Healthy Airports

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Executive Summary

Through the 20th century airports grew to become major trade, commercial, transport, tourism, employment and people hubs of the world. In the 21st century the airport promises to be a new core of global and regional connectedness.

Airports have, however, significant impacts on the social, physical and economic environment. In particular, concerns around noise and environmental pollution are on the minds of many people in airport affected communities.

Yet airports also have the potential to contribute to improvements in environments for health. They may well support enhanced sustainability and resilience; they potentially create high quality jobs and better education; they attract top quality catering industries and food systems; innovation industries like to be close to global transport hubs; and interconnected multi-modal transport contribute to population health.

Given development of the new Western Sydney Airport, this is why the Centre for Health Equity Training, Research and Evaluation (CHETRE - a research hub with UNSW and an intelligence unit in the South Western Sydney Local Health District's Population Health Division) was charged with the development of a Healthy Airport Region vision.

Based on a structured scholarly review and broad stakeholder consultation this project proposes that a Healthy Airport is:

> "*...an ever-evolving complex human enterprise responsive to the unique character and composition of the people and communities that live around and engage with it centered on actions, policies and general governance arrangements enabling the efficient movement of people, goods and services, through aircraft using it as a departure and arrival base as well as in its terrestrial supply and waste chains, and aimed at creating conditions for better and equitable health within its spatial, commercial and perceptual footprints to maximise health potential and minimize health hazards.*"

This report identifies twelve dimensions across seven geospatial levels to drive the development of airports as "engines of health". It explicitly embraces World Health Organization thinking around "Healthy Settings" and "Social Determinants of Health". Such thinking requires full engagement of all stakeholders, but explicitly communities such as travellers, visitors, fly-in-fly-out staff, local communities, stationary workers and aviation personnel. This paper sees these groups as associated with a Healthy Airport impact and influence that extend far beyond the visual horizon.

Healthy Airport Regions – A Conceptual Framework

Contents

Introduction

In this document we aim to outline the dimensions that would create a Healthy Airport. Airports can and must be health enhancing. Like many other large infrastructural developments, airports are simultaneously seen as both major economic engines and as potential threats to health and well-being. Airports are special places. They are dynamic windows on the world. For many, they resonate with the romance and adventure of travel. They are places where emotions associated with departure and homecoming resonate. For others, they are places of anger and frustration related to delay, poor service, noise and congestion. There is still great symbolism associated with the aviation world and its terrestrial bases. Airport development prompts varied (often emotive) responses.

As engines of economic performance and pivots of busy-ness, airports are complex interfaces between corporate operations uniquely related to air transportation of passengers and cargo, and other entrepreneurial activity that seeks to take advantage of the concentration of transport-related services and goods.

At the same time, airports have been seen historically as sources of noise, air and other pollution, congestion, and as destructive of ecosystems essential for the survival of the planet. They generate complex spatial externalities – negative impacts are usually seen as concentrated on or near the airport, and experienced by workers and local communities, while the positive benefits are seen as spread to a wider geography.

> **"**_Airports are engines of the economy, if 'done well' they are engines of health. Healthy Airports create healthy and equitable economies._**"**

Urban Health Settings

Since the adoption of the 'Ottawa Charter for Health Promotion' in 1986 there has been a strong ideological and evidence-based recognition that risk-based approaches in population health need to be combined with, and embedded in, settings-based approaches. Epidemiological and biostatistical operations enable population health researchers to identify concentrations of (excess) risk in certain populations, but the individuals, groups and communities that make up those populations virtually never see themselves as a 'risk group' – they create their own raison d'être, identity, and therefore health-enhancing (and threatening) capacities in the settings of their everyday lives. Such settings could be homes, workplaces, neighbourhoods, schools and the public domain.

One of the most globally prolific and evidence-based settings initiatives is the global Healthy Cities movement. This movement embraces thousands of cities of all sizes on all permanently habited continents. In some countries, like China and South Korea, 'Healthy Cities' are mandated by law. 'Healthy Cities' have their ups and downs in popularity. In Australia, they were a vehicle of choice for health promotion in the 1980s and 1990s, while now only a handful (Illawarra; Onkaparinga; Gold Coast; Casey; Corio-Norlane) are 'officially' members of the global effort through the Australian Chapter of the Alliance for Healthy Cities. Yet, all local governments in Victoria are required to meet Healthy City-like standards through their Municipal Public Health Plan, and efforts promoting healthy urban development elsewhere heavily draw on the eleven qualities which a Healthy City should strive to attain (Hancock & Duhl, 1986):

1. a clean, safe, high quality physical environment (including housing quality)
2. an ecosystem which is stable now and sustainable in the long term
3. a strong, mutually supportive and non-exploitative community
4. a high degree of public participation in and control over the decisions affecting one's life, health and well-being
5. the meeting of basic needs (food, water, shelter, income, safety, work) for all the city's people
6. access to a wide variety of experiences and resources with the possibility of multiple contacts, interaction and communication
7. a diverse, vital and innovative city economy
8. encouragement of connectedness with the past, with the cultural and biological heritage and with other groups and individuals
9. a city form that is compatible with and enhances the above parameters and behaviour
10. an optimum level of appropriate public health and sick care services accessible to all
11. high health status (both high positive health status and low disease status).

Hancock & Duhl (1986) define a Healthy City as:

> **"***…one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and developing to their maximum potential.***"**

Healthy Cities are therefore not just localities where some sort of optimum health capacity has been achieved. More realistically and productively, Healthy Cities around the world engage in multitudes of processes, actions, policies and institutional arrangements that aim for health outcomes in many different ways (de Leeuw & Simos, 2017).

