



New Runway Project

PRELIMINARY DRAFT
MAJOR DEVELOPMENT PLAN

VOLUME C: AIRSPACE MANAGEMENT PLAN

SECTIONS 19-26
MAY 2018





Appendices

Glossary of Terms

03L/21R

Existing main runway designation

03R/21L

New runway designation

06/24

Existing cross runway designation

Air Route

The designated route for aircraft to fly between two points on the ground.

Air Traffic Control

Air Traffic Controllers manage the safe and orderly flow of aircraft into, out of and between airports.

Aircraft Movement

Either a take-off or a landing by an aircraft.

Aircraft sequencing

The process of air traffic control arranging spacing between aircraft to allow an orderly landing sequence with enough spacing to allow a landing aircraft to vacate the runway prior to the next one being cleared to land.

Airport Central

The terminal area between the existing main and new runways which currently houses Terminal 1 and Terminal 2.

Airport Infrastructure

Refers to all facilities provided at an airport. It includes runways, taxiways, terminals, roads, other buildings and navigation equipment.

Airside

The movement area of an aerodrome, adjacent terrain and building or portions thereof, access to which is controlled.

Airspace

The portion of the earth's atmosphere over which a nation exercises jurisdiction over aircraft in flight.

Airspace Management Plan

The Airspace Management Plan is a high level document that provides the parameters for which detailed flight path planning can be undertaken prior to the construction of the New Runway.

Section 160 of the *Environment Protection and Biodiversity Conservation Act 1999* notes that before the NRP MDP can be approved the Commonwealth Minister for Infrastructure and Transport must consider the advice of the Minister for the Environment and Energy in relation to the adoption of implementation of a plan for aviation airspace management involving aircraft operations that have or will have or are likely to have a significant impact on the environment.

Approaches

The course to be followed by an aircraft in approaching for a landing or in joining a traffic pattern.

Apron

A defined area on a land aerodrome intended to accommodate aircraft for loading and unloading passengers, mail or cargo, fuelling, parking or maintenance.

Australian Noise Exposure Contour (ANEC)

An Australian Noise Exposure Contour (ANEC) chart represents a forecast produced for a hypothetical future usage pattern. ANEC forecasts are based on indicative data on aircraft types, flight paths, operating modes etc., and are generally used in environmental assessments to depict potential noise exposure for the scenarios being considered.

Australian Noise Exposure Forecast (ANEF)

An Australian Noise Exposure Forecast (ANEF) chart shows contours representing a forecast of future noise exposure around an airport that has been endorsed by Airservices Australia on the basis of approved operational arrangements and air traffic forecasts. In some cases an ANEF chart may be based on the outer envelope of contours from a number of ANEC charts.

Australian Noise Exposure Index (ANEI)

An Australian Noise Exposure Index (ANEI) chart is based on historical data from a previous year, where exact numbers and types of aircraft which used the aerodrome are known. It shows the average daily aircraft noise exposure around the aerodrome for that year.

Automatic Dependent Surveillance Broadcast

An air traffic surveillance technology that enables aircraft to be accurately tracked by air traffic controllers and other pilots without the need for conventional radar.

A-Weighted Noise Level (dBA)

This is a value representing the loudness of a sound at a specific time, allowing for the differential response of the human ear to different sound frequencies.

Compass departures

Compass departures sees the runway allocated according to the direction that the aircraft is going.

Continuous Descent Approach

An approach in which the aircraft's height is reduced continuously from a point at a large distance from the airport until it touches the runway. This results in lower noise emission than alternatives in which the aircraft's height may be held constant for sections of the track.

Controlled Airspace

Controlled airspace is airspace where an air traffic control service is provided. Controlled airspace is provided around major airports and between airports to ensure that the majority of aircraft that carry passengers are provided with separation from other aircraft.

Corridor

A representation around an air route that indicates a range of flight paths that may be flown by aircraft as a result of weather diversions or air traffic control intervention. An area that final flight paths may be designed within.

