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Western Sydney Aerotropolis Team
Department of Planning, Industry and Environment
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Email: engagement@ppo.nsw.gov.au

Dear Sir/Madam

Western Sydney Aerotropolis

I am writing to provide comment on the Western Sydney Aerotropolis including associated draft planning controls received by the Environment Protection Authority (EPA) on 9 December 2019.

The EPA provides its advice in **Attachment A** (EPA Comments) for DPIE (Planning) consideration. These comments relate to:

- Air Quality
- Water Quality
- Noise
- Contaminated Land Management
- Waste Management.

Some additional supporting information is provided in **Attachment B** (Additional guidance) and **Attachment C** (EPA Baseline report input for WS Place Infrastructure Compact – air quality) of this letter.

The EPA would like to work with DPIE (Planning) in the continued development of the supporting planning controls. We are available to meet at a suitably convenient time to discuss the above matters, if required.

If you have questions regarding the above, please phone Paul Wearne (02) 4224 4100.

Yours sincerely

[redacted]

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Attachments A, B and C

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ATTACHMENT A – EPA COMMENTS

Air Quality

The proposal would benefit from the inclusion of a narrative on air quality and a strategic direction for air quality to support improved air quality outcomes (both regional and local level) in the planning controls for the Aerotropolis precincts. This currently appears to be addressed by some limited objectives in the supporting Development Control Plan (DCP).

There are risks associated with new development and increasing community exposure to air pollution unless air quality is specifically considered and addressed. Further background information on air quality and supporting approaches for its management are provided in Attachments B and C of this letter.

The EPA recommends that the following strategic outcome be included in the expected planning outcomes for the precincts and secured through the proposed SEPP:

'Support actions that reduce harmful air emissions and help to avoid exposure community to elevated concentrations of air pollution" and

'Support approaches that prevent land use conflict and provide for a mix of uses in appropriate locations".

The Western Sydney Aerotropolis Summary (Section 4.3.2) recognise the role of air quality sensors. Both the NSW State Government and Local Councils are investigating the role of local air quality sensors to provide real time air quality information. Increasing use of air quality sensors will increase government/community awareness of air quality at a more local level and potential pollution *"hot spots"*. It is recommended that DPIE (Planning) consult with NSW Health's Environmental Health Branch (Director, Richard Broome) in relation to this planning proposal.

The EPA would appreciate further discussion and the opportunity to work closely with DPIE and other key agencies on how the proposed SEPP and supporting DCP can adequately address air quality issues in response to future growth.

Water Quality

The EPA supports the commitment and recognition of Wianamatta–South Creek as important Blue–Green infrastructure and valuable assets that will be managed through a landscape approach. This will involve incorporating these into urban activity and form while improving and preserving environmental, cultural and spiritual values. It recognises the Aboriginal cultural significance of this waterway and provides a catalyst to bring Aboriginal people together to help in the planning of this area.

As highlighted in the Western District Plan, an important element for the Aerotropolis will be to ensure the cumulative impacts of development and land management decisions across catchment is done in a way that improves water quality and waterway health. The EPA promotes development that maintains or restores the community's uses and values of waterways. Where these values are being achieved in a waterway, they should be protected; and where they are not being achieved, all activities should work towards their achievement over time. With a catchment undergoing such significant change this should form an important principle in the proposed Western Sydney Aerotropolis SEPP and supporting DCP. In this regard, it is recommended that Principle 5 should be strengthened as follows:

- *Incorporate development that protects, maintains or restores waterway health and the community's environmental values and uses of waterways by applying the "Risk-based Framework for Considering Waterway Health Outcomes in Strategic Land-use Planning Decisions" (OEH/EPA 2017).*

There appears to be a strong emphasis on delivering the Wianamatta-South Creek as the central spine of the Blue-Green Grid and the Wianamatta–South Creek corridor and its tributaries will form an important element to planning of these new areas. It is unclear however from the supporting information the extent of tributaries that will be protected, maintained or restored. As a minimum up to and including 2nd order streams should be retained and encouraged when place based planning these new areas. This concept should be embedded into any supporting Development Control. This approach is consistent with work being undertaken by INSW in relation to South Creek.

The supporting discussion paper recognises the *South Creek Sector Review* including the need for water to be managed holistically under integrated water management. It also recognises the release of Sydney Water's *Western Sydney Regional Master Plan* in 2020 which sets an integrated water management servicing direction to 2056. It also considers the total water cycle in Western Sydney and promotes a sustainable water future delivered via integrated water services. To help enable this direction, the proposed Western Sydney Aerotropolis SEPP and supporting DCP should include the following guiding principle.

- *Ensure an integrated approach to drinking water, wastewater, and stormwater service is considered to drive more sustainable water management outcomes where it is safe and practical to do so.*

This will ensure consistency with other LUIPs and the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* which includes water recycling and conservation provisions (Clause 18). While these provisions in the SEPP need updating to make contemporary, similar approaches are also being applied in the planning of Wilton and Greater Macarthur.

The following amendments to the proposed DCP are also recommended.

- The title *High Ecological Value Waterways* (Section 3.3) should be amended to *Waterway Health*, as the title high ecological waterways is only one of the elements when considering the suite of objectives and outcomes needed in delivering waterway health outcomes for Wianamatta-South Creek and its tributaries.

- Objective a) *Improve the ecological condition of aquatic ecosystems over time*, should be broadened to capture opportunities to protect, maintain and restore these ecosystems in order to help deliver the community values. In addition, there should be recognition that aquatic ecosystems include but not be limited to wetlands and riparian lands to help with clarity. The following objective is recommended (changes in Italics).