We acknowledge that a 'city' paradigm can be limiting in some circumstances and that the notion of the healthy region provides a more inclusive concept for approaching development alongside citizens' good health (http://www.healthyregions.eu/). 'Cities' no matter what their size all have regional footprints. The smallest 'Healthy City' is l'Isle-Aux-Grues in the mouth of the Québec Fleuve Saint-Laurent with a few hundred inhabitants, whereas the largest one, Shanghai, exceeds 16 million people. Similarly, airports have been cast as particular types of regions, too. This is specifically happening in European contexts on two fronts: one perspective is looking at the wider spatial impact of airports on population agglomerations, and another frames a type of airport that is not a national hub but rather serving regional interests. The latter type, however, is often seen as an appropriate alternative for (sometimes international) flights by budget airlines.

In the early 21st century these aspirations and views of urban and regional development very much resonate with United Nations initiatives: the Sustainable Development Goals set in 2015 (Reckien et al., 2017) and the New Urban Agenda which the world agreed on in 2016 (Sassen et al. 2017). This context creates important momentum for a health view of airports.

The Case of Airport-Related Communities

In many respects an airport might be characterized as a special type of city or region. In fact, the aerotropolis concept claims as much, but primarily from an economic development-driven perspective:

An aerotropolis is a metropolitan subregion whose infrastructure, land-use, and economy are centered on an airport. Similar in shape to the traditional metropolis made up of a central city commercial core and its outlying commuter-linked suburbs, the aerotropolis consists of a multimodal airport-based commercial core (Airport City) and outlying corridors and clusters of aviation-linked businesses and associated residential developments that feed off of each other and their accessibility to the airport (Kasarda, forthcoming).

From a health point of view our quintessential perspective must be on people (individuals, groups, and communities) while we recognise that their health is created, sustained and promoted by other people, institutions, and other more distal determinants (social, economic and political). Airport and aviation related communities include stationary workers at the airport as well as in industries and sectors dependent on the airport (e.g., the catering and innovation industries), travelers (of all kinds, including business travelers and international tourists), visitors and friends/family/colleagues/staff delivering or collecting people at the airport, personnel in the general mobility sector (taxi and ride share drivers, bus and truck professionals, rail personnel), flight staff (ground personnel and flying), communities involved in food systems, logistics, and other supply chain vehicles, as well as people affected by noise and emissions of aircraft.

Thus, in considering an airport as a unique setting for health (the Healthy Airport) we suggest that the rhetorical and development appeal of the aerotropolis idea may well be married to the health ambitions of Healthy Cities. Below we set out a number of conceptual dimensions for a Healthy Airport - and more especially Healthy Airport Regions - and current as well as future research and development opportunities to connect these dimensions with the unique characteristics of the airport setting.

> **"***Cities, regions, airports, aerotropolises and health all have wider (and fuzzy) footprints.***"**

Toward the Healthy Airport Region

The aviation industry and its terrestrial facilities are subject to strict codification and monitoring. Aviation safety, security and compatibility issues are regulated in a complex institutional environment where the public sector engages with industry and enterprise objectives as well as employee, consumer and citizen interests. In relation to international airports there are significant volumes of standards and codes that need to be maintained. These are negotiated and upheld predominantly by the International Civil Aviation Organisation (ICAO), but particular services and conditions (notably related to health) are within the remit of local, state, national and international governments (see Appendix). Quarantine regulations and reportable health conditions, for instance, fall within the ambit of the World Health Organisation (WHO) and regulatory remit of ICAO, and their implementation within the appropriate (governance) configuration of local and national governments.

In scoping the healthy airport concept we must consider the nature and footprint of the thing that is 'an airport'. Airports are dynamic environments animating their local settings with multifarious impacts that can also reach national and global levels (Freestone, 2009). The aerotropolis concept usefully recognizes a wider spatial frame of reference for airport-related development and impacts but remains an essentially city-based framework. A broader region-based approach recognizes broader territorial circumstances and issues, including the complexity of multi-airport operations (Bertsimas et al., 2011). There are existing institutional networks which recognize the relevance of approaching airports in the context of balancing economic growth and quality of life considerations from a regional perspective (Airport Regions Conference, n.d.).

