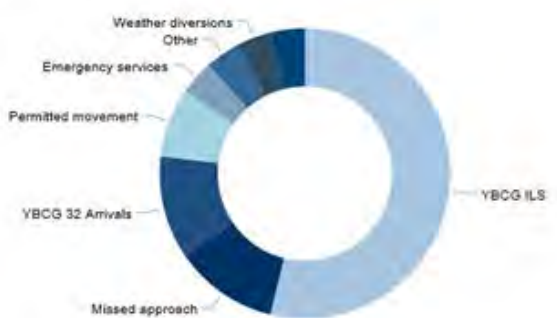
### Issues and Classifications

**Issues**



Issue Type	Count
Standard flight path movements	18
Unusual movements	4
Curfew movements	4

**Classifications**



**Suburbs**

Suburb	Complainants	Last 12 months Avg. Complainants	Issues
Miami	7	5	2
Kingscliff	3	1	1
Broadbeach Waters	2	2	1
Burleigh Heads	2	2	2
Coolangatta	2	0	1
Surfers Paradise	2	2	1
Tweed Heads	2	1	2
Banora Point	1	1	1
Burleigh Waters	1	1	2
Currumbin Waters	1	0	1
Mermaid Beach	1	2	1
Mermaid Waters	1	3	1
<b>Total</b>	<b>25</b>	<b>21</b>	<b>16</b>

# New Format Online Reporting



Select a page :

Complainants

Issues and Classifications

Select a month :

Dec-19

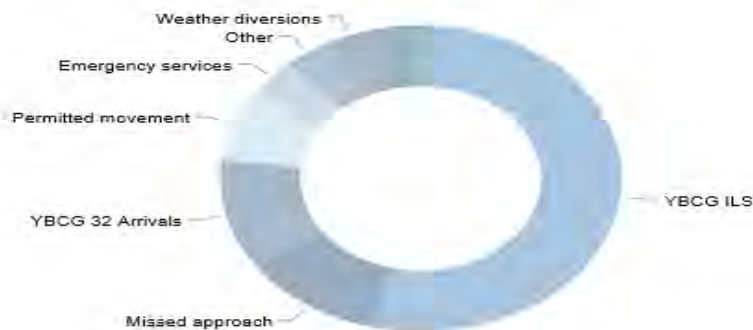
## Issues and Classifications

### Issues



Standard flight path movements  
14

### Classifications



### Suburbs

Suburb	Complainants	Last 12 months Avg. Complainants	Issues
Miami	6	5	1
Broadbeach Waters	2	2	1
Surfers Paradise	2	2	1
Burleigh Heads	1	2	1
Burleigh Waters	1	1	1
Mermaid Beach	1	2	1
Mermaid Waters	1	3	1
<b>Total</b>	<b>14</b>	<b>18</b>	<b>7</b>





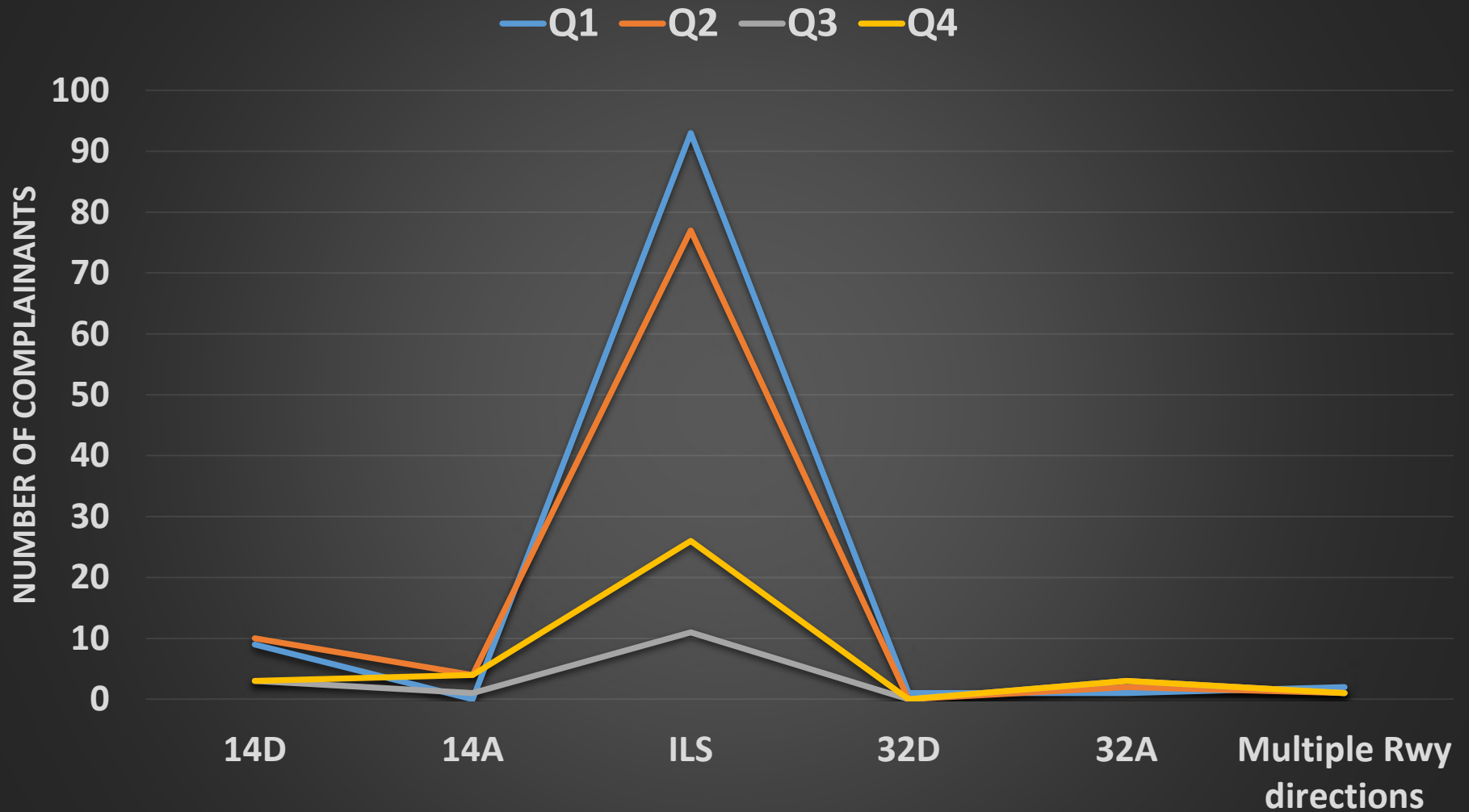


# 2019 Year in Review

## Complainants

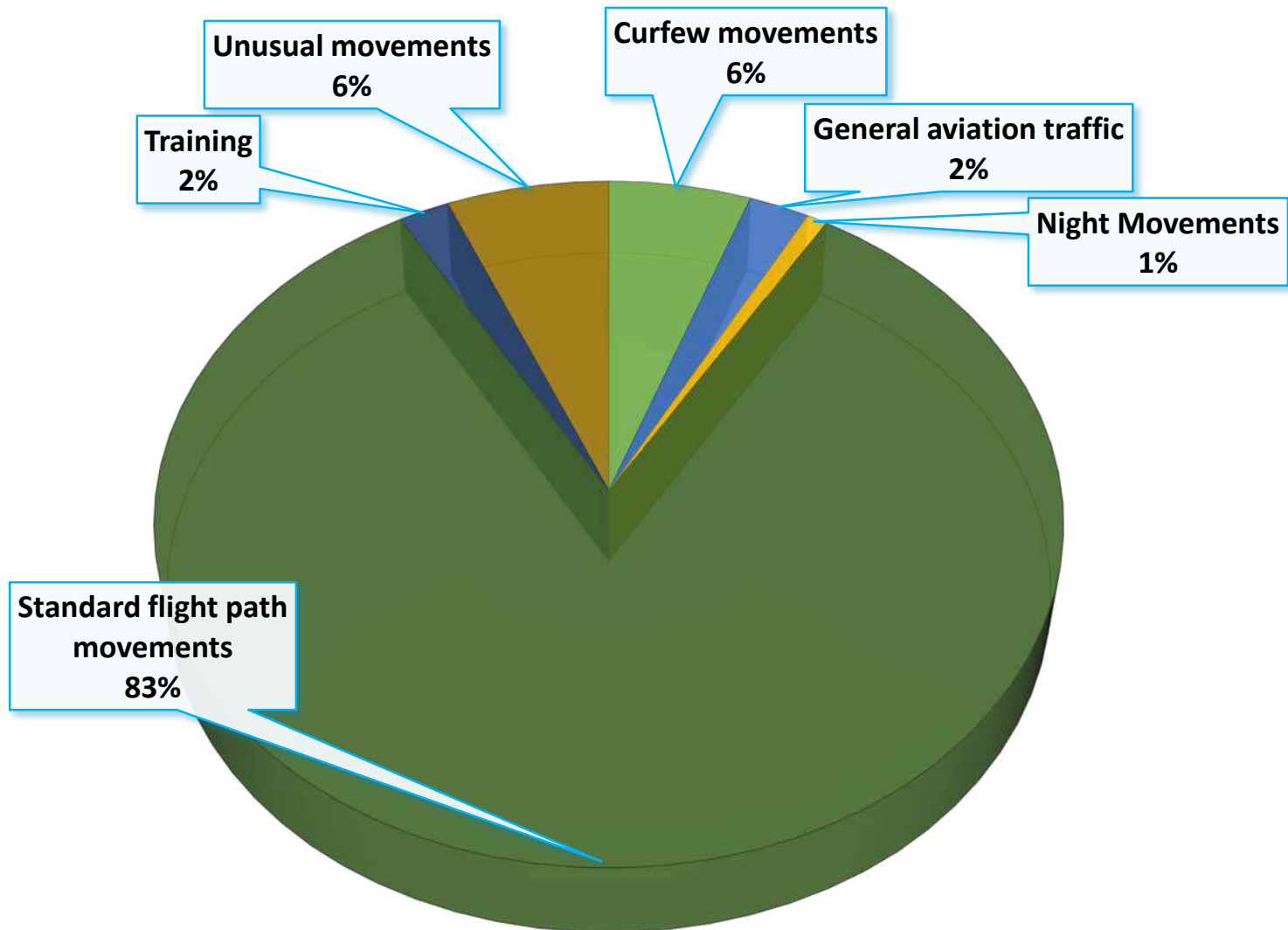
- 248 individual complainants an increase from 143 in 2018
- Increase due to implementation of the ILS – affecting 164 complainants

# Runway and ILS Usage



# 2019 Year in Review

## Issues



# 2019 Year in Review

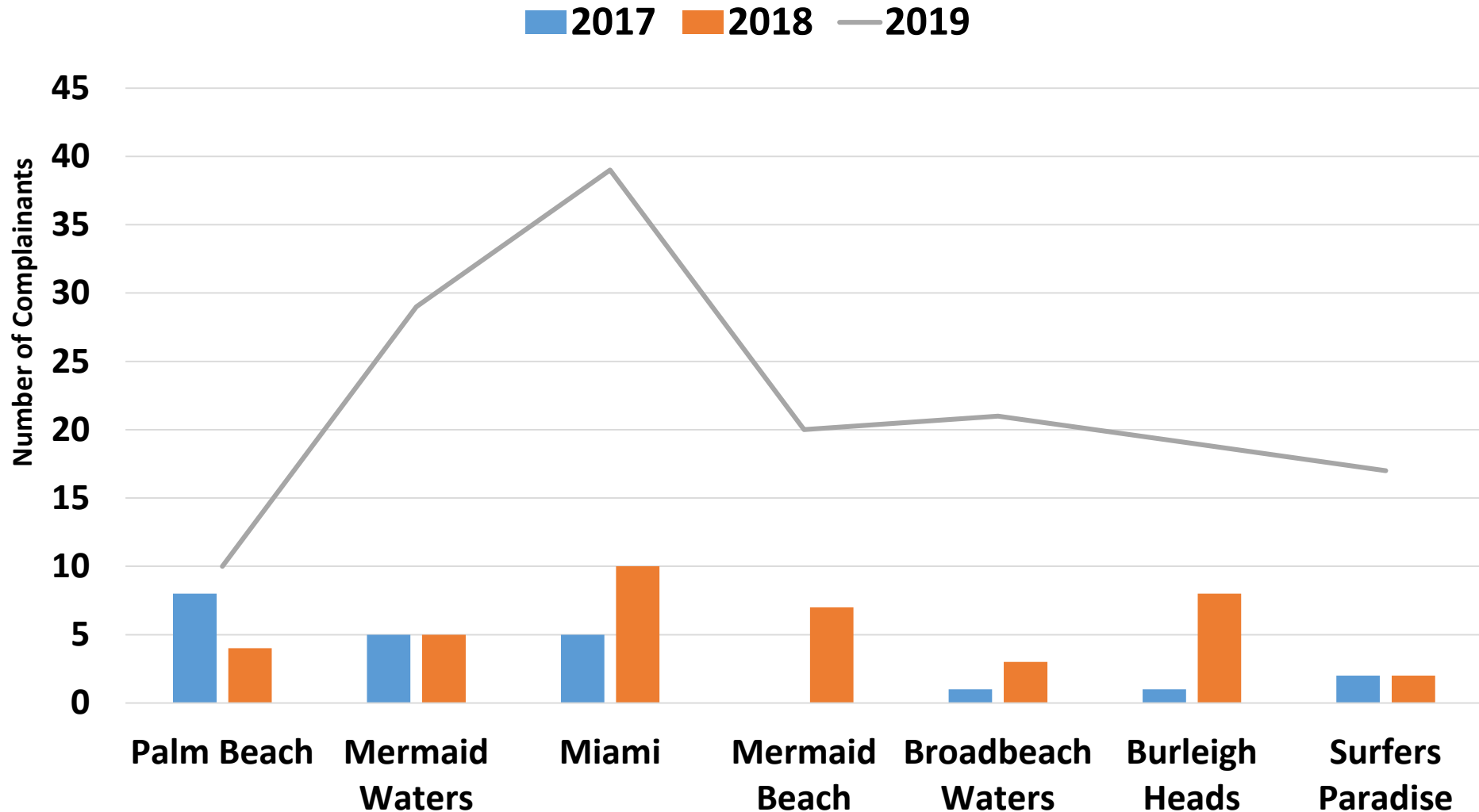
## Suburbs



- 43 suburbs recorded complainants
- 19 suburbs recorded a single complainant
- Suburbs recording the most complainants:
  - Miami (39), mainly concerned with ILS operations
  - Mermaid Waters (29), ILS
  - Broadbeach Waters (21), ILS and standard flight path movements
  - other suburbs were all north of the airport and were concerned with ILS operations

# 2019 Year in Review

## Suburbs



# Gold Coast ANACC ATC

The rules – standards

The process - aims

The limitations

Example flight

# Rules - technique

## Strategic v Tactical Separation

Safety based on applying rule sets for minimum distances – either horizontal or vertical.

Time, vertical (altitude) radar (distance) or visual (tower)

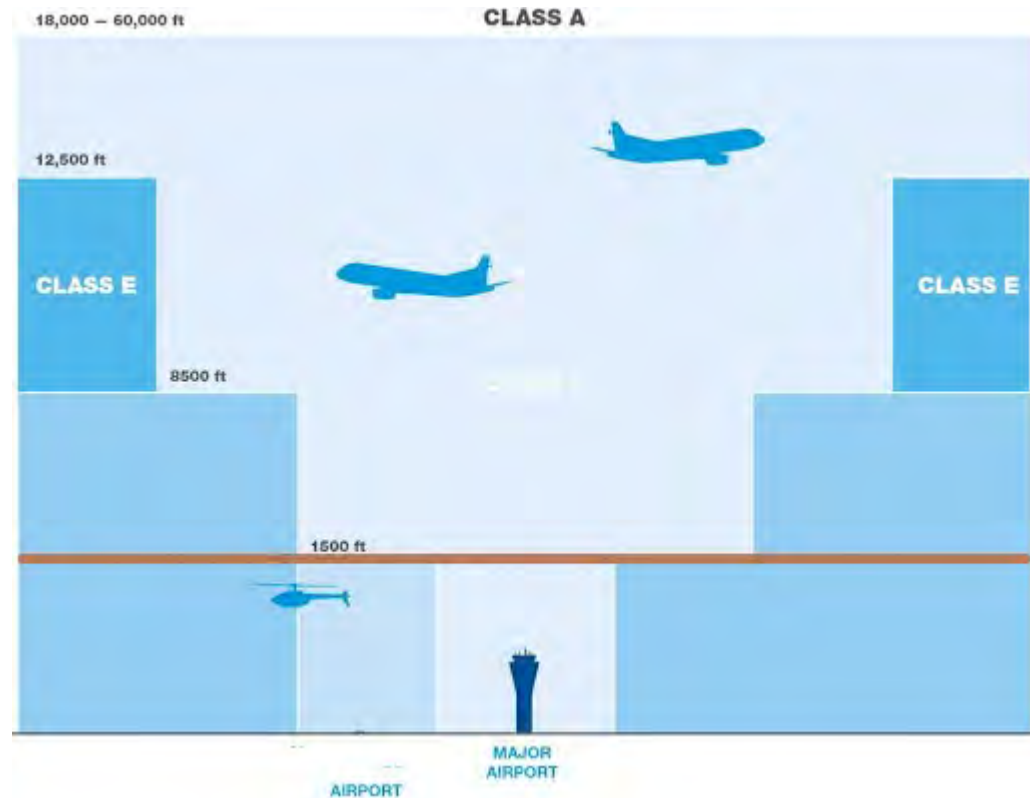
Must always have one separation standard – and be able to prove it  
3nm – 1000ft

One controller to another – different rules

Always L070 - always have a plan B

# Gold Coast - airspace

- Gold Coast tower
- 7nm (13 km )
- 1500 ft
- 12 Staff
- 1 SMC/Clearance
- 1 ADC Tower
- 1 Supervisor







# Process – ‘coordination’

ATC1 Clearance issued to aircraft (Dep - ~30 mins)

ATC1 Aircraft pushback (Dep – 8)

ATC1 Aircraft taxi – Brisbane aware (Dep 2-5)

ATC2 Plan traffic at taxi – where – how – when (plan B)

ATC2 Aircraft ready for departure

-> ATC3 ‘Next Dodo 1 - require’

ATC3 Options L070 or H140 unless ATC 2 requires something –  
“2 Minutes”

Air traffic control will issue the flight with departure instructions – the pilot will only change for operational reasons or due to weather.