Departure and Arrival Procedure

The Standard Instrument Departures (SID) used for departing aircraft or the Standard Arrival Routes (STAR) used for arriving aircraft

Dependant Approaches

Where aircraft making approaches to each of parallel runways must be provided with air traffic control separation from each other.

Duty Runway

The runway or runways that have been nominated to be used by air traffic control at a given time.

Estate

The grounds and tenancies associated with the Perth Airport land holdings.

Flight Path

The track an aircraft may fly. Flight paths include Air Routes, Departure and Arrival procedures, Approach procedures and flight tracks.

Flight Track

The actual path in the air flown by an aircraft which may vary from the air route or the departure or arrival procedure.

General Aviation (GA)

Refers to all flights other than military and scheduled airline flights, both private and commercial.

HIAL

High Intensity Approach Lighting

Holding

A manoeuvre designed to delay an aircraft already in flight while keeping it within a specified airspace.

Independent Approaches

Where two aircraft can be processed for an approach to each of the parallel runways independent of each other.

Instrument Approach

An instrument approach is required in poor weather conditions where the pilot cannot see the ground and relies on the pilot receiving guidance to land from instruments located in both the aircraft and on the ground.

Instrument Landing System (ILS)

An ILS is a highly accurate navigation aid that uses radio signals to give the pilot vertical and horizontal guidance on a three-degree descent profile to the runway for landing. The ILS provides lateral guidance (localiser) which will keep the aircraft on a heading direct to the runway and descent guidance (glide path) which provides descent guidance to touch down on the runway.

Instrument Meteorological Conditions

When low cloud or reduced visibility do not permit a visual approach and a pilot must make an instrument approach.

L_{A90}

The L_{A90} level is the A-weighted noise level which is exceeded for 90 per cent of the sample period. During the sample period, the noise level is below the L_{A90} level for ten per cent of the time. This measure is commonly referred to as the background noise level.

L_{Aeq}

The equivalent continuous sound level (L_{Aeq}) is the energy average of the A-weighted noise level over a sample period, and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is sometimes used to describe aircraft noise, in which case it refers to the noise level that is due to aircraft only, excluding other noise. Variants of this measure have been defined that cover specific time periods, such as L_{Aeq} 9.00 am to 3.00 pm.

Major Development Plan (MDP)

As defined by section 91 (1) of the *Airports Act 1996*.

Master Plan

As defined by section 71 (2) of the *Airports Act 1996*.

Maximum Noise Level (L_{Amax})

L_{Amax} over a sample period is the maximum A-weighted noise level measured during the period. In the context of aircraft overflight noise, L_{Amax} generally means the maximum A-weighted noise level recorded during a specific overflight, measured using Slow speed, and can therefore also be written L_{ASmax} . In this report, L_{Amax} denotes the maximum level attained during a single overflight.

Movement

Either a take-off or a landing by an aircraft.

N60

N60 is a measure of noise exposure that indicates the average number of aircraft overflights per day (or other specified time period) exceeding 60 dBA. N60 is generally used to describe night time noise exposure.

N65

N65 contour map illustrates the average number of events per day over 65 dBA for a particular area. This corresponds to an outdoor sound level of 65 dBA and an indoor noise level of approximately 55 dBA.

NATS

The United Kingdom's provider of air traffic control services. In addition to providing services to 13 UK airports, and managing all upper airspace in the United Kingdom, NATS provides services around the world spanning Europe, the Middle East, Asia and North America. Additional information on NATS can be found at www.nats.aero

Noise Abatement Procedures

Every major airport has Noise Abatement Procedures (NAPs), which are designed to reduce the impact of aircraft noise on the community. They include procedures for runway use and flight paths.

N-contours

A term used to describe noise through reporting the number of aircraft noise events louder than the specified dBA level.

New Runway Project

The New Runway Project (NRP) includes:

- construction, including clearing and site preparation, of a new runway up to 3,000 metres in length and with associated infrastructure.
- development of an airspace management plan that will cater for the changes to current airspace and flight paths to accommodate operations of the new runway.

