

# Camden Council

Submission to Western Sydney Airport -  
draft Airport Plan and  
draft Environmental Impact Statement 2015





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## Executive Summary

The Australian Government's proposed Western Sydney Airport project has the potential to transform South-Western Sydney, including the Camden local government area, bringing with it a range of facilities, services, employment and other opportunities for the community.

Camden Council has a longstanding policy position of opposition to the construction of a second major airport within the Sydney Basin, including the proposed Badgerys Creek site. Notwithstanding Council's position, it is important to note the following submission acknowledges the intent of the proposed airport, and seeks to articulate objective commentary based on the conclusions of planning merit enshrined in the draft airport plan and draft Environmental Impact Statement (EIS). In this regard, given the scale of the project, Council is of the view that the draft airport plan and draft EIS warrant an exhibition period of more than the 60 days prescribed by the Australian Government.

Council is currently presented with a unique challenge, in responding to the draft airport plan and draft EIS. While the Camden local government area is currently a community of 70,000+ residents, upon opening of a proposed airport at Badgerys Creek in the mid-2020's our community is anticipated to be upwards of 150,000, with the potential for 250,000 residents once the proposed airport is fully developed. In this regard, Council's submission is considered in a context mindful of our future residents, whom have not yet arrived in the Camden area. It is both the current community, and the community of the future that Council seeks to effectively represent through the following submission, to ensure the Camden beyond 2040 reflects the vision of today.

Pursuant to this point, the issue of delivering effective and efficient integrated planning and transport infrastructure in South-West Sydney remains a considerable challenge for all tiers of government. Camden Council has identified a number of key issues regarding the proposed airport, highlighting points of concern, implications and recommendations for project outcomes. Council's submission is structured in response to issues pertinent to the Camden local government area identified in the Australian Government's draft airport plan and draft EIS.

Following is an overview of the key messages identified by Council. Of particular concern is the apparent urgency with which the draft airport plan and draft EIS was prepared. This is evident in the extent of information gaps that exist throughout various technical documents. Compounded by a rejected request to the Australian Government for access to data used in formulating the draft airport plan and draft EIS, Council strongly recommends that further work be undertaken before proceeding any further with the proposed development.

## Key Messages

### Aircraft Flight Paths (Noise)

The absence of defined flight paths and other airspace management strategies for the proposed airport is of significant concern for Council. This means the draft EIS is predicated on flight path alignments that may be significantly different compared to

when the proposed airport is operational, subject to decisions made by the airport operator and Air Services Australia.

The absence of definitive flight paths in the draft EIS means there is no assessment of the scale or severity of community annoyance resulting from aircraft noise. In this regard, given uncertainties concerning the final form of the airspace design, the extent of noise mitigation measures is not adequately quantified.

### **Air Quality & Human Health**

Air quality resulting from a second major airport within the Sydney Basin has long been a key point of concern for Council. As the exhibited draft EIS does not adequately respond to the guidelines, the following statement raised in Council's 1998 EIS submission to the Australian Government, still holds true:

*"The construction of a major international airport at Badgerys Creek would impose dangerously high incremental burdens of critical air pollutants on an already stressed environment. A major airport development would 'lock in' long term....pollutants from both air and ground transport sources".*

The adverse outcome of poor air quality resulting from the proposed airport will ultimately impact on human health; the community that Council represents. Findings from the draft EIS should be presented in a way that helps to communicate the scale of the population affected by issues such as air quality, and other significant issues, so that a quantitative and qualitative assessment of the combined impacts to our community may be determined.

### **Traffic & Transport**

The issue of transport remains a prominent point of concern for South-Western Sydney, both now and into the future. Notwithstanding the commitment demonstrated to this issue through the Governments 'Western Sydney Infrastructure Plan', lack of detailed analysis on the impacts of the proposed airport demonstrated through limited modelling data in the draft EIS is of significant concern. Further work is needed in this area prior to the proposed airport development proceeding.

Council notes that post-exhibition of the draft airport plan and draft EIS, the Australian Government announced a 12 month scoping study into the future provision of a rail connection to the proposed airport site. It is strongly recommended that the outcomes of this study are integrated with those of a revised and amended EIS, with both technical documents concurrently re-exhibited thereafter.

As part of a strategic response to public transport connections in South-Western Sydney, Council advocates the position that rail services should include the rail line extension to Narellan, and further to the Main Southern Rail Line to service the recently announced 'Greater Macarthur Land Release Investigation Area'.

### **Environment (Biodiversity)**

As in assessing the various other parts of the draft airport plan and draft EIS, with regard to biodiversity Council is concerned as to the lack of non-compliance in some areas relative to the EIS guidelines. In particular there appears an underestimation of the

range of mitigation and management measures required to account for threatened biodiversity in the longer-term development area, nor what implications any of the stage 1 management measures might have.

In this regard, it is recommended there be a review of current listings of threatened species, populations and communities prior to any construction of the proposed airport. Furthermore, a review of the current biodiversity legislation, assessment and offsetting requirements would also be appropriate, prior to construction of the longer-term development.

### **Economic & Employment**

The draft EIS notes a number of economic benefits resulting from the proposed airport, however the extent of these benefits are not adequately quantified. While the projection for jobs growth is speculated to be in the thousands, it is not clear as to what type of employment opportunities this represents, nor the cumulative impact as a consequence of adjacent employment areas.

While it is anticipated the proposed airport will be a catalyst for business growth in South-Western Sydney, the draft EIS does not adequately respond to the way in which future business centres (i.e. Bringelly Enterprise Corridor, Western Sydney Employment Area, Leppington Major Centre etc.) will operate relative to each other. That being, will each of these enterprise sites be complimentary, competitive or conflicting?

## Draft Airport Plan (& Airspace)

### Key Issues for Council

- Need for a coordinated approach with the NSW Government to re-visit the South West Growth Centre Structure Plan in the context of the proposed airport, with a revised focus on integrated land use planning and transit orientated development.
- Important to re-visit the hierarchy of Centres identified in the South West Growth Centre Structure Plan.
- If population is a key element for identifying the need for a proposed airport in Western Sydney, it is crucial any EIS assessment is based on greater certainty of population projection and location.
- Potentially problematic issue of proposed higher density development in key centres, before supporting infrastructure is constructed (e.g. a rail line) to the proposed airport, resulting in dis-orderly rate of development and potentially adverse urban planning outcomes (whether temporary or permanent).
- The level of analysis and detail in the draft EIS does not reflect the level of significance of the expected impacts on the environment. Unknown variables and assumptions made in the assessment, such as future aircraft types, proposed staged runway development, technology implementation, assumed traffic projections require further, more detailed analysis.
- Stage 1 of the proposed airport should be re-assessed using realistic (i.e. not conservative) projected passenger numbers.

### Implications & Opportunities

- The proposed airport project provides a significant opportunity as a catalyst for a targeted approach to integrated land use planning and transit orientated development. However, based on the existing South West Growth Centre Structure Plan, the project may potentially result in planning outcomes inconsistent with this approach.

For example, the existing 'Growth Centres Model' of achieving 15 dwellings per hectare may be considerably altered throughout parts of the Camden and Liverpool local government areas, particularly in proximity to the proposed airport site (and any proposed future rail station locations connecting to the proposed airport site).

An additional element to this issue is the period of transition in time between when the proposed airport is constructed (and subsequently operational). It may be reasonable to expect that development will proceed in anticipation of future land use in proximity to the proposed airport, without key items of infrastructure committed to (e.g. rail line access to the proposed airport site). This is further

complicated by applying existing planning controls that may be inconsistent with future land use. The potential implications of this issue should warrant a concurrent review with the NSW Government of the South West Growth Centre Structure Plan.

- Further to the issue of reviewing the South West Growth Centre Structure Plan, a key element of this issue is the need to re-visit the hierarchy of Centres identified. For example, construction of a proposed airport may advocate the emergence of higher order Centres in the Camden local government area; conversely, there may be cause to reflect on the status of the Leppington Major Centre, given it is no longer situated as a pivotal origin/destination. These examples, combined with the other Centres that may soon benefit from the proposed airport, should warrant a concurrent review of the Centres hierarchy, and how they relate to each other.
- The issue of timing in delivery of the proposed airport is critical as to its potential impact on development, particularly for pre-empting re-zonings in the South West Growth Centre. For example, permitting higher density development in key centres before supporting infrastructure is delivered may be problematic (i.e. from low density to high density, in the absence of the necessary supporting transport infrastructure).

As part of a concept plan for delivery of the proposed airport, a strategy is required to determine how the orderly rate of development may be managed to mitigate any adverse urban planning outcomes resulting from this phenomenon, whether temporary or permanent. For example, residential areas in proximity to the proposed airport site to feature an option to up-lift zoning once the airport is constructed.

- With regard to flight paths for the initial development of the proposed airport, the draft EIS refers to a single model of flight paths, with specific entry and exit 'gates'. It does not consider alternatives which move noise and emission corridors away from sensitive and populated areas. The evaluation relies on mitigation as justification, but does not consider other possible methods of avoiding environmentally sensitive (populated) areas.