# Limitations

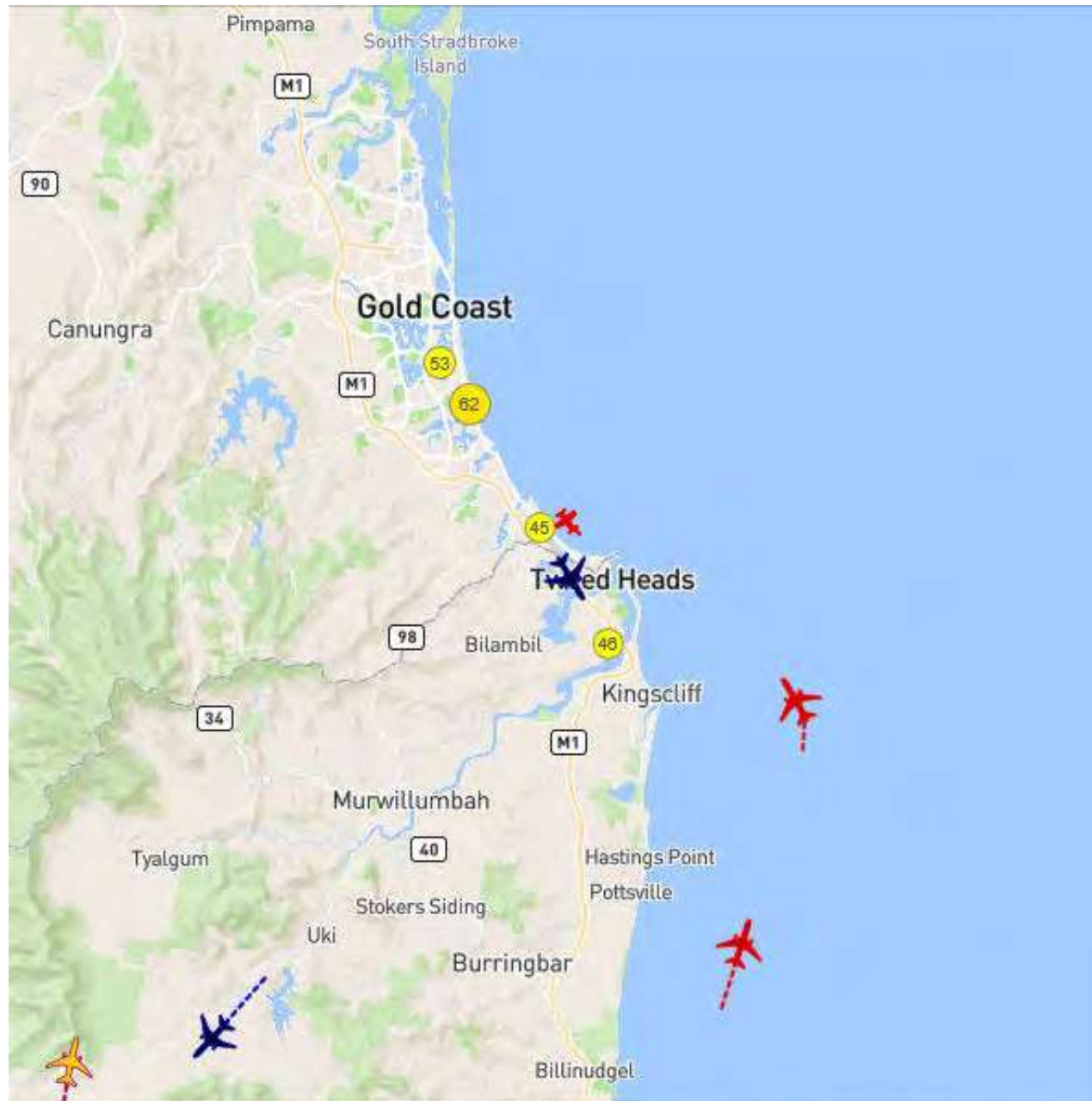
Airport design - Taxiway system

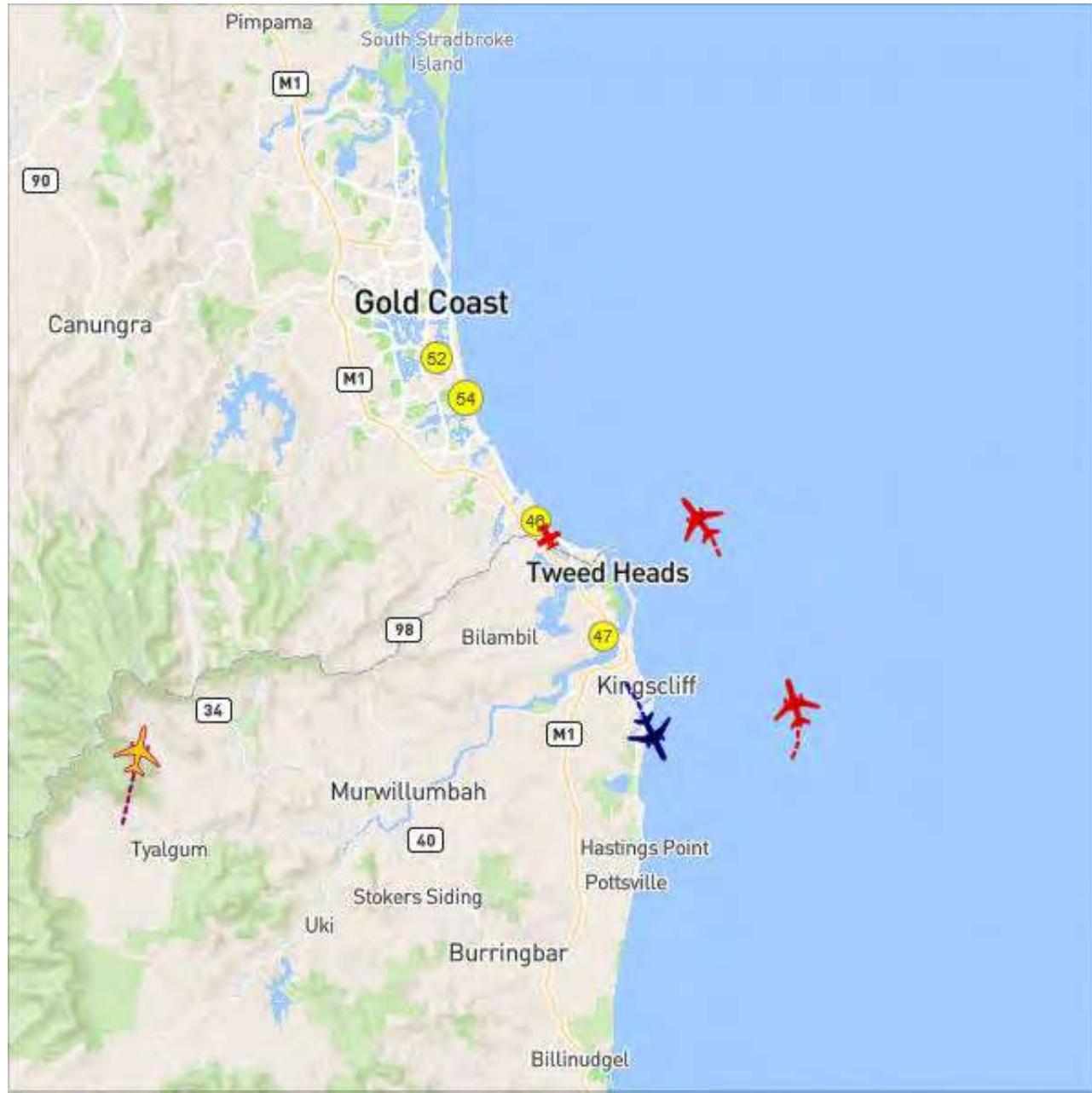
Other traffic

Route network - airspace

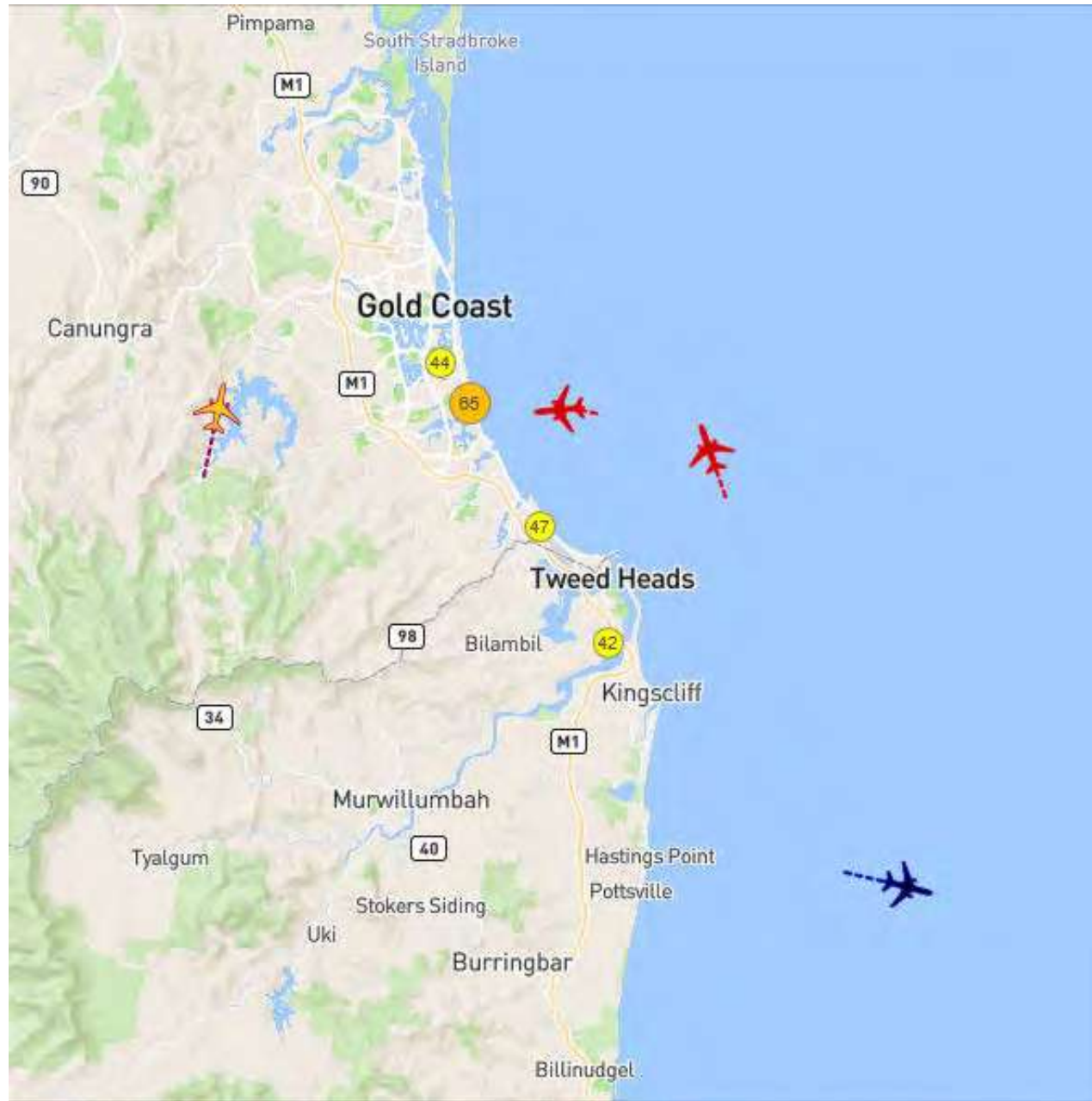
Visibility - weather

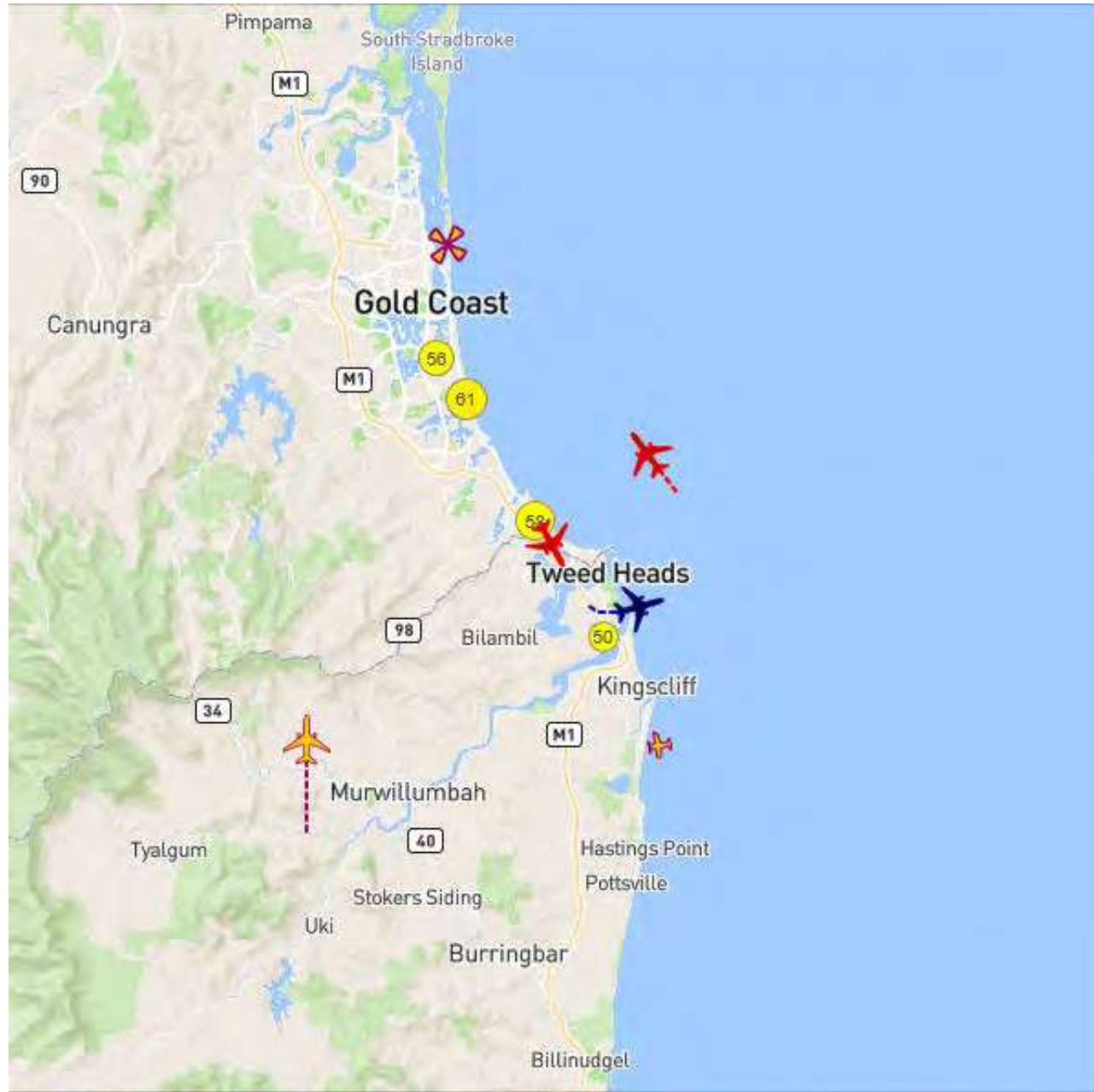
Experience – P - roundabout













## 9.6 Callsign list

local_date	ATIS ILS starts	ATIS ILS ends	All ILS callsigns (with aircraft type / local landing time)
28/02/2019			VH-FEM (Piston, 10:04:20), VH-OJL (Piston, 14:42:29), VH-KNQ (Turboprop, 16:15:09)
1/03/2019			VH-ROV (Piston, 15:12:11)
2/03/2019	5:49	6:20	JST983 (A320, 06:01:59), JST12 (B787, 06:06:16), JST400 (A320, 06:18:52)
3/03/2019			VOZ511 (B737, 09:43:12), VH-PMG (Piston, 11:39:01)
4/03/2019			VH-ZUA (Piston, 16:56:40)
5/03/2019			VH-EFW (Turboprop, 10:02:18), VH-SDU (Piston, 14:54:20), VH-YHL (Piston, 16:10:12), VH-ZUA (Piston, 21:35:20)
6/03/2019			
7/03/2019			VH-ZUA (Piston, 11:50:24), VH-EAJ (Piston, 12:00:29), VH-YHL (Piston, 13:31:31)
8/03/2019			VH-ROV (Piston, 08:57:14), VH-EAJ (Piston, 15:51:46)
9/03/2019			
10/03/2019			
11/03/2019			
12/03/2019	6:13	6:40	JST12 (B787, 06:32:39), VOZ725 (B737, 07:00:56)
13/03/2019			VH-CPB (Piston, 08:54:15), VH-ZUA (Piston, 09:01:33), VH-CBT (Piston, 10:14:09), VH-ROV (Piston, 13:29:41), VH-ROV (Piston, 15:05:11), VH-ROV (Piston, 20:12:47)
14/03/2019	18:34	19:36	VH-ROV (Piston, 09:03:12), VH-ROV (Piston, 09:03:23), VH-DTG (Piston, 10:11:06), VH-RKS (Piston, 12:25:23), TGG624 (A320, 19:06:16), JST424 (A320, 19:36:16)
15/03/2019	18:12	20:22	VH-TQW (Turboprop, 16:12:58), VOZ1511 (B737, 19:56:44), VOZ535 (B737, 20:16:31), TGG572 (B737, 20:25:32), VOZ755 (B737, 20:30:24), QFA864 (B737, 20:35:12)
16/03/2019	15:20	23:59	VH-ROV (Piston, 13:10:59), VOZ527 (B737, 16:14:11), JST438 (A320, 16:17:44), JST428 (A320, 21:58:16)
17/03/2019	11:28	15:38	VH-OXY (Turboprop, 11:45:42), QFA856 (B737, 12:03:00), JST408 (A320, 12:05:07), JST967 (A320, 12:07:33), JST436 (A320, 15:27:47), JST168 (A320, 15:35:48), VOZ527 (B737, 15:57:36)
18/03/2019			
19/03/2019			VH-KSS (Piston, 11:03:59)
20/03/2019			TGW006 (B787, 08:04:24), VH-KSS (Piston, 11:12:24), VH-ROV (Piston, 13:35:26)
21/03/2019			VH-DTG (Piston, 09:58:43)
22/03/2019			
23/03/2019			
24/03/2019			VH-TKJ (Piston, 10:34:34)
25/03/2019			
26/03/2019			
27/03/2019	11:20	15:34	VH-ZUA (Piston, 10:32:03), JST408 (A320, 11:38:36), VOZ517 (B737, 11:42:12), VH-TBM (Turboprop, 12:16:48), JST967 (A320, 12:18:11), TGG612 (A320, 12:33:25), VOZ741 (B737,

			13:22:27), JST412 (A320, 13:33:03), QFA1568 (B717, 13:58:28), TGG562 (B737, 14:24:48), JST436 (A320, 14:29:12), JST168 (A320, 15:25:01), VOZ527 (B737, 15:33:32), VH-EUZ (Piston, 16:30:21), VH-RPV (Piston, 18:12:00)
28/03/2019	7:19	7:29	JST12 (B787, 07:25:58), JST430 (A320, 07:49:19), ADA3 (Turboprop, 12:07:48), VH-DYC (Piston, 13:45:15), VH-YDC (Piston, 15:27:07), VH-TQW (Turboprop, 16:14:04), VH-ZUA (Piston, 18:01:48)
29/03/2019			VH-ROV (Piston, 10:07:48), VH-VMV (Piston, 17:55:46)
30/03/2019			
31/03/2019			VH-KWZ (Turboprop, 18:00:44)
1/04/2019			VH-ZUA (Piston, 09:57:11), VH-ROV (Piston, 11:57:24), VH-ZUA (Piston, 15:49:05), VH-ROV (Piston, 16:47:51)
2/04/2019	12:36	18:09	VH-EDB (Piston, 06:29:55), VOZ741 (B737, 13:14:44), JST436 (A320, 13:28:12), VOZ523 (B737, 13:32:20), JST412 (A320, 13:36:01), VH-FEM (Piston, 14:17:21), TGG560 (B737, 14:20:51), QFA862 (B737, 14:33:20), VH-EAJ (Piston, 15:32:50), VOZ749 (B737, 16:11:52), VH-LMD (Turboprop, 16:33:20), JST134 (A320, 16:38:23), ANZ879 (A320, 16:41:21), VOZ527 (B737, 16:59:53), VOZ535 (B737, 17:19:44), TGG622 (A320, 17:23:56), JST414 (A320, 17:53:40), JST424 (A320, 18:07:54), JST496 (A320, 18:11:52), VH-VCW (Turboprop, 18:22:20), VH-VCW (Turboprop, 18:22:22)
3/04/2019	6:14	9:55	JST400 (A320, 06:28:11), JST7990 (A320, 06:32:27), JST12 (B787, 06:48:15), JST430 (A320, 06:51:49), ANZ937 (A320, 09:59:56), VOZ110 (B737, 10:05:06), JST412 (A320, 15:22:07), VH-ZUA (Piston, 16:13:03)
4/04/2019			VH-ZUA (Piston, 14:57:52), VH-LAA (Turboprop, 19:07:41), VH-FOH (Piston, 20:57:15)
5/04/2019			VH-BCD (Piston, 11:11:44)
6/04/2019			VH-YHM (Piston, 15:09:16)
7/04/2019			
8/04/2019			
9/04/2019			
10/04/2019			VH-XGH (Piston, 09:15:00), VH-ZUA (Piston, 11:51:27)
11/04/2019			
12/04/2019	10:54	12:56	JST430 (A320, 07:55:20), JST967 (A320, 11:09:48), VOZ110 (B737, 11:19:11), QFA860 (B737, 11:22:48), VOZ733 (B737, 11:31:20), QFA880 (B737, 11:35:56), VOZ1447 (B737, 11:48:38), VOZ515 (B737, 11:53:12), JST630 (A320, 11:58:08), JST420 (A320, 12:02:00), VOZ735 (B737, 12:17:27), JST432 (A320, 12:22:00), VOZ517 (B737, 12:35:12), JST438 (A320, 12:47:48), QFA864 (B737, 12:54:12), TGG612 (A320, 13:20:15), VOZ741 (B737, 14:44:12)
13/04/2019			
14/04/2019			VH-ZUA (Piston, 12:59:39), VH-LAA (Turboprop, 13:53:16)
15/04/2019			VH-ZUA (Piston, 11:06:32)
16/04/2019			VH-EZR (Piston, 10:22:20)
17/04/2019			VH-STE (Turboprop, 09:40:35)
18/04/2019			VH-IYE (Piston, 14:47:40), VH-ONW (Piston, 14:54:31)

19/04/2019			QFA864 (B737, 13:02:36), VOZ755 (B737, 21:02:59)
20/04/2019			JST430 (A320, 08:49:59), JST965 (A320, 17:04:28), VH-OJL (Piston, 18:33:32)
21/04/2019			
22/04/2019	17:34	19:30	VH-YKU (Piston, 09:33:08), VH-ZUA (Piston, 12:04:20), VH-ZUA (Piston, 15:09:46), JST414 (A320, 17:51:20), VOZ749 (B737, 17:56:28), VH-ZUA (Piston, 18:09:57), JST134 (A320, 18:23:47), TGG622 (A320, 18:28:00), VOZ1451 (B737, 18:36:36), VOZ535 (B737, 18:39:52), JST424 (A320, 18:53:36), VOZ539 (B737, 19:39:12)
23/04/2019			VH-EYY (Piston, 14:08:56), VH-YDC (Piston, 23:09:38)
24/04/2019			VH-OBW (Piston, 08:09:05), VH-ZUA (Piston, 12:00:44)
25/04/2019			VH-AZX (Piston, 13:09:01)
26/04/2019			
27/04/2019			VHSRA (Piston, 13:23:48)
28/04/2019			
29/04/2019			VH-RKS (Piston, 18:04:20)
30/04/2019			VH-ZUA (Piston, 11:07:27), VH-TOE (Piston, 15:11:11)
1/05/2019			VH-MDH (Turboprop, 12:49:24)
2/05/2019			VH-CLE (Piston, 14:18:25), VH-RKS (Piston, 19:40:46)
3/05/2019			
4/05/2019	15:13	15:37	QFA862 (B737, 15:24:40), JST410 (A320, 15:33:08), TGG560 (B737, 15:49:23)
5/05/2019			VH-YKB (Piston, 10:34:53)
6/05/2019			VH-YKB (Piston, 14:09:29), VH-LYT (Turboprop, 18:44:17)
7/05/2019			
8/05/2019			
9/05/2019			VH-ZIO (Piston, 11:57:56), VH-XHT (Piston, 14:55:00)
10/05/2019			
11/05/2019			
12/05/2019			QFA1574 (B717, 20:46:59)
13/05/2019			VH-ZUA (Piston, 10:10:17), VH-ZUA (Piston, 13:01:12)
14/05/2019			VH-EFK (Piston, 12:12:52), VH-ROV (Piston, 13:41:46), VH-ZUA (Piston, 15:40:44), VH-ROV (Piston, 15:47:55), VH-ROV (Piston, 15:47:57)
15/05/2019			
16/05/2019			VH-NGI (Piston, 14:07:34), VH-NGI (Piston, 14:07:35)
17/05/2019			VH-SUM (Piston, 09:09:20), VH-ROV (Piston, 12:52:09), VH-YKB (Piston, 13:39:52)
18/05/2019			
19/05/2019			VH-ZUA (Piston, 16:54:20)
20/05/2019	10:06	10:36	VH-VTF (Turboprop, 10:20:41), VOZ511 (B737, 10:39:31), VH-WGS (Piston, 10:44:05), VH-ROV (Piston, 13:22:48)
21/05/2019			VH-YDC (Piston, 22:53:25)
22/05/2019			VH-ROV (Piston, 13:19:17), VH-NGI (Piston, 15:30:55)
23/05/2019			VH-RPL (Piston, 15:02:18)
24/05/2019			VH-IMS (Piston, 09:54:22), VH-ROV (Piston, 10:01:20), VH-ROV (Piston, 15:28:14)

25/05/2019			VH-YDC (Piston, 18:38:29)
26/05/2019			
27/05/2019			
28/05/2019			
29/05/2019			
30/05/2019			VH-ZIO (Piston, 12:51:54)
31/05/2019			VH-ZUA (Piston, 09:08:27), VH-TAW (Piston, 09:32:52), VH-YKU (Piston, 10:06:41), VH-YKU (Piston, 13:16:40), VH-OIH (Piston, 20:13:36)
1/06/2019			VH-ZIH (Piston, 12:21:20)
2/06/2019			VH-PXW (Piston, 09:34:53)
3/06/2019			
4/06/2019			
5/06/2019			VH-YKU (Piston, 09:57:08), VH-ROV (Piston, 10:50:35), VH-YKU (Piston, 12:56:40), VH-YKU (Piston, 13:56:20), VH-ZIO (Piston, 16:26:52)
6/06/2019			VH-ZUA (Piston, 13:47:27), VH-ROV (Piston, 15:23:49), VH-LSE (Piston, 16:34:08), VH-ZUA (Piston, 21:48:28)
7/06/2019			VH-ROV (Piston, 09:06:25), VH-ROV (Piston, 14:28:27)
8/06/2019			
9/06/2019			
10/06/2019			VH-KZG (Piston, 11:04:51)
11/06/2019			VH-TAW (Piston, 09:36:48)
12/06/2019			VH-YKU (Piston, 09:12:06), VHWJB (Piston, 17:25:37)
13/06/2019			
14/06/2019			VH-AZX (Piston, 12:47:40)
15/06/2019	14:27	14:49	TGG554 (B737, 14:35:15), VOZ523 (B737, 14:47:52), TGG560 (A320, 14:56:12)
16/06/2019			
17/06/2019			VH-NCR (Piston, 09:29:39), VH-ZUA (Piston, 14:41:28), VH-ZIH (Piston, 14:56:49)
18/06/2019			VH-WDG (Piston, 04:05:04), VH-CLE (Piston, 15:18:14), VH-YDC (Piston, 23:08:16)
19/06/2019			VH-VVP (Piston, 15:22:07)
20/06/2019			VH-XGH (Piston, 09:13:39), VH-HGK (Piston, 14:05:32), VH-BVS (Turboprop, 16:08:44), VH-ZUA (Piston, 16:13:13)
21/06/2019			VH-ZUA (Piston, 15:11:57)
22/06/2019			VH-DTG (Piston, 12:40:41), VH-ZUA (Piston, 13:22:21), VH-WGS (Piston, 14:42:57)
23/06/2019			
24/06/2019	19:55	20:43	VH-BJZ (unknown, 08:59:15), ANZ937 (A320, 11:01:39), VOZ543 (B737, 20:38:32), VOZ755 (B737, 20:46:05), QFA1574 (B717, 20:51:55)
25/06/2019	15:30	15:53	VH-NGI (Piston, 13:34:45), VH-XGH (Piston, 15:02:23), JST494 (A320, 16:03:08), VH-ZUA (Piston, 16:09:04)
26/06/2019	7:00	7:33	JST400 (A320, 07:22:07), TGW006 (B787, 07:32:14), VH-PID (Turboprop, 07:42:19), JST430 (A320, 07:56:56), TGG604