Noise Event

An event begins when the noise level exceeds a certain threshold value set in the noise monitor (which will be above the background noise level) and ends when the noise level drops below it.

Required Navigation Procedure (RNP)

RNP is a highly accurate procedure to approach and land on a runway. RNP uses highly accurate on board computer systems to fly via a set of latitudes and longitudes while also providing descent guidance.

Restricted Areas

Restricted areas or airspace is a defined piece of airspace, above land or water, where an aircraft is restricted to fly unless specified conditions are complied with and air traffic control permission is granted.

Runway

A defined rectangular area on a land aerodrome, prepared for the take-off and landing of aircraft along its length.

Runway Heading

Runway heading refers to the magnetic direction in degrees that corresponds to the centerline of the runway. The main runway 21 at Perth has a magnetic heading of 196 degrees so to fly on runway heading would see the pilot fly a heading of 196 degrees magnetic.

Runway Mode

An operating mode is the use of a certain runway or a combination of runways and the mode selected is based on a number of factors and documented selection criteria.

Runway Mode Capacity

How many aircraft that a runway or combination of runways can accommodate in an hour in various weather conditions. It may be a number of arrivals or departures or a combination of both.

Runway Number

The number allocated to a runway end, being that whole number nearest to one tenth of the magnetic bearing of the runway centreline (measured clockwise from magnetic north) when viewed from the approach. Single digit numbers are preceded by zero and where the final numeral of the bearing is five degrees, the number allocated is the next largest number.

Taxiway

A defined path on an aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:

- aircraft stand taxiway: a portion of an apron designated as a taxiway and intended to provide access to aircraft stands only,
- apron taxiway: a portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron, and
- rapid exit taxiway: a taxiway connected to a runway at an acute angle and designed to allow landing aircraft to turn off at higher speeds than are achieved on other exit taxiways thereby minimising runway occupancy times.

Terminal Arrivals

When aircraft arrive and depart from the runway nearest the terminal they operate from.

Uncontrolled airspace

Airspace where no air traffic control service is provided. This is where the majority of light aircraft and helicopters operate.

Visibility

A measure of the distance at which an object or light can be clearly discerned.

Visual Approach

A visual approach is an approach to a runway conducted with reference to visual cues and clear of clouds.

Visual Meteorological Conditions

When weather conditions are such that no low cloud or reduced visibility will impact a pilots ability to make a visual approach.

Acronym / Abbreviation

03/21 or 03L/21R	Main runway designation
03R/21L	New runway designation
06/24	Cross runway designation
AAQ NEPM	Ambient Air Quality National Environment Protection Measure
ACES	Airport Consultative Environmental Sustainability Group
ACI	Airports Council International
ADS-B	Automatic Dependent Surveillance Broadcast
AEDT	Aviation Environmental Design Tool
AEPR	Airports Environmental Protection Regulations
AIP	Aeronautical Information Package
Airports Act	<i>Airports Act 1996</i>
Airservices	Airservices Australia
ANEC	Australian Noise Exposure Concept
ANEF	Australian Noise Exposure Forecast
ANEI	Australian Noise Exposure Index
ANMS	Aircraft Noise Management Strategy
ANO	Aircraft Noise Ombudsman
AQI	Air Quality Index
AQMS	Air Quality Monitoring Station
AS	Australian Standard
ATC	Air Traffic Control
AWS	Automatic Weather Station
C LL 2000	Class C Controlled Airspace with a Lower Level of 2000 feet
CASA	Civil Aviation Safety Authority
CBD	Central Business District
CDA	Continuous Descent Arrival
CONOPS	Concept of Operations
CTA	Controlled Airspace
DAP	Departures and Approach Procedures
dBA	Weighted decibels which accounts for the varying sensitivity of the human ear to different frequencies of sound
DEE	Department of the Environment and Energy
DME	Distance Measuring Equipment
DPLH	Department of Planning, Lands and Heritage
DIRDC	Department of Infrastructure, Regional Development and Cities
DWER	Department of Water and Environment Regulation
EDMS	Emissions and Dispersion Modelling System
EPBC Act	<i>Environment Protection and Biodiversity and Conservation Act 1999</i>
EPNL	Effective Perceived Noise Level