The geographical (and indeed geopolitical and governance) scale of an airport may be illustrated by a set of partly concentric circles that should be taken into account when both analyzing as well as projecting health risks and opportunities. In an airport region we may see a multitude of air travel facilities (passenger and cargo) that will impact on each other, which the US Joint Planning and Development Office has dubbed a metroplex. Here the circles overlap (Figure 1).
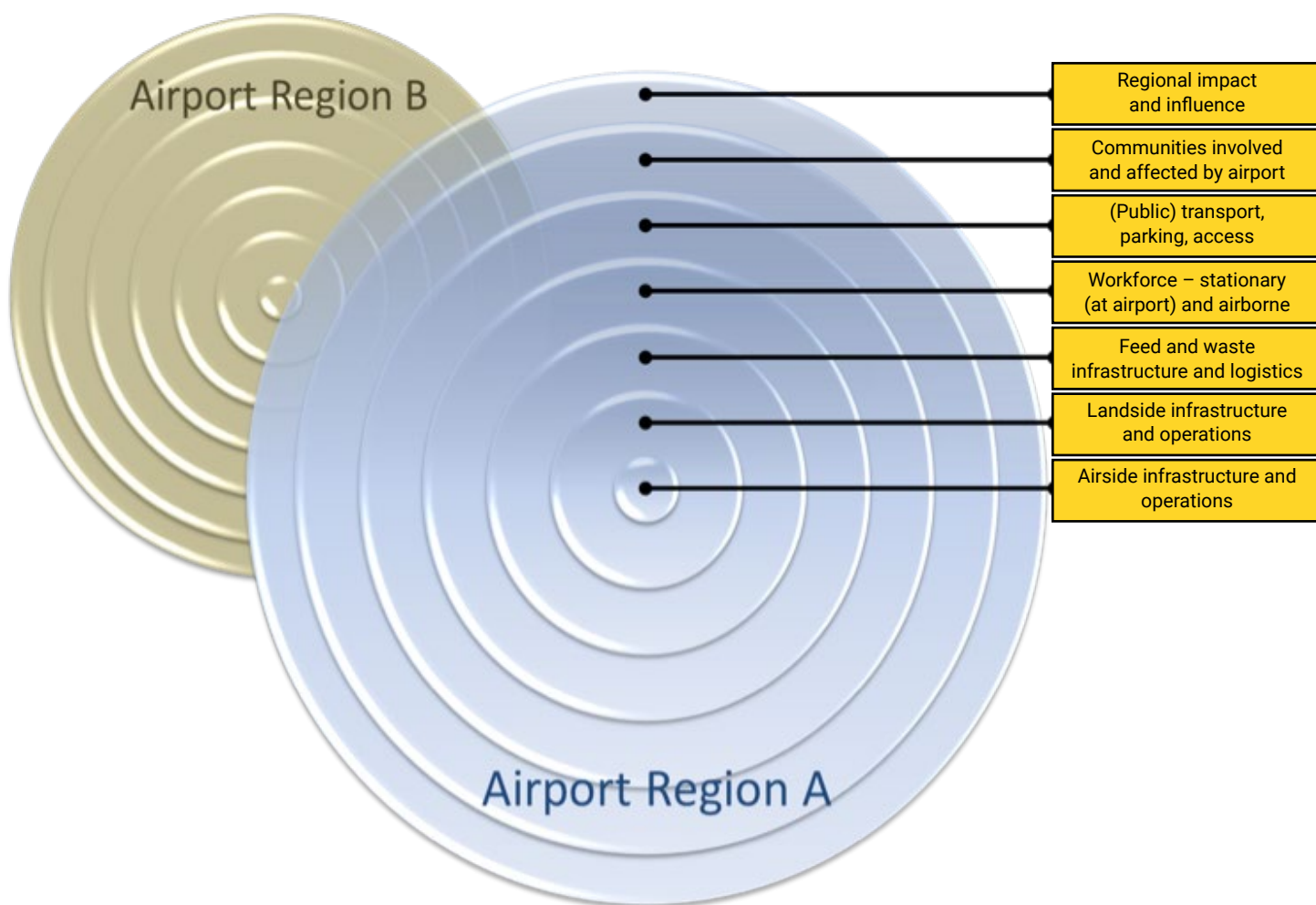

Figure 1. Geopolitical and geographical scale dimensions within a metroplex setting

Almost counter-intuitively, the innermost circle (the 'airside' environment of an airport) is, in a way, also the most global. For interstate and internationally operating airports this is where global (health) threats may arrive and must be immediately dealt with. In a very traditional public health infectious disease paradigm, this is where global health (e.g., SARS, Ebola or Zika) meets local containment. This is, indeed, glocal health (de Leeuw, 2001).

In terms of the geography and geopolitical governance dimensions of the airport region, the landside infrastructure and operations dynamically interact with airside demands and supplies. Around these, supply and waste infrastructure and logistics need to be in place – for aircraft fueling and maintenance, for instance, but also for passenger catering, animal facilities, and provision of utilities like water, electricity, and sewerage. Operating all this, at all levels is a commuting workforce requiring public transport and parking. Most members of this workforce will be members of communities that are directly affected economically by the airport (through income sourced directly or collaterally) but many other communities may well be involved in and affected by the airport region as well.