			(A320, 09:29:21), TGG550 (B737, 09:39:00), VH-NGI (Piston, 13:06:44), VH-XGH (Piston, 15:13:48), VOZ527 (B737, 16:29:08)
27/06/2019			VH-NGI (Piston, 10:09:44), VH-OBW (Piston, 10:53:26), VH-ROV (Piston, 14:35:44), VH-ROV (Piston, 16:38:56)
28/06/2019			VH-ROV (Piston, 13:45:56)
29/06/2019			
30/06/2019			VH-CEN (Piston, 09:57:10), VH-PNC (Piston, 10:02:41), VH-FOJ (Piston, 10:35:32), VH-ZUA (Piston, 12:19:04), VH-DTG (Piston, 15:19:37)
1/07/2019			VH-NGI (Piston, 19:53:01)
2/07/2019			VH-YJX (Piston, 16:08:42), VH-XGH (Piston, 16:42:34)
3/07/2019			ANO180 (Ejet, 12:31:40), VH-NGI (Piston, 15:15:12)
4/07/2019			VH-NGI (Piston, 14:22:04)
5/07/2019			VOZ733 (B737, 11:38:41), VH-ZUA (Piston, 18:02:26)
6/07/2019			VH-ZUA (Piston, 16:40:09)
7/07/2019			
8/07/2019			N5001N (unknown, 17:44:44)
9/07/2019			VH-YHM (Piston, 12:06:16), VH-ROV (Piston, 15:39:11), VH-AZX (Piston, 15:44:24)
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11/07/2019			
12/07/2019			AM452 (Jet, 02:13:28), SVY23 (Turboprop, 03:19:19)
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14/07/2019			VH-NGI (Piston, 11:38:53), VH-ZUA (Piston, 12:45:09)
15/07/2019			VH-NGI (Piston, 08:59:08), VHICF (Piston, 09:03:53), VH-NGI (Piston, 10:23:53), VH-TAW (Piston, 13:01:24), VH-NGI (Piston, 14:46:55)
16/07/2019			VH-YDC (Piston, 22:49:44)
17/07/2019			VH-NGI (Piston, 09:52:24), VH-ZUA (Piston, 15:27:08), YBCG (Piston, 15:48:19), VH-ZUA (Piston, 17:31:09)
18/07/2019			VH-ROV (Piston, 11:00:16), VH-IFU (Piston, 11:04:43), VH-AZX (Piston, 15:33:59), VH-NGI (Piston, 16:40:25)
19/07/2019			VH-ZUA (Piston, 09:19:36)
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24/07/2019			VH-TAV (Piston, 15:03:13), VH-AZX (Piston, 15:35:32)
25/07/2019			VH-NGI (Piston, 09:08:55), VH-TAV (Piston, 13:23:24), VH-AVT (Piston, 13:33:36), VH-NGI (Piston, 13:38:53), VH-CVP (unknown, 18:35:44)
26/07/2019			VH-OIH (Piston, 10:45:41)
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28/07/2019			VH-ZUA (Piston, 12:40:59)
29/07/2019			VH-ZUA (Piston, 16:35:16)
30/07/2019			VH-DMB (Piston, 09:45:48), VH-ZOB (Piston, 10:13:30), VH-ZUA (Piston, 11:23:31), VH-CMA (Piston, 13:30:41)

31/07/2019			VH-NGI (Piston, 11:10:46), VH-RQU (Piston, 12:04:21), VH-ZUA (Piston, 16:44:52)
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2/08/2019			VH-CEM (unknown, 13:57:53)
3/08/2019			VH-MBJ (Piston, 14:36:20)
4/08/2019			VH-RQU (Piston, 10:33:06), VH-YDC (Piston, 11:37:25), VH-TAV (Piston, 14:10:05)
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14/08/2019			N53DL (Piston, 15:21:44), VH-ZUA (Piston, 17:29:16)
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20/08/2019			VH-CMA (Piston, 15:09:44), VH-CMA (Piston, 15:09:49), VH-AZX (Piston, 16:15:45)
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28/08/2019			VH-ZUA (Piston, 14:46:56)
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30/08/2019			VH-ZUA (Piston, 10:30:33), VH-ZUA (Piston, 14:27:14)
31/08/2019			VH-ZUA (Piston, 13:22:21), VH-HLP (Piston, 17:49:52)
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2/09/2019			
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8/09/2019			VH-CDG (Jet, 09:26:57)
9/09/2019			VH-NGI (Piston, 09:14:43), VH-LAV (Piston, 12:59:08)
10/09/2019			VH-CMA (Piston, 13:11:53), VH-KNQ (Turboprop, 16:24:19)

11/09/2019			VH-NGI (Piston, 09:57:24), VH-ZUA (Piston, 12:07:11), VH-YKB (Piston, 13:03:30), VH-YRE (Piston, 15:19:32), VH-YKB (Piston, 16:01:39)
12/09/2019			VH-NGI (Piston, 12:33:13)
13/09/2019			VH-YHL (Piston, 08:25:58), VH-EZR (Piston, 08:46:21), VH-NGI (Piston, 13:40:31)
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17/09/2019	16:58	17:26	VH-ZUA (Piston, 09:55:27), VH-ZUA (Piston, 14:55:16), JST494 (A320, 17:19:44), VOZ527 (B737, 17:22:24)
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20/09/2019			VH-NGI (Piston, 09:53:03), VH-CFG (Piston, 12:08:55)
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24/09/2019			VH-TTS (Piston, 05:56:17), VH-ROV (Piston, 10:29:01), VH-NGI (Piston, 13:34:59)
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30/09/2019			VH-ROV (Piston, 09:48:52), VH-ROV (Piston, 13:38:55), VH-NGI (Piston, 14:13:55), VH-ZUA (Piston, 17:57:08), VH-LYT (Turboprop, 18:51:50)
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2/10/2019			VH-ZUA (Piston, 15:02:43)
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5/10/2019			VH-VVP (Piston, 09:12:12), VH-ZIO (Piston, 09:19:06)
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8/10/2019			VH-YDC (Piston, 21:15:48)
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11/10/2019	11:31	13:16	VH-TOE (Piston, 09:40:40), VOZ517 (B737, 12:44:07), VOZ517 (B737, 12:44:08), VOZ739 (B737, 12:58:04), JST438 (A320, 13:03:12), VOZ741 (B737, 13:25:01), TGG560 (B737, 14:21:12), VH-JRL (Piston, 14:25:35), JST434 (A320, 14:54:13)
12/10/2019	8:13	12:30	TGG550 (A320, 08:21:08), XAX200 (A330, 09:11:51), JST630 (A320, 10:55:19), TGG852 (B737, 11:02:34), JST432 (A320, 11:06:53), JST967 (A320, 11:16:55), VOZ735 (B737, 11:24:35), VOZ517 (B737, 11:27:18), TGG554 (B737, 11:30:51), QFA864 (B737, 11:33:40), JST408 (A320, 11:48:40), JST434 (A320, 11:56:07), VOZ739 (B737, 12:14:56), JST438 (A320, 12:40:35)
13/10/2019			VH-ZIO (Piston, 09:08:06), VH-MDH (Turboprop, 17:05:23)



14/10/2019			VH-ROV (Piston, 10:50:13)
15/10/2019			JST983 (A320, 06:03:20)
16/10/2019			
17/10/2019			
18/10/2019			VH-AVT (Piston, 15:07:20)
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21/10/2019			7771 (unknown, 07:45:22), VH-ROV (Piston, 09:24:44), VH-ZUA (Piston, 10:10:57), VH-RBB (Piston, 17:11:07)
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23/10/2019			VH-ZUA (Piston, 10:32:32), VH-NQF (Turboprop, 13:17:23), VH-YHL (Piston, 14:36:50), VH-EWW (Piston, 16:10:35), VH-VCW (Turboprop, 16:13:37)
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13/11/2019			VH-CBT (Piston, 09:01:49), VH-YRP (Piston, 11:02:24), VH-ZUA (Piston, 14:17:48), VH-LAA (Turboprop, 15:13:27), VH-LYI (Turboprop, 16:03:52)
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17/11/2019	7:13	8:41	JST132 (A320, 07:31:28), JST402 (A320, 07:35:28), JST430 (A320, 08:05:40), TGG604 (A320, 08:17:44), TGG550 (B737, 08:37:56)
18/11/2019			VH-ZUA (Piston, 09:41:40)
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28/11/2019			VH-DYC (Piston, 17:58:04), VH-TQW (Turboprop, 23:39:36)
29/11/2019			
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2/12/2019			VH-ZIH (Piston, 15:50:33)
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11/12/2019			TFR41 (B737, 23:21:15)
12/12/2019			VH-CFP (Piston, 12:37:20)
13/12/2019	8:49	15:15	XAX200 (A330, 09:19:48), JST406 (A320, 09:30:07), VOZ511 (B737, 09:41:05), QFA1330 (B737, 09:44:52), ANZ937 (A320, 10:03:04), QFA860 (B737, 10:17:32), VOZ110 (B737, 10:24:12), VOZ733 (B737, 10:26:51), VOZ1447 (B737, 10:42:00), VOZ515 (B737, 10:47:59), VOZ735 (B737, 11:24:57), VH-XGH (Piston, 11:32:50), QFA864 (B737, 11:52:00), VOZ517 (B737, 11:58:47), JST967 (A320, 12:01:52), VH-WME (Piston, 12:16:04), VH-RKS (Piston, 12:42:38), JST408 (A320, 12:48:31), TGG562 (B737, 13:44:53), VOZ523 (B737, 13:47:55), VOZ741 (B737, 13:54:36), JST49 (B787, 14:05:15), QFA1566 (B717, 14:10:37), JST412 (A320, 14:19:23), VH-LMD (Turboprop, 14:51:39), JST492 (A320, 15:18:59), JST168 (A320, 15:28:08)

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15/12/2019			
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17/12/2019			VH-YHM (Piston, 13:49:33), VH-ZUA (Piston, 16:36:07)
18/12/2019			VH-YHP (Piston, 13:54:24), VH-YHP (Piston, 16:18:25), VH-ZUA (Piston, 16:38:24)
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20/12/2019			VH-NNS (Piston, 13:27:35)
21/12/2019			
22/12/2019	21:32	23:59	VOZ761 (B737, 21:49:39), JST448 (A320, 21:54:04), JST452 (A320, 22:16:32)
23/12/2019			
24/12/2019	19:02	20:01	TGG604 (A320, 08:21:31), VOZ543 (B737, 19:48:40)
25/12/2019	7:33	9:23	JST402 (A320, 07:48:23), JST983 (A320, 08:02:24), JST49 (B787, 08:12:39), TGG604 (A320, 08:56:56), JST406 (A320, 09:17:58), XAX200 (A330, 09:21:06), VOZ511 (B737, 09:30:01)
26/12/2019			VH-DTG (Piston, 16:43:25)
27/12/2019			VH-ZUA (Piston, 12:28:15), VH-NNS (Piston, 14:11:26)
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11/01/2020			JST426 (A320, 21:25:12)
12/01/2020	6:55	7:51	QFA1301 (B737, 07:15:00), JST132 (A320, 07:22:40), JST430 (A320, 07:48:12)
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14/01/2020			VH-ZUA (Piston, 15:14:04)
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3 February 2020

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**Our ref S20/44**

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Dear Mr Brent

Thank you for your letter to Ms Elizabeth Koff, Secretary, NSW Health about air quality monitoring around the Gold Coast Airport. The Secretary has asked me to respond.

Mr Greg Bell, Acting Director of the North Coast Public Health Unit (NCPHU) has advised that there currently is not a government agency in NSW that monitors air quality around the Gold Coast Airport. Given this, unfortunately there is no data available. However, following discussions between NCPHU staff and the Department of Planning, Industry and Environment (DPIE), the Department has advised that they are planning to extend the NSW air quality monitoring network to include long-term monitoring of particles and gaseous air pollutants in the Northern Rivers-North Coast region. The DPIE currently undertakes air quality monitoring in other locations across NSW.

I am further advised that the following principles would be considered to identify potential sites for new monitoring stations in the Northern Rivers-North Coast Region:

- population exposure – monitors are located to measure air quality experienced by most of the population in the region
- location of air pollution sources – air pollutants are emitted from human activity (industry, air and rail transport, agriculture and motor vehicles) as well natural sources (bushfires and dust storms)
- seasonal influences - air quality is affected by seasonal patterns of weather and human activity
- site security – monitors are located to ensure public safety and security of power supply.

Given this, I would suggest that the Community Aviation Consultation Group make a request to the DPIE on 1300 305 695 to consider the inclusion of air quality monitoring near the Gold Coast Airport as part of this extension.

If you would like more information please contact Mr Paul Williamson, Senior Environmental Health Officer, North Coast Public Health Unit – Lismore Office at [Paul.Williamson@health.nsw.gov.au](mailto:Paul.Williamson@health.nsw.gov.au) or on 02 6620 7527.

Yours sincerely

  
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Queensland  
Government

**Gold Coast Hospital  
and Health Service**

Author Code: SJ/jf  
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Phone: 5667 3200

28 January 2020

Mr Ron Brent  
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Dear Mr Brent

Thank you for your letter to John Wakefield, Director-General Health, dated 9 January 2020, regarding air quality testing around the Gold Coast Airport. The Director-General has asked that I respond directly to you on this occasion.

Air quality testing in Queensland is carried out by the Department of Environment and Science (DES) through air quality monitoring stations located around the State. There are several stations within south-east Queensland, the nearest to the Gold Coast Airport is situated in Southport. Information relating to the air quality data at this station can be viewed online at <https://apps.des.qld.gov.au/air-quality/>.

New South Wales (NSW) air quality monitoring is conducted by the NSW Department of Planning, Industry and Environment (DPIE) and I have been advised that there are no permanent monitoring stations in the North Coast Region.

For more information or to discuss the possibility of these agencies conducting air quality testing around the airport, please contact them direct. DES may be contacted on telephone number 13 74 68 or email at [info@des.qld.gov.au](mailto:info@des.qld.gov.au) and DPIE on telephone number 1300 361 967 or by email [info@environment.nsw.gov.au](mailto:info@environment.nsw.gov.au).

Should you require further information in relation to air quality monitoring please contact Anne Cowdry, Team Leader Environmental Health on telephone 5667 3200 or by email at [EH\\_Goldcoast@health.qld.gov.au](mailto:EH_Goldcoast@health.qld.gov.au).

Yours sincerely

A handwritten signature in black ink, appearing to read 'R Calvert'.

Ron Calvert  
Health Service Chief Executive

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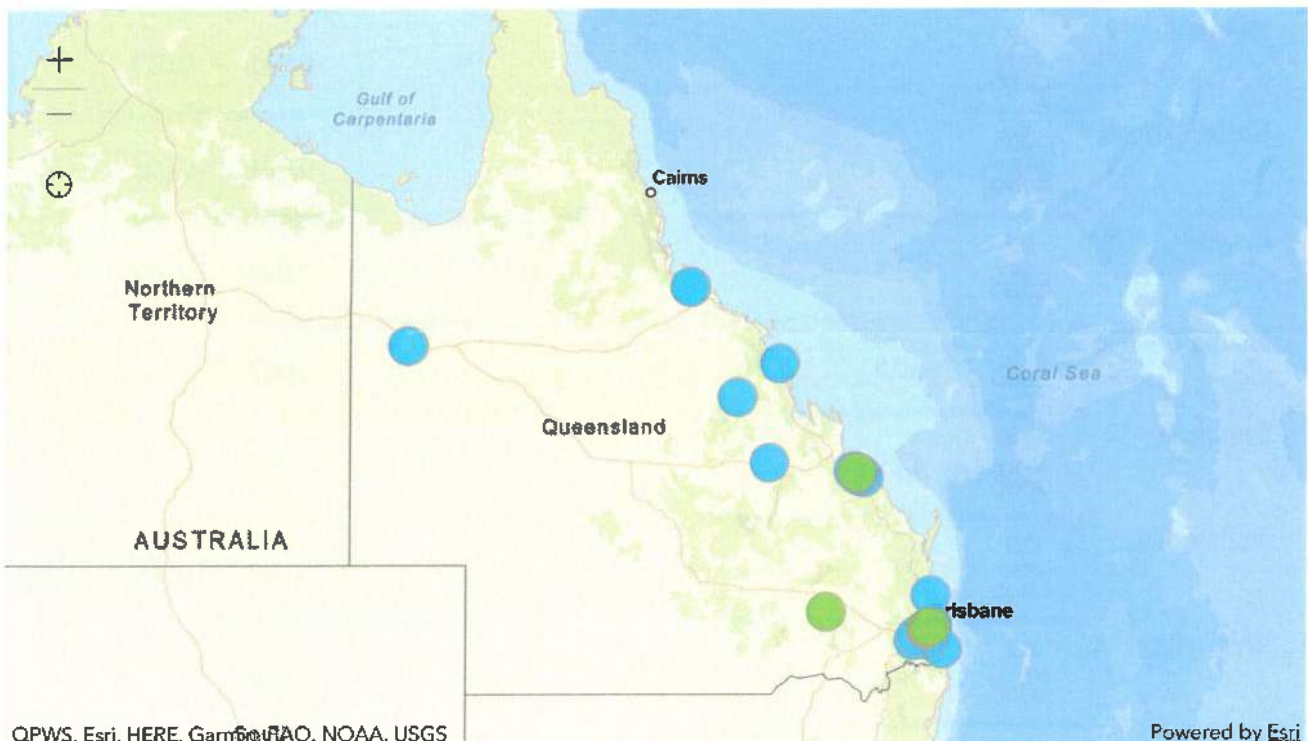
Air quality monitoring >Live air data

## Live air data

Thursday 30 January 2020 11am

### Air quality

Legend to air quality index colours [about index values](#) ([https://apps.des.qld.gov.au/air-quality/#index\\_legend\\_info](https://apps.des.qld.gov.au/air-quality/#index_legend_info))



Map markers are indicative only. They do not reflect the exact location of the stations.



Select a value within the table to [generate charts](https://apps.des.qld.gov.au/air-quality/chart/) and to [download air quality data](https://apps.des.qld.gov.au/air-quality/download/).

**South East Queensland** [MAP](#) Show:  measurements  indexes

Station	Summary index highest at station	Particle PM <sub>10</sub> µg/m <sup>3</sup> 24hr avg	Particle PM <sub>2.5</sub> µg/m <sup>3</sup> 24hr avg	Particles TSP µg/m <sup>3</sup> 24hr avg	Visibility Mm <sup>-1</sup> 1hr avg	Carbon monoxide ppm 8hr avg	Nitrogen dioxide ppm 1hr avg	Ozone ppm 1hr avg	Sulfur dioxide ppm 1hr avg
<a href="#">Brisbane CBD</a>	<b>32</b> VERY GOOD	<a href="#">15.8</a>	<a href="#">5.7</a>		<a href="#">14</a>				
<a href="#">Cannon Hill</a>	<b>52</b> GOOD	<a href="#">19.6</a>	<a href="#">7.7</a>	<a href="#">41.6</a>				<a href="#">0.017</a>	
<a href="#">Deception Bay</a>	<b>18</b> VERY GOOD						<a href="#">0</a>	<a href="#">0.018</a>	
<a href="#">Flinders View</a>	<b>29</b> VERY GOOD	<a href="#">14.5</a>			<a href="#">12</a>		<a href="#">0.004</a>	<a href="#">0.026</a>	<a href="#">0</a>
<a href="#">Lytton</a>	<b>24</b> VERY GOOD	<a href="#">12.2</a>	<a href="#">3</a>						<a href="#">0</a>
<a href="#">Mountain Creek</a>	<b>24</b> VERY GOOD	<a href="#">12.2</a>			<a href="#">7</a>		<a href="#">0.003</a>	<a href="#">0.014</a>	
<a href="#">Mudpapilly</a>	<b>27</b> VERY GOOD						<a href="#">0.001</a>	<a href="#">0.027</a>	
<a href="#">North Maclean</a>	<b>25</b> VERY GOOD						<a href="#">0.001</a>	<a href="#">0.025</a>	
<a href="#">Rocklea</a>	<b>29</b> VERY GOOD	<a href="#">14.7</a>	<a href="#">5.6</a>		<a href="#">11</a>		<a href="#">0.003</a>	<a href="#">0.027</a>	
<a href="#">South Brisbane</a>	<b>34</b> GOOD	<a href="#">16.8</a>	<a href="#">5.7</a>			<a href="#">0</a>	<a href="#">0.007</a>		
<a href="#">Southport</a>	<b>24</b> VERY GOOD	<a href="#">11.9</a>	<a href="#">3.1</a>				<a href="#">-</a>	<a href="#">-</a>	
<a href="#">Springwood</a>	<b>20</b> VERY GOOD	<a href="#">10.2</a>	<a href="#">1.6</a>				<a href="#">0.002</a>	<a href="#">0.007</a>	<a href="#">0.002</a>
<a href="#">Woolloongabba</a>	<b>32</b> VERY GOOD	<a href="#">16.2</a>	<a href="#">5.7</a>			<a href="#">0.3</a>	<a href="#">0.018</a>		
<a href="#">Wynnum</a>	<b>20</b> VERY GOOD	<a href="#">10</a>	<a href="#">2.2</a>				<a href="#">0</a>		<a href="#">0</a>
<a href="#">Wynnum West</a>	<b>20</b> VERY GOOD	<a href="#">10.2</a>	<a href="#">2.5</a>						<a href="#">0.001</a>

**South West Queensland** [MAP](#)

Show: [measurements](#) [indexes](#)

Station	Summary index highest at station	Particle PM <sub>10</sub> µg/m <sup>3</sup> 24hr avg	Particle PM <sub>2.5</sub> µg/m <sup>3</sup> 24hr avg	Particles TSP µg/m <sup>3</sup> 24hr avg	Visibility Mm <sup>-1</sup> 1hr avg	Carbon monoxide ppm 8hr avg	Nitrogen dioxide ppm 1hr avg	Ozone ppm 1hr avg	Sulfur dioxide ppm 1hr avg
<a href="#">Hopeland</a>	<b>36</b> GOOD	<u>8.8</u>	<u>4.5</u>	<u>12.2</u>		-	<u>0.001</u>	<u>0.036</u>	
<a href="#">Miles Airport</a>	<b>32</b> VERY GOOD	<u>16</u>	<u>7.6</u>	<u>25.8</u>		<u>0.2</u>	<u>0.004</u>	<u>0.032</u>	
<a href="#">Upper Humbug</a>	<b>36</b> GOOD	<u>10.6</u>	<u>5.4</u>	<u>15</u>		<u>0.3</u>	<u>0.001</u>	<u>0.036</u>	

**Gladstone** [MAP](#)

Show: [measurements](#) [indexes](#)

Station	Summary index highest at station	Particle PM <sub>10</sub> µg/m <sup>3</sup> 24hr avg	Particle PM <sub>2.5</sub> µg/m <sup>3</sup> 24hr avg	Particles TSP µg/m <sup>3</sup> 24hr avg	Visibility Mm <sup>-1</sup> 1hr avg	Carbon monoxide ppm 8hr avg	Nitrogen dioxide ppm 1hr avg	Ozone ppm 1hr avg	Sulfur dioxide ppm 1hr avg
<a href="#">Auckland Point</a>	<b>24</b> VERY GOOD	<u>12</u>							
<a href="#">Boat Creek</a>	<b>26</b> VERY GOOD	<u>13.1</u>	<u>4.2</u>		<u>7</u>		<u>0</u>		<u>0.002</u>
<a href="#">Boyne Island</a>	<b>21</b> VERY GOOD	<u>10.4</u>	<u>3.9</u>		<u>6</u>	<u>0</u>	<u>0</u>		<u>0.001</u>
<a href="#">Clinton</a>	<b>24</b> VERY GOOD	<u>12</u>	<u>4.5</u>		<u>6</u>		<u>0.001</u>		<u>0</u>
<a href="#">Fisherman's Landing</a>	<b>54</b> GOOD	<u>27.2</u>	<u>4.1</u>		<u>7</u>		<u>0</u>		<u>0</u>
<a href="#">South Gladstone</a>	<b>27</b> VERY GOOD	<u>13.7</u>	<u>4.5</u>		<u>6</u>		<u>0.005</u>		<u>0.005</u>
<a href="#">Targinie</a>	<b>24</b> VERY GOOD	<u>11.9</u>	<u>4</u>		<u>11</u>		<u>0.002</u>		<u>0</u>