FAA	USA Federal Aviation Administration
FUA	Flexible Use of Airspace
GA	General Aviation
GDA	Geocentric Datum of Australia
GIS	Geographic Information System
GPS	Global Positioning System
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
IHD	Ischaemic Heart Disease
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
INM	Integrated Noise Model
IVA	Independent Visual Approach
KT	Knot (wind speed measured in nautical miles per hour)
LTO	Landing Take-off cycle
MDP	Major Development Plan
MGA	Map Grid of Australia
NAP	Noise Abatement Procedures
NASAG	National Airports Safeguarding Advisory Group
NASF	National Airports Safeguarding Framework
NEF	Noise Exposure Forecast
NEPM	National Environment Protection Measure
NFPMS	Noise and Flight Path Monitoring System
NGER Act	<i>National Greenhouse and Energy Reporting Act 2007 (Commonwealth)</i>
NOTAM	Notice to Airmen
NPD	Noise Power Distance
NRP	New Runway Project
ORAT	Operational Readiness Activation and Transition
PAANTWG	Perth Airport Aircraft Noise Technical Working Group
PACF	Perth Airport Community Forum
PAG	Perth Airport Aboriginal Partnership Agreement Group
PAMG	Perth Airport's Municipalities Group
PAPI	Precision Approach Path Indicator
PCF	Planning Coordination Forum
PHCTR	Perth Control Zone
PM	Particulate Matter
RAAF	Royal Australian Air Force
RNP	Required Navigation Procedure
RPT	Regular Public Transport
SA HB	Standards Australia Handbook

SAE	Society of Automotive Engineers
SEL	Sound Exposure Level
SFC	Surface
SID	Standard Instrument Departure
SOIR	Simultaneous Operations on Parallel or Near Parallel runways
STAR	Standard Arrival Route
STEP	Significant Terminal Expansion Project
T1	Terminal 1
T2	Terminal 2
T3	Terminal 3
T4	Terminal 4
US EPA	United States of America Environmental Protection Agency
VMC	Visual Meteorological Conditions
VOC	Volatile Organic Compound
WAPC	Western Australian Planning Commission
WARRP	Western Australia Route Review Project
WGS	World Geodetic System 1984 (a global reference system for geospatial information and is the reference system for GPS)
WHO	World Health Organization