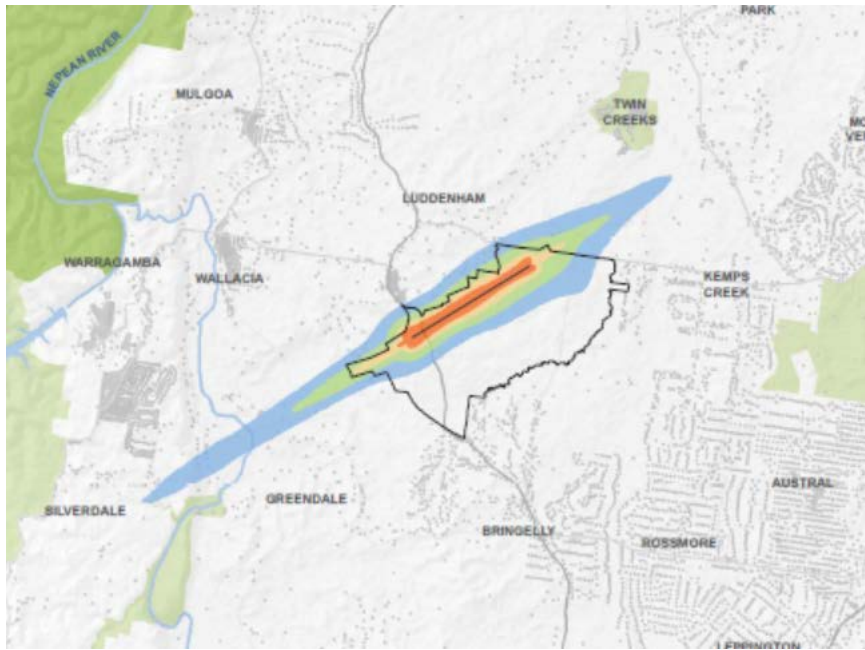
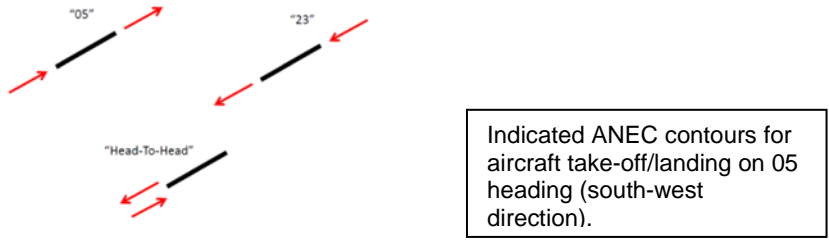
The initial flight paths and airspace for the airport are constructed so as not to require a change to Sydney Kingsford Smith Airport operations. There will, however, be changes required to operations at both Bankstown and Camden Airports, with the former having significant amendment required and possibly operational restrictions. This impact is not quantified.

The flight paths developed for the initial proposed airport layout do not coincide with those intended for the ultimate airport layout. This may have resistance to change by the time those procedures could be implemented. It is worth considering a Sydney Basin Traffic Management Review sooner than the proposed timeline indicates.

- Stage 1 of the proposed airport is predicated on conservatively low projected passenger numbers. To ensure a robust assessment of the potential impacts

associated with the initial stage of the proposed airport, the draft EIS should be re-visited based on the possibility of higher passenger numbers.

Figure 14: Potential Airport Operating Mode Options for WSA (Taken from Wilkinson Murray, 2014)



- Rationale for the north-east/south-west runway alignment configuration is based on aircraft flying over the Western Sydney Employment Area (to the north-east of the proposed airport site), or 'the predominantly rural area to the south-west'. While Council questions the rationale of the latter part of this statement, the pertinent point to raise is the potential 'head-to-head' aircraft movements on the 05 heading (as per the image above).

Council is of the understanding that, subject to prevailing conditions (wind, volume of aircraft movements) a 'head-to-head' pattern (where aircraft take-off and land to/from the south-west) may become a common occurrence in operation of the proposed airport. This may in part negate the rationale for the locating of the Western Sydney Employment Area, as it is subject to fewer aircraft movements than residential areas. The extent of this possibility is not adequately addressed in the draft EIS, and requires further investigation.



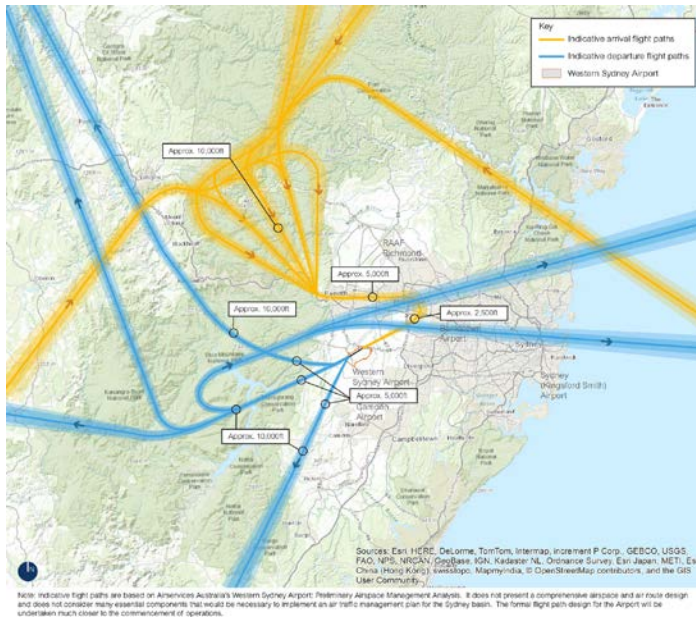
## Noise (aircraft)

### Key Issues for Council

- The absence of defined flight paths and other airspace management strategies in the draft EIS.
- No assessment of the scale or severity of community annoyance resulting from aircraft noise.
- Given uncertainties concerning the final form of the airspace design, the extent of noise mitigation measures is not adequately quantified.
- High passenger numbers per plane, possibly decreasing overall plane movements.

### Implications & Opportunities

- The absence of defined flight paths and other airspace management strategies in the draft EIS and technical documents highlights a key concern for Council regarding the aircraft noise assessment. The effect of this absence is that the flight paths used for the modelling may change at the time operations commence for Stage 1 of the proposed airport. This creates significant uncertainty as to the modelling presented and the assessment of what areas and how many people will be affected by aircraft noise. The review also highlights that there has been no attempt to try and quantify this uncertainty. In addition, there has not been any sensitivity analysis that would give an idea of the implications that changes in flight paths would have.
- Not having final flight paths and airspace design also limits impacts on the identification of appropriate mitigation methods, an aspect that is not adequately addressed in the draft EIS.



Indicative flight paths – how can the community expect aircraft to take-off/land in these directions?

- There has been no assessment of the potential scale or severity of community annoyance that is likely to result in reaction to aircraft noise. This point is also highlighted in the Health Risk Assessment. This issue is particularly relevant to the Camden local government area; whilst there are small areas in the north of Cobbitty and Bringelly that fall within areas designated as affected using standard aircraft noise criteria (e.g. ANEC/ANEF, N70 and N60 contours) there are much greater areas of the local government area that will be exposed to aircraft noise, that is less than these criteria. Further work is required through the draft EIS to respond to this issue.
- As previously noted, further work is required on the draft EIS based on more definitive (i.e. not indicative) flight paths and other aspects of air space management, to allow a better prediction of aircraft noise impacts.
- *Low Stage 1 movement numbers:* the total aircraft movement numbers for the Stage 1 development are relatively low when compared to other international airports in Australia. Given the objective of the proposal is to develop a major international airport, the low movement numbers raises the question of the suitability of the 5 year time horizon as the appropriate primary assessment scenario for the purpose of obtaining approval for the development. Further, it is unclear how the incremental and periodic approvals that would need to occur as part of the ongoing expansion of the airport provides a sufficient basis for considering the initial 5 years of operation as the primary period for the assessment of noise impacts.
- *Airspace management strategy uncertainties:* the draft EIS clearly indicates that the airspace management strategy used as the basis for noise modelling is a proof-of-concept design, and as previously noted, further work is required to determine the actual flight paths which would be flown in practice. Information about the extent of potential changes is limited. The uncertainty surrounding the final airspace management design that would be implemented represents a

potentially significant source of uncertainty in the noise assessment. The potential significance of this source of uncertainty has not been quantified and, with exception of alternative merge points for Stage 1, there has not been any sensitivity analysis carried out to assess the implications of potential flight path changes.

- *Assessment of community annoyance:* the draft EIS includes exposed population statistics which provide a useful indication of the potential scale of the community who may be affected by aircraft noise to varying degrees. However, in isolation, this data does not provide an indication of the scale or severity of potential community reaction to aircraft noise levels as a result of annoyance. The Health Risk Assessment provides the most discussion of community annoyance, including references to research concerning the relationship between noise exposure and community annoyance, but ultimately states that no quantitative assessment of annoyance was conducted as part of the study. While the assessment of the risk of community annoyance is complex, the scale of the proposed airport and the number of people potentially affected warrant further evaluation of the subject. The introduction of a new 24-hour international airport at a greenfield development site introduces a risk of wide spread and prolonged community annoyance. A better understanding of this potential risk would be prudent to inform the environmental impact assessment process and the extent to which operational noise mitigation should be prioritised relative to other non-safety related airspace management considerations.
- *Land use impacts:* the draft EIS includes calculated Australian Noise Exposure Concept (ANEC) contours for the Stage 1 and long term development operating scenarios. ANECs are often presented as an indication of the extent of a potential future Australian Noise Exposure Forecast (ANEF) contour which would be used to guide land use planning for noise-sensitive developments in the vicinity of airports. However, while the draft EIS provides population counts for the various ANEC bands, no assessment is provided of the extent to which land use controls may change as a result of a future ANEF prepared as part of the detailed airspace design for the project. Specifically, the draft EIS does not quantify the potential extent of changes to land use controls relative to the measures which have been in place since the original EIS was undertaken in 1985. Most significantly, the discussion of land use planning impacts in the draft EIS notes that the National Airports Safeguarding Framework (the Framework) would *'be instrumental in managing potential future operational noise impacts for future land use planning and development around the airport'*. The Framework could potentially translate to the creation of land use planning controls which extend over significantly greater areas than either the current land use planning controls (based on the 1985 EIS) or the 2063 ANEC contours provided in the draft EIS, however this has not been discussed or assessed in the draft EIS.
- *Greater Blue Mountains World Heritage Area (GBMWA):* the draft EIS presents information to evaluate the potential impacts of aircraft operations on the acoustic amenity of the GBMWA. The assessment indicates the potential for a large number of audible aircraft events within the GBMWA. While the levels are predicted to be relatively low (below 50 – 55 dB LAmax), aircraft over flights would be expected to be audible and represent a significant and widespread impact for a World Heritage Area where natural soundscapes are a likely to be a

valued feature of the areas amenity. Accordingly, the assertion within draft EIS chapter that noise levels below 50 and 55 dB LAmax are 'not significant' is not considered to have been sufficiently justified, and the assessment may therefore not adequately reflect the potential impact to the values of tranquillity within the World Heritage Area.