**Central Queensland** [MAP](#)

Show: [measurements](#) [indexes](#)

Station	Summary index highest at station	Particle PM <sub>10</sub> µg/m <sup>3</sup> 24hr avg	Particle PM <sub>2.5</sub> µg/m <sup>3</sup> 24hr avg	Particles TSP µg/m <sup>3</sup> 24hr avg	Visibility Mm <sup>-1</sup> 1hr avg	Carbon monoxide ppm 8hr avg	Nitrogen dioxide ppm 1hr avg	Ozone ppm 1hr avg	Sulfur dioxide ppm 1hr avg
<a href="#">Blackwater</a>	<b>21</b> VERY GOOD	<u>10.6</u>	<u>4.5</u>						
<a href="#">Moranbah</a>									

Station	Summary index highest at station	Particle PM <sub>10</sub> µg/m <sup>3</sup> 24hr avg	Particle PM <sub>2.5</sub> µg/m <sup>3</sup> 24hr avg	Particles TSP µg/m <sup>3</sup> 24hr avg	Visibility Mm <sup>-1</sup> 1hr avg	Carbon monoxide ppm 8hr avg	Nitrogen dioxide ppm 1hr avg	Ozone ppm 1hr avg	Sulfur dioxide ppm 1hr avg
	<b>28</b> VERY GOOD	<a href="#">14.1</a>	<a href="#">6.9</a>						
<a href="#">West Mackay</a>	<b>31</b> VERY GOOD	<a href="#">15.4</a>	<a href="#">6.7</a>		<a href="#">15</a>				

**Townsville** [MAP](#)

Show:

Station	Summary index highest at station	Particle PM <sub>10</sub> µg/m <sup>3</sup> 24hr avg	Particle PM <sub>2.5</sub> µg/m <sup>3</sup> 24hr avg	Particles TSP µg/m <sup>3</sup> 24hr avg	Visibility Mm <sup>-1</sup> 1hr avg	Carbon monoxide ppm 8hr avg	Nitrogen dioxide ppm 1hr avg	Ozone ppm 1hr avg	Sulfur dioxide ppm 1hr avg
<a href="#">Coastguard</a>	<b>23</b> VERY GOOD	<a href="#">11.3</a>		<a href="#">14.7</a>					
<a href="#">Environment Park</a>	<b>22</b> VERY GOOD	<a href="#">11.2</a>							
<a href="#">Lennon Drive</a>	<b>6</b> VERY GOOD	<a href="#">offline</a>		<a href="#">4.6</a>					
<a href="#">North Ward</a>	<b>22</b> VERY GOOD	<a href="#">10.9</a>	<a href="#">4.8</a>		<a href="#">38</a>		<a href="#">0.001</a>		<a href="#">0</a>

**Mount Isa** [MAP](#)

Show:

Station	Summary index highest at station	Particle PM <sub>10</sub> µg/m <sup>3</sup> 24hr avg	Particle PM <sub>2.5</sub> µg/m <sup>3</sup> 24hr avg	Particles TSP µg/m <sup>3</sup> 24hr avg	Visibility Mm <sup>-1</sup> 1hr avg	Carbon monoxide ppm 8hr avg	Nitrogen dioxide ppm 1hr avg	Ozone ppm 1hr avg	Sulfur dioxide ppm 1hr avg
<a href="#">Menzies</a>	<b>0</b> VERY GOOD								<a href="#">0</a>
<a href="#">The Gap</a>	<b>16</b> VERY GOOD	<a href="#">7.8</a>							<a href="#">0</a>

None of the data is validated  
(0% validated, 0/127 records)

The data used to compile this air quality information comes directly from the department's air monitoring network and has only undergone a preliminary quality check. Data is retrieved from the stations every hour and after quality checks, is available approximately 1 hour later.

All data on this site is shown in Australian Eastern Standard Time (AEST).

- If there is no data measured for a parameter, or data could not be retrieved from the monitoring station at this hour, no data is shown in the cell.
- An offline message in a cell indicates that measurements are temporarily unavailable due to equipment servicing or failure. See [network status](https://www.qld.gov.au/environment/pollution/monitoring/air-monitoring/network-status) ( <https://www.qld.gov.au/environment/pollution/monitoring/air-monitoring/network-status> ).

## About air quality index values

Our scientists create an air quality index by converting measured pollutant concentrations into index values which make it easier to interpret air quality data by reducing the complexity associated with pollutant concentrations.

The index value is the pollutant concentration expressed as a proportion of the National Environment Protection Measure for Ambient Air Quality (Air NEPM) standard or the Environmental Protection (Air) Policy 2008 (Air EPP) objective.

[More information about air quality index](https://www.qld.gov.au/environment/pollution/monitoring/air/air-monitoring/air-quality-index) ( <https://www.qld.gov.au/environment/pollution/monitoring/air/air-monitoring/air-quality-index> ).

## About these Air quality parameters

**Particle PM<sub>10</sub>** Airborne particles less than 10 micrometres in diameter, referred to as PM<sub>10</sub>, can be hazardous to human health or cause a nuisance when present in the air at elevated levels. They are capable of penetrating the lower airways of humans and can cause possible negative health effects.

The guideline for Particle PM<sub>10</sub> is 50µg/m<sup>3</sup> (24hr avg).

Particle PM<sub>10</sub> is measured in micrograms per cubic metre.

[More information about Particle PM<sub>10</sub>](https://www.qld.gov.au/environment/pollution/monitoring/air-monitoring/trend-graphs#b)  
( <https://www.qld.gov.au/environment/pollution/monitoring/air-monitoring/trend-graphs#b> )

**Particle PM<sub>2.5</sub>** Airborne particles less than 2.5 micrometres in diameter, referred to as PM<sub>2.5</sub>, can be hazardous to human health or cause a nuisance when present in the air at elevated levels. They are capable of penetrating the lower airways of humans and can cause possible negative health effects.

The guideline for Particle PM<sub>2.5</sub> is 25µg/m<sup>3</sup> (24hr avg).

Particle PM<sub>2.5</sub> is measured in micrograms per cubic metre.

[More information about Particle PM<sub>2.5</sub>](https://www.qld.gov.au/environment/pollution/monitoring/air-monitoring/trend-graphs#c)  
( <https://www.qld.gov.au/environment/pollution/monitoring/air-monitoring/trend-graphs#c> )

**Particles TSP** Airborne particles up to about 100 micrometres in diameter are referred to as TSP (total suspended particles). These particles are generated by combustion and non-combustion

processes, including windblown dust, sea salt, earthworks, mining activities, industrial processes, motor vehicle engines and fires.

The guideline for Particles TSP is  $80\mu\text{g}/\text{m}^3$  (24hr avg).

Particles TSP is measured in micrograms per cubic metre.

[More information about Particles TSP](#)

( <https://www.qld.gov.au/environment/pollution/monitoring/air-pollution/samplers> )

#### Visibility

Aerosols and fine particles can reduce visibility. Smoke from fires or haze are common causes of poor visibility.

The guideline for Visibility is  $235\text{Mm}^{-1}$  (1hr avg).

Visibility is measured in inverse megametres.

[More information about Visibility](#)

( <https://www.qld.gov.au/environment/pollution/monitoring/air-monitoring/trend-graphs#a> )

#### Carbon monoxide

Carbon monoxide is a colourless, odourless gas formed when substances containing carbon (such as petrol, gas, coal and wood) are burned with an insufficient supply of air. It has serious health impacts on humans and animals, especially those with cardiovascular disease.

The guideline for Carbon monoxide is 9ppm (8hr avg).

Carbon monoxide is measured in parts per million.

[More information about Carbon monoxide](#)

( <https://www.qld.gov.au/environment/pollution/monitoring/air-pollution/carbon-monoxide> )

#### Nitrogen dioxide

Nitrogen dioxide is an acidic and highly corrosive gas. Nitrogen oxides are critical components of photochemical smog. Long-term exposure to high levels of nitrogen dioxide can cause chronic lung disease and affect the senses.

The guideline for Nitrogen dioxide is 0.12ppm (1hr avg).

Nitrogen dioxide is measured in parts per million.

[More information about Nitrogen dioxide](#)

( <https://www.qld.gov.au/environment/pollution/monitoring/air-pollution/nitrogen-oxides> )

#### Ozone

Ozone is a colourless, highly reactive gas with a distinctive odour. The upper atmosphere ozone layer (at altitudes of 15–35km) protects the earth from harmful ultraviolet radiation from the sun. The ozone layer reduction represents a global atmosphere issue.

The guideline for Ozone is 0.1ppm (1hr avg).

Ozone is measured in parts per million.

[More information about Ozone](#)

( <https://www.qld.gov.au/environment/pollution/monitoring/air-pollution/ozone> )

**Sulfur dioxide** Sulfur dioxide (SO<sub>2</sub>) is a colourless gas with a sharp, irritating odour. It is produced by burning fossil fuels and by the smelting of mineral ores that contain sulfur.

The guideline for Sulfur dioxide is 0.2ppm (1hr avg).

Sulfur dioxide is measured in parts per million.

[More information about Sulfur dioxide](#)

( <https://www.qld.gov.au/environment/pollution/monitoring/air-pollution/sulfur-dioxide> )

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Last updated 30 January 2020

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## Gold Coast Airport Community Aviation Consultation Group (CACG) Meeting - 6 November 2019

### Item 8 – Airservices Report - Action List-58: Lindy Smith, CACG member

### Subject: PFAS contamination at Gold Coast Airport (GCA)

#### 1. Action List-58

*Written questions to identify the reports not published, seasonality issues & fluctuating PFAS levels, yearly testing and testing on the western boundary. Questions will include JA's comments around testing on the western side at the fire station.*

**a)** The known reports undertaken for Airservices on PFAS contamination at GCA not published are; 2008 (GHD), 2011 (AECOM), 2014 (Parsons Brinkerhoff (PB) and 2016b (GHD), and yearly groundwater monitoring October 2018 and 2019.

**b)** The data collected under the Preliminary Site Investigations (PSI) undertaken at GCA for Airservices since 2016 have been during dry periods and have not been validated with seasonal variability data in both surface and groundwater, and to determine the surface water flow rates, groundwater levels and the fluctuations of PFAS concentrations.

**c)** Review of data on Coolangatta Creek down stream of GCA July 2017 to June 2019 undertaken by another authority shows significant fluctuations of **PFOS** concentrations with results well above the criteria levels for the consumption of fish, and well above samples undertaken for Airservices. Further, results of groundwater sampling undertaken at the fire training ground (FTG) 2011 - 2015 reveal extraordinary fluctuations of **PFOS** concentrations.

**d)** The yearly groundwater monitoring October 2018 and 2019 again have been during dry periods and there remains no seasonal variability data despite the recommendations 2016.

**e)** More than 11yrs after it was confirmed soil and groundwater was contaminated with PFAS chemicals at the GCA FTG 2008 2 primary surface water discharge points of GCA's drainage network (environmental exposure pathways) to the western boundary (as per GCA MP 2017) have not been tested. Nor was any sediment sampling undertaken for the 2017 PSI along the western boundary where the surface and groundwater interface occurs with the Cobaki Broadwater (lower Tweed River estuary). Further, despite recommendations 2008 and 2015 to conduct sampling within the surface water drain east of the FTG this has not occurred.

**f)** I believe JA's comment was around the lack of monitoring on the western area of the airport where the FTG is located and a known source of PFAS contamination as I have outlined above.

#### 2. Comment

- The update provided to the CACG meeting 6/11/19 by Airservices on PFAS contamination at GCA again stated the PSIs *"found no detections or low levels of PFAS in soil and water at the perimeter of the airport"* which is misleading.

Also, the statement *"Airservices monitoring at the airport to date indicates stable conditions"* is not credible for reasons outlined below.

The findings of the 2016 PSI state, *"Groundwater sample locations on the south eastern portion of the site and western perimeter exceeded the adopted human health screening levels and the enHealth drinking water guidelines."* (s6.2, pg.18)



- Understanding the groundwater contours, migration rate of PFAS contaminant plumes, drainage patterns and surface water flows is an important factor in PFAS investigations.
- Research and review of data indicates rain events influence the level of PFAS contaminant concentrations, however no data has been collected under these conditions since 2016.
- Due to the high mobility of PFAS from contaminated sites, to manage exposure pathways requires consideration of the groundwater vertical and horizontal migration and infiltration process from rain events, and surface water overland flows and migration of PFAS during rain events via stormwater.

Findings of the 2008 PSI included, *“There is a potential risk to human health due to groundwater impact from **PFOS** and **PFOA**, based on the limited number of samples analysed and the criteria used.”*

- Despite this finding no further groundwater sampling beyond the FTG was undertaken to delineate the extent of groundwater impacts until 2016, after the community had the 2008 report unearthed, and after two major developments plans had been approved on the GCA site which involved massive disturbance of soil, surface and groundwater.

Relevant to the 2016 surface and groundwater sampling undertaken the 2016b report states; ***“this is insufficient to cover different seasonal conditions (such as markedly different history of rainfall), and it is possible that surface water flows, groundwater levels and contaminant concentrations will vary with different seasonal conditions. This limitation needs to be recognised in the assessment of the risk posed by contamination at the site.”***

### 3. Conclusion

It is acknowledged PFAS is an emerging contaminant with some experts advising we are yet to see the peak of these contaminants. However, products containing **PFOS** were known to cause detrimental impacts to the environment and a ban on the manufacture of **PFOS** was imposed two decades ago.

**PFOS** and **PFOA** are listed on the *Safe Work Australia, Hazardous Substances Information System* as hazardous substances due to risks to human health.

Thus, the precautionary principle should have been applied at the earliest confirmation of PFAS contamination at the GCA site 2008 when the **PFOS** concentrations were so high with investigations undertaken to delineate the extent of the contamination, groundwater flow direction and tidal influences and to identify and assess environmental exposure pathways.

PFAS are highly persistent in the environment, can bio-accumulate and can be harmful to animal and human health (US EPA 2014).

I have previously raised with Airservices the limitations, deficiencies and significant data gaps of the PSIs outlined above since 2016. I am also aware other authorities have requested that further assessments and investigation into the data gaps be undertaken 3yrs ago. Evidence reveals the PFAS contamination at GCA and beyond is not going away and there are significant fluctuations in the **PFOS** concentrations.

Of crucial importance and credibility to manage the PFAS contamination at the GCA site and beyond including containment and remediation requires a comprehensive DSI that ensures appropriate, scientific and risk-based approach for investigation of the PFAS contamination originating from the GCA site.

**Gold Coast Airport Community Aviation Consultation Group (CACG)  
Meeting date - 4 March 2020: Lindy Smith, CACG member**

**Subject: Clarification and follow up on PFAS issues**

**1. Introduction**

Due to a full agenda and time constraints there is a number of PFAS matters that require clarification and follow up post the CACG meeting 4/3/20, as discussed after the close of the meeting.

**2. Gold Coast Airport CACG Update – November 2019 - Airservices PFAS activities at GCA**

The above update was handed out at the CACG meeting 6/11/19 and was generally a response to the CACG Action List items from the CACG meeting 25/7/18. Following is my response/clarification;

**18) To provide a clarification of markers for different types of PFAS:** previous Preliminary Site Investigations (PSI) have identified the source of **PFOS/PFOA** soil, surface and groundwater contamination at GCA is from decades of Airservices operations using 3M Light Water *aqueous film-forming foam* (AFFF) in the areas of the Fire Training Ground (FTG), Main Fire Station and surrounding area, Fire Station Workshop, old fire station and other areas of incidents of discharge of AFFF.

- "*Fingerprinting*" has been identified as above and to now claim further investigations is key to identifying the source such as a *leaking cup of coffee from a desk to a kitchen* is incongruous.

**20) To provide advice on whether the PFAS Management Plan or summary may be able to be provided to the CACG:** it is noted the PFAS Management Plan (PMP) contains the action of *monitoring of PFAS yearly* which is contrary to previous findings/recommendations. That the PMP is to be an internal document inhibits confidence there is to be any management of the PFAS contamination.

**23) Follow up to identify the groundwater monitoring and report on the outcome:** it states re the 2018 monitoring report *Airservices will provide a copy to the Chair following this meeting* to be provided to the CACG.

- Was this action undertaken as this report has not been provided to the CACG.

It also states, "*However, we note that the situation at the airport has changed, with the completion of some major projects such as the terminal expansion, and this may impact future results.*"

- The terminal expansion has not been completed and construction had only recently commenced. As outlined above the source of PFAS contamination has been identified from Airservices operations and known since 2008/2011, and the spread of the contamination is due to the high mobility of both PFAS and surface and groundwater exposure pathways.

**25) To investigate if an environmental expert can present to address the group about the DSI:** states, "*Airservices is currently in the final stages of the Tenderer Evaluation for the Gold Coast DSI. Airservices expects to award a successful tenderer in December this year...*" and "*Airservices can request a team member from the successful contractor to address the CACG about the DSI process. Airservices envisages this would be at the March 2020 CACG.*"

**3. Conclusion**

Further to **25** above the CACG minutes 6/11/19, Attachment 2: Action List-25 is *DSI to commence Jan 2020.*

That Airservices failed to have the courtesy to include the PFAS matter in their presentation, acknowledge the paper prepared under *Action 58* and indications from CACG members queries there is not yet a brief for the DSI being totally contrary to the status advised to the CACG 6/11/19 is unacceptable and of very grave concern.

The CACG was advised Nov. 2017 a DSI was to commence 2018 and more than 2yrs on there is no information of any DSI to be undertaken on the GCA site and beyond. To add it is now more than 11yrs since PFAS contamination was confirmed on the GCA site with critical environmental exposure pathways still not investigated.

Under the *PFAS National Environmental Management Plan* the polluter (i.e. Airservices) is responsible including containment and avoidance which requires a quantitative PFAS assessment ensuring that a scientific and risk-based approach is adopted for investigation which is yet to be undertaken.

Despite the extremely high levels of groundwater **PFOS** concentrations and mounting evidence that exposure to PFAS can have adverse health outcomes in humans and animals it is appearing that Airservices do not want to quantify the real status of the PFAS contamination on the GCA site and beyond, thus neglecting a duty of care.

13/3/20

# BANORA POINT & DISTRICT RESIDENTS ASSOCIATION Inc.

President: Brian Taylor 0428 241 640      Secretary: Pat Tate 5524 2957      Treasurer: Clive Andrew 0488 133 342  
Mobile: 0428 332 819  
Vice President: John Sweeney 0402 612 881      Vice President: Cliff Clothier 5524 7396  
Correspondence: P.O. Box 936, Banora Point, NSW 2486

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Thursday, 13 February 2020

Mr. Ron Brent,  
Chairman,  
Community Aviation Consultation Group,  
Gold Coast Airport.

Dear Ron,

I have been on the committee of the CACG since its inception but have now reached a time in my life when I feel I must start cutting back on some of my commitments. As a result of reaching this decision, I wish to advise that I will no longer be the representative of the Banora Point & District Residents Association Inc. and officially resign from the committee.

At the associations meeting on the 3<sup>rd</sup> February, members voted that John Sweeney would now be their representative and this to take effect as of the first meeting for 2020 namely, Wednesday, 4<sup>th</sup> March. Your records should show you already have John's contact details as he has been a proxy for Bill Pinkstone on a few occasions.

I have found being on this committee to be both informative but many times, very frustrating. I wish to thank you for your chairmanship of these meetings and hope you hold this position for many years to come.

Regards,



PAT TATE  
Secretary

## 9.3 GANNON Helen\_11Mar20 18.48.31\_RE Health effects of airports

**From:** [GANNON Helen](#)  
**To:** [jthicks@bigpond.net.au](mailto:jthicks@bigpond.net.au); [Community Aviation Consultation Group](#); [Ron Brent \(ron@3fdi.com\)](mailto:Ron.Brent@3fdi.com)  
**Cc:** [DUN Eleanor](#); [MCARTHUR Russell](#)  
**Subject:** RE: Health effects of airports [SEC=UNOFFICIAL]  
**Date:** Wednesday, 11 March 2020 6:52:03 PM  
**Attachments:** [Air Quality.docx](#)  
[australias-emissions-projections-2018.pdf](#)

---

UNOFFICIAL

Hi All

Please find attached the document I referred to at the CACG last week. As I mentioned it was put together as a follow up from a teleconference between John, Russell McArthur, Eleanor Dun and myself.

The second document is the source material for the summary in the Air Quality document.

Jared - can you please circulate to the CACG members when you send the minutes of the meeting.

John - my apologies for the delay in sending - I have been travelling extensively over the past few weeks (am currently in hot and humid Darwin) and my to do list and emails are a bit out of control.

Cheers  
Helen

UNOFFICIAL

---

**From:** [jthicks@bigpond.net.au](mailto:jthicks@bigpond.net.au) <[jthicks@bigpond.net.au](mailto:jthicks@bigpond.net.au)>  
**Sent:** Wednesday, 11 March 2020 1:32 PM  
**To:** GANNON Helen <[Helen.Gannon@infrastructure.gov.au](mailto:Helen.Gannon@infrastructure.gov.au)>  
**Cc:** DUN Eleanor <[Eleanor.Dun@infrastructure.gov.au](mailto:Eleanor.Dun@infrastructure.gov.au)>  
**Subject:** Health effects of airports

Hi Helen,  
Are you please able to email to me the paper you provided to the Gold Coast Airport CACG meeting on 4 March regarding above?

With thanks,

John Hicks  
President, Gold Coast Lifestyle Association Inc  
Member of Gold Coast Airport CACG and ANACC  
Mobile 0447 584 000  
Email: [jthicks@bigpond.net.au](mailto:jthicks@bigpond.net.au)

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## Aviation Emissions

### Transport emissions

Of the 532 Mt of CO<sub>2</sub> produced in 2018, the transport sector in Australia accounted for 102 Mt of emissions or 19 per cent.

Domestic aviation accounted for 9 Mt of CO<sub>2</sub> during 2018 or 8.8 per cent of total transport CO<sub>2</sub> emissions or 1.6 per cent of total CO<sub>2</sub> emissions. The 2018 inventory of Particulate Matter 2.5 which is considered to be the highest risk to human health, electricity generation account for 7.5 million kg per year versus Airport Operations which were 2,100 kg per year or 0.28 per cent of all Particulate Matter 2.5 emissions.

### Sources of emissions

A University of New South Wales Booklet<sup>1</sup> – Climate Change, Air Pollution and Health in Australia states “urban and regional air pollution comes from a range of point sources and diffuse sources. Diffuse sources include motor vehicle emissions, domestic wood heaters, hazard reduction burns, agricultural burns and bushfires. Point sources include some commercial activities and industrial activities such as coal-fired power stations and metal ore and coalmines”.

### Air quality studies

A study undertaken for the Brisbane New Parallel Runway project found “*in summary, Airport operations are not a major source of local air pollution in a city such as Brisbane, where air quality is largely dominated by motor vehicle emissions. The New Parallel Runway would not substantially change the air quality in the environs of the Airport and the differences with or without the New Parallel Runway are considered to be small*”. An Air Quality Assessment matrix for the New Parallel Runway is provided below.

**Table 6.9:** Air Quality Assessment Summary Matrix.

EIS Area: Air Quality  Feature / Description	Current Value + Substitutable Y:N	Description of Impact			Additional Compensation (Beyond Standard Practice)	Residual Impact
		Impact	Mitigation Inherent in Design/ Standard Practice Amelioration	Significance Criteria		
Ground-level air quality	Measurement data suggests acceptable air quality at off-site sensitive receptor locations.  Not substitutable	Potential minor increases to offsite air pollutant concentrations due to aircraft emissions.	Expected improvements to future aircraft emissions.	Minor to Negligible  -ve, D, C, ST	Nil	Minor to Negligible  -ve, D, C, ST

<sup>1</sup> Grand Challenges on Climate Change – November 2017 – University of New South Wales



A similar study for Sunshine Coast Airport found *“the potential impacts due to aircraft operations related to the Project were considered for current and predicted air traffic levels. The maximum significance level was found to be minor, due to 1 hour average concentration of NO<sub>2</sub>. All other pollutants were found to have a negligible potential for impact”*.