The attraction to the airport of non-aeronautical business activity and the wider indirect and catalytic impacts of aviation escalate further the potential scale of development (Deloitte Access Economics, 2012). It is worth noting that affected communities may not be spatially close to the airport. Ultimately, in economic, well-being and sustainability terms, a wider region is affected (both beneficially and detrimentally) by an airport – and in an airport metroplex these airport regions overlap and interact.
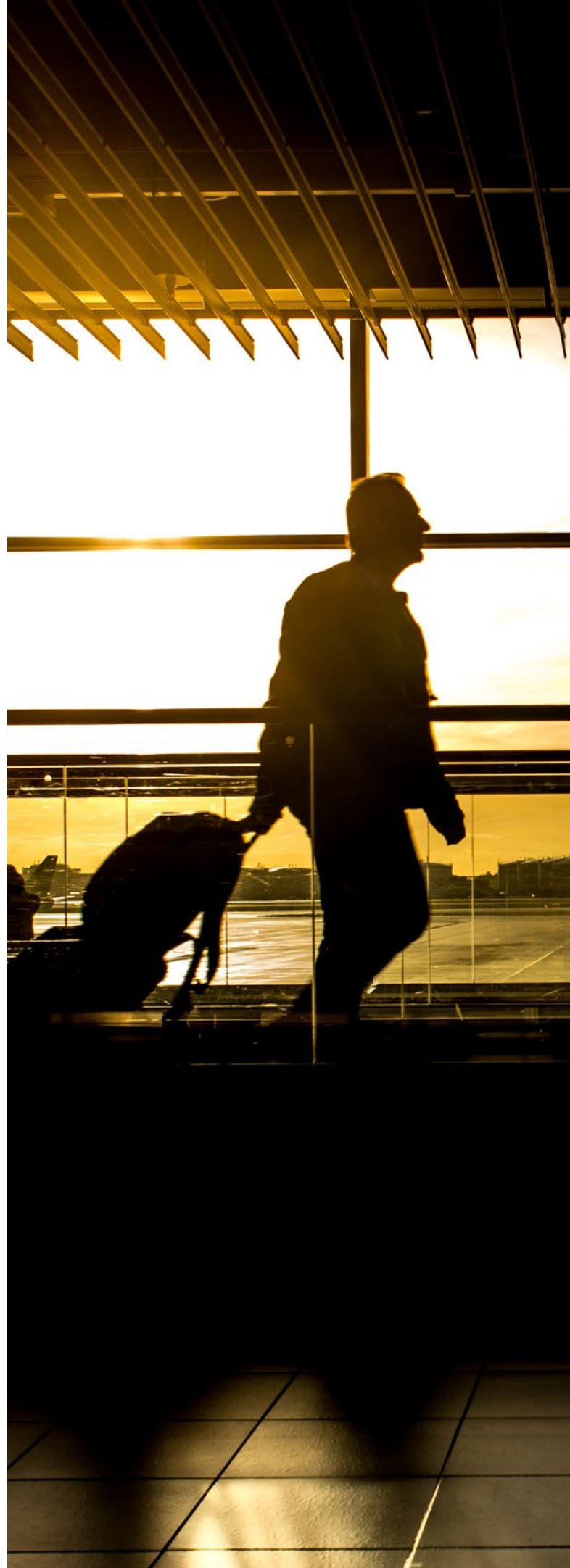
The Airport as a Setting For Health: Evidence Scoping Review

A systematic scoping review of primarily academic literature was undertaken to identify literature that provided evidence to develop airports in ways that are socially and environmentally sustainable and positively address the social determinants of health (Crimeen et al., 2016). Ten exclusion criteria were applied to maintain the manageability of this preliminary analysis:

1. Non- English language;
2. Published before 1996;
3. Unable to be accessed through UNSW library resources;
4. Not focused on airports or immediate surrounding area;
5. Does not have implications for health or the environmental, economic or social determinants related to human health;
6. Not related to Australian contexts;
7. Focused solely on describing health risks or specific risk mitigation strategies;
8. Relevant only to 'air travel' or risks of flying in an aircraft;
9. Focused on the operations of an isolated sector of the airport, such as occupational health and safety, or disease transmission and control, or maintenance;
10. Technical papers focused on specific planning, modelling, engineering operations or service implementation techniques.

Despite these constrictions, 1,311 potential sources of information were identified through the exploration of five data bases and search engines. After the final cull, a total of 16 core studies were retained that aligned well with the general characteristics of healthy settings (Dooris et al., 2017). These focused on eight dimensions:

1. employment
2. sustainability
3. public participation
4. access
5. health behaviour
6. mobility or transport
7. social connectivity
8. economy and governance or policy.

The exclusion criteria meant removal of studies regarding the broader impacts of aviation-sourced pollution on human health including noise, which has attracted a substantial literature and policy concern. However, in expert consultations that followed it was agreed that airports have a unique position and responsibility to not only minimize various forms of pollution, but also – through their critical socio-economic position – become institutional role models and industry benchmarks In a larger sense. Here there is a significant overlap with sustainability concerns. Recent efforts by some airports in Europe, for instance, to commit to a full renewable energy with zero carbon emission footprint for all airside ground operations show a way forward in broader environmental responsibilty. ICAO (2016) has adopted three major goals as part of its 'Strategic Objectives' relating to environmental protection: (a) Limit or reduce the number of people affected by significant aircraft noise; (b) Limit or reduce the impact of aviation emissions on local air quality; and (c) Limit or reduce the impact of aviation greenhouse gas emissions on the global climate.

In the scoping review we also found that health services were not discussed in the literature, although they have long been identified in two of the eleven qualities of a Healthy City (Hancock & Duhl, 1986). Also, there was little consideration of the relationship between airport development and place-making (e.g., Project for Public Spaces, 2017) beyond the design of airport terminals for the passenger experience.

The review identified one paper that proposed an organising framework to understand and shape the complex roles of airports and their spatial interactions (Stevens et al., 2010) but this work only has a tangential relation to population health.

It appears that some airport corporations themselves are operating much more at the cutting edge of innovation in the sustainability and corporate social responsibility space than is being investigated or described by global academia. This is exemplified by strategic statements by major airports in the US and Europe, e.g. London's Heathrow (e.g. Heathrow Airport Holdings Ltd., 2015; Schiphol Airport, 2016). This suggests that a health angle may well align with those developments globally. However, we did not find evidence of any explicit Australian commitment to health and more holistic well-being aspects of airport development.

> **"**To consider an airport as a setting and engine for health is a world first.**"**

Time, Mobility, and Governance

One dimension that is unique to ports (be they airports, harbours, data exchange facilities, and rail or space stations), above and beyond other settings, is that their prime purpose is to move things: people, goods, and/or services. Although mobility may contribute to the effective operations of other settings (e.g., a well-functioning multi-modal public transport system makes for an attractive urban environment) the entire raison d'être of an airport is to move people and goods. It needs to create the conditions for mobility in optimal ways to achieve its operational objectives, and the better it does it, the more attractive it becomes. There is a growing academic literature on different dimensions of mobility which considers these aspects but primarily set within a cultural studies and humanities perspective rather than the ramifications for social policy (Urry, 2007). But there is a direct connection between mobility and health – as input, throughput, and output (e.g., Woodcock et al., 2009). This dynamism is key to Healthy Airports.