- *Mitigation measures and residual noise impacts:* the draft EIS noise modelling is based on an indicative proof-of concept air traffic management design which does not present a comprehensive airspace and air route design. Given the uncertainties concerning the final form of the airspace design, the final form of noise mitigation measures to be implemented is not yet known. Accordingly, the mitigation measures that have been referred to in the aircraft noise assessment are generic in nature. This is a particularly important point for an airport development as, unlike other forms of infrastructure development, the policies used to manage aircraft overflight noise do not generally stipulate noise limits that airport operations must adhere to at surrounding noise-sensitive locations. Accordingly, without a defined airspace design, a defined noise mitigation strategy or defined noise criteria to adhere to in practice, the residual impacts and the location of these impacts is subject to considerable uncertainty. Further, it is unclear how noise considerations would be prioritised among other non-safety related airspace management and operational considerations associated with the proposed airport site.

Based on the above considerations, further information and assessment are considered necessary before Council can reach an informed view on the potential scale and significance of aircraft overflight noise impacts associated with the proposed airport site.

## Noise (ground operations, construction, road and rail)

### Key Issues for Council

- Inadequate response to EIS guidelines for ground noise impacts.

### Implications & Opportunities

- The assessment does not fulfil the requirements of the *Guidelines for the Content of a Draft Environmental Impact Statement – Western Sydney Airport 2015* (EIS Guidelines) which state that the type and magnitude of impact, both pre-mitigation and post-mitigation should be presented. The ground noise assessment should be updated to include this assessment.
- There is insufficient detail to satisfy the EIS Guidelines on the source of the noise data used in noise predictions. As these assumptions form the basis for the noise assessment, changes to the source noise data could potentially lead to a significantly different outcome.



- The assessment excludes the use of Auxiliary Power Units (APU) and does not present sufficient detail for an alternative ground-based power supply. As an alternative power supply method is not presented, there is potential for additional noise sources being introduced that have not been considered.
- A single rating background level has been assumed for all receptors, rather than several location-specific values. This generalisation has underestimated the magnitude of noise impacts at receptors close to the airport that are currently exposed to low levels of environmental noise.
- The nearest noise sensitive receptors in Luddenham were not included in the background noise monitoring and therefore it is uncertain if noise impacts have been adequately assessed at this location.

Furthermore, noise sensitive receptors represented in the draft EIS reflect only existing communities; they make no representation of the potential future sites of other noise sensitive receptors i.e. residential areas, schools, parks etc. This data should be re-modelled using the South West Growth Centre Structure Plan, to identify future community locations.

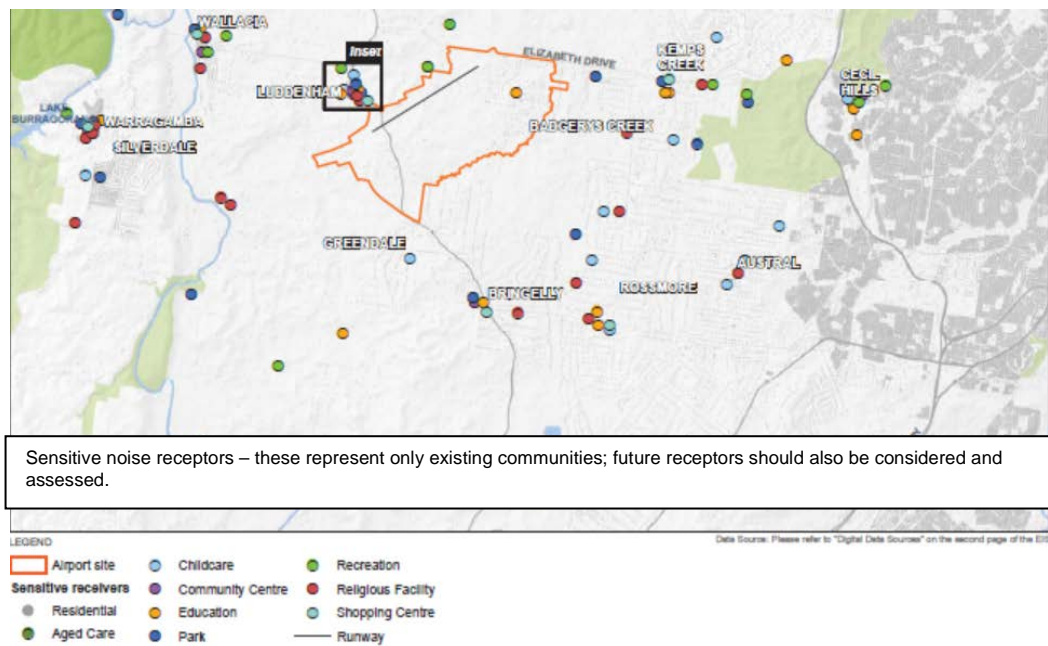


Figure 10-7 - Sensitive Receivers surrounding the airport site



- No consideration has been given to the cumulative noise impact from all ground noise sources at the nearest noise sensitive receptors both with and without mitigation measures as required by the EIS Guidelines. Additional assessment should also be undertaken for other ground noise sources, such as the compass calibration pad.

- It is recommended that the mitigation measures identified in the assessment, including the restriction of APUs and the limitation of engine ground run-ups during the night, are formalised as part of the project approval;
- The assessment does not provide sufficient evidence that all reasonable and feasible mitigation measures have been considered to reduce noise impacts from taxiing and ground run-ups;
- Semi-enclosed pens and bunded areas to reduce noise impacts from engine ground run-up noise are considered in the assessment. It is recommended that these measures are considered further as part of the approvals and subsequent design stages;
- No consideration has been given to the cumulative noise impact from the new M12 motorway and realignment of The Northern Road that are being developed to accommodate the proposed airport;
- The draft EIS contains misleading statements relating to operational road traffic noise which do not acknowledge the limitations of the assessment. The development of the M12 motorway and realignment of The Northern Road have been excluded from the assessment and statements regarding operational road traffic noise should include these limitations;
- The draft EIS does not include ground-based noise in the summary or conclusion for the long term development. It is recommended that the outcomes of the revised long-term development ground-based noise assessment are included in these sections so that all impacts are clearly presented;
- It is considered that the ground-based noise assessment does not provide an appropriate level of detail on a number of key aspects including:
  - The derivation and allocation of assessment criteria;
  - Noise impacts at the nearest sensitive receptors in Luddenham;
  - Noise source levels;
  - The type and magnitude of impacts with and without mitigation;
  - Evidence that all reasonable and feasible mitigation has been considered; and
  - Cumulative noise impacts from operational activities and road traffic projects.

As a result, without further clarification or justification, it is uncertain that the draft EIS has adequately presented and addressed the noise impacts associated with the proposed development.

It is recommended that these items are addressed to reduce the level of uncertainty, increase the accuracy of the assessment and to satisfy the requirements of the EIS Guidelines.

## Air Quality and Greenhouse Gases

### Key Issues for Council

- Inadequate response to EIS guidelines for air quality and greenhouse gases.

### Implications & Opportunities

- It is noted that with regard to the air quality and greenhouse gases chapter of the draft EIS, there exist a number of typographical errors and inconsistencies that undermine the credibility of the air quality assessment. In this regard, these sections of the draft EIS require a thorough technical and editorial review by its authors to address the issues outlined in the review to improve transparency and credibility of the air quality assessment.
- As a consequence of the rail line not being part of the draft EIS, the air quality assessment of the longer term development of the proposed airport is speculative, and does not provide a sufficiently robust basis to support approval of the longer term development of the proposed airport.
- The draft EIS indicates that the proposed airport will increase the 1-hour ozone concentration by 4.5 parts per billion (ppb); significantly more than the 1ppb maximum allowable increment allowed in the NSW EPA's tiered approach. A similar result was also noted for the 4-hour average ozone concentration which is predicted to be 3.7ppb, significantly more than the 1ppb maximum allowable increment allowed in the NSW EPA's tiered approach. Exposure to ozone results in a number of health effects such as induction of respiratory symptoms (such as coughing, throat irritation and chest tightness, wheezing and shortness of breath) a decrease in lung function and inflammation of airways. Exposure to ozone can also make asthma symptoms worse and increase sensitivity to asthma triggers.
- The potential impacts due to fuel dumping were not quantified. The EIS stated *"fuel dumping is not considered likely to have a significant immediate or future impact on air quality"* due to *"the inability of many aircraft to perform dumps, the rapid vaporisation and wind dispersion of jettisoned fuel, the strict guidelines on fuel dumping altitudes and locations, and the anticipated reduction in fuel dumping events and volumes in the future."*

In addition to the issues associated with risk, there is a need for the draft EIS to quantify the implications for air quality with regard to fuel dumping.

- Council has retained longstanding concerns associated with the air quality and the proposed airport, as was reflected in our submission to the Australian Government in response to the 1998 draft EIS. The following points were noted in Council's previous submission, which still hold true today regarding air quality.

The Sydney Airshed is located within the valleys and estuaries of three major river systems of Sydney, being the Georges, Parramatta and the Hawkesbury/Nepean, and is surrounded by mountains in the south and west.

Air movement in the Sydney Airshed is essentially circular – moving west on the prevailing wind during the day, draining northward down the valleys at night, eastward to the coast in the early morning then returning back inland. Because of this circular pattern, parcels of air become entrained in the flow, the same parcels crossing back over the metropolitan area, accumulating pollutants and returning the following day to the Hawkesbury Basin.

During times of stable weather, and when temperature inversions occur, this cycle can go on for days or weeks with pollutants either emitted within the basin or transported into it from the east being retained rather than dispersed. Thus the capacity of the Hawkesbury Basin to assimilate pollutant emissions is less than that of the eastern sectors of the Sydney Airshed.