References

- Aboriginal and Torres Strait Islander Heritage Protection Act 1984*
- Aboriginal Heritage Act 1972*
- Aboriginal Heritage Regulations 1974
- Air Navigation (Aircraft Engine Emissions) Regulation 1995
- Air Navigation Act 1920*
- Air Navigation Regulations 1947
- Airports Act 1996*
- Airports (Building Control) Regulations 1996
- Airports (Control of On-Airport Activities) Regulations 1997
- Airports (Environment Protection) Regulations 1997
- Airports (Protection of Airspace) Regulations 1996
- Airports Regulations 1997
- Airports Commission. Discussion Paper 05: Aviation Noise, 2013
- Airservices Australia. Review of Perth Airport Noise Abatement Procedures, 2014
- Airspace Act 2007*
- Australian Bureau of Statistics. Census of Population and Housing, 2011
- Australian Bureau of Statistics. Working Time Arrangements, 2012
- Australian Bureau of Statistics. Regional Statistics: Greater Perth, 2014
- Australian Bureau of Statistics. Census of Population and Housing, 2016
- Australian Institute of Health and Welfare. Cardiovascular disease: Australian facts, 2011
- Australian Standard AS 1055.2-1997 Acoustics-Description and measurement of environmental noise, 1997
- Australian Standard 2021:2015 Acoustics – Aircraft noise intrusion – Building siting and construction, 2015
- Babisch, W. Transportation noise and cardiovascular risk: updated review and synthesis of epidemiological studies indicate that the evidence has increased, 2006
- Babisch, W. Updated exposure-response relationship between road traffic noise and coronary heart diseases: A meta-analysis, 2014
- Basner, M., Babisch, W., Davis, A., Brink, M., Clark, C., Janssen, S. and Stansfeld, S. Auditory and non-auditory effects of noise on health, 2014
- Basner, M., Müller, U. and Elmenhorst, E.M. Single and combined effects of air, road, and rail traffic noise on sleep and recuperation, 2011
- Berry, B. and Sanchez, D. The economic and social value of aircraft noise effects: A critical review of the state of the art. 11th International Congress on Noise as a Public Health Problem, 2014
- Black, D., Black, J., Issarayangyunc, T. and Samuels, S. Aircraft noise exposure and resident's stress and hypertension: A public health perspective for airport environmental management. Journal of Air Transport Management, 2007
- Brisbane Airport Corporation. New Parallel Runway Environmental Impact Statement (EIS) and Major Development Plan (MDP), 2007
- Civil Aviation Act 1988
- Civil Aviation Authority. Information on the Environmental Impact of Aviation, 2015
- Civil Aviation Authority. Aircraft noise and health effects: Recent findings. Environmental Research and Consultancy Department Report CAP 1278, 2016
- Civil Aviation Authority. Survey of Noise Attitudes 2014, 2017
- Civil Aviation Regulations 1988
- Civil Aviation Safety Regulations 1988
- Clark, C. Aircraft noise effects on health. Report Prepared for the Airports Commission, 2015
- Clark, C., Martin, R., van Kempen, E., Alfred, T., Head, J., and Davies, H.W. Exposure-effect relations between aircraft and road traffic noise exposure at school and reading comprehension - the RANCH project. American Journal of Epidemiology, 2006
- Correia, A., Peters, J., Levy, J., Melly, S., and Dominici, F. Residential exposure to aircraft noise and hospital admissions for cardiovascular diseases: multi-airport retrospective study, 2013
- Denison, L. Western Sydney Airport Environmental Impact Assessment, 2016
- Department of Employment. Small Area Labour Markets publication - March quarter 2017, 2017
- Department of Health. National Mental Health Plan 2003-2008, 2003
- Department of Infrastructure, Regional Development and Cities. State of Australian Cities 2014-2015, 2014
- Department of Infrastructure, Regional Development and Cities. The National Airports Safeguarding Framework. 2017a
- Department of Infrastructure, Regional Development and Cities. Aviation Emissions, 2007b
- Western Australian Planning Commission. Direction 2031 and Beyond, 2010