The New Parallel Runway study for Perth Airport found *“emissions of operational air pollutants for baseline conditions do not result in exceedances of air quality limits at any sensitive receptor (on-estate and off-estate)”*, i.e. all air quality was within the National Environment Protection (Ambient Air Quality) Measure.

A 2013 study<sup>2</sup> on the impact of aircraft emissions on air quality near the ground found *“the effects of Landing and Take-Off emissions are too small to meaningfully affect air quality and that aviation emissions do not make a statistically significant change in atmospheric particulate matter 2.5 concentrations”*.

---

<sup>2</sup> Department of Atmospheric Science, University of Illinois – Impact of aircraft emissions on air quality near the ground – 6 June 2013



Australian Government

Department of the Environment and Energy

# Australia's emissions projections 2018



December 2018

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or



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Further information about projections of greenhouse gas emissions is available on the Department of the Environment and Energy's website: [www.environment.gov.au](http://www.environment.gov.au). To contact the Projections team, please email [emissions.projections@environment.gov.au](mailto:emissions.projections@environment.gov.au)

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# Australia's emissions projections 2018



# Executive Summary

- The 2018 projections show Australia continues to make good progress to its emissions reduction targets. Australia will surpass its 2020 target and the task to meet the 2030 target has declined.

## Australia's 2020 target (5 per cent below 2000 levels)

- Australia is on track to overachieve on its 2020 target by 367 million tonnes of carbon dioxide equivalent (Mt CO<sub>2</sub>-e), inclusive of carryover, or 240 Mt CO<sub>2</sub>-e without carryover.
- This is an improvement of 73 million tonnes since the 2017 projections, which estimated an overachievement of 294 Mt CO<sub>2</sub>-e.
- Emissions in 2020 are projected to be 540 Mt CO<sub>2</sub>-e, a downward revision of 11 Mt CO<sub>2</sub>-e since the 2017 projections. This change is due to:
  - lower projected emissions from land use, land use change and forestry (LULUCF),
  - lower projected emissions from electricity generation, and
  - lower projected emissions from the agriculture sector.
- The major drivers of growth in emissions to 2020 are the continued expansion of Australia's Liquefied Natural Gas (LNG) industry and a declining carbon sink from the land sector. This is mostly offset by a decline in electricity emissions.

## Australia's 2030 target (26–28 per cent below 2005 levels)

- The 2018 projections shows a 173 Mt CO<sub>2</sub>-e reduction in the task to meet our 2030 targets since our last projection.
- The 2030 target will require 695 to 762 Mt CO<sub>2</sub>-e in cumulative emissions reductions between 2021 and 2030 to meet the 26 per cent and 28 per cent targets respectively.
- Emissions in 2030 are projected to be 563 Mt CO<sub>2</sub>-e, a downward revision of 7 Mt CO<sub>2</sub>-e since the 2017 projections.
- This change is largely due to the decline of emissions in the electricity sector, driven by:
  - higher than expected build for large scale renewables to the early 2020s,
  - an increased forecast of small scale solar PV uptake, and
  - lower than previously forecast electricity demand.
- Agricultural sector emissions are projected to grow to 2030. However, the current drought has constrained production and short-term growth, meaning the starting level of emissions in 2021 are lower. This results in less cumulative emissions from agriculture than in the 2017 projections.





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# Introduction

Emissions projections are estimates of Australia's future greenhouse gas emissions. They provide an indicative assessment of how Australia is tracking against its emissions reduction targets. They also provide an understanding of the expected drivers of future emissions.

The projections provide an estimate of the emissions reduction effort required to meet Australia's emissions reduction targets. Australia's targets are tracked against an emissions budget. The cumulative emissions reduction task represents the total emissions that must be avoided or offset for Australia to achieve its targets. If the emissions reduction task is a negative value, this indicates Australia is on track to overachieve on its targets.

The 2018 projections include:

- A projection of emissions from 2018 to 2020<sup>1</sup>, which provides an estimate of Australia's emissions reduction task to meet its 2020 emissions reduction target.
- A projection of emissions from 2021 to 2030, which provides an estimate of Australia's emissions reduction task to meet its 2030 emissions reduction target.
- Sensitivity analyses to illustrate how emissions may differ under changes in expected economic growth.

These projections update *Australia's emissions projections 2017*.

This report contains a high level description of projections methods. A detailed description of the methodologies applied and key data inputs to the projections can be found in the *2018 Projections Methodology* paper on the Department's website.

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<sup>1</sup> All year references refer to Australian financial years unless otherwise stated. For example 2020 refers to the financial year 2019–20.

# Projection results

## Australia's progress toward meeting the 2020 target

Australia has a target of reducing emissions to 5 per cent below 2000 levels by 2020.

Australia is expected to overachieve on its 2020 target by 367 Mt CO<sub>2</sub>-e, inclusive of carryover, or 240 Mt CO<sub>2</sub>-e without carryover. These estimates are calculated against an emissions budget for the period 2013 to 2020 using Kyoto categories<sup>2</sup>. They are adjusted for estimates of voluntary action<sup>3</sup> and units voluntarily transferred to the Commonwealth under the Waste Industry Protocol<sup>4</sup>.

Australia holds 128 Mt CO<sub>2</sub>-e of surplus units from the Kyoto Protocol first commitment period (our 'carryover').

Table 1 Cumulative emissions reduction task, 2013 to 2020

Calculation of 2020 emissions reduction task	Emissions (Mt CO <sub>2</sub> -e)
Cumulative emissions 2013–2020	4269
Target trajectory 2013–2020	4488
<b>Unadjusted emissions reduction task</b>	<b>-219</b>
Voluntary action	8
Waste Protocol units	-28
<b>Emissions reduction task</b>	<b>-240</b>
Carryover from 2008–2012	-128
<b>Emissions reduction task with carryover</b>	<b>-367</b>

Note: totals may not sum due to rounding.

<sup>2</sup> Description and quantification of the emissions budget is detailed in Appendix A.

<sup>3</sup> Voluntary action refers to individuals and companies offsetting their emissions to become 'carbon-neutral' and households buying GreenPower (a government-accredited program for energy retailers to purchase renewable energy on behalf of customers). Voluntary action achieves emissions reductions additional to—that is, above and beyond—national targets.

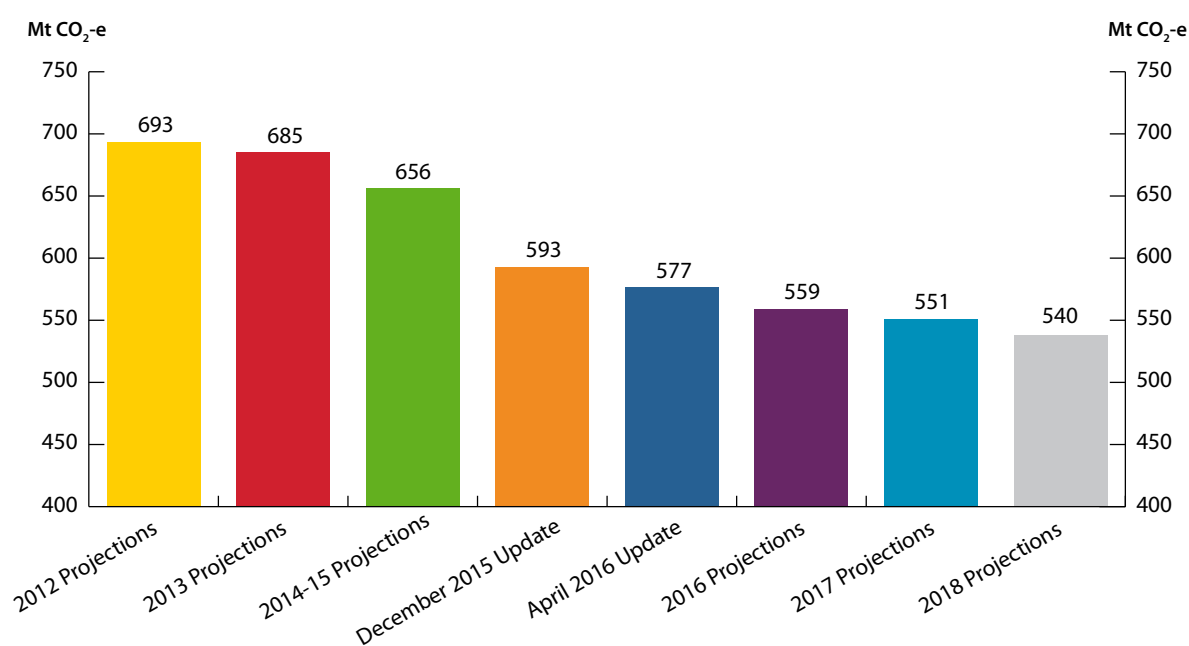
<sup>4</sup> Under the carbon tax, many landfill facility operators charged their customers in relation to future carbon liabilities that were expected to accrue as the waste being deposited decayed over many decades. Now that the carbon tax has been repealed, the voluntary Waste Industry Protocol allows these landfill operators to acquit these charges by purchasing carbon abatement credits and voluntarily transferring them to the Commonwealth.

## Emissions to 2020

Australia's emissions are projected to grow 1 per cent above current levels to 2020. A major factor in this growth is the increase in LNG production and a declining sink in the land sector. These increases are largely offset by falling emissions in the electricity sector as a result of higher renewable builds and lower than previously forecast demand.

Emissions in 2020 are projected to be 540 Mt CO<sub>2</sub>-e. This is a reduction of 11 Mt CO<sub>2</sub>-e, or 2 per cent, from the estimate of 551 Mt CO<sub>2</sub>-e published in *Australia's emissions projections 2017*.

Figure 1 Projected emissions in 2020 over time



## Changes since the 2017 projections

The increase in the overachievement of the 2020 target is primarily due to lower emissions in the land use, land use change and forestry (LULUCF), agriculture and electricity sectors. This is partially offset by increased emissions in the fugitives and transport sectors.<sup>5</sup>

<sup>5</sup> Further information is available in the relevant sectorial sections of this report.

## Australia's progress toward meeting the 2030 target

Australia has a target of reducing emissions to 26 to 28 per cent below 2005 levels in 2030.

The current estimate is that cumulative emissions reductions of 695 Mt CO<sub>2</sub>-e (26 per cent reduction) to 762 Mt CO<sub>2</sub>-e (28 per cent reduction) will be needed over the period 2021–2030 to meet Australia's 2030 target.

Table 2 Cumulative emissions reduction task 2021 to 2030

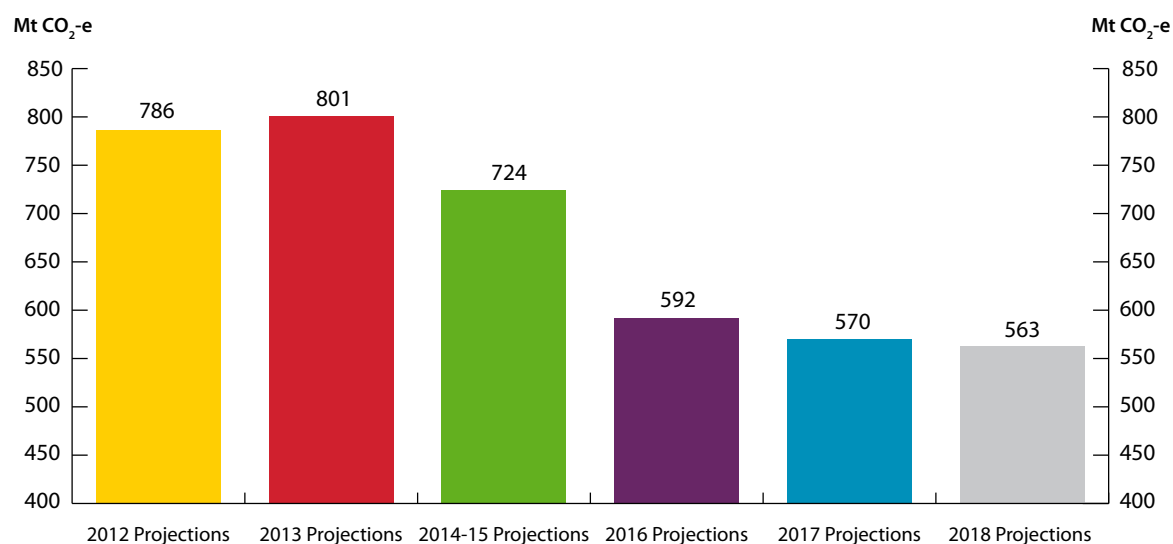
Calculation of 2030 emissions reduction task	26 per cent below 2005 level in 2030 (Mt CO <sub>2</sub> -e)	28 per cent below 2005 level in 2030 (Mt CO <sub>2</sub> -e)
Cumulative emissions 2021–2030	5487	5487
Target trajectory 2021–2030	4800	4733
Voluntary action	8	8
<b>Emissions reduction task</b>	<b>695</b>	<b>762</b>
<i>Overachievement of Australia's Kyoto Protocol targets</i>	<i>-240* (2013–2020, *projection)</i> <i>-128 (2008–2012)</i>	
<i>Total</i>	<i>-367</i>	
<b><i>Emissions reduction task including overachievement</i></b>	<b>328</b>	<b>395</b>

## Emissions to 2030

Total emissions in 2030 are projected to be 563 Mt CO<sub>2</sub>-e, which is 7 per cent below 2005 levels (605 Mt CO<sub>2</sub>-e). This is a reduction of 8 Mt CO<sub>2</sub>-e from the estimate of 570 Mt CO<sub>2</sub>-e published in the 2017 projections.

Emissions to 2030 are projected to grow 4 per cent above 2020 levels, driven by higher emissions from LNG production, increased transport activity, a declining forest sink in the LULUCF sector, and growth in agricultural activity after a return to average seasonal conditions.

Figure 2 Projected emissions in 2030 over time



## Changes since the 2017 projections

The decrease in the emissions reduction task for the 2030 target is primarily driven by reductions in projected emissions from the electricity sector. This is due to greater renewable generation and lower electricity demand than previously projected.

Emissions from the LULUCF sector have also been revised down due to improved methods and data for estimating carbon sinks from regrowing forests based on analysis by CSIRO. The drought's impact combined with weaker mid-term agriculture growth rates also restrict the agriculture sector's ability to reach previously projected activity levels, and corresponding emissions levels.

These reductions are partially offset by higher estimated emissions for LNG driven by an improved outlook for exports.

## Overall results

Figure 3 Australia's emissions, 1990 to 2030

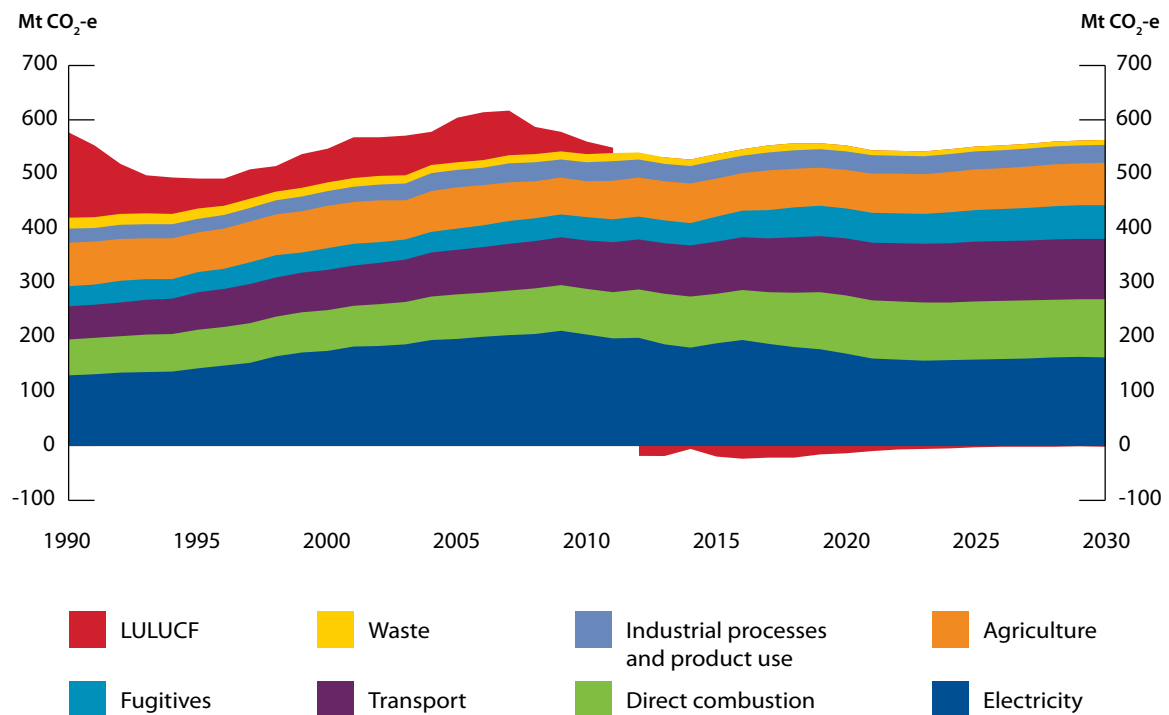




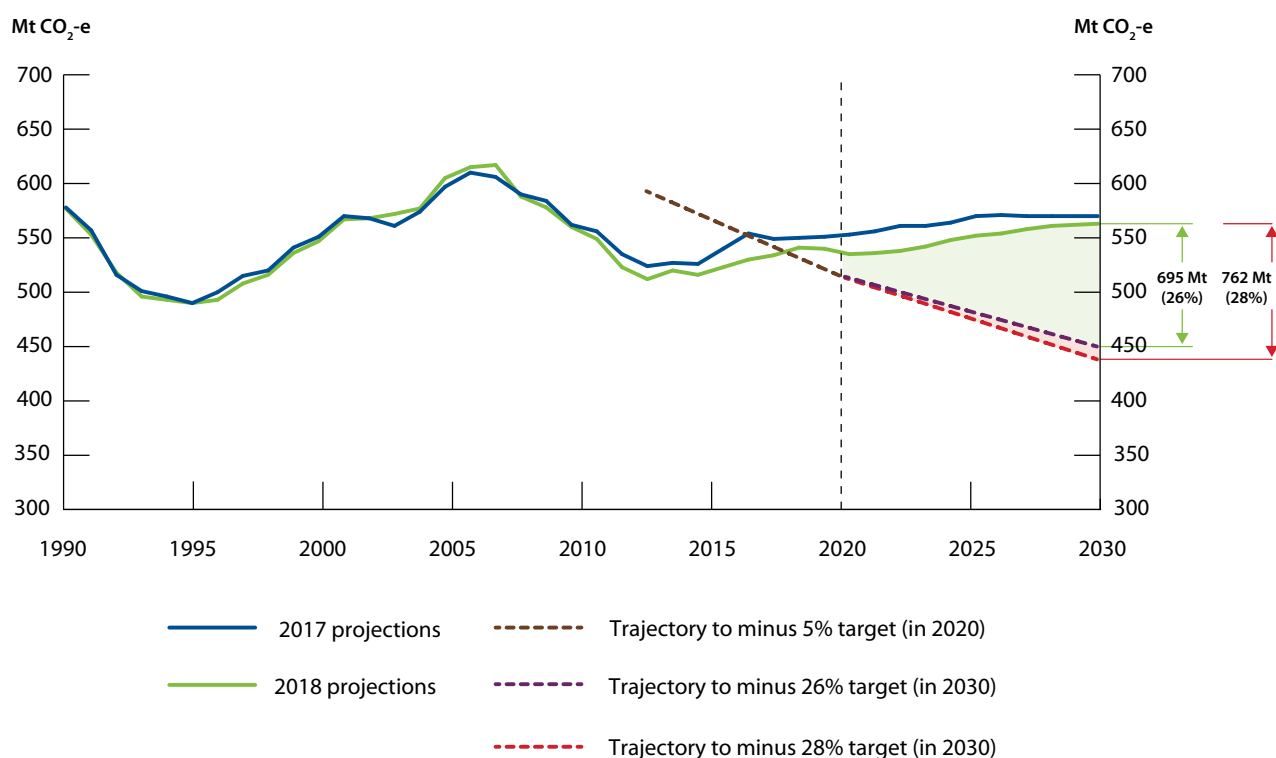
Table 3 Sectoral breakdown of 2018 projections results to 2030

Emissions by sector (Mt CO <sub>2</sub> -e)	National Greenhouse Gas Inventory			Projection	
	2000	2005	2018	2020	2030
Electricity	175	197	182	170	163
Direct combustion	75	82	100	107	107
Transport	74	82	102	105	111
Fugitives	40	39	55	55	62
Industrial processes and product use	27	32	34	34	33
Agriculture	78	76	71	71	78
Waste	16	14	13	11	9
Land use, land use change and forestry	62	82	-22	-14	-1
<b>Total</b>	<b>547</b>	<b>605</b>	<b>534</b>	<b>540</b>	<b>563</b>

Note: totals do not sum due to rounding.

## Overall change since the 2017 projections

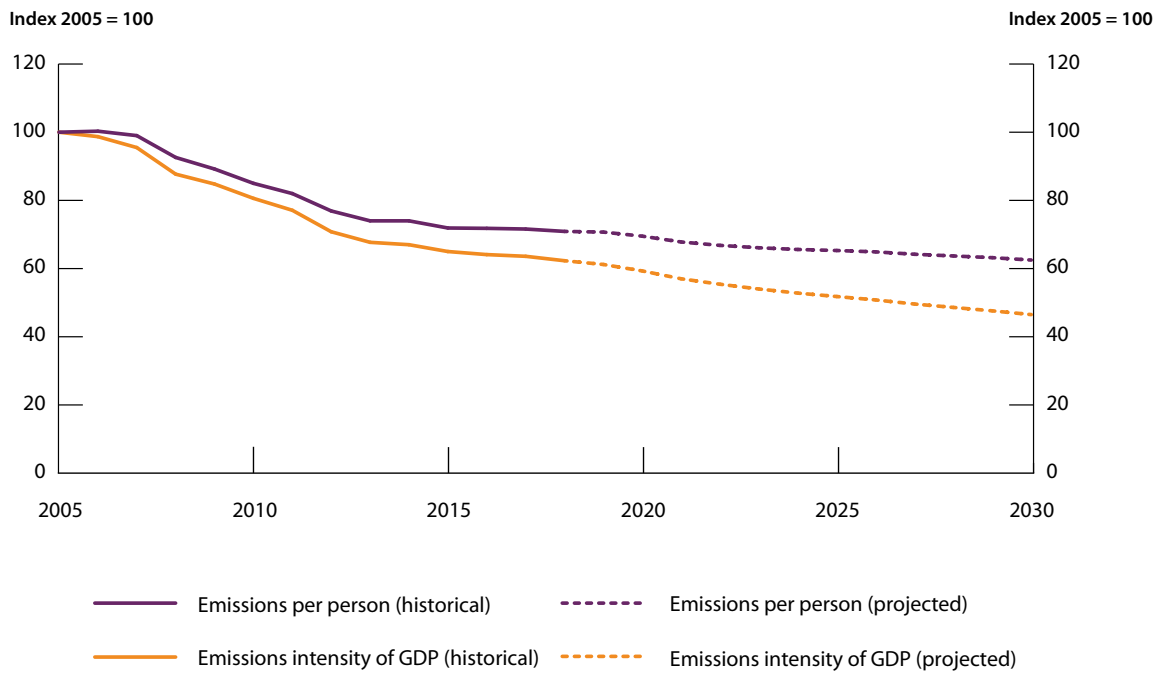
Figure 4 Australia's emissions trends, 1990 to 2030



## Other metrics

The emissions intensity of the economy (GDP) has continued to decline and is projected to fall by 54 per cent from 2005 to 2030. Emissions per person are also expected to fall steadily by 38 per cent from 2005 to 2030.