The Camden local government area comprises an area of land approximately 206m<sup>2</sup>, the greater part of which lies within a topographic basin within the Sydney Airshed known as the Camden Basin. This Basin lies within the Hawkesbury Basin and is bounded on the north by a series of low hills to the west of South Creek (near the proposed airport site) and on the west, east and south by the 100m contour. While of only shallow depth (approximately 40m) the Camden Basin is an important sub-region in local air quality considerations because of its ability to trap and inhibit the dispersion of low level air emissions.

The Camden Basin is subject to extremely stable air conditions at night resulting from deep strong temperature inversions and is completely decoupled from the flow of air above thus allowing trapped air to deteriorate within the Basin until the inversion has lifted and sufficient wind flow occurs to displace it.

In the absence of clear analysis in the draft EIS on this issue, it may be reasonable to conclude that an accurate picture of what happens with air chemistry, and in fact air quality as a whole, within the Camden Basin has not yet been established.

## Human Health

### Key Issues for Council

- The health chapters of the draft EIS should assess the health impacts/effects of changes in the full range of environmental and social determinants of health and the potential inequalities/equity issues due to the proposed development. The level of analysis and detail should be reflective of their likely significance. Examples are changes to road traffic movements and their potential health consequences (community severance, risk of road traffic accident and injury), changes in qualities and characteristics of the surrounding areas (including land values and other economic impacts) and changes in recreational use, amenity of natural areas and access to greenspace and nature and their associated health



and wellbeing impacts through, for example, changes to levels of physical activity; effects on services and amenities.

- Findings from the draft EIS should be presented in a way that helps to communicate the scale of the population affected, by determinant of health, and also what the combined impacts are likely to be to various communities from exposure to the combined hazards.
- Not all unknown variables, assumptions, and limitations are included in the assessment. A specific comment relates to certain health impacts (e.g. air quality-related health impacts on children, other chronic effects such as incidence of chronic bronchitis in adults) known to occur from exposure to air pollution but for which the level (extent/magnitude) of the health impact associated with a certain level of pollution exposure is uncertain or unknown. These additional health impacts, for which quantification is uncertain or unknown, are not discussed. The Health chapters of the draft EIS should consider and discuss health impacts where quantification is not currently recommended by national guidance (e.g. Australian Government '*Guidelines for Health Risk Assessment*') such as air quality impacts on children, other chronic effects, and other additional morbidity effects of short-term exposure but for which there is a widely acceptable evidence base supporting their likely occurrence.

## Implications & Opportunities

### Air Quality & Noise

- It is not clear what baseline incidence rates were used (Sydney average or Liverpool/suburb rates). If Sydney rates are used, this may have resulted in a small underestimation of risks.
- Risks are estimated for 2030 and 2063 snapshots and separately for each pollutant. An overview of the expected scale of impacts resulting from the combined effect of all pollutants should be provided to convey a picture of the total risk to the exposed communities.
- There is no discussion of the implication of the distribution of effects for inequality and equity through baseline information on sensitive/vulnerable groups.
- Community feedback and any potential perceptions or concerns of local residents are not discussed. Community feedback on health concerns should be described and how this feedback was considered and addressed in the assessment should be discussed. Where community comments have not been incorporated or addressed an explanation justifying this should be presented. If there were no specific comments or concerns about health impacts/effects or some determinants of health then this should also be stated explicitly. There should also be a discussion of how communities were consulted.
- Perception effects are different from biological or epidemiological risks, can cause stress and anxiety, and should be considered separately from mortality and morbidity effects.

- Mitigation measures are not discussed; readers are cross-referred to the air quality chapter. An outline of proposed measures (i.e. an air quality management framework or plan) should be provided in the health chapter and an explanation provided for how and to what extent these measures will mitigate the identified health impacts.
- A qualitative analysis and discussion of impacts/risks/effects on vulnerable/sensitive groups and on health inequality/equity issues has not been undertaken.

### Water Quality

- A complete health risk assessment is not provided for water quality due to the limitations in water quality sampling (i.e. only 1997 data was available; no new data was collected for the draft EIS). A more complete assessment is required that includes a clear list of assumptions, a description of population affected, and an assessment of impacts on vulnerable population groups.

### Traffic and Transport

- Higher levels of traffic in residential areas are associated with poor health and lower levels of social cohesion. This particularly affects older people and children. Time spent commuting can impact on family life and mental wellbeing. Increases in traffic can lead to increases in traffic related accidents. The social impact assessment identifies opportunity for *“comprehensive planning, improvements to the road network in conjunction with new public transport infrastructure would create connected communities, reducing commute times and providing opportunities for an active lifestyle”* (pg. 97). In addition, increased local job opportunities were predicted to reduce travel times and improve quality of life. Risk due to aircraft accidents is discussed but road traffic accidents due to increased traffic density have not been assessed.

### Odour

- Odour can cause annoyance and avoidance behaviour (for example, changes in use of outside areas). Odour from exhaust emissions and the on-site waste water treatment plant is assessed within the Air Quality Assessment. These were assessed to be below detectable levels off site for Stage 1. Odour was not assessed for the longer term scenario.

### Climate Change

- Climate change has significant impacts on human health ranging from changes to food production to increases in extreme weather events. Climate change is addressed in the draft EIS in the Biodiversity assessment, and is identified as being exacerbated by the proposed airport. Potential impacts on health from climate change have not been identified.

## Employment

- Evidence shows that higher levels of employment lead to better population health. Participating in employment has been shown to have strong positive effects on mental and physical wellbeing. In general, being in work is better for health than having no job; however there are exceptions. Workers in jobs that are poor quality, low paid and precarious (insecure) have similar health scores to the unemployed. Low paid, low skill, insecure jobs with few opportunities for training, development and progression are less healthy than higher paid, higher skill, secure jobs with good opportunities for training, development and progression. Previous health impact assessments of airports have shown that airports tend to generate a relatively high proportion of lower paid, low skill level jobs.
- Employment and economic impacts are discussed in depth in the Social Impact Assessment (SIA) technical report. It is estimated that during stage 1 construction there will be approximately 758 full-time equivalent (FTE) jobs created. In addition, there is an estimated 7,500 FTE airport related employment by the end of stage 1 (2030) and a further 4,400 FTE jobs in the business parks associated with the airport. Longer term it is estimated that approximately 61,500 FTE jobs would be required for airport operations (2063). Although employment opportunities are expected to increase there are some expected negative impacts on agricultural and manufacturing industry due to competition for land. This could also result in potential loss of agricultural land. The potential health impacts related to the existing local economy and those employed in that economy are not described in the SIA.

The SIA identified a potential reduction in commuting times for Western Sydney residents by being able to access jobs closer to where they live. This could have positive benefits for community and family life.

## Community facilities

- Changes on population, both residential and workforce, can lead to increased demand on health services. There are also potential effects on health services through risks associated with airport development. People within healthcare facilities also tend to be disproportionately vulnerable to impacts such as noise and air quality. The SIA identifies insignificant impacts on healthcare demand for Stage 1 and potential additional demand in the longer term scenario. Health care facilities are also identified as 'sensitive social infrastructure' more likely to be affected by impacts such as noise, social amenity, etc. but the specific health impact on these sensitive settings is not assessed.

## Other public and community services

- The SIA identifies sensitive social structures that may be particularly vulnerable to potential negative impacts (child care, schools, hospitals, recreational spaces and places of worship) but the specific health impact on these sensitive structures is not assessed.
- The SIA identifies that it is likely that new facilities will be developed as part of the growth associated with the airport.

### Recreation resources

- Access to good quality green space is associated with improved mental and physical health outcomes. This may happen through ameliorating stress, increased physical activity and there is also evidence of exposure to nature reducing blood pressure. The mental health benefits of activities in a natural environment have been identified as:
  - Social, emotional, creative and cognitive development of children and young people
  - Quality of life and relaxation
  - Recovery from stress
  - Relief of symptoms
  - Therapeutic and healing; spiritual
  - Physical activity; sport; adventure; challenge
  - Learning; intellectual and creative development
  - Sense of meaning/purpose/perspective
  - Social contact; cohesion; belonging; identity
  - Volunteering; conservation; “giving something back”

The SIA identifies loss of amenity for recreational areas from visual and noise impacts. Noise is expected to negatively impact on the amenity of Bents Basin Recreational Area in Greendale, Rossmore Grange, Twins Creek Golf and Country Club, Whalan Reserve at St Marys, Burragorang State Conservation Area and a small part of the Western Sydney Parklands and Prospect Nature Reserve. The Greater Blue Mountains World Heritage Area is going to be negatively impacted on by noise and visual impact from planes. The impacts on recreational facilities and greenspace on health have not been considered.

### Social capital and community cohesion

- Research has demonstrated a link between social capital and health, in particular mental wellbeing. Communities with high social capital have higher levels of trust, reciprocity and participation. At an individual level social participation and support are associated with lower levels of mental health problems and higher levels of self-reported health. Further discussion on how social capital and community cohesion is addressed in the points below.

### Land take for airport

- Loss of housing and forced relocation of residents and businesses have been shown to have significant negative health impacts on individuals as well as community level impacts due to loss of or disruption to social capital and community cohesion. The SIA excludes the impacts of forced relocation on health and wellbeing because the relocations have already taken place.
- The SIA identifies that there will be a loss of agricultural land. Food security is an important public health issue and has not been assessed within the draft EIS.



### Community disruption due to noise of air traffic and noise and severance of construction and operation related road traffic

- The health chapter includes an assessment of noise related impacts in terms of awakenings, cardiovascular events, learning and cognitive development in children. Air quality is assessed in terms of impacts on physical health (e.g. cancer risk, increased mortality and morbidity). Community disruption and impacts on social capital and community wellbeing are not assessed in the health chapters. Stress and anxiety related impacts are also not assessed. Within the SIA loss of amenity due to air and road traffic noise is identified as a potential negative impact. The implications of this for public health and wellbeing are not identified. The draft EIS has not assessed the potential increase in road traffic accidents as a result of airport related traffic.