- Western Australian Planning Commission. Kewdale-Hazelmere Integrated Masterplan, 2011
- Department of Transport and Regional Services. Expanding Ways to Describe and Assess Aircraft Noise, 2000
- Department of Environment . Air Quality and Air Pollution Modelling Guidance Notes 2006, 2006
- enHealth. The health effects of environmental noise – other than hearing loss, 2004
- Environment Protection and Biodiversity Conservation Act 1999*
- European Environment Agency. Good practice guide on noise exposure and potential health effects, 2010
- Fields, D.M., De Jong, R.G., Gjestland, T., Flindell, I.H., Job, R.F.S. and Kurra, S. Standardized general-purpose noise reaction questions for community noise surveys: Research and a recommendation. *Journal of Sound and Vibration*, 2001
- Guski, R. Personal and social variables as co-determinants of noise annoyance. *Noise and Health*, 1999
- Hänninen, O., Knol, A.B., Jantunen, M., Lim, T.A., Conrad, A., Rappolder, M., Carrer, P., Fanetti, A.C., Kim, R. and Buekers, J. Environmental burden of disease in Europe: Assessing nine risk factors in six countries. *Environmental Health Perspectives*, 2014
- Hansell, A., Blangiardo M., Fortunato, L., Floud, S., de Hoogh, K., Fecht, D., Ghosh, R., Laszlo, H., Pearson, C., Beale, L., Beevers, S., Gulliver, J., Best, N., Richardson, S. and Elliott, P. Aircraft noise and cardiovascular disease near Heathrow airport in London: small area study, 2013
- Huss, A., Spoerri, A., Egger, M. and Röösli, M. Aircraft Noise, Air Pollution, and Mortality from Myocardial Infarction. *Epidemiology*, 2010
- Hygge, S., Evans, G. and Bullinger, M. A Prospective Study of Some Effects of Aircraft Noise on Cognitive Performance in Schoolchildren. *Psychological Science*, 2002
- International Civil Aviation Organization. Environmental Report 2016 Aviation and Climate Change. On Board: a sustainable future, 2016 .
- International Civil Aviation Organization. Balanced Approach to Noise Management, 2017
- International Civil Aviation Organization. Procedures for Air Navigation Services Air Traffic Management, 16th edition, 2016a,
- Ising H. and Kruppa B. Health effects caused by noise: Evidence in the literature from the past 25 years. *Noise and Health*, 2014
- Jandakot Airport Master Plan 2014
- Jarup,L., Babisch, W., Houthuijs, D., Pershagen, G., Katsouyanni, K., Cadum, E., Dudley, M., Savigny, P., Seiffert, I., Swart, W., Breugelmans, O., Bluhm, G., Selander, J., Haralabidis, A., Dimakopoulou, K., Sourtzi, P., Velonakis, M. and Vigna-Taglianti, F. Hypertension and Exposure to Noise Near Airports: the HYENA Study. *Environmental Health Perspectives*, 2008
- Jones, K. Environmental Noise and Health: a review. Environmental Research and Consultancy Department Report 0901, 2010a
- Jones, K. Aircraft noise and children’s learning: a review. Environmental Research and Consultancy Department Report 0908, 2010b
- Jones, K. and Rhodes, D.P. Aircraft Noise, Sleep Disturbance and Health Effects: A Review. Environmental Research and Consultancy Department Report CAP 1164, 2013
- Klatte, M., Spijski, J., Mayerl, J., Möhler, U., Lachmann, T. and Bergström, K. Effects of Aircraft Noise on Reading and Quality of Life in Primary School Children in Germany. *Environment and Behaviour*, 2016
- Manual of Standards Part 139 – Aerodromes
- Manual of Standards Part 172 – Air Traffic Services
- Matheson, M., Stansfeld, S. and Haines, M. The effects of chronic aircraft noise exposure on children’s cognition and health: 3 field studies. *Noise and Health*, 2003
- Maurice L.Q., Lee D.S. (eds). Assessing Current Scientific Knowledge, Uncertainties and Gaps in Quantifying Climate Change, Noise and Air Quality Aviation Impacts, 2008
- Maurice, L.Q., Lee, D.S., Wuebbles, D.W., Isaksen, I., Finegold, L., Vallet, M., Pilling, M. and Spengler, J. Final Report of the International Civil Aviation Organization (ICAO) Committee on Aviation and Environmental Protection (CAEP) Workshop, Washington DC; Manchester: US Federal Aviation Administration and Manchester Metropolitan University, 2009
- Michaud, D.S., Fidell, S., Pearsons, K., Campbell, K.C. and Keith, S.E. Review of field studies of aircraft noise-induced sleep disturbance. *Journal of the Acoustical Society of America*, 2007
- Miedema, H.M. and Vos, H. Associations between self-reported sleep disturbance and environmental aircraft noise-induced sleep disturbance. *Behavioural Sleep Medicine*, 2007
- Muzet, A. Environmental noise, sleep, and health. *Sleep Medicine Reviews*, 2007
- National Greenhouse and Energy Reporting Act 2007*
- National Environmental Protection Council. National Environment Protection (National Pollutant Inventory) Measure, 1998