Figure 5 Emissions per person and emissions intensity of GDP, 2005 to 2030



# Sectoral trends

This chapter sets out the emissions projections associated with each sector. The sector breakdown is consistent with the international guidelines for reporting under the United Nations Framework Convention on Climate Change (UNFCCC). These sectors are described in Table 4 below:

Table 4 Projections sector coverage

Sector	Coverage
<b>Electricity</b>	Emissions from the combustion of fuels to generate electricity
<b>Direct combustion</b>	Emissions from the combustion of fuels to generate steam, heat or pressure, other than for electricity generation and transport
<b>Transport</b>	Emissions from the combustion of fuels for transportation within Australia
<b>Fugitives</b>	Emissions released during the extraction, processing and delivery of fossil fuels
<b>Industrial processes and product use</b>	Emissions from non-energy related industrial production and processes. Includes emissions from hydrofluorocarbons (HFCs) (used in refrigerants and air conditioning)
<b>Agriculture</b>	Emissions from livestock, manure management and crop residue Emissions from rice cultivation, application of nitrogen to soils, and burning of agricultural residues
<b>Waste</b>	Emissions from the disposal of material to landfill and wastewater
<b>Land use, land use change and forestry</b>	Emissions and sequestration from activities occurring on forest lands, forests converted to other land uses, grasslands, croplands, wetlands and settlements

## Electricity

Emissions from electricity generation are the result of fuel combusted for the production of electricity in the National Electricity Market (NEM), Western Australia's Wholesale Electricity Market (WEM), the other small grids and off-grid.

The NEM is the electricity market covering the east coast of Australia. It comprises of five regions – Queensland, New South Wales (including the ACT), Victoria, Tasmania, South Australia – and represents approximately 85 per cent of electricity generation in Australia. The WEM operates in the South West of Australia. The other grids comprise of the small grids (the Darwin Katherine Interconnected System, the North West Interconnected System, and Mt Isa) and off-grid electricity generation.

### Emissions to 2020

Electricity emissions are projected to be 170 Mt CO<sub>2</sub>-e in 2020, a decrease of 7 per cent on current levels. Emissions are projected to fall as federal and state renewable energy targets drive increased renewable generation. Expanding renewable investment, aided by declining costs, also contributes to emissions reductions. This trend is seen in both the NEM and WEM.

In the other grids, emissions grow strongly to 2020. This is largely because of increased electricity use generated on-site by LNG facilities as they ramp up to full production.

### Emissions to 2030

Electricity emissions are projected to be 163 Mt CO<sub>2</sub>-e in 2030, 4 per cent below 2020 levels. This is 17 per cent below electricity emissions in 2005. After 2020, emissions in the NEM and WEM are projected to continue to fall to the early 2020s as renewable generation grows as a proportion of the generation mix (Figure 7). By 2023 NEM emissions fall to 28 per cent below 2005 levels.

From the mid-2020s, emissions in the NEM and WEM gradually increase as electricity demand grows with population and economic growth. Much of this increase in demand is met by continued growth in rooftop PV generation and some thermal generation. By 2030, emissions in the NEM are still 26 per cent below 2005 levels and emissions in the WEM are 18 per cent above 2005 levels.

In the other grids there is a small increase in emissions to 2030.

### Comparison to previous projections

Compared to the 2017 projections, emissions are lower in 2020 by 6 Mt CO<sub>2</sub>-e and lower in 2030 by 10 Mt CO<sub>2</sub>-e. This is due to lower electricity demand assumptions compared to the previous projections and greater investment in renewables than previous projected.

Figure 6 Electricity emissions, 1990 to 2030

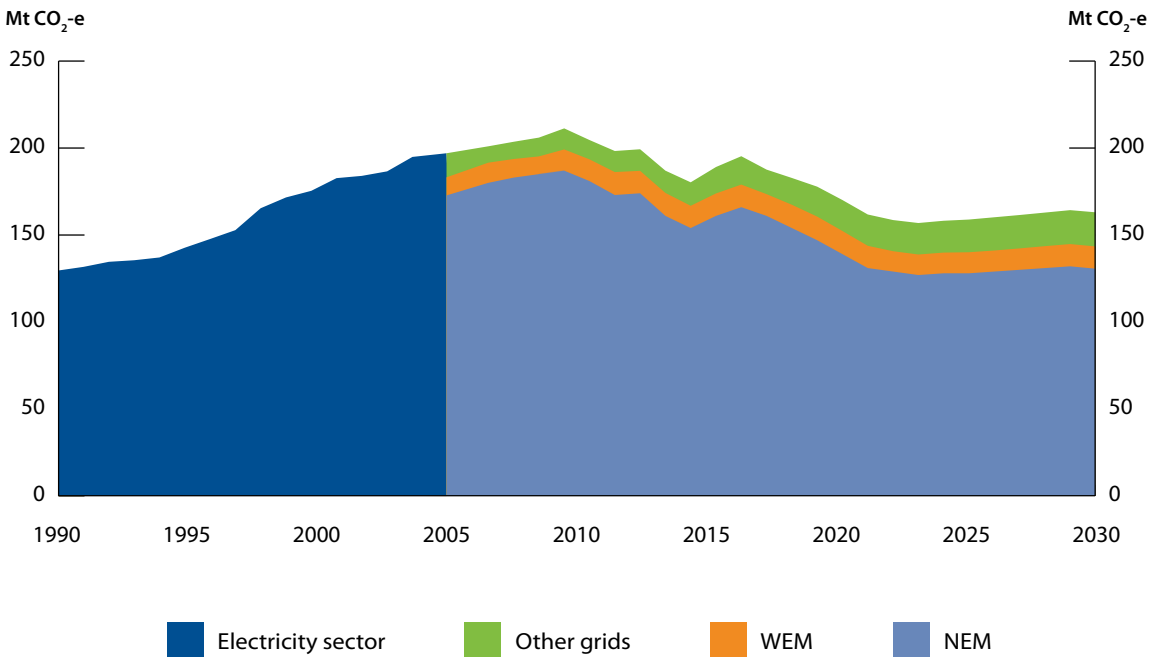


Figure 7 Fuel generation mix, 2018 to 2030

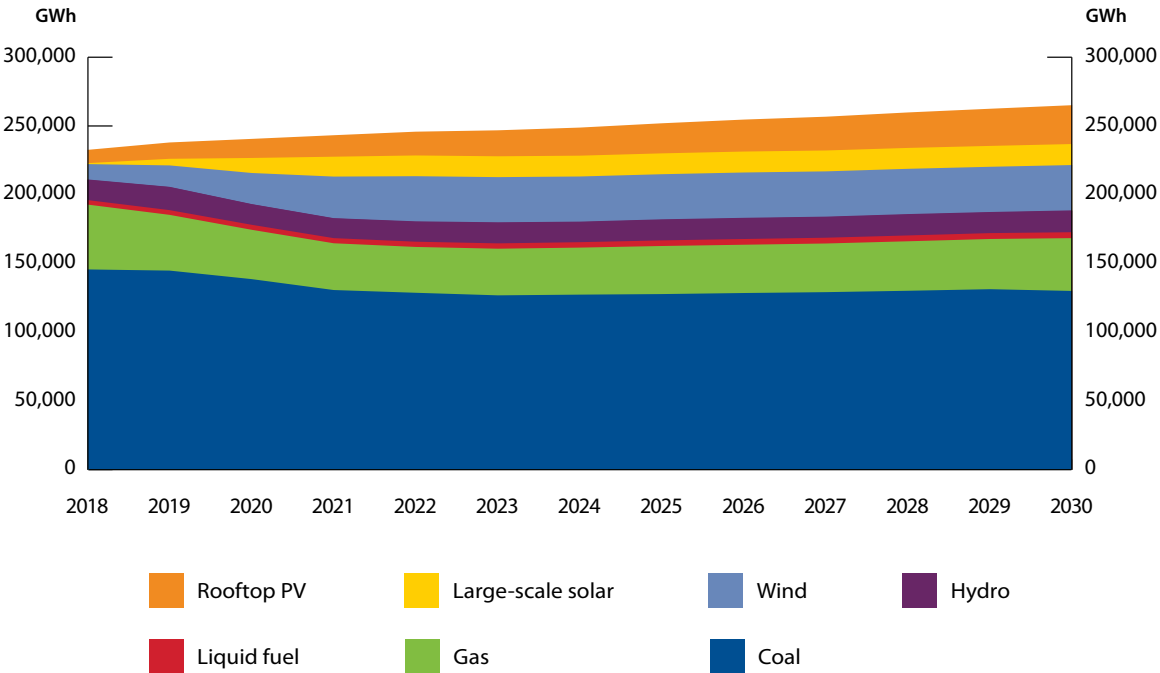


Table 5 Electricity emissions, Mt CO<sub>2</sub>-e

Emissions by grid	2018	2020	2025	2030
National Electricity Market	154	139	128	131
Western Australia Wholesale Electricity Market	13	13	12	13
Other grids	15	18	19	20
<b>Total electricity sector</b>	<b>182</b>	<b>170</b>	<b>159</b>	<b>163</b>

Note: totals may not sum due to rounding

## Direct combustion

Emissions from direct combustion are from the burning of fuels for energy used directly, in the form of heat, steam or pressure (excluding for electricity generation and transport). The direct combustion sector consists of six subsectors: energy, mining, manufacturing, buildings, agriculture, forestry and fishing, and military. Fuel combusted in mobile equipment in mining, manufacturing, buildings, agriculture, forestry and fishing is included in direct combustion.

### Emissions to 2020

Direct combustion emissions are projected to be 107 Mt CO<sub>2</sub>-e in 2020, 7 per cent above current levels.

Projected increase in gas combustion at LNG facilities and diesel combustion at mine sites are expected to drive higher energy emissions to 2020.

### Emissions to 2030

Direct combustion emissions are projected to be 107 Mt CO<sub>2</sub>-e in 2030, the same as 2020 levels.

Emissions from the energy subsector are projected to grow due to higher coal mining and LNG activities. In 2013–14 there were three operating LNG plants with capacity to export 24 Mt of LNG per year. Australia is now over halfway through the ramp-up of new LNG capacity. By 2020, Australia will be operating 10 LNG plants with capacity to export more than 80 Mt of LNG per year.

Manufacturing is projected to remain the biggest contributor to sector emissions, with emissions projected to be mostly flat to 2030. Emissions from the agriculture, forestry and fishing subsector are also projected to be stable over the projections period.

Emissions from buildings are expected to decline marginally to 2030 due to emissions reductions from energy efficiency improvements and fuel-switching from gas to electric appliances.

## Comparison to previous projections

Compared to the 2017 projections, emissions are projected to be 2 Mt CO<sub>2</sub>-e higher in 2020, and 4 Mt CO<sub>2</sub>-e higher in 2030. This is due to higher than forecast emissions across multiple subsectors.

Building emissions have increased due to methodology improvements to align with AEMO's assumptions. AEMO assume that effects of fuel switching and energy efficiency on gas consumption in residential and commercial buildings will diminish in the long term.

Emissions from the agriculture, forestry and fishing subsector are higher than the previous forecast due to a higher inventory starting point. This reflects higher diesel demand for cropping in response to a record winter harvest in 2016–17.

Figure 8 Direct combustion emissions, 1990 to 2030

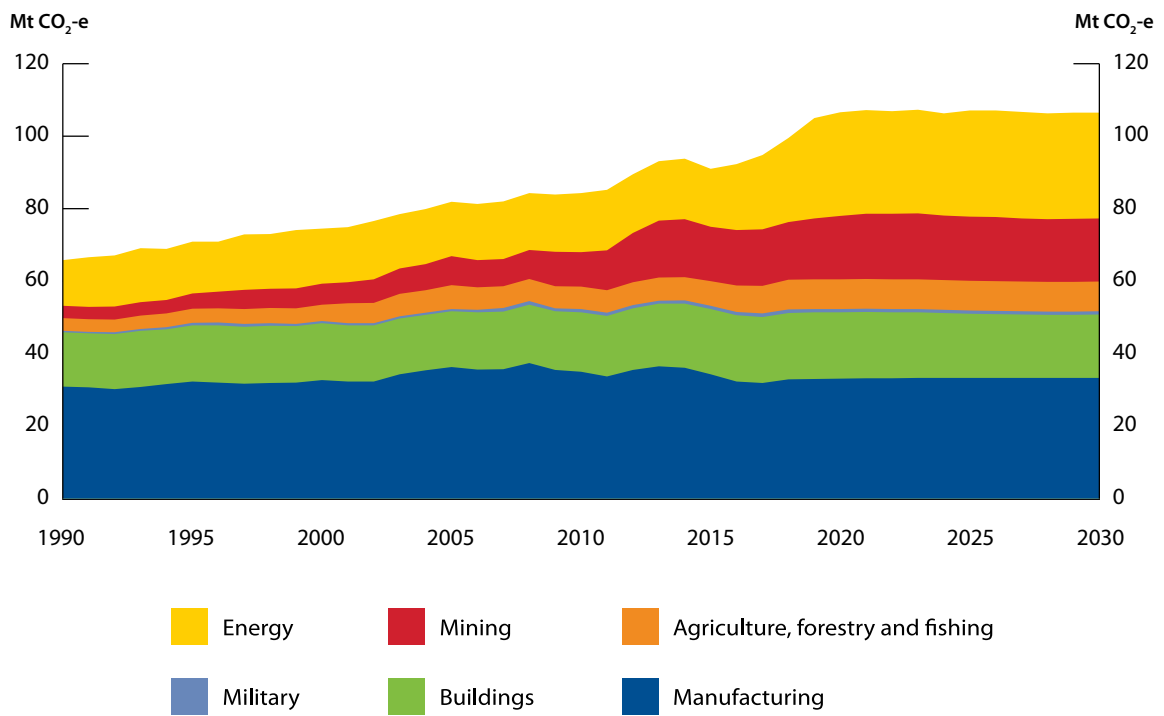




Table 6 Direct combustion emissions, Mt CO<sub>2</sub>-e

Emissions by subsector	2018	2020	2025	2030
Energy	23	29	29	29
Mining	16	18	18	17
Agriculture, Forestry and Fishing	8	8	8	8
Military	1	1	1	1
Buildings	18	18	18	18
Manufacturing	33	33	33	33
<b>Total</b>	<b>100</b>	<b>107</b>	<b>107</b>	<b>107</b>

Note: totals may not sum due to rounding

## Transport

Emissions in the transport sector are the result of the combustion of fuels for transportation. This includes road, domestic aviation, rail, domestic shipping, off-road recreational vehicle activity and gas pipeline transport. Road transport includes cars, light commercial vehicles, motorcycles, rigid trucks, articulated trucks and buses.

Emissions from electricity used in electric vehicles and rail are accounted for in the electricity sector.

### Emissions to 2020

Transport emissions are projected to be 105 Mt CO<sub>2</sub>-e in 2020, 3 per cent above current levels. Emissions are projected to increase as activity from all modes of transport increase due to population and economic growth.

### Emissions to 2030

Transport emissions are projected to be 111 Mt CO<sub>2</sub>-e in 2030, 6 per cent above 2020 levels.

The biggest contributor to emissions is road transport. Emissions from cars and light commercial vehicles are projected to increase to 2025 due to increased activity, however from 2025 emissions start to decline. Increases in activity to 2030 are more than offset by improvements in vehicle efficiency, fuel switching away from diesel and an increasing share of electric vehicles.

Emissions from heavy vehicles increase to 2030 as fuel consumption increases to meet the increased freight load. Emissions growth slows from 2025 as efficiency improvements and fuel switching slows the growth in emissions.

Emissions from non-road sectors are projected to grow to 2030 with most of the growth occurring in domestic aviation due to increasing demand for air travel. Emissions from domestic shipping and rail are projected to increase as they take on an increased freight load.

### Comparison to previous projections

Compared to the 2017 projections, transport sector emissions are projected to be 3 Mt CO<sub>2</sub>-e higher in 2020 and 1 Mt CO<sub>2</sub>-e lower in 2030.

Road transport emissions are projected to be 3 Mt CO<sub>2</sub>-e lower in 2030 due to lower forecast activity, improved heavy vehicle fuel efficiency and fuel switching to electric and hybrid vehicles.

Compared to the previous projections, emissions from domestic aviation and shipping are both projected to be 1 Mt CO<sub>2</sub>-e higher in 2030 due to increased projected activity.

Figure 9 Transport emissions, 1990 to 2030

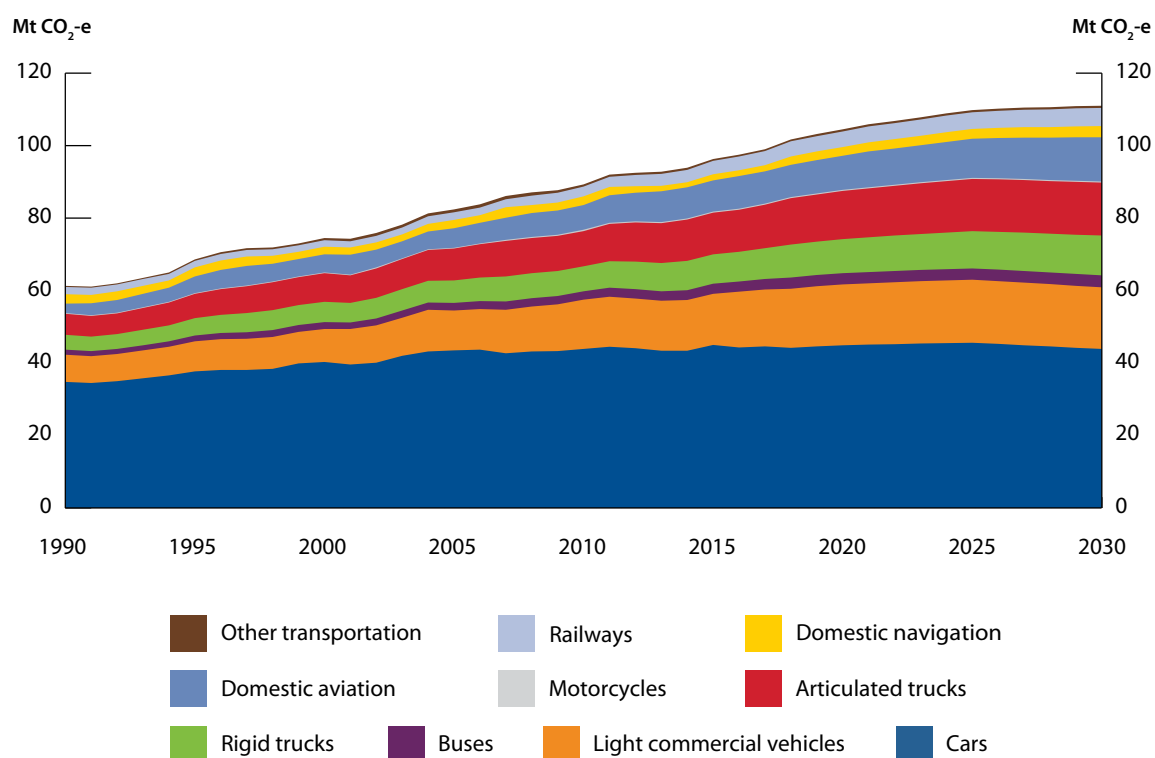


Table 7 Transport emissions, Mt CO<sub>2</sub>-e

Emissions by subsector	2018	2020	2025	2030
Cars	44	45	46	44
Light commercial vehicles	16	17	17	17
Buses	3	3	3	3
Rigid trucks	9	9	10	11
Articulated trucks	13	13	14	15
Motorcycles	<1	<1	<1	<1
Domestic aviation	9	9	11	12
Domestic shipping	2	2	3	3
Railways	4	4	5	5
Other transportation <sup>6</sup>	<1	<1	<1	<1
<b>Total</b>	<b>102</b>	<b>105</b>	<b>110</b>	<b>111</b>

Note: totals may not sum due to rounding

<sup>6</sup> Other transportation includes off-road recreational and pipeline transport

## Fugitives

Fugitive emissions are released during the extraction, processing and delivery of fossil fuels. Fugitive emissions do not include emissions from fuel combusted to generate electricity, operate mining plant and equipment, or transport fossil fuels by road, rail or sea.

### Emissions to 2020

Fugitive emissions are projected to be 55 Mt CO<sub>2</sub>-e in 2020, the same level as emissions in 2018.

Emissions from coal mines are projected to increase as a number of gassy coal mines return to full production after temporary declines. Emissions from LNG plants are projected to increase as Australia's new LNG plants come online and ramp up to full production. Ichthys (NT) shipped its first LNG cargo in October this year leaving Prelude LNG (WA) the final announced project to commence production.

These increases are projected to be offset by the commencement of carbon capture and storage at the Gorgon LNG project prior to 2020.

### Emissions to 2030

Fugitive emissions are projected to be 62 Mt CO<sub>2</sub>-e in 2030, 13 per cent higher than 2020 levels.

Fugitive emissions from oil and gas<sup>7</sup> are projected to increase from 29 Mt CO<sub>2</sub>-e in 2020 to 31 Mt CO<sub>2</sub>-e in 2030. LNG emissions are projected to increase between 2020 and 2030 as production and the emissions intensity of feed gas increase. The addition of one new LNG train in the mid-2020s adds to the expected LNG production profile for Australia.

Out to 2030, several LNG plants are expected to source gas from new basins as current feed gas sources deplete. As the percentage of CO<sub>2</sub> is higher for some of these new feed gas sources the overall emissions intensity of Australia's LNG projections increases which increases emissions. Gas emissions growth is partially offset by decreasing fugitive emissions from oil production.

Fugitive emissions from coal mines are projected to increase from 27 Mt CO<sub>2</sub>-e in 2020 to 31 Mt CO<sub>2</sub>-e in 2030. Post 2020, slower growth is projected in coal production and emissions. The International Energy Agency's *World Energy Outlook 2018* New Policy Scenario projects global trade in thermal coal (used for electricity generation) will decline from current levels while trade in coking coal (used in iron and steel production) will increase. In Australia a higher proportion of coking coal is produced from underground coal mines, which have a higher average emissions intensity than open cut mines.

### Comparison to previous projections

Compared to the 2017 projections, emissions are projected to be 4 Mt CO<sub>2</sub>-e higher in 2020, and 9 Mt CO<sub>2</sub>-e higher in 2030. The majority of the growth in fugitive emissions comes from the updated outlook for LNG in Australia, reflecting an increased production profile out to 2030 and industry gas source updates.

The increase in fugitive emissions also reflects updates to natural gas emissions, driven by higher unconventional gas production, and a small increase in coal fugitive emissions due to an improved outlook for Australian coking coal exports.

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<sup>7</sup> Fugitive gas emissions include emissions associated with gas consumed domestically and LNG. LNG is natural gas that has been cooled down to liquid form for ease and safety of non-pressurised storage and transport.