A function of optimal mobility is time – for commuting in and out of an airport, for arriving and departing visitors and aircraft, and for the freshness of time-critical (export and import) goods. A Healthy Airport is time conscious and takes into account that optimal mobility is a determinant not just of health but economic viability.

The time dimension has other bearings on any settings for health development, including airport regions. In an airport's evolution, there are health aspects to its entire 'life cycle', from the historical context and considerations siting the facility in a particular spot, to planning (and political) decisions on the shape, scale and functionality, the ways and nature of its construction, how the airport is operated and for whom, environmental and social sustainability considerations, through to expansion and even decommissioning scenarios. One way of looking at this complex life cycle is through the lens of governance. We suggest that good governance is not just an essential condition for appropriate airport life cycles, but indeed for their health and well-being making nature (de Leeuw, 2017).

People

Health is not abstract. It is a source for life's fulfillment for individuals, groups and communities. Health, by the WHO definition, is not just the absence of disease or infirmity, but (however unrealistic) a complete state of well-being. In the words of microbiologist-philosopher René Dubos (1965, pp. xvii): 'The states of health or disease are the expressions of the success or failure experienced by the organism in its efforts to respond adaptively to environmental challenges.' In these terms, health can be regarded as 'the expression of the extent to which the individual and the social body maintain in readiness the resources required to meet the exigencies of the future' (Dubos, 1962, pp.102-3).

This view of health has clear socio-ecological dimensions that can be translated into a Healthy Airports vision. It sees health as a relational resource, with different meanings for different groups and individuals at different moments in their lives. In the airport environment, those groups and individuals include staff, travellers, service personnel, occupants, homeless people, consumers (at any geospatial location; stationary or in transit) – and the way they use health as a resource is expressed through their successful or experienced employment, participation, belonging, engagement, emotion, and health behavior.

This means that our vision for Healthy Airports is not only dynamic in itself, but must also be responsive to the unique composition and qualities of the people and communities that connect and engage with the airport region.
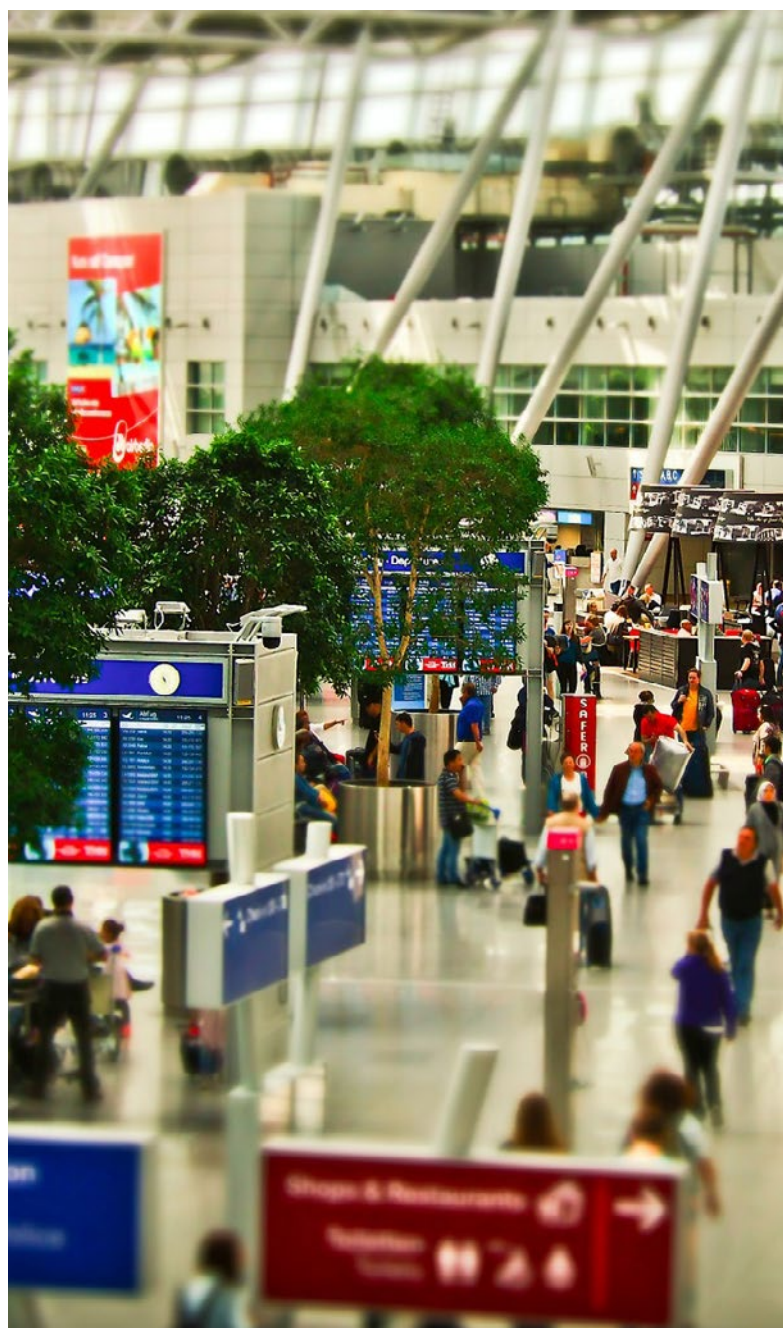
Healthy Airport Dimensions, Definition and Vision

In remaining consistent with the dynamic and process driven conceptualisations of urban health settings we suggest that a Healthy Airport is:

- an ever-evolving complex human enterprise
- responsive to the unique character and composition of the people and communities that live around and engage with it
- centered on actions, policies and general governance arrangements
- enabling the efficient movement of people, goods and services,
- through aircraft using it as a departure and arrival base as well as in its terrestrial supply and waste chains,
- and aimed at creating conditions for better and equitable health within its spatial, commercial and perceptual footprints
- to maximise health potential and minimize health hazards.