- National Environmental Protection Council. National Environment Protection (Air Toxics) Measure, 2004
- National Environmental Protection Council. National Environment Protection Measures, 2017
- Öhrström, E., Hadzibajramovic, E., Holmes, E. and Svensson, H. Effects of road traffic noise on sleep: studies on children and adults. *Journal of Environmental Psychology*, 2006
- Passchier-Vermeer, W. and Passchier, W.F. Noise exposure and public health. *Environmental Health Perspectives*, 2000
- Paunović, K., Stansfeld, S., Clark, C. and Belojević, G. Epidemiological studies on noise and blood pressure in children: Observations and suggestions. *Environment International*, 2011
- Perth Airport Master Plan 1985
- Perth Airport Master Plan 1999
- Perth Airport Master Plan 2004
- Perth Airport Master Plan 2009
- Perth Airport Master Plan 2014
- Perth Airport Master Plan 2014 Minor Variation
- Pirrer, S., De Valck, E. and Cluydts, R. Nocturnal road traffic noise: a review on its assessment and consequences on sleep and health. *Environment International*, 2010
- Rosenlund, M., Berglind, N., Pershagen, G., Järup, L. and Bluhm, G. Increased prevalence of hypertension in a population exposed to aircraft noise. *Occupational and Environmental Medicine*, 2001
- Sharp, B., Connor, T.L., McLaughlin, D., Clark, C., Stansfeld, S.A. and Hervey, J. Assessing aircraft noise conditions affecting student learning. A.C.R. Program (Ed.): Transportation Research Board of the National Academies, 2014
- Sørensen, M., Hvidberg, M., Andersen, Z., Nordborg, R., Lillelund, K., Jakobsen, J., Tjønneland, A., Overvad, K. and Raaschou-Nielsen, O. Road traffic noise and stroke: a prospective cohort study. *European Heart Journal*, 2011
- Southgate, D. Aircraft Noise - A Broad-Area Issue. International Civil Aviation Organization Environmental Report 2007 Part 2: Aircraft Noise, 2007
- Standards Australia Handbook. SA HB 149:2016 Acoustics—Guidance on producing information on aircraft noise, 2016
- Stansfeld, S. and Matheson, M. Noise Pollution: non-auditory effects on health, *British Medical Bulletin*, 2003
- Stansfeld, S. and Clark, C. Health effects of noise exposure in children. *Current Environmental Health Reports*, 2015
- Stansfeld, S., Berglund, B., Clark, C. and Berry, B. Aircraft and road traffic noise and children's cognition and health: a cross-national study. *The Lancet*, 2005
- Stansfeld, S.A., Clark, C., Cameron, R.M., Alfred, T., Head, J., Haines, M.M., van Kamp, I., van Kempen, E. and Lopez-Barrio, I. Aircraft and road traffic noise exposure and children's mental health. *Journal of Environmental Psychology*, 2009
- Stansfeld, S.A., Hygge, S., Clark, C. and Alfred, T. Night time aircraft noise exposure and children's cognitive performance. *Noise and Health*, 2010
- Swift, H. A Review of the Literature Related to Potential Health Effects of Aircraft Noise. Partner Project 19 Final Report, 2010
- Vanclay, F., Esteves, A. M., Aucamp, I. and Franks, D. Social Impact Assessment: Guidance for Assessing and the Social Impacts of Projects, 2015
- Vanclay, P.F. International Association of Impact Assessment. Social Impact Assessment, International Principles, Special Publication Series No. 2, 2003
- Western Australian Planning Commission. State Planning Policy 5.1 Land Use Planning in the Vicinity of Perth Airport, 2015
- World Health Organization Europe. Burden of Disease from Environmental Noise, 2011
- World Health Organization Europe. Night Noise Guidelines for Europe, 2009
- World Health Organization. Guidelines for Community Noise, 1999.
- World Health Organization. Health Aspects of Air Pollution with Particulate Matter, Ozone and Nitrogen Dioxide. Report on a World Health Organization Working Group Bonn, Germany 13-15 January, 2013
- World Health Organization. Health Effects of Particulate Matter, 2013
- World Health Organization. Constitution of WHO: Principles, 2017
- World Heart Federation. Hypertension and Cardiovascular Disease, 2017





Perth Airport Pty Ltd

Level 2, 2 George Wiencke Drive, Perth, WA 6105
PO Box 6, Cloverdale, WA 6985
Tel: +61 8 9478 8888 Fax: +61 8 9478 8889
www.perthairport.com.au