### Migration of workers and presence of non-local workers

- Migration of workers and the presence of non-local workers in communities can cause community disruption and impacts on local facilities and resources. The SIA identifies that the majority of the workforce is expected to be local but also some moving into the area permanently and also people commuting in from other parts of Sydney. The expectation for a mostly local workforce appears to be based on the availability of working-age people in the South Western Sydney area. It is not clear whether the expected increase in employment opportunities will benefit young residents, unemployed residents and residents experiencing deprivation in the surrounding area. These residents are also likely to be most negatively affected by existing and future environmental, social and health impacts from airport activities.

### Community concerns/perceptions and beliefs about the airport

- Evidence of health impacts, as laid out in the draft EIS, may not be the same as the community's perception of health risks. The perception of changes to noise, air quality, and home prices can influence the behaviour of local community members and in turn affect their health. This has been evidenced by other health impact assessments on airport developments. The extent to which individuals and communities have control over their lives has a significant influence on mental health and overall health. Lack of control and lack of influence (believing you cannot influence the decisions that affect your life) are independent risk factors for stress. Heightened risk perceptions, low control and low involvement in decision-making are associated with negative physical and mental health impacts. The SIA acknowledges uncertainty over the airport plans (e.g. flight path location) that could cause anxiety among local community but the potential impacts on health and wellbeing are not drawn out. This is a potentially significant area of health impact that has not been assessed.

### Housing

- The SIA reports that most stakeholders noted housing affordability during consultation as a key issue. The SIA identified no significant impacts on values for large blocks of land that are currently common around the airport. The population forecast carried out for the draft EIS predicts significant population

growth in South-Western Sydney. Areas close to the airport have been identified as both employment and housing growth areas. The SIA identifies that potential longer term housing unaffordability due to growth may negatively impact on already disadvantaged groups.

- In addition, housing prices may be relatively more affordable in areas exposed to higher levels of noise. This means that already vulnerable population groups are more likely to live closer to environmental risks. Communities close to the airport may have already experienced disruption and corresponding loss of identity, social capital and social cohesion due to relocation of housing and community facilities, changes in employment opportunities, and other environmental impacts due to the airport development. Although longer-term housing unaffordability is identified as a potential problem in the SIA, the implications of this for health and health equity are not drawn out.

### Visual intrusion

- The proposed airport and associated development, construction and additional traffic will negatively impact on visual amenity. The SIA identifies the loss of agricultural land; this will impact on the visual amenity of the area as it is replaced by other more built-up industries. As mentioned previously, recreational areas including the Blue Mountains will suffer loss of visual amenity due to the presence of planes overhead and for some areas changes to the landscape. Some residential areas will also have views of the airport.
- The potential negative permanent impacts from the loss of amenity and green space on health are not identified in the SIA. These impacts would affect future generations. The potential health impacts on communities that will experience multiple amenity impacts (e.g. noise and visual) has not been considered. These impacts can lead to a significant loss of community and sense of place (with or without any additional increase in aircraft noise) making the area less desirable to live in and affecting community identity and cohesion.

## Hazard and Risk

### Key Issues for Council

- Early preservation of a corridor, and early construction of a dedicated pipeline to supply aviation fuel to the proposed airport site.
- The risks associated with fuel dumping, and the proximity of the proposed airport site relative to Sydney's primary water catchment area.
- Proximity of vital infrastructure to the proposed airport site, and indicative flight paths.
- The impacts of safe operation of the proposed airport resulting from adverse weather conditions i.e. fog.

## Implications & Opportunities

- As noted elsewhere in Council's submission, a key concern is the cumulative impacts of the proposed airport on the Western Sydney transport network. A significant contributor to this issue is the forecast fuel demand for the proposed airport operation that would require the mobilization of approximately 43 B-double trucks of fuel per day. This number of additional, hazardous truck movements on the local road network presents a clear risk to the community.

As noted in the draft EIS, if a dedicated fuel supply pipeline is not provided to the proposed airport site, the number of truck movements would need to increase in line with the growth in air traffic. In this regard, Council recommends the early preservation and construction of a fuel supply pipeline, as well as comprehensive risk mitigation strategies to safeguard the community from road-based fuel supply movements.

- Observations noted in the draft EIS depict a low risk assessment associated with the jettisoning of fuel from aircraft, due primarily on the basis that occurrences are rare. Council is concerned any occurrence of the airborne emission of toxic chemicals in the form of aviation fuel as a significant environmental and community risk.

For example, more than four million people in Sydney, the Illawarra and the Blue Mountains rely on water from the surrounding catchments; one of which is in immediate proximity to the proposed airport site. Water is collected from over 16,000 km<sup>2</sup> of land and stored in 21 storage dams (11 major dams) that hold a total of 2,500 billion litres of water. Exposure to this natural resource from airborne chemical spillage, even of a rare occurrence, is a significant issue that requires an appropriate mitigation strategy.

- It is noted that 'Appendices H - Hazard and Risk' in the draft EIS addresses issues such as aircraft accidents, adverse weather, terrorism and other risk-related issues associated with the proposed airport site. However, there are other significant risks that require consideration, such as those associated with public infrastructure.

Aircraft accidents impacting on vital infrastructure such as electricity (e.g. sub-stations), telecommunication, roads and bridges, rail etc. are significant considerations that warrant an appropriate response in a revised draft EIS.

- It is noted that the draft EIS states a study undertaken by the Bureau of Meteorology, indicates the most significant weather aspect of the airport site is likely to be the occurrence of fog. This is a key point of concern, as the draft EIS states the development of fog overnight in the western Sydney Basin is possible during all months of the year (and for extended periods of time during winter). Notwithstanding the advent of systems such as 'Runway Visual Range' and 'Instrument Landing Systems' to land modern aircraft in such conditions, a robust assessment is required in 'Appendices H - Hazard and Risk' of the draft EIS relative to the issue of fog.

## Traffic, Transport and Access

### Key Issues for Council

- Earlier provision of rail access to the proposed airport site (than is indicated in the draft EIS).
- Accurate, corroborated traffic data upon which meaningful modelling may be conducted, and associated impacts assessed.

### Implications & Opportunities

- In the context of stage 1 of the proposed airport development, no analysis is conducted as to the benefit derived on the surrounding transport network based on the earlier provision of a rail link. Conversely, as assessment of the draft EIS suggests an additional rail link capacity (above and beyond the South West Rail Link Extension) would be required to accommodate both proposed airport trips and background growth trips, before 2063.

The post-draft EIS announcement by the Australian and NSW Governments of a scoping study into the provision of a rail link to the proposed airport site highlights the significance of this issue, in that it warrants meaningful and supported analysis.

It remains Council's position that rail services should at least include the rail line extension to Narellan, and further to the Main Southern Rail Line to service the recently announced 'Greater Macarthur Land Release Investigation Area'.

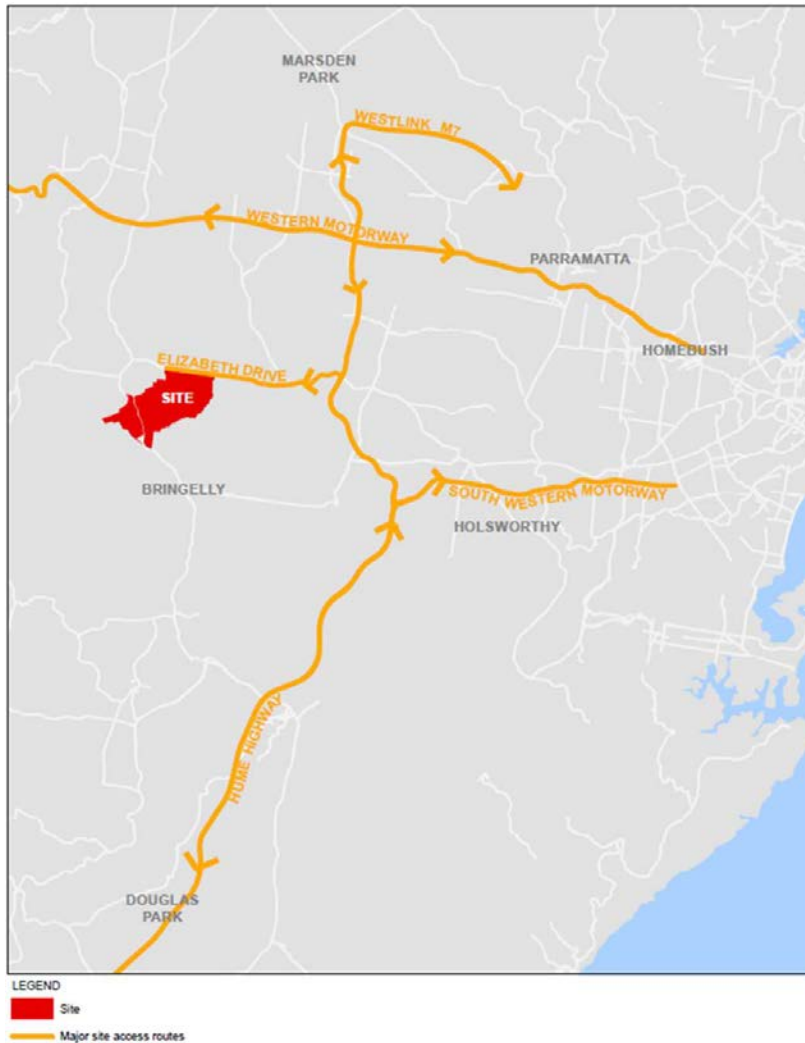
- The strategic transport model (STM3) used as a basis for the draft EIS assessment is currently in development and requires further review and corroboration by Transport for NSW. In the absence of confirmed assumptions on which the draft EIS are based, there is diminished certainty as to whether many of the claimed conclusions are valid.
- In line with similar major projects, intersection modelling needs to be completed as part of the assessment of the traffic and transport impacts resulting from the proposed airport. Assessing the impact of the proposed airport on key intersections and corridors is essential as part of the stage 1 development. As a further example, as noted in the draft EIS the traffic impacts caused by the proposed airport is predicted to be significant, and should there be no rail options, the new M12 Motorway is predicted to fail in 2050 (being approximately 13 years before the ultimate long term airport development year (2063)).
- Intersection layouts, including the potential need for grade separation and associated land acquisition, need to be established. Of particular concern for the Camden local government area are the following intersections:
  - Bringelly Road / Camden Valley Way / Cowpasture Road;
  - Camden Valley Way / Raby Road; and