In the following table we suggest and detail twelve Healthy Airport (Region/Metroplex) parameters as an initial framework for capturing the idea of the Healthy Airport to be developed more rigorously. This first framing is based on and extends the eleven established dimensions for Healthy City settings (Hancock & Duhl, 1986):

Table 1 Dimensions of a Healthy Airport

Dimension:	A Healthy Airport:
1. Environment	• Engages in planning processes that result in health promoting aesthetic built environments • Provides a clean, safe, high quality physical environment for all people inside the airport boundaries and in surrounding communities • Ensures that systems that are in place to protect individual and collective safety and security are implemented in least-obtrusive ways conducive with their specific purpose
2. Ecosystem	• Creates, maintains and aligns with governance, policies and practices for a sustainable ecosystem • Protects as much as possible the natural ecosystems within and beyond the airport boundaries • Addresses sustainability principles • Reduces its environmental footprint (particularly with regard to carbon emissions and waste generation) to the greatest extent possible, on a trajectory to carbon neutrality • Reflects local communities' sensitivity/connection to landscape and environment (e.g. local flora, fauna and open spaces, etc.)
3. Community	• Builds on consultative/participatory community engagement to ensure fairness and equity in risks and benefits • Ensures an inclusive, respectful and mutually supportive community through consultative processes • Actively pursues its ability to build positive social change outside the boundaries of its general business
4. Participation	• Implements governance structures that enable a high degree of public participation in and control over the decisions affecting one's life, health and well-being • Provides avenues for all airport users and members of communities affected by the airport's operations with effective means of providing feedback on the airport's operations and involvement in decisions that affect them

5.	Basic services and facilities	• Ensures that hygienically prepared food and beverages are available that meet a wide range of preferences and prices • Ensures that potable plain water is available free of charge throughout the airport • Ensures that all activities at the airport are conducted with adherence to high standards of workplace health and safety • Ensures that conditions of employment for all persons working at the airport are meeting appropriate international/national standards • Offers healthy food choices, including meeting the needs of all diet requirements when travelling and in the airport • Ensures equitable affordable transport options for workers and visitors
6.	Experiences and resources	• Provides a range of passive and active recreational spaces and activities for residents, workers and visitors • Provides a wide range of opportunities for relaxation and physical and mental activity for persons waiting at the airport • Provides free family friendly activities for travelers and people waiting • Provides accessible and acceptable connectedness to internet and (social) media
7.	Economy	• Creates and sustains a lively economy that supports a diversified skill set within local industry and provides opportunities for advancement • Makes a vital and innovative contribution to the economy of the region around the airport • Provides equitable employment
8.	Heritage	• Maintains and promotes the historical, social, economic, geographic and cultural contexts of the region • Provides many tangible links with the historical, cultural and biological heritage of the region in which it is located
9.	Form and design	• Has a physical form that is compatible with and enhances all the other elements of a Healthy Airport • Integrates coordinated high level infrastructure planning with the local urban (political, social and environmental) context
10.	Public health and sick care services	• Engages in activities that promote and maximise the health of individuals, peoples and communities • Provides appropriate public health and sick care services that are easily accessible by all who need them, particularly travelers and employees
11.	Connectedness	• Is designed to make people feel welcomed • Is designed to blend into the region and culture • Recognizes its glocal (the interface between global and local) footprint in all of the above qualities
12.	Nuisance and impact	• Works pro-actively and in collaboration with potentially affected individuals to reduce health risks and build (health) resilience • Aims to meet and exceed the strictest standards in noise, air, water and soil pollution

A Healthy Airport Concept

We recognize that setting a standard for Healthy Airport Regions in many ways may resemble the shape of a busy airfield (Figure 2).

The qualities and dimensions we propose above intersect and overlap. Considering the vast array of disciplines, professions and preferences associated with the airport and aviation experience and developments, some of these ideas do not necessarily connect. In Figure 2 they are shown as parallel and (in)directly intersecting runways. In furthering this global benchmarking we recognize that quite a bit of maneuvering on 'apron', 'taxiway', and 'holding areas' is still required. We rely on appropriate 'ground traffic management' and consultation with all stakeholders to establish a Healthy Airport standard.

Next Steps

Airports are hitherto mostly framed as engines for economic development. We see a multitude of examples, though, where this perspective is cast much wider. In the development stage of this paper numerous examples of innovative Healthy Airports initiatives were identified including bee-keeping practices, wildlife raptor programs, heritage strategies, local catering practices, stationary bicycle device charging set-ups, bio-kerosene installations, public realm improvements, community days and programs, green roofs, local employment commitments, development of health care complexes. gender-balanced STEM (Science, Technology, Engineering and Mathematics) education across the lifecourse, and health enhancing physical exercise opportunities both landside and airside.