Figure 10 Fugitive emissions, 1990 to 2030

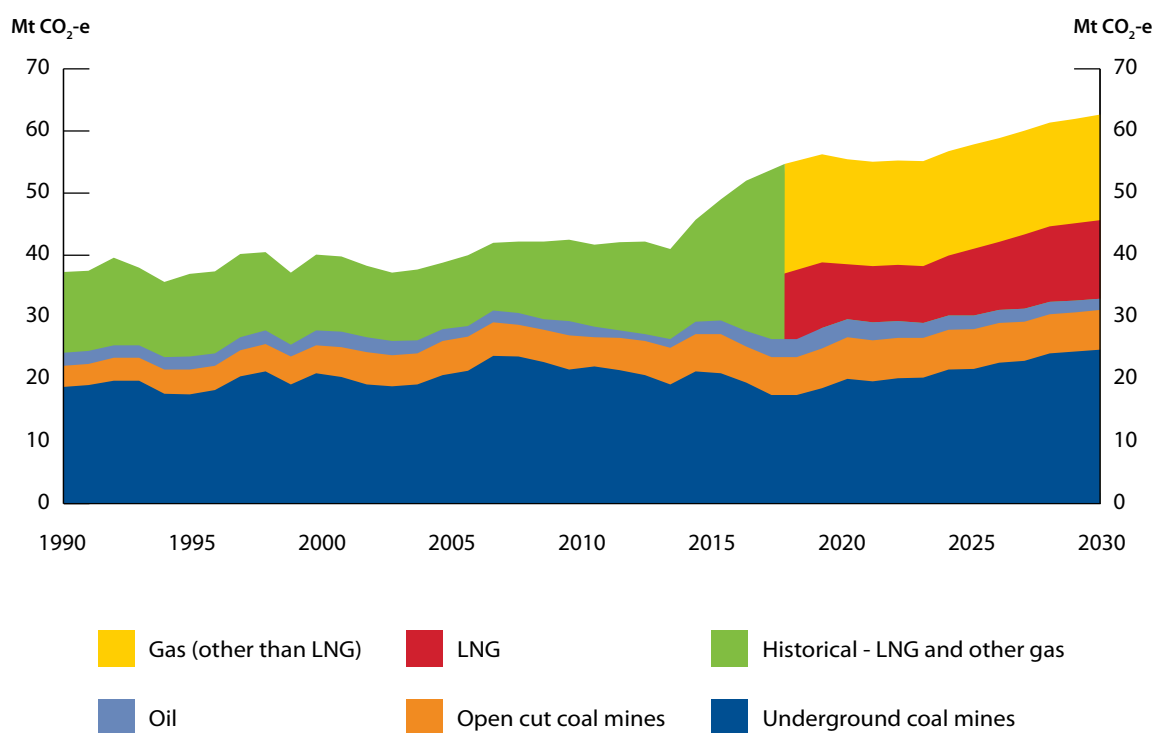


Table 8 Fugitive emissions, Mt CO<sub>2</sub>-e

Emissions by subsector	2018	2020	2025	2030
Gas (other than LNG)	17	17	17	17
LNG	11	9	11	13
Oil	3	3	2	2
Open cut mines	6	7	6	6
Underground coal mines	18	20	22	25
<b>Total</b>	<b>55</b>	<b>55</b>	<b>58</b>	<b>62</b>

Note: totals may not sum due to rounding

## Industrial processes and product use

The industrial processes and product use sector includes emissions from non-energy related production processes. Table 9 below lists the subsectors that comprise the industrial processes and product use sector and the main production processes which drive emissions from these subsectors.

Table 9 Production processes in industrial processes and product use

Subsector	Main production processes
Metal Industry	Iron and steel, and aluminium production
Chemical Industry	Ammonia, nitric acid and titanium dioxide production
Mineral Industry	Cement clinker and lime production
Product uses as substitutes for ozone depleting substances	Hydrofluorocarbons used in refrigeration and air conditioning equipment, foam, fire protection and aerosols
Non-energy products from fuel and solvent use	Emissions from lubricant oils not used for fuel
Other production	Carbon dioxide used in food production
Other product manufacture and use	Sulphur hexafluoride used in electrical switchgear

### Emissions to 2020

Industrial processes and product use emissions are projected to be 34 Mt CO<sub>2</sub>-e in 2020, 2 per cent above current levels.

Growth in iron ore mining and coal mining, which are drivers for ammonia and nitric acid production, are projected to increase chemical industry emissions. Emissions from the metal industry are projected to be higher in the short term due to higher commodity prices and a lower Australian dollar, leading to greater exports.

### Emissions to 2030

Industrial processes and product use emissions are projected to be 33 Mt CO<sub>2</sub>-e in 2030, 4 per cent below 2020 levels. Emissions reductions across the projections period are mainly due to reduced emissions from the product uses as substitutes for ozone depleting substances subsector, also known as the hydrofluorocarbon (HFC) subsector. This is because the HFC subsector takes into account the legislated phase-down of bulk HFC gases permitted to be imported into Australia from 2018.

Chemical industry emissions are projected to increase due to continued strength in the iron ore mining and coal mining. Chemical products such as ammonia are used as explosives in the mining industry.

### Comparison to previous projections

Compared to the 2017 projections, industrial processes and product use emissions are projected to be less than 1 Mt CO<sub>2</sub>-e higher in 2020 and 2030.

Higher emissions in this sector are mainly due to projected increases in emissions from the chemical subsector, driven by higher ammonia and nitric acid production.

Figure 11 Industrial processes and product use emissions, 1990 to 2030

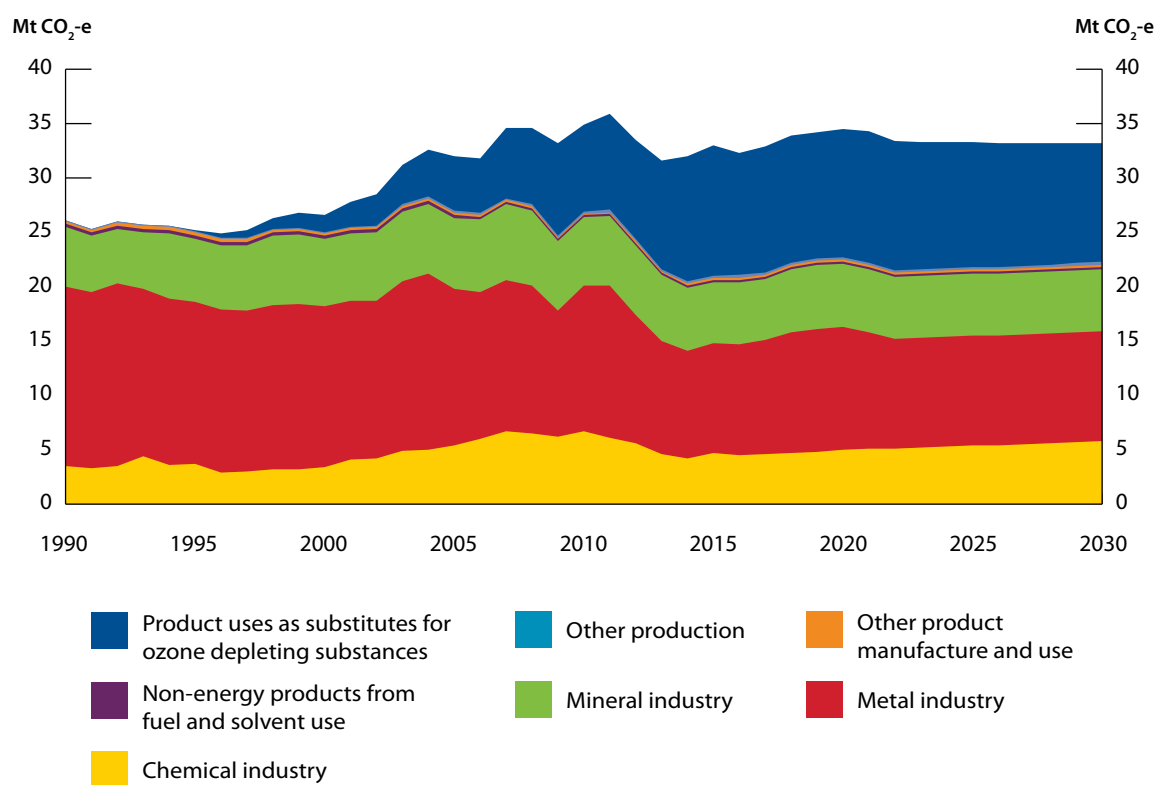


Table 10 Industrial processes and product use emissions, Mt CO<sub>2</sub>-e

Emissions by subsector	2018	2020	2025	2030
Product uses as substitutes for ozone depleting substances	12	12	12	11
Other production	<1	<1	<1	<1
Other product manufacture and use	<1	<1	<1	<1
Non-energy products from fuel and solvent use	<1	<1	<1	<1
Mineral industry	6	6	6	6
Metal industry	11	11	10	10
Chemical industry	5	5	5	6
<b>Total</b>	<b>34</b>	<b>34</b>	<b>33</b>	<b>33</b>

Note: totals may not sum due to rounding

## Agriculture

The agriculture sector includes emissions from enteric fermentation (the digestive process of some animals including cattle and sheep), manure management, rice cultivation, agricultural soils and field burning of agricultural residues. It does not include emissions from electricity use or fuel combustion from operating equipment, which are included in the electricity and direct combustion sectors.

The bulk of agriculture greenhouse gas emissions are methane and nitrous oxide. The emissions projections presented below are expressed as carbon dioxide equivalent.

### Emissions to 2020

Agriculture emissions are projected to be 71 Mt CO<sub>2</sub>-e in 2020, 1 per cent above current levels.

Emissions are projected to fall by 1 per cent in 2019 as drought conditions restrict agriculture activity. After falling in 2019 agricultural activity is predicted to rise in 2020 on the assumed return to average seasonal conditions.

### Emissions to 2030

Agriculture emissions are projected to be 78 Mt CO<sub>2</sub>-e in 2030, 9 per cent above 2020 levels.

Emissions to 2030 are projected to slowly rise by approximately 1 per cent a year, driven by productivity improvements, and underpinned by rising food demand internationally.

Beef cattle is projected to continue to be the biggest contributor to sectoral emissions, followed by sheep and dairy cattle. Most emissions come from enteric fermentation from livestock, so fluctuations in these animal numbers have a direct effect on emissions in this sector. While the majority of beef will continue to be fed by grazing on pasture, the projections have accounted for an assumed increase in grain fed beef cattle in feedlots due to these cattle being less susceptible to drought. Grain fed cattle are more emissions intensive, due to increased energy intake and increased concentration of manure in feedlots.

### Comparison to previous projections

Compared to the 2017 projections, emissions are lower in 2020 by 3 Mt CO<sub>2</sub>-e and lower in 2030 by 5 Mt CO<sub>2</sub>-e. Emissions are lower due to drought in the immediate term which acts as a constraint on livestock numbers. This combines with slightly weaker mid-term growth, forecast by ABARES, beyond the drought period, which brings down projected emissions in 2030.



Figure 12 Agriculture emissions, 1990 to 2030

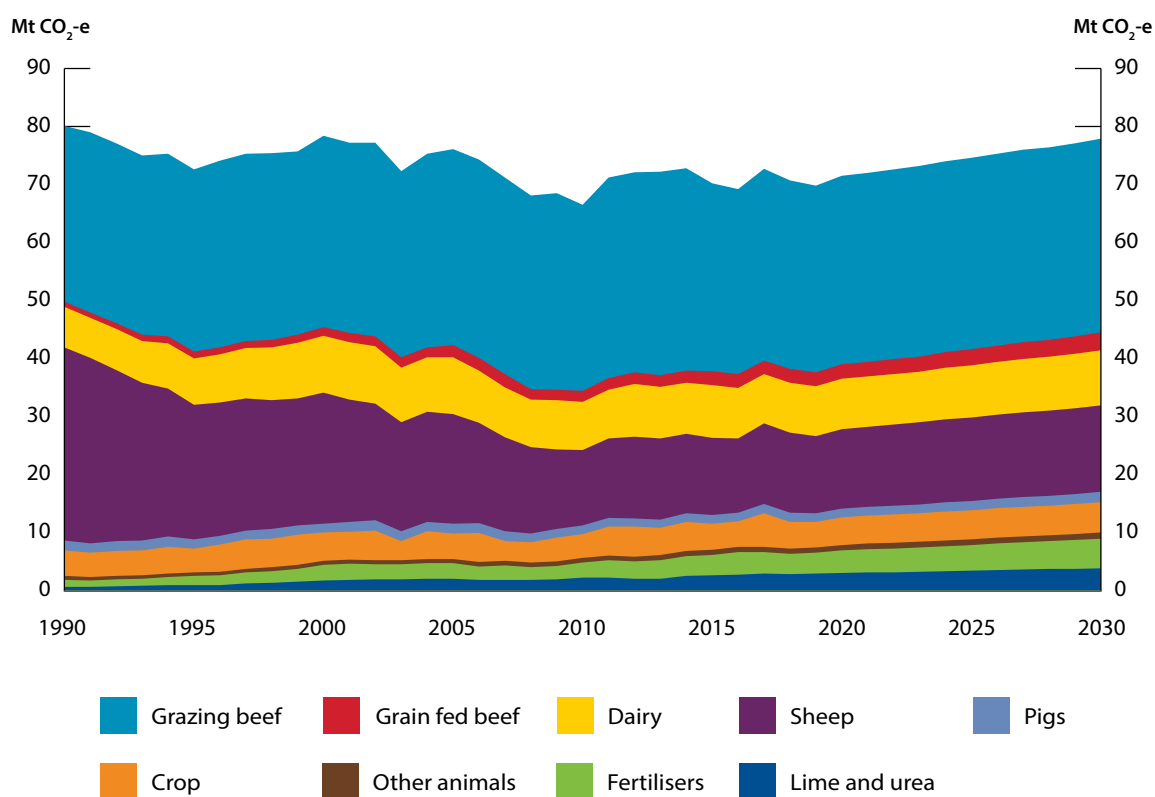


Table 11 Agriculture emissions, Mt CO<sub>2</sub>-e

Emissions by subsector	2018	2020	2025	2030
Grazing beef	33	33	33	33
Grain fed beef	2	2	3	3
Dairy	9	9	9	9
Sheep	14	14	14	15
Pigs	2	2	2	2
Crop	5	5	5	5
Other animals	1	1	1	1
Fertilisers	4	4	4	5
Lime and urea	3	3	3	4
<b>Total</b>	<b>71</b>	<b>71</b>	<b>75</b>	<b>78</b>

Note: totals may not sum due to rounding

## Waste

The waste sector covers emissions from the disposal of organic materials to landfill and wastewater emissions from domestic, commercial and industrial sources. Emissions are predominantly methane, generated from anaerobic decomposition of organic matter.

### Emissions to 2020

Emissions in the waste sector are projected to be 11 Mt CO<sub>2</sub>-e in 2020, 14 per cent below current levels.

The decrease in emissions reflects the impact of ERF projects as well as efforts to divert waste from landfill.

### Emissions to 2030

Emissions in the waste sector are projected to be 9 Mt CO<sub>2</sub>-e in 2030, 14 per cent below 2020 levels.

The decrease in waste sector emissions to 2030 is predominately the result of the increase in recycling and methane capture rates over the period. This includes the methane capture and emissions avoidance as a result of ERF projects. It also reflects the impact of policies and projects implemented by state and federal governments to reduce waste, including the National Food Waste Strategy.

Emissions in the waste sector decline to 2022 as ERF abatement increases. Post 2022, waste emissions are projected to remain moderately flat as population and industry production impacts begin to outpace growth in ERF abatement and methane capture rates.

### Comparison to previous projections

Compared to the 2017 projections, emissions are projected to be 1 Mt CO<sub>2</sub>-e higher in 2020, and 1 Mt CO<sub>2</sub>-e lower in 2030.

The increase in emissions out to 2020 reflects an increase in expected short term emissions due to updates to emissions estimation methods in the national greenhouse gas inventory.

The long term decrease out to 2030 reflects an updated outlook of state waste diversion targets, the inclusion of announced national waste diversion policies and the ARENA funded Kwinana energy-from-waste facility project.

Figure 13 Waste emissions, 1990 to 2030

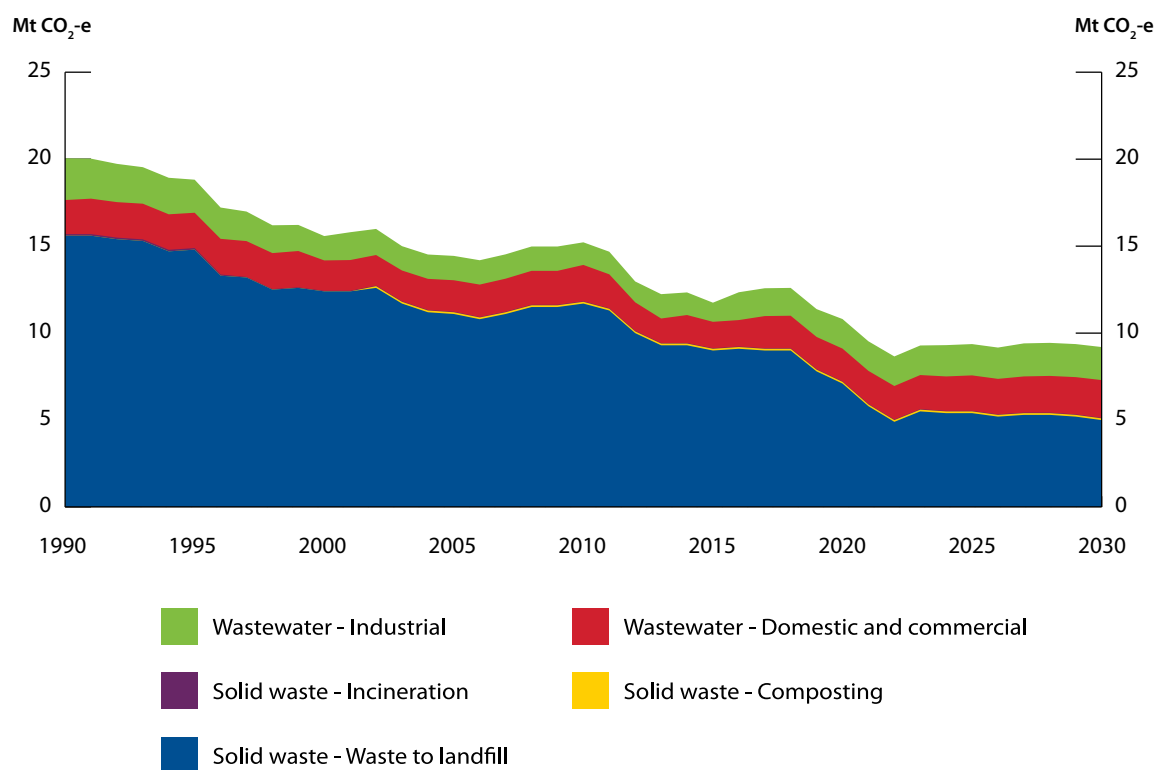


Table 12 Waste emissions, Mt CO<sub>2</sub>-e

Emissions by subsector	2018	2020	2025	2030
Solid waste – waste to landfill	9	7	5	5
Solid waste – composting	< 1	< 1	< 1	< 1
Solid waste – incineration	< 1	< 1	< 1	< 1
Wastewater – domestic and commercial	2	2	2	2
Wastewater – industrial	2	2	2	2
<b>Total</b>	<b>13</b>	<b>11</b>	<b>9</b>	<b>9</b>

Note: totals may not sum due to rounding

## Land use, land use change and forestry

The land use, land use change and forestry (LULUCF) sector includes both sources of greenhouse gas emissions and sinks that remove carbon dioxide from the atmosphere and sequester it as carbon in living biomass, debris and soils. The most influential source of emissions is clearing of forests. Other land sector categories (see below) include the establishment and ongoing management of forests, grazing land, and croplands.

The LULUCF sector projections are based on the UNFCCC inventory structure as described in Australia's *National Inventory Report 2016*. The major categories used include:

- **forest land**, including *forest land remaining forest* and *land converted to forest* (e.g. harvest and regeneration of native forests, establishment and harvest of plantations, wildfires and prescribed burning) and includes sinks from regrowing forest on previously cleared land, and carbon stored in harvested wood products and their disposal in landfill
- **forest clearing**, emissions from the UNFCCC land use classification of *forest converted to other land uses*, includes direct clearing-related emissions and delayed emissions from previous clearing, mainly through the gradual loss of soil carbon over a number of years but excluding sinks from regrowing forests on previously cleared lands
- **cropland**, i.e. woody horticulture and changes in soil carbon under herbaceous crops
- **grasslands**, i.e. changes in soil carbon through pastoral activities, fire management in savanna rangelands and changes in shrubby vegetation extent on grasslands and
- **wetlands and settlements**, gains and losses of woody vegetation that is not already classified as *forest land* (e.g. sparsely planted trees or shrubs) on wetlands and within settlement boundaries (from ABARES' catchment-scale land-use mapping), as well as aquaculture activities, dredging of seagrasses and mangrove and tidal marsh conversions not already reported in *forest land* or *forest conversions*.

### Emissions to 2020

Net emissions from the LULUCF sector are projected to represent a sink of -14 Mt CO<sub>2</sub>-e in 2020, an increase of 8 Mt CO<sub>2</sub>-e above current levels.

Net emissions are projected to rise from the historical lows seen in recent inventory years. These lows reflect a large net sink driven by increasing forest cover across Australia, including from forests that are re-appearing on previously cleared land more rapidly than land managers are able to re-clear that bush encroachment. These strong increases in forest cover are not expected to be maintained over the projections period with the return to normal conditions.

### Emissions to 2030

Net emissions from LULUCF are projected to be -1 Mt CO<sub>2</sub>-e in 2030, an increase of 13 Mt CO<sub>2</sub>-e above 2020 levels.

Net emissions are projected to continue to rise beyond 2020, reflecting a gradual return to long-term average conditions, approaching net zero emissions. The rate of increase is projected to slow by around 2025, reflecting the declining impact of the current forest sink over the medium to longer term.

Land clearing emissions are largely stable over the projections period, reflecting continuing high rates of re-clearing to maintain pastures for grazing, offsetting the declining rate of conversion of primary forests in line with farmers' terms-of-trade forecasts.

High rates of hardwood plantation harvesting are projected to continue over the whole projections period, resulting in a declining net sink from plantations established after 1990 as these mature from a phase of rapid growth and increasingly become available for harvesting. Harvesting of native forests is projected to remain close to historical lows, resulting in an ongoing net sink as regrowth in previously harvested forest lands continues to outweigh harvesting emissions.

### Comparison to previous projections

The projections have been revised to reflect updates and improvements in the most recent National Inventory Report, submitted in April 2018. Compared to the 2017 projections, emissions are projected to be 13 Mt CO<sub>2</sub>-e lower in 2020 and 5 Mt CO<sub>2</sub>-e lower in 2030. There are two main factors driving the revisions to the inventory baseline.

First, in response to recommendations from international expert review of the inventory, coverage of grasslands converted to forest lands has been broadened to include ongoing net emissions (sequestration) from natural regrowth that occurred prior to 1990.

Second, these revisions reflect improvements in modelling and data for land subject to natural regrowth and commercial plantations, as part of ongoing implementation of CSIRO research.

Figure 14 Emissions and removals from land use, land use change and forestry (LULUCF), 1990 to 2030

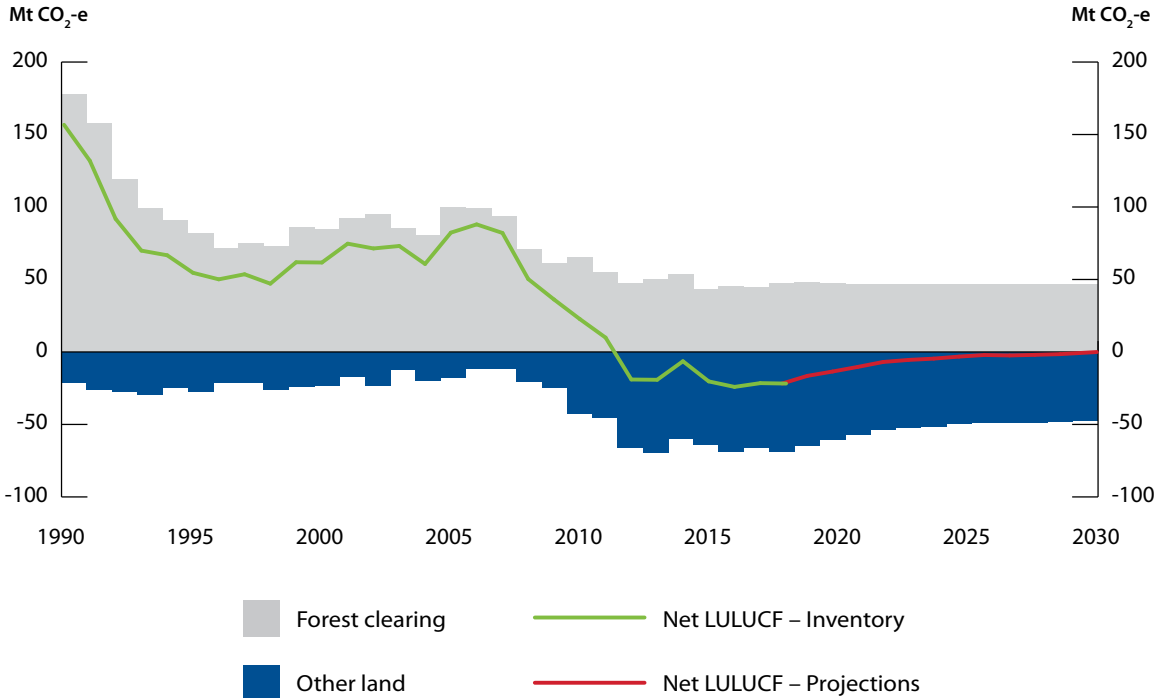


Table 13 Emissions and removals from land use, land use change and forestry (LULUCF), Mt CO<sub>2</sub>-e

Emissions by subsector	2018	2020	2025	2030
Forest clearing *	47	47	46	46
Other land +	-69	-61	-50	-47
Net LULUCF emissions	-22	-14	-3	-1

\* Emissions from UNFCCC land use classification of forest conversions, excluding sinks from regrowing forest on previously cleared land.