- The Northern Road / Camden Valley Way / Narellan Road / Camden Bypass.
  - Vehicle travel time comparisons need to be provided, to enable a comprehensive assessment of the potential impacts of the proposed airport on the local and regional traffic network.
  - Traffic generation of freight (other than for air cargo) and private vehicles (other than air passengers) need to be assessed for the airport precinct.
  - Long term strategic mitigation measures for The Northern Road should be identified in the assessment including detailed public transport alternatives to road travel.
  - The draft EIS states *“the substantial package of road improvements proposed as part of the [Western Sydney Infrastructure Plan], in addition to those identified in the [Broader Western Sydney Employment Area] and [South West Growth Centre] would have sufficient capacity to cater for the expected airport passenger and employee travel demand in 2031.”*

However, it is noted that Western Sydney Infrastructure Plan has funded the Northern Road upgrade and Bringelly Road upgrade, in providing four lanes, which is the provision identified by the NSW Government to cater for the initial stages of the South West Growth Centre only. No commitment has been made by the NSW or Australian Government to further upgrade these roads to six lanes or provide additional intersection grade separation. Furthermore no commitment beyond the Special Infrastructure Contribution gazettal has been made to the upgrade of Raby Road. Without such guarantees in place there is no certainty that such road upgrades will be undertaken by 2031.

- Council is aware that the NSW Government is currently investigating a study area to identify a recommended corridor, for the future Outer Sydney Orbital. As a significant future transport corridor for South-Western Sydney (and the Sydney region), one of the key elements of the Outer Sydney Orbital is to facilitate strategic access to the airport site. In this regard, given the NSW Government release of a recommended corridor for the Outer Sydney Orbital is imminent, Council recommends further assessment in the draft EIS of the subject implications to the broader traffic network.





Proposed airport site access – the draft EIS does not assess access context inclusive of a future Outer Sydney Orbital

## Biodiversity

### Key Issues for Council

- With regard to conducting an overall assessment of the draft EIS relative to Biodiversity, Council is concerned as to the lack of non-compliance in some areas relative to the EIS guidelines e.g. the biodiversity package has not yet been finalised.
- Council would support a threatened flora translocation plan to consider the suitability of the sites within the environmental conservation zone and biodiversity offset sites, (in proximity to the proposed airport site), in order to maintain populations of these species as close to their original location as is possible.

## Implications & Opportunities

### Biodiversity matters for consideration

- The site contains the Critically Endangered Ecological Community *Cumberland Plain Woodland (CPW)* and the Endangered Ecological Communities *River-Flat Eucalypt Forest (RFEF)* and *Shale-Gravel Transition Forest (SGTF)*. These communities total 433.8 ha in area. There is a small component of artificial freshwater wetlands (35.4 ha).
- One threatened species *Pultenea parviflora* (which is listed as Vulnerable under the *Commonwealth's Environment Protection & Biodiversity Conservation Act 1999* (EPBC Act) and Endangered under the *NSW Threatened Species Conservation Act 1995* (TSC Act)) was recorded at the site. An additional seven flora species are considered to likely occur at the airport site and may be affected by the proposed airport. Three of these occur in the Camden local government area. They include *Cynanchum elegans* and *Pimelia spicata* (both listed as Endangered under the EPBC Act and TSC Act), and *Grevillea juneripina subsp. juneripina* which was found in recent years in Gundungurra Reserve at Narellan Vale and is listed as Vulnerable under the TSC Act.
- Ninety three stems of the *Marsdenia viridiflora subsp. viridiflora* which is listed as an Endangered Population under the TSC Act have been recorded in the centre of the proposed airport site adjacent to Longleys Road. *Marsdenia viridiflora subsp. viridiflora* is recorded in Camden local government area and has been identified along the roadside at Bringelly Road and Greendale Road.
- Connectivity for fauna species is mainly along the Badgerys Creek riparian corridor or between closely linked patches within the proposed airport site. Connectivity with vegetation outside the airport site is limited. There is limited connectivity to South Creek riparian corridor.
- Fifty one species of threatened fauna (listed under the EPBC Act and/or TSC Act) have been recorded or are predicted to occur at the proposed airport site or within the locality.
- Nine threatened fauna species were found on the site during the survey. Eight of these species occur in the Camden local government area. They include the Grey-headed Flying-fox (*Pteropus poliocephalus*) listed as Vulnerable under the EPBC Act and the TSC Act and the Eastern Freetail-bat (*Mormopterus norfolkensis*), the following bird species which are listed as Vulnerable under the TSC Act, Varied Sittella (*Daphoenositta chrysoptera*), Little Lorrieket (*Glossopsitta pusilla*), Little Eagle (*Hieraaetus morphnoides*), Blue-billed Duck (*Oxyura australis*), Scarlet Robin (*Petroica boodang*). The Cumberland Plain Snail (*Meridolum corneovirens*) is listed as Endangered under the TSC Act. All species are recorded at a number of sites in the Camden local government area.
- Seven migratory bird species which are listed under the EPBC Act under the international agreements such as the China-Australia Migratory Bird Agreement (CAMBA) or the Japan Australia Migratory Bird Agreement (JAMBA) were

recorded at the proposed airport site during the field surveys. Four of these species have been recorded in the Camden local government area. They include the Cattle Egret (*Ardea ibis*), Latham's Snipe (*Gallinago hardwickii*), White-bellied Sea Eagle (*Haliaeetus leucagaster*), Rainbow Bee-eater (*Merops ornatus*).

#### Identified Impacts on Biodiversity

- Approximately 280.8 hectares of native vegetation will be removed, comprising around 146.1 hectares of good native vegetation, 146.1 hectares which is in good condition and 134.7 hectares in poor condition. Most of the vegetation to be lost is CPW with a small area of good condition artificial freshwater wetland (25.4 ha). Around 61 hectares of native vegetation would also be retained in the environmental conservation zone at the proposed airport site.
- The draft EIS estimates that the percentage loss of terrestrial and wetland fauna habitat is 0.91 % loss of woodland in the locality (i.e. 90.80 ha from 10,014 ha) and 1.6 % loss of riparian forest (29.8 ha from 2,555 ha). However these percentages are based on Western Sydney regional vegetation and not on percentages based on the local extent of the vegetation.
- The draft EIS identifies that “notably, the population of *Marsdenia viridiflora subsp. viridiflora* at the airport site would be removed, which would comprise a significant impact at the local scale.”
- The draft EIS also states that the removal of vegetation at the airport site would result in the loss of fauna foraging, breeding, roosting, sheltering and/or dispersal habitat. The loss of habitat includes grassland, artificial wetlands and patches of woodland vegetation. Construction of Stage 1 development will result in the loss of 50 hollow-bearing trees which may provide roosting and nesting habitat for birds and arboreal mammals species including microbats. As a result of the vegetation removal, habitat fragmentation and fauna displacement will occur.
- Other impacts identified with fauna include bird and bat strike. The risk assessment found that a number of bird species would present at least a moderate strike risk during operation of the Stage 1 development. Habitats that are found to create the most risk are farm dams, landfills and Flying Fox camps in the locality. It is noted that one of major food source for Australian White Ibis is the Eastern Creek Landfill Site and it is proposed to close in 2017.

#### Proposed Mitigation and Management Measures

- The draft EIS identifies that mitigation measures and biodiversity offsets would be further developed with reference to relevant conservation advice and recovery plans for threatened biota potentially affected by the proposed airport.
- The proposed environmental conservation zone will retain woodland along Badgerys Creek, Oaky Creek and Duncans Creek and will maintain some degree of fauna movement along riparian corridors and habitat stepping stones. This includes approximately 122 hectares of land and 61 hectares of land that will need to be revegetated.

- It is proposed to stage vegetation clearance to provide the opportunity for fauna that are resident in the construction zone to seek refuge in alternative habitat in the environmental conservation zone, long term development area or outside the airport area. It is proposed to prepare a biodiversity management plan and threatened fauna management plan prior to construction and this would include mitigation measures. It is also proposed to prepare a threatened flora translocation plan.
- An offset package has been prepared to compensate for the removal of approximately 90.8 hectares of CPW, 120.6 hectares of foraging habitat for the Grey-headed Flying Fox, and other features mentioned in regards to the affected mentioned threatened flora and fauna species, and to some extent the population of *Marsenia viridiflora subsp. viridiflora*.

#### Further commentary

- The direct impact of the loss of vegetation and habitat for threatened fauna and flora is confined within the proposed airport site. The loss of mostly CPW (90.8 ha) and the abovementioned threatened flora and fauna is significant. While the draft EIS identifies that the percentage loss of remnant vegetation is a few percentage points, at a local extent the loss is approximately 20%.
- The above proposed removal of vegetation and translocation of threatened species do not directly impact Camden local government area. Indirect impacts such as offsetting and fauna and flora management as discussed below are not identified to occur in the Camden local government area. However in the short to medium term there will be displacement of fauna and a considerable number will likely relocate to the northern part of the Camden local government area.
- A threatened flora translocation plan is proposed to consider the suitability of the sites within the environmental conservation zone and biodiversity offset sites within the vicinity of the site in order to maintain populations of these species as close to their original location as is possible.
- Potential Biobank Offset sites have been identified at a number of sites outside the proposed airport site. None are located within Camden local government area but are identified and make a reference to the Biobanking methodology and the required species credits.
- The suggested Biobank sites for CPW are based on candidate sites from a desktop assessment which includes BioBanking online registers and “like for like” vegetation match.
- Potential offsite sites for threatened fauna and flora include some of these candidate sites that allow for appropriate “like for like” vegetation and habitat. It also acknowledges that the listed threatened flora and fauna species have been recorded at some of these candidate sites.