ICAO explicitly links the aviation industry and airport development to the global Sustainable Development Goals (SDGs). Healthy Airports are able to deliver significant contributions to the attainment of those goals. The SDGs are a systems package and they acknowledge that economic development is only one element in global development overall. We cast this development in broader health terms, of people and the planet.

Further research and development is required, with all stakeholders and in particular with all communities connected to existing, expanding, and greenfield airports. CHETRE is partnering with all stakeholders to develop this program of action and inquiry.
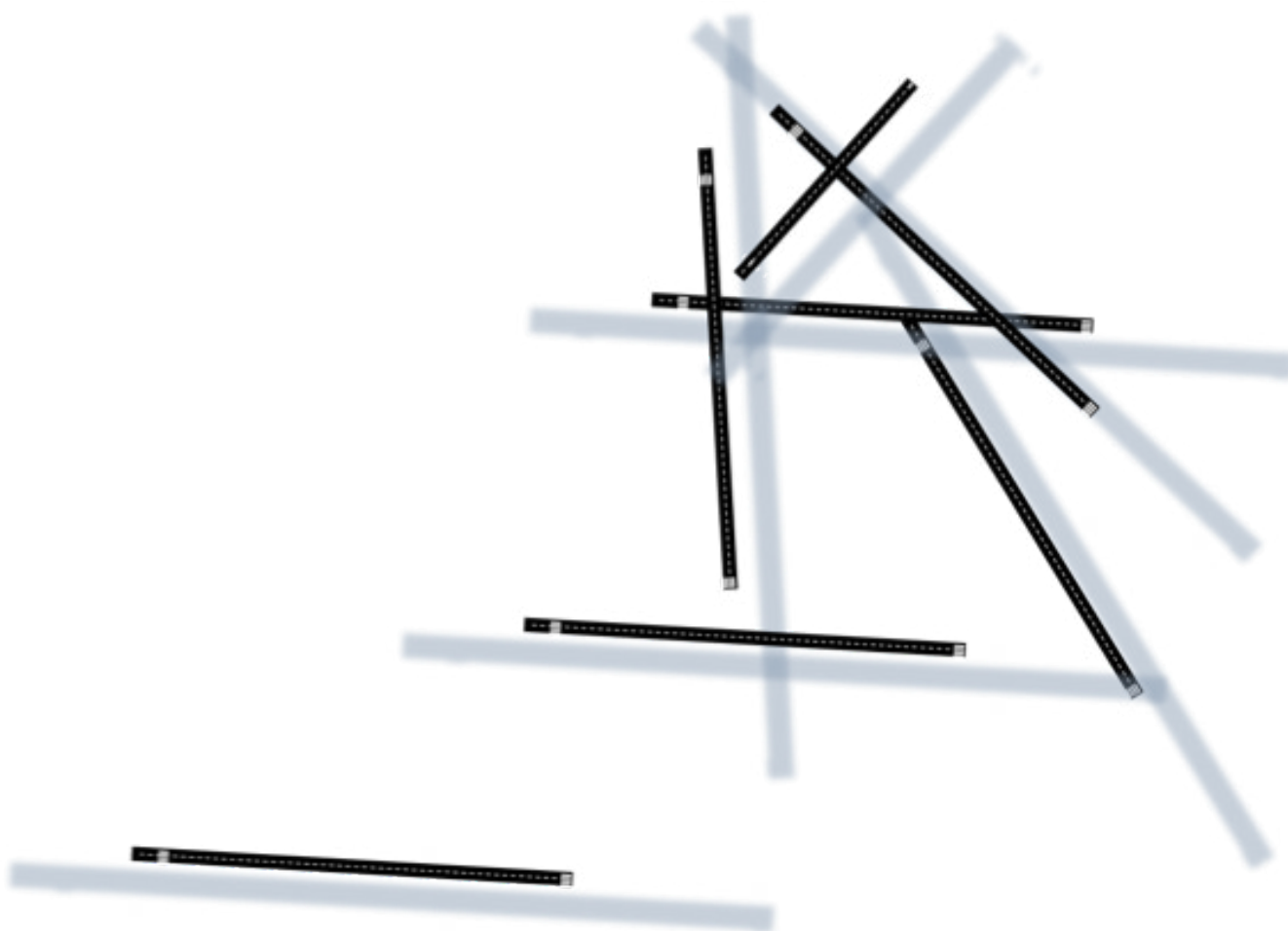

Figure 2. Concepts as runways

South Western Sydney Local Health District and Western Sydney Airport

The remit of the sponsor of this project, South Western Sydney Local Health District (SWLHD) is to improve population health in its service area. Its unique perspective and research gaze in scoping this project, therefore, is health and well-being.

The 'Healthy Airport' region is a designation relevant to the promise of the future Western Sydney Airport now under development at Badgery's Creek.

It may indeed provide a better conceptual frame for our ambitions (and those of other new airports around the world, and in fact airports that consider retro-fitting along the lines of what follows) than the economically dominated aerotropolis idea. We are interested in airport operations, the movement of people and goods, security, logistics, commerce, jet fuel and other sources of (renewable) energy, and many more aspects of aerodrome life, but cannot claim to be airport specialists. We cast a Healthy Airport vision from the position of health experts and specifically look at the health aspects of airport developments and operations.

The development of the Western Sydney airport presents a unique opportunity to reconcile the promises, problems and challenges of an airport across a range of economic, environmental, and social settings. The impacts on human health in the broadest sense will be a vital consideration and cannot be neglected amid the dominant discourse of economic growth. An airport is an engine of the local and wider economy; but with a wide recognition that economic circumstances impact on health and its distribution in the population, if an airport is 'done well', it is also an engine of health. With research , policy and governance fit for purpose, it should be possible to shape an airport that minimises deleterious impacts on health, and maximises opportunities for health gains.