+ Includes the UNFCCC classifications forest land remaining forest land, land converted to forest land, as well as croplands, grasslands, wetlands and settlements that were not previously converted from forest lands.

# Sensitivity Analyses

It is not possible to predict future trends in emissions with complete certainty. The 2018 projections include two sensitivities to assess how Australia's emissions are impacted by different assumptions:

- Low demand, which assumes slower economic growth both in Australia and across the globe, tentative consumer confidence and low population growth in Australia.
- High demand, which assumes faster economic growth both in Australia and across the globe, high consumer confidence and strong population growth in Australia.

The sensitivities do not assume any policy changes. When considered with the baseline projections, they present a possible range of emissions trajectories to 2030.

Each sensitivity has been prepared by drawing on published modelling and data.

The sectors modelled for the sensitivity analyses are the electricity, direct combustion, transport, fugitives, industrial processes and product use and waste sectors.

Table 14 Key assumptions under the sensitivities

Sensitivity	Baseline – 2018 projections	High demand	Low demand
<b>Economy</b>	Medium global and domestic demand, broadly consistent with Treasury forecasts for Budget 2018–19	High global and domestic demand	Low global and domestic demand
<b>Population growth</b>	Medium	High	Low
<b>Commodity prices</b>	Medium	High	Low
<b>Electricity demand</b>	Medium	High	Low
<b>Energy efficiency</b>	Medium	High	Low
<b>Electric vehicle uptake</b>	Medium	High	Low
<b>Uptake of rooftop solar</b>	Medium	High	Low

## Low demand sensitivity

The low demand sensitivity has been prepared drawing on AEMO's slow change scenario in the 2018 Electricity Statement of Opportunities (ESOO).

Compared to the baseline:

- Slower economic growth is assumed to reduce demand for Australia's products both domestically and internationally.
- Energy demand is lower, with electricity demand 17 per cent lower than the baseline in 2030.
- Energy demand from industry is reduced because of lower production. Household energy demand is lower due to slower population growth as well as consumer responses to prices.
- Manufacturing activity is lower, with activity 20 per cent lower than the baseline in 2030.
- Exports are lower, with global metal prices between 15 and 30 per cent below the baseline in 2030.
- Electric vehicle uptake is slower, with 70 per cent fewer electric vehicles on the road in 2030 compared with the baseline.

## Emissions to 2020

Emissions in 2020 are projected to be 534 Mt CO<sub>2</sub>-e, equivalent to current levels and 1 per cent lower than the baseline in 2020.

Similar to the baseline, rising LNG production and a declining sink in the land sector increases emissions to 2020. However, compared to the baseline scenario emissions are slightly lower because of lower LNG production in line with the lower export demand assumed.

This emissions growth is offset by falling emissions in the electricity sector, which continues to see growth in large-scale renewable builds lowering the emissions intensity of the grid, as with the baseline.

## Emissions to 2030

Emissions in 2030 are projected to be 497 Mt CO<sub>2</sub>-e, falling 7 per cent below 2020 emissions levels and 12 per cent lower than the baseline in 2030.

Much of this fall is driven by emission declines in the electricity sector. Electricity demand falls as industrial closures are assumed. Given the lower electricity demand, a number of older power stations are projected to close.

Direct combustion emissions also decline, driven by lower manufacturing and energy activity levels.

Part of this decline is offset by rising transport emissions and a declining sink in the land sector. Transport emissions grow faster than the baseline as lower consumer confidence and slower investment delays the uptake of electric vehicles through the projections period. This results in a more emissions-intensive fleet to 2030.



## High demand sensitivity

The high demand sensitivity has been prepared drawing on AEMO's fast change scenario in the 2018 ESOO.

Compared to the baseline:

- Faster economic growth is assumed to increase demand for Australia's products both domestically and internationally.
- Energy demand is higher, with electricity demand 8 per cent higher than the baseline in 2030.
- Manufacturing activity is 5 per cent higher than the baseline in 2030.
- Exports are higher, with global metal prices between 15 to 40 per cent above the baseline in 2030.
- Electric vehicle uptake is higher, with double the number of electric vehicles on the road in 2030 compared to the baseline scenario.

### Emissions to 2020

Emissions in 2020 are 547 Mt CO<sub>2</sub>-e, 3 per cent above current levels and 1 per cent above baseline levels in 2020.

Similar to the baseline, rising LNG production and a declining sink in the land sector drives emission increases to 2020. However compared to the baseline scenario, emissions are slightly higher due to stronger growth in LNG production to meet higher export demand.

Part of this growth is offset by falling emissions in the electricity sector, which continues to see growth in large-scale renewable builds lowering the emissions intensity of the grid, as with the baseline. In this sensitivity, electricity demand is higher compared to the baseline but is offset by higher rooftop solar generation.

### Emissions to 2030

Emissions in 2030 are 582 Mt CO<sub>2</sub>-e, growing 6 per cent above 2020 emissions levels and 3 per cent above the baseline in 2030.

Emissions are driven by growing production of LNG and coal. Demand for energy exports is higher than the baseline, which sees production for both of these products grow faster than the baseline.

This growth is offset in part by declines in electricity sector emissions. Although demand for electricity is higher than the baseline, there is stronger uptake of rooftop solar driven by strong economic activity, consumer confidence and growth in new dwellings. Large-scale renewable capacity is added in the late 2020s to meet growing demand and aided by declining renewable costs.

Transport emissions grow slower than the baseline, as higher investment and consumer confidence increase the uptake of electric vehicles. This lowers the emissions-intensity of the fleet.

Figure 15 Sensitivities against baseline, 1990 to 2030

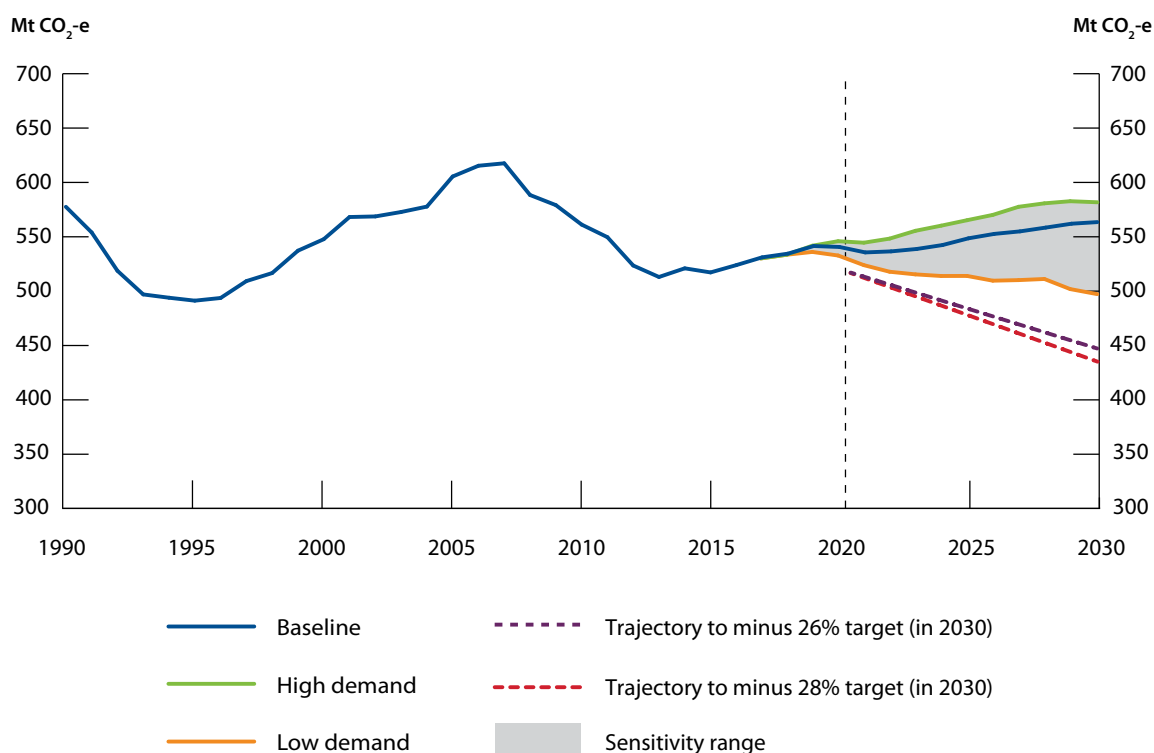


Table 15 Sensitivity results compared to baseline, Mt CO<sub>2</sub>-e

	2005	2018	2020	2030
<b>Baseline</b>	605	534	540	563
<b>Low demand</b>	605	534	534	497
<b>High demand</b>	605	534	547	582

Table 16 Cumulative emissions reduction task to 2030 under baseline and sensitivity analyses, Mt CO<sub>2</sub>-e

	Cumulative emissions reduction task (26% below 2005)	Cumulative emissions reduction task (28% below 2005)
<b>Baseline</b>	695	762
<b>Low demand</b>	325	392
<b>High demand</b>	877	944

# Appendix A – Methodology

An extensive methodology for Australia's emissions projections is provided as a separate document alongside this report. The Methodology report, *Methodology for the 2018 Projections*, can be found on the Department's website.

## Accounting approach

The projections are prepared at the sectoral level consistent with international guidelines adopted by the United Nations Framework Convention on Climate Change (UNFCCC). Emissions are expressed in terms of CO<sub>2</sub>-e using the 100 year global warming potentials contained in the Intergovernmental Panel on Climate Change's *Fourth Assessment Report* (IPCC 2007). As greenhouse gases vary in their radiative activity and in their atmospheric residence time, converting emissions into CO<sub>2</sub>-e allows the aggregate effect of emissions of the various gases to be considered.

Australia's emissions projections are estimated using a UNFCCC reporting framework consistent with Australia's approach to reporting under the 2030 target. The projections are also prepared on a Kyoto Protocol classification basis for tracking under the 2020 target. The sectoral emission estimates in this report use the UNFCCC reporting framework. The difference between the two classification frameworks is the treatment of emission sources and sinks from the land use, land use change and forestry sector. The UNFCCC framework includes more comprehensive coverage of lands and activities, while Kyoto Protocol classifications are more restrictive in their coverage of forests and wetlands, and apply a different set of reporting rules, for example relating to the international trade of harvested wood products and their eventual disposal in landfill.

Unless stated otherwise, all years in this report align with the definition of reporting year used in the national greenhouse gas inventory. Reporting years are reported for financial years as key data sources are published on this basis. For instance, '2030' refers to the financial year 2029–30.

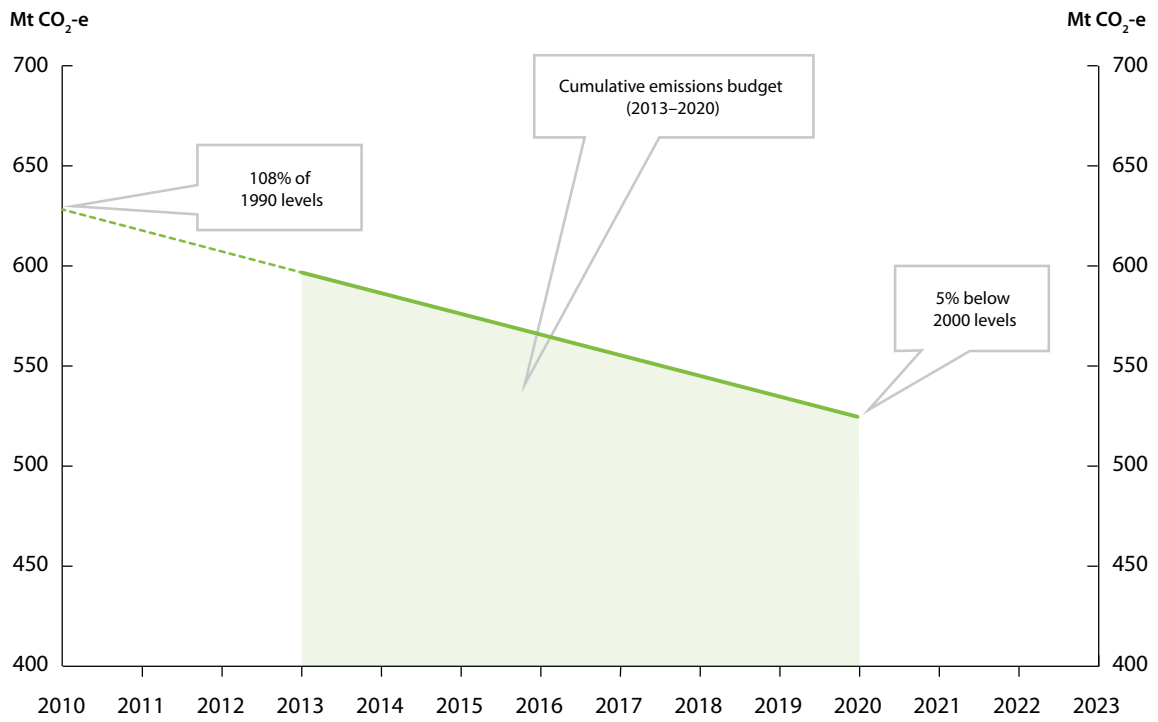
## Methodology for calculating Australia's cumulative emissions reduction task to 2020

Australia has a target of reducing emissions to 5 per cent below 2000 levels by 2020. This target has been communicated to the UNFCCC as a pledge under the Cancun Agreement.

Australia's 2020 target is based on the Kyoto Protocol classification system. It includes emissions and removals from the energy (electricity, direct combustion, transport, fugitives), industrial processes and product use, agriculture and waste sectors and the following Kyoto Protocol land use, land use change and forestry sub-classifications: deforestation, afforestation, reforestation, forest management, cropland management, grazing land management and revegetation.

Australia assesses its progress towards its 2020 target using an emissions budget for 2013 to 2020. A trajectory to achieve the emissions budget is calculated by taking a linear decrease from 2010 to 2020, beginning from the Kyoto Protocol first commitment period target level, which was 108 per cent of 1990 levels (583 Mt CO<sub>2</sub>-e) as calculated in Australia's latest National Inventory Report submission, and finishing at five per cent below 2000 levels in 2020.

Figure 16 Australia's cumulative emissions reduction task to 2020

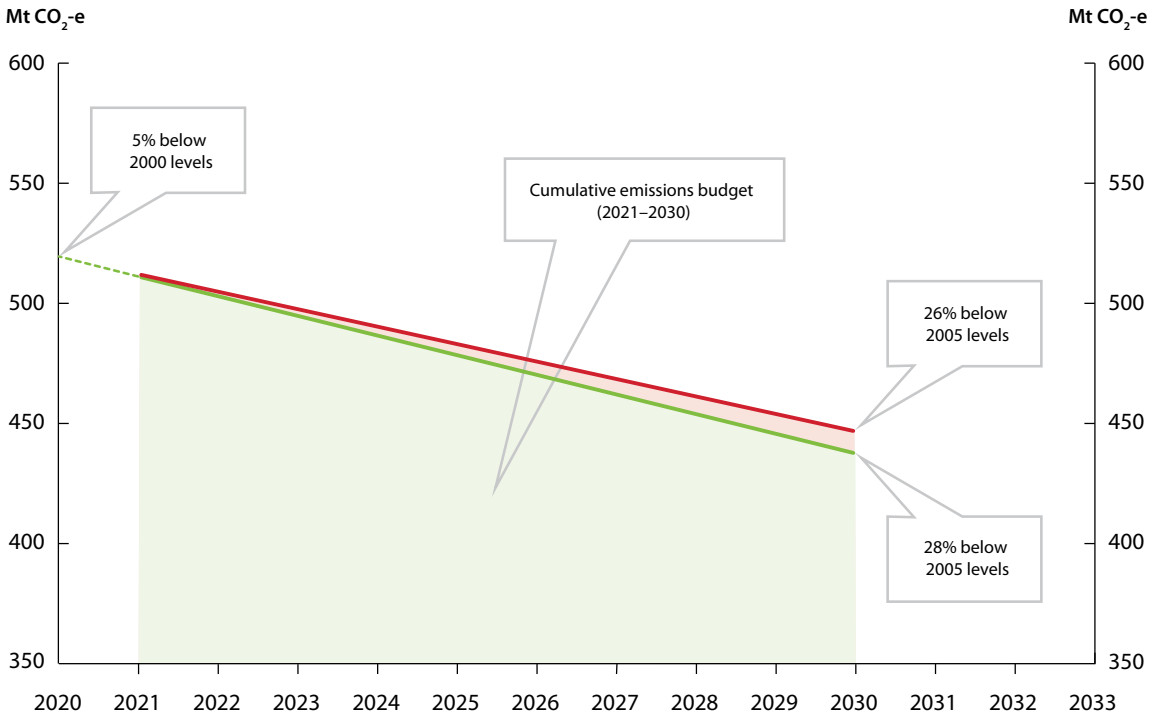


	2013	2014	2015	2016	2017	2018	2019	2020	2013–2020
Budget trajectory Mt CO <sub>2</sub> -e	598	587	577	566	556	545	535	524	<b>4488</b>

# Methodology for calculating Australia’s cumulative emissions reduction task to 2030

Under the Paris Agreement, Australia has a target of reducing emissions by 26–28 per cent below 2005 levels by 2030. Australia stated in its Nationally Determined Contribution that it would develop its target into an emissions budget covering the period 2021–2030. For this report, the calculation of Australia’s emissions budget is based on existing UNFCCC guidance developed in the context of the Cancun Agreement.

Figure 17 Australia’s cumulative emissions reduction task to 2030



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2021–2030
Budget trajectory (26% target) Mt CO <sub>2</sub> -e	512	505	498	491	484	476	469	462	455	447	<b>4800</b>
Budget trajectory (28% target) Mt CO <sub>2</sub> -e	511	503	494	486	478	469	461	452	444	435	<b>4733</b>

## Data sources

The projections are developed using a combination of top-down and bottom-up modelling prepared by the Department's analysts and external consultants. The preparation of the projections is based on the following data sources:

- historical emissions data from the *Quarterly Update of Australia's National Greenhouse Gas Inventory: June 2018*,
- macroeconomic assumptions of gross domestic product and exchange rates consistent with the Australian Government's 2018–19 Budget,
- population growth from the Treasury and ABS; and
- commodity forecasts and activity levels informed by a number of publications and data from government agencies and other bodies, including:
  - the Department of Industry, Innovation and Science
  - the Australian Bureau of Agricultural and Resource Economics and Sciences
  - the Australian Energy Market Operator
  - the International Energy Agency
  - announcements by business of investment intentions.

The Department applies consistent assumptions across all sectors of these projections.

Every effort is made to take account of available information and analysis. However, there is inevitably information that becomes available too close to the release of the projections to allow for detailed integration into the projections.

## Consideration of policies

The projections are developed on the basis of current policies and measures. These include the:

- ERF, total funding allocated to the ERF is \$2.55 billion and is projected to contribute 65 Mt CO<sub>2</sub>-e of abatement to 2020, and 240 Mt CO<sub>2</sub>-e over the period 2021 to 2030<sup>8</sup>
- Large-scale Renewable Energy Target of 33,000 GWh by 2020 to 2030
- Legislated phase-down of HFCs
- Land Use Land Use Change and Forestry measures including land clearing laws and the 20 Million Trees Programme
- State-based waste policy frameworks and the National Food Waste Strategy
- National Energy Productivity Plan
- State and territory government legislated renewable energy policies.

They do not take account of estimates of abatement from potential future policies and initiatives including proposed state renewable energy targets and plans.

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<sup>8</sup> Abatement from the ERF includes the results of the first seven auctions, with calculated estimates for future auctions based on set assumptions. Abatement includes contracted emission reductions and the continuation of some projects after the end of the contract period (post contract abatement). Further abatement from ERF projects after 2030 is not included in the projections.

## Institutional arrangements and quality assurance

The projections are prepared by the Department of the Environment and Energy using the best available data and independent expertise to analyse Australia's future emissions reduction task. The Department engages with a technical working group comprising of representatives from Commonwealth agencies to test the methodologies, assumptions and projections results. Australia makes formal submissions on its emissions projections to the United Nations and these are subject to UN expert review. The last review was completed in 2018.

The preparation of the emissions projections underwent a performance audit by the Australian National Audit Office (ANAO) in 2016 and 2017. The audit found the arrangements for preparing, calculating and reporting on Australia's greenhouse gas emission projections were largely effective. The audit report, *Accounting and Reporting of Australia's Greenhouse Gas Emissions Estimates and Projections* is published on the ANAO website.

## Difference between projections and forecasts

The Department regularly prepares emissions projections using the latest data including production and activity levels, commodity prices and macroeconomic assumptions. The Department makes reasonable assumptions about this data into the future based on the advice of other government agencies and external consultants. These include macroeconomic forecasts by the Australian Treasury; activity forecasts by other government agencies such as the Australian Bureau of Agricultural and Resource Economics and Sciences and the Department of Industry, Innovation and Science; forecasts by other public bodies such as the Australian Energy Market Operator; and announced investment intentions by businesses.

The projections are modelled taking this data into account and indicate what Australia's future emissions could be if the assumptions that underpin the projections continue to occur. For example, the projections presume that assumptions around the current rates of economic and population growth, the take up of certain technologies and the impacts of current government policies will remain valid. The projections do not attempt to account for the inevitable, but as yet unknown, changes that will occur in technology, energy demand and supply and the international and domestic economy.

In contrast, emissions forecasts speculate on the expectations or predictions of what will happen in the future and thus what future emissions will be. In a forecast the assumptions represent expectations of actual future events or changes. For example, this could mean forecasting emissions based on alternative predictions of how technology may evolve, how consumers and businesses will react to these technological changes and subsequently what impacts this would have on emissions. Alternatively this could mean forecasting emissions based on expectations about restructures in the Australian economy. Often a number of different scenarios that reflect different forecast assumptions are undertaken at the same time.

Both projections and forecasts are inherently uncertain, involving judgements about the future growth path of global and domestic economies, policies and measures, technological innovation and human behaviour. This uncertainty increases the further into the future emissions are projected (or forecast).

The distinction between forecasts and projections can also be seen in the Treasury's economic estimates underlying Australian Government fiscal projections. The estimates divide the forecast horizon into two distinct periods: the near-term forecast period which covers the first two years beyond the current financial year; and the longer-term projection period which includes the last two years of the forward estimates, and up to 36 more years for intergenerational analysis. The economic estimates over the forecast period are based on a range of short-run forecasting methodologies, while those over the projection period are based on medium- to long-run rules.

## Feedback

The Department of the Environment and Energy welcomes feedback regarding Australia's Emissions Projections at [emissions.projections@environment.gov.au](mailto:emissions.projections@environment.gov.au).



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