- Camden Council has extensive areas of CPW, and will in the coming year assess the Biobanking potential of some of its high conservation significant reserves with the view to register them as potential Biobank candidate sites. A Biodiversity Corridor Plan is also to be prepared in the coming year for the Cobbitty/Cobbitty Hills corridor which contains high conservation value land. Additionally it is noted that there will be a significant loss of habitat trees and Council should consider accommodating the reuse of these hollows as part of its Biobanking Sites Assessment and Biodiversity Corridor Plan for Cobbitty/Cobbitty Hills.

## Surface Water and Groundwater

### Key Issues for Council

- With regard to conducting an overall assessment of the draft EIS relative to Surface Water and Groundwater, Council is concerned as to the lack of qualification of the data and interpretation of the reliability and uncertainty of outcomes.

### Implications & Opportunities

- Comment on how the reliability of the information was tested and what uncertainties (if any) are in the information is not presented. Further, figures and maps are provided, however, many figures and maps are not clear and could be improved to aid understanding. Mitigation and management measures are identified, however, are generally broad and do not necessarily target specific residual impacts or propose specific measures or targets.

The identified gaps in the assessment relate to:

- Flooding – Residual impacts in Cosgroves, Oaky and Badgerys Creek are identified. It is difficult to confirm whether the statements and conclusions are valid as there is a lack of supporting information and presentation of inputs and results are not clear and concise. Further, these impacts still require management to mitigate them to negligible levels.
- Duncans Creek and its tributaries have not been modelled to allow definition of baseline and relative hydraulic impacts in these locations. Such impacts have been assessed by the changes in the hydrology for these catchments. As such, all summary impacts do not fully consider impacts to the Duncans Creek downstream areas. Investigation of a basin at this location is proposed as a mitigation/management measure.
- Many of the figures/maps provided in both the main chapters of the draft EIS and in the technical reports are either not easy to understand or omit relevant information to aid ease of understanding.



- Cumulative impacts have been discussed, however, no assessment has been undertaken to quantify the potential impacts other than for climate change scenarios.
- Water quality has not been presented in terms of achieved pollutant load reduction or assessment against guideline pollutant reduction targets. The draft EIS seems to dismiss any relevance of increased pollutant loads on the receiving environment and instead determines that impacts are acceptable because there are general improvements in pollutant concentrations due to increased flow volumes.
- The draft EIS discusses the tributary of Badgerys Creek that joins Badgerys Creek approximately 300 metres downstream of Elizabeth Drive under existing conditions. It acknowledges that threatened ecological communities have not been mapped outside the site as part of the biodiversity assessment, but there is evidence of some remnant native vegetation along this reach of creek which would be reliant on occasional flooding and would be impacted under the current proposals. Such impacts need to be assessed to ensure there are no impacts and any mitigation and management measures identified.

Surface water impact management is required to address the following residual risks to surface water:

- Outstanding localised increases to flood depths in Cosgroves, Oaky and Badgerys Creeks.
- Risks to erosion and geomorphological changes to the downstream creeks due to increases in bed shear stress at various locations.
- Undefined impacts and mitigation for runoff to Duncans Creek.
- Implications of increases in pollutant loads, particularly for cumulative impacts are not addressed.
- Ecological impacts in receiving waters are not clearly addressed.
- Impacts of potential use of stormwater to provide water supply for site preparation works has not been considered.

Ground water system impacts contain a number of shortcomings with regard to data analysis. The identified gaps in the assessment relate to:

- The lack of qualification of the data (previous data and interpretation of the reliability and uncertainty of outcomes).
- The identification of MNES is not provided in the groundwater studies. The MNES of relevance appears to be the Cumberland Plain Woodland. This ecosystem is also classified as a high priority groundwater dependant ecosystem under the NSW regulatory framework. The text of the draft EIS does not clearly define the Cumberland Plain Woodland as a MNES. Additionally, the text in the

draft EIS documents locates the Cumberland Plain Woodland along Badgerys Creek; however, the map appears to locate the ecosystem at several places over the site. Due to the nature of the project, vegetation over most of the site is expected to be cleared. As such, impacts to the Cumberland Plain Woodland ecosystem need only to be addressed for the groundwater impact assessment along creek lines. This is provided in the draft EIS documents.

- Sufficiently complete characterisation of the weathered rock (regolith) aquifer is not provided as no additional data from previous studies was collected.
- Similarly, no baseline time-series data has been collected. This is especially a limitation when it comes to characterisation of the weathered rock (regolith) aquifer and the contribution of this aquifer to the alluvium formations along the creek lines where groundwater dependant ecosystems are primarily located.
- The impacts are reasonably well identified; however some of the impact assessment is missing a clear outcome statement.
- Impact management and mitigation measures are only discussed generally with potential mitigation measures to be considered and monitoring to be implemented. Groundwater impact management is required to address the two residual risks to groundwater values:
  - Risk of soil and subsurface contamination from spill/release of chemicals or contaminants;
  - Risk of impact on groundwater dependant ecosystems from reduced water supply to the creek alluvium system. The draft EIS documents do not provide a robust impact assessment of the risk to the Cumberland Plain Woodland along Badgerys Creek. The following management and mitigation approach could be considered to address the draft EIS guidelines requirements;
  - Implementation of baseline data acquisition with an aim to document the contribution of recharge to the creek alluvial system from the weathered rock (regolith) aquifer and the Bringelly Shale;
  - A review of the risk to the groundwater dependant ecosystem;
  - Based on the outcome of the previous item, the management and mitigation will vary with the level of risk. A risk propagation based monitoring strategy and response plan may be suitable. In this case, a response plan would propose a suitable early warning indication of impact propagation and provide the management and mitigation measures if necessary to prevent adverse impact. If the risk is identified to be more significant, engineered solutions may need to be considered in the site design.

## Aboriginal Heritage

### Key Issues for Council

- The site is owned by the Australian Government, and thus for heritage is covered by federal legislation (not State or local legislation) i.e. the *Environmental Protection and Biodiversity Conservation Act* (EPBC Act). However the heritage assessment undertaken is consistent with that required by the NSW Heritage Council.

### Implications & Opportunities

- 74 aboriginal sites are identified on the airport site (49% consist of single stone tools).
- At least 39 sites are directly impacted upon (requiring destruction).
- The alteration of landscape will have adverse effects on the intangible value of the landscape to Aboriginal people.
- The potential to avoid or to mitigate the items is limited due to the need to create a large flat platform that is well drained for the proposed airport.
- 11 sites (including a highly significant grinding grooves and scarred tree) are located in Badgerys Creek and thus can be retained and incorporated in open space and conservation areas.
- Salvage of the items (which need to be removed) and continued consultation with Aboriginal people is recommended.
- There is no direct impact on the Aboriginal items of the Blue Mountains World Heritage site, however the protection of quiet wilderness areas are important and should be considered in determining the flight paths.

## European Heritage

### Key Issues for Council

- The proposed airport does not have any direct impacts on the heritage of Camden Council, due to its distance from the Camden local government area. The study area (which is larger than the proposed area of the airport) extends to the corner of Bringelly and the Northern Roads.

### Implications & Opportunities

- 19 European items are identified within the airport site, and 22 within the study area. Most were assessed as being of Commonwealth (equivalent to local

heritage significance). Of these, 18 items within the site will be directly affected (demolished), and most will be indirectly affected, for example by visual and ambience impacts.

- The items to be demolished include those in the townships of Badgerys Creek, Luddenham, Bringelly and Greendale.
- Mitigation and management measures proposed prior to commencement of construction include:
  - further archival and archaeological investigations;
  - relocation of movable objects;
  - relocation of remains interred in graves from cemetery sites;
  - interpretation by displaying items in an onsite museum, use of heirloom plantings in landscaping.

## Social

### Key Issues for Council

- *Translation of issues within the draft EIS* - the Specialist Social Impact Study identifies a number of likely adverse impacts to local communities. Despite the significance of these impacts and their potential to raise notable social concerns, many are given relatively minor reference in the relevant chapters (23 and 37) with no reference in the Executive Summary. This results in an ill-informed view of social issues for readers of the draft EIS who may not progress to read Chapter 23 or Appendix P in detail.
- *Statements without Assessment* - In both the social and economic chapters (23, 24 and 37) many of the potential issues are stated with little assessment of their implications to communities, their degree of significance or duration and alternative approaches that may be applied to alleviate them i.e. alternative open spaces available during construction, the severity of noise impacts to recreational areas, the degree of noise disturbance for different locations over the short and longer terms. This approach weakens the readers' appreciation of the issues and the means to mitigate them. It could also result in greater angst by the community as to the likely degree, duration and severity of impacts.
- *Mitigation of Longer Term Impacts* - a review of the discussion concerning mitigation measures over the longer term focuses heavily on planning mechanisms (i.e. zoning of land to exclude residential uses) together with local and State Government investment to address broader traffic, transport and infrastructure issues. There is no discussion however of how this would be co-ordinated or resourced to address specific impacts resonating from the proposed airport. There is no discussion either as to who the key accountability would fall with. This results in a potential risk that some mitigation measures and impacts would be missed or forgotten over time.

- *Direct Response to Stakeholder Engagement* - the initial stakeholder engagement program for the proposed airport identified a range of social and economic concerns (Vol.1). A number of these concerns are listed by the specialist studies yet are not specifically addressed by the draft EIS. It is recommended that each is appropriately considered and responded to so as to identify the most appropriate mitigation measures and minimise community concerns.
- *Potential of adverse implications associated with the proposed airport* - It is noted in the draft EIS for the proposed airport that perceived impacts are as important as actual impacts, as people may modify their behaviours or experience discomfort simply because of a perceived impact.