In sum, the development of Western Sydney Airport is not 'just' a major transformative infrastructural change for Greater Sydney with significant consequences for population and economic growth and urban planning. It is a once-in-a-lifetime opportunity to shape such a significant development to be contributing expressly to better health and well-being for all. It presents an opportunity to close gaps in education, (health) services, employment, and mobility, to impact on the determinants of health and health equity.

Appendix: An Overview of the Existing Statutory Context

International

The International Civil Aviation Organization (ICAO) prides itself on preceding the establishment of the United Nations by nearly three years. Fifty-two countries signed the Convention on International Civil Aviation, also known as the Chicago Convention, in Chicago, Illinois, on 7 December 1944. Under its terms, a Provisional International Civil Aviation Organization (PICAO) was to be established, to be replaced in turn by a permanent organization when 26 countries ratified the convention. Accordingly, PICAO began operating on 6 June 1945. The 26th country ratified the Convention on 5 March 1947 and, consequently PICAO was disestablished on 4 April 1947 and replaced by ICAO, which began operations the same day. In October 1947, ICAO became an agency of the United Nations linked to the United Nations Economic and Social Council.

The Chicago Convention is still the quintessential core for the international collaborative effort driven by ICAO. The Convention is operationalised in a number of 'Annexes' as follows:

- Annex 1   Personnel Licensing
- Annex 2   Rules of the Air
- Annex 3   Meteorological Service for International Air Navigation
- Annex 4   Aeronautical Charts
- Annex 5   Units of Measurement to be Used in Air and Ground Operations
- Annex 6   Operation of Aircraft
- Annex 7   Aircraft Nationality and Registration Marks
- Annex 8   Airworthiness of Aircraft
- Annex 9   Facilitation
- Annex 10 Aeronautical Telecommunications
- Annex 11 Air Traffic Services
- Annex 12 Search and Rescue
- Annex 13 Aircraft Accident and Incident Investigation
- Annex 14 Aerodromes
- Annex 15 Aeronautical Information Services
- Annex 16 Environmental Protection
- Annex 17 Security: Safeguarding International Civil Aviation Against Acts of Unlawful Interference
- Annex 18 The Safe Transport of Dangerous Goods by Air

These Annexes are constantly reviewed and amended, and form the basis of instructions and manuals, e.g., for aircraft behaviour at airports and in the air. Two such manuals pertinent to airport planning and operations are:

Aerodrome Design Manual (Doc 9157)

- Part 1 — Runways
- Part 2 — Taxiways, Aprons and Holding Bays
- Part 3 — Pavements
- Part 4 — Visual Aids
- Part 5 — Electrical Systems

Airport Planning Manual (Doc 9184)

- Part 1 — Master Planning
- Part 2 — Land Use and Environmental Control
- Part 3 — Guidelines for Consultant/Construction Services

Australian Commonwealth, States and Territories

The following Commonwealth acts and regulations are relevant to Air Services Australia in the performance of its functions:

- Adelaide Airport Curfew Act 2000
- Air Navigation Act 1920
- Air Navigation Regulations 1947
- Air Services Act 1995
- Air Services Regulations 1995
- Air Navigation (Aerodrome Flight Corridors) Regulations 1994
- Air Navigation (Aircraft Engine Emissions) Regulations
- Air Navigation (Aircraft Noise) Regulations 1984
- Air Navigation (Fuel Spillage) Regulations 1999

- Air Navigation (Charges) Regulations
- Aircraft Noise Levy Act 1995
- Aircraft Noise Levy Collection Act 1995
- Airports Act 1996
- Airport (Environment Protection) Regulations 1997
- Airports (Control of On-Airport Activities) Regulations 1997
- Airspace Act 2007
- Airspace Act 2007 – Australian Airspace Policy Statement (28/06/2007)
- Airspace Regulations 2007
- Australian Heritage Council Act 2003
- Aviation Fuel Revenues (Special Appropriation) Act 1988
- Aviation Transport Security Act 2004
- Aviation Transport Security Regulations 2005
- Civil Aviation Act 1988
- Civil Aviation Regulations 1988
- Civil Aviation Safety Regulations 1998
- Civil Aviation (Fees) Regulations 1995
- Competition and Consumer Act 2010
- Commonwealth Places (Mirror Taxes) Act 1988
- Damage by Aircraft Act 1999
- Environment Protection and Biodiversity Conservation Act 1999
- National Vocational Education and Training Regulator Act 2011
- Public governance, Performance and Accountability Act 2013
- Space Activities Act 1998
- Sydney Airport Curfew Act 1995
- Sydney Airport Curfew Regulations 1995
- Sydney Airport Demand Management Act 1997
- Work Health and Safety Act 2011
- Work Health and Safety Regulations 2011

The Airports Act 1996 is federal legislation that regulates airports including;

- leasing rules,
- airport master plans,
- approval for building activities on sites,
- requirements for an environmental strategy,
- regulation of environmental standards,
- the Australian Competition and Consumer Commission ACCC monitors quality of services and facilities,
- implementation of international regulations of liquor, commercial trading, vehicle movements, gambling and smoking
- regulations to control intrusions on airspace
- minister may demand management schemes

Air Services Australia oversee provision of air traffic services, rescue and firefighting services

Most specifically the Airports Act 1996 specifies development planning for airports. There is a group of 'core regulated airports', both capital city and regional, including 'Sydney West Airport'.

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