### **Implications & Opportunities**

- The physical and perceived impacts of a new airport (and resulting restrictions to access across the locality) to social cohesion should be considered, and any associated community and cultural connections.
- The potential social concerns relating to the perceived or actual impacts of the proposed airport to the local communities health (i.e. noise disturbance, fuel jettisoning etc.) should be evaluated.
- Consideration should be given of the social implications of the locality changing from a rural and low density residential area to a more urbanised one. Whilst the draft EIS makes the assumption that this transition would be a positive one, Council notes that different communities may value varying levels of urbanisation differently. Therefore a change to a denser built form may be considered undesirable and stressful for some established and retired community members.
- Consideration should be given of the degree and duration of the impacts to existing residents located in Luddenham, Badgerys Creek, Bringelly, Greendale and Wallacia during construction and operation i.e. construction noise, access and traffic congestion.
- It remains un-clear as to how potential social and economic impacts would be managed and mitigated with such a significant and relatively quick increase in the number of passengers and associated on site employment (+120%) over the 13 year period between 2050 and 2063.
- The draft EIS should identify what impact the additional flight paths, operations and associated amenity impacts would have to the longer term development potential of affected areas in Western Sydney i.e. height and noise restrictions to increasing residential density.
- Consideration should be given as to the degree to which the airport could “...lead to the reduction in social amenity and impacts on the existing lifestyle of people living and working...” (Pg. 138) identified by the draft EIS.



- Further analysis is required as to the economic costs or implications of the proposed airport's "...role in attracting economic activity to the Region" at the expense of others i.e. "There is a reduction in value-add in the Rest of Australia" (Pg. 139).
- The draft EIS identified the potential for additional amenity impacts to the local communities as a consequence of the proposed airport. Means to mitigate these impacts are not identified other than general references to the need for local and NSW Government planning (i.e. appropriate land use zoning) and service provision (i.e. new community facilities etc.).

Whilst it is difficult to be definitive with respect to mitigation measures over such a period of time, this predicament, combined with the significant scale of the development, creates a significant risk over the longer term. This risk is on account of uncertainties as to how these additional facilities would be funded and who would be responsible for their provision, operation and maintenance to a level that adequately addressed the impacts. This reliance on other parties to manage the proposed airport's impacts has the potential to result in missed mitigation measures and governance overlaps or gaps.

- While potential social issues are stated in the draft EIS, little assessment of the associated implications (e.g. discussion of potential health impacts) have been explored; furthermore, community feedback/discussion was not outlined indicating several assessment gaps. In this regard, it is strongly recommended that there is further assessment of social impacts.
- It is noted that consultation with Indigenous stakeholders is apparently unclear in the draft EIS. In this regard, further clarification is required as to the extent of consultation that has occurred, and/or that further consultation take place if required.
- Existing residents may experience associated negative effects due to relocation, the change to a denser built form and the associated changes to land use. There will also be issues around loss of access to existing facilities, recreation resources and green space affecting health, mental health, food security etc.

## Economic

### Key Issues for Council

- Impacts – while there is a strong focus in the draft EIS on the economic benefits of the proposed airport, this is distinct from a balanced discussion of economic and social costs and benefits. For example the economic Chapter (24) in Vol. 2 focuses entirely on the regional (Western Sydney) and broader (Sydney, NSW and Australian) employment and economic benefits of the proposed airport with only one general and unclear reference to potential adverse economic impacts:

*“However there would be some negative impacts in the immediate vicinity of the airport site due to combination of the airport development and the changing land uses” Vol. 2, Chapter 23, Pg. 504*

Council seeks a better balance of discussion in relation to matters such as impacts to local business activity during construction or the potential impacts of a new business park (with retail as a permissible use) to existing and proposed centres in the South West (i.e. Leppington, Edmondson Park and Liverpool).

- Geography – Council also has concerns as to the balance of discussion regarding the draft EIS’s strong focus on the regional and Australian economic benefits of the proposed airport as distinct from any prospective local impacts. For example the economic benefits and costs to centres within close proximity to the proposed airport (i.e. Bringelly, Luddenham etc.) are little, if at all discussed.
- Transfer and Redistribution Effects - the draft EIS commentary regarding the economic value-add as a consequence of the proposed airport recognises its *“...role in attracting economic activity to the Region” at the expense of others i.e. “There is a reduction in value-add in the Rest of Australia” (Pg. 139) and “The model assumed the future regional employment growth would be redistributed across Sydney...” (Pg.141).*

Whilst the generation of jobs in Western Sydney is a strong positive of the proposed airport, the draft EIS does not discuss the economic or social implications of this transfer of activity from the other areas in Sydney or “the rest of Australia”.

## Implications

- While it may be debated that the overall benefits of the proposed airport might outweigh the costs for Sydney, a more detailed discussion of costs, and who would be affected is recommended i.e. costs with respect to increased traffic generation and congestion, health impacts, the loss of agricultural land, local business impacts etc.
- In this regard it is unclear what the ‘standing’ of any cost benefit analysis is for the assessment – that is what is the area being assessed. If the standing is Western Sydney as a whole, there would be a net benefit gained by the proposed airport to the area of assessment. If the standing is Greater Sydney, the Specialist Studies infer that there would be no net increase with regards to job growth or value add over the short term as result of the proposed airport.
- The draft EIS recognises that the proposed airport would increase congestion on parts of the M4, M5 and M7 Motorways together with the M31 Hume Highway. The potential impacts to businesses reliant on these access routes for servicing and delivery should be considered.
- There is no assessment of the potential impacts of the proposed airport (positive or negative) to the future operation of businesses within the Western Sydney

Employment Area (i.e. in relation to noise or congestion impacts, access improvements and land value).

- The draft EIS does not assess the potential economic impacts of the retail floorspace relative to the economic viability of existing centres in the South West (i.e. Luddenham or Liverpool) or the timely delivery of proposed centres (i.e. Leppington and Edmondson Park).
- There is no assessment of the demand for, or impacts as a result of, a new business park in this part of the South West and the potential implications to other centres such as Leppington that are identified as a future major centre in South-Western Sydney.
- The draft EIS does not assess the demand for, and implications of a potential 845,000m<sup>2</sup> of additional industrial floorspace to the Western Sydney Employment Area, nor the potential benefits of a business park and how these jobs would align with the characteristics and skills of the new population in South-Western Sydney.
- The draft EIS does not assess the level of demand for, and impact to social infrastructure in the locality as a result of these uses and their employees (+4,400 to +27,000 people).
- While the draft EIS identified an adverse correlation between airport noise and land values in Brisbane and Adelaide, it did not make the same finding for land affected by Sydney and Melbourne airports. The draft EIS poses a number of reasons for this result including the fact that property values in central Sydney may be more significantly and positively influenced by factors other than noise including proximity to Sydney CBD. Council cautions any conclusions that seek to draw the same correlation as central Sydney between property prices and airport noise for the proposed airport. Despite this, Chapter 24 of the draft EIS concludes:

*“Overall there would be no discernable negative impact expected on property values, as the anticipated value uplift from land use changes will outweigh any consequence or concern about noise impacts” Pg. 489*

Council is of the view that the characteristics of land and properties surrounding the proposed airport could be more akin to the localities surrounding Adelaide or Brisbane airports (i.e. land that is not located within a few kilometres of a Global CBD) resulting in a different correlation between noise and land values to the Sydney airport analysis.

Council also questions the draft EIS conclusion made on the growth rates for properties affected by Sydney airport being on par with other non-affected areas in Sydney. Whilst this may certainly be the case with respect to growth rates, there is likely to be very different actual sale value starting points i.e. lower land values in noise affected areas than non-affected areas consistent with the findings of other literature cited by the draft EIS.

## Opportunities

Camden Council's Economic Development Strategy (EDS) is built around maximising and seizing opportunities from growth while supporting and encouraging local business. The proposed airport will provide areas of opportunity that will enhance and support this strategy and Council's community strategic plan, *Camden 2040*.

- The need to reduce long journeys to work is a key challenge for South-Western Sydney (including the Camden local government area), the location of the proposed airport at Badgery's Creek will provide employment opportunities for local residents closer to home, enabling reduced costs of travel; potentially reducing commuter times for individuals and thereby reducing energy use, cutting carbon emissions, raising the overall productivity of the workforce and increasing people's quality of life and social benefits.
- The location of the proposed airport which is approximately 5-10kms from Camden local government area (i.e. Bringelly Road, Bringelly) will provide increased employment opportunities for Camden local government area residents.
- The proposed airport will make it more attractive for business to establish in the Camden local government area as they will have access to a greater number of workers, operating in closer proximity to other firms, enabling knowledge spill-over.
- The Camden local government area is well placed to attract new businesses into South-Western Sydney, providing a desirable location for business and family life.
- The proposed airport will provide an opportunity to increase 'visitor appeal' and to maximise domestic and international tourism into the Camden local government area.
- The proposed airport will provide key tourism infrastructure such as road and potential rail infrastructure, which will support tourism growth in South-Western Sydney and the Camden local government area.
- The proposed airport will provide a mix of direct and indirect employment opportunities for residents of the Camden local government area. It has the potential to impact jobs and population growth spatially throughout NSW, influencing where people will live and work. In particular, it is expected to significantly contribute to employment growth in and around the airport.
- Camden's construction industry has a unique opportunity to enhance its financial position during the construction phase of the proposed airport. The construction sector is currently Camden local government area's largest industry, accounting for 3,995 local jobs, equalling 17.1% of the employment in the Camden region (2013/2014- *National Institute of Economic and Industry Research - NIEIR*).

Current planning forecasts show that jobs in the construction industry are likely to closely follow the planned growth in population. The significant population growth is driving growth in the construction sector over a number of decades and provides employment and training opportunities for existing and potential new Camden residents. With the total Western Sydney employment footprint expected to reach 2,700 jobs in 2022 and a total of 11,300 persons over the construction period, Camden residents employed in construction, and construction related businesses have a unique opportunity to take advantage of the construction occurring as part of the proposed airport project.

- Many Camden residents will be attracted to jobs at the on-site business park which will support 4,440 employees in 2031 and 27,150 employees in 2063.
- As a neighbouring Council to the proposed airport site, more information and assessment is required on the negative and positive economic impacts to the Camden local government area businesses e.g. what are some of the negative impacts in the immediate vicinity of the proposed airport (to the Camden local government area) that will occur due to construction (traffic related issues), changing land uses and airport development/new business park? More specifically what would the economic impact be on the Leppington Major Centre?