  Protect, maintain and restore the ecological condition of aquatic ecosystems (*including but not limited to wetlands and riparian lands*) over time.

- Objective c) *Ensure that waterways are protected in the design and management of the stormwater and wastewater management systems.* Recommend that the following amendments to capture NSW Government Water Quality Policy (in Italics) to best deliver waterway health outcome.

  Protect, maintain or restore waterway health and the community's environmental values and uses of waterways in the design, *implementation* and management of the stormwater and wastewater management systems.

- To capture NSW Government water quality policy, recommend the following amendment (see strike out and italics).

  e) Effectively manage indirect and ongoing impacts of development waterways to ensure established waterway health ~~targets~~ *objectives* are achieved and maintained.

The supporting Discussion Paper recognises the importance of contributions in delivering key infrastructure, but these are limited, and other funding sources are needed. The Western Sydney Place Based Infrastructure Compact (PIC) will assist in informing this conversation. Investigation into funding approaches such as value capture are also supported. However, any review of contribution or funding approaches should also include green and blue infrastructure including stormwater management and associated water quality devices. For example, water quality devices will require ongoing maintenance to ensure ongoing performance. This may only increase with new and more efficient contemporary WSUD controls; for example, water gardens require maintenance every six months. The discussion paper identifies cognises concepts such as a value capture are supported especially where green infrastructure will assist in value lift.

The DCP may also want to consider the development of green plans especially for key centres that are underpinned by IWCM for key areas undergoing transformation. For example, the successful establishment of a street tree will be dependent on water and if appropriately designed, a street tree pit can also provide water quality improvement to stormwater. An example of such a plan was recently done for Arncliffe and Banksia, see attached link:
https://www.planning.nsw.gov.au/-/media/Files/DPE/Plans-and-policies/Attachment-G---Arncliffe-and-Banksia-Green-Plan.pdf?la=en

The issue of salinity and its management does not appear to be discussed in the supporting discussion paper. Much of the area of the Aerotropolis has significant salinity issues that requires careful management when planning areas (including strategies to retain water in the landscape). The DCP should clearly outline the management response needed to address any potential risks in relation to these hazards. Work including the LLS - "*Hydrogeological Landscapes for the Hawkesbury-Nepean Catchment Management Authority, Western Sydney Study Area*" should be recognised and consulted. A copy can be obtained at the following link:
http://data.environment.nsw.gov.au/dataset/western-sydney-hydrogeological-landscapes-may-2011-first-editionf20fe/resource/61ac3645-25c0-4380-aee0-c286aa4b7ea6?inner_span=True

DPIE EES (Policy Science and Strategy Section) is also currently finalising an environmental hazard suitability analysis for WSUD measures within the South Creek Catchment. This work considers seven environmental hazards including steep sites, shallow bedrock, high sediment load, salinity hazard, high water tables, high soil permeability and low soil permeability. A copy of this work can be provided on request if needed or alternatively a copy of this work can be obtained from DPIE EES (Policy Science and Strategy Section) Jocelyn Dela-Cruz phone (02) 9995 5508.

Noise

There are a range of opportunities in the Draft DCP that can help better address noise management approaches to improve local amenity and deliver desired public domain outcomes. For example, the section titled Interface with Transport and Surrounding Land Uses PO20 could be strengthened to include (see italics)

> *Limit incompatible land uses in areas exposed to urban hazards (including but not necessarily limited to uses including intense freight, industrial, rural and infrastructure activities.*

The District Plan includes as an objective under a sustainable and resilient city, *"exposure to natural and urban hazards is reduced"*, and states that, *"effective planning can reduce the exposure to natural and urban hazards"*. Urban hazards are identified as including: noise, air pollution and soil contamination. In this instance the suggested above change would help compliment actions (Action 88) in the Western City District Plan.

Suggested provisions in the draft DCP that encourage good built form outcomes through Design Excellence Competitions, Design Excellence Assessment and satisfying Design Guidelines also provide a further opportunity to deliver high amenity/liveability outcomes. In this regard, the delivery of the Western Parkland City - Landscape Led Approach (Section 5.1.1.2) would also benefit a

similar approach where industry could strive to deliver design excellence as part of precinct planning to help drive sustainability and liveability outcomes.

It appears most of the supporting noise planning controls for the Aerotropolis are directed towards the control of aircraft noise. While this is important, noise emission from associated industry, vehicles and plant has the potential to cause disturbance to adjacent residential developments. Due care should be given to planning for these noise sources using the above advice. This includes the types of activities that may be permitted within zones & could also be contributing to potential land use conflict risks. For example, while the supporting discussion paper states that residential accommodation will not be permissible within the Enterprise Zone, the Draft WS SEPP proposes sensitive land uses including centre-based child care facilities, educational establishments, health service facilities and places of worship in this zone. If these activities are permitted within this zone, they will need specific locational and design requirements.

The Aerotropolis proposes a mixed use zone that allows a mix of co-located uses (including retail, commercial, entertainment, employment and residential uses, etc) in connection with transport hubs. The supporting discussion paper recognises the importance of delivering a night-time economy. There are a range of challenges however when delivering mixed use development that require careful planning. For example, commercial activities can produce a range of noise related impacts (including mechanical ventilation, refrigeration, hotel/live music event noise, sirens and for shopping centers, night-time cleaning/blowers/truck movements). The Western City District Plan identifies the challenges in the planning of these new centres where activation is being sought, while also ensuring public realm/domain is enhanced and amenity protected.

To address this issue and compliment this direction in the District Plan the following additional objective is recommended for Mixed Use Zone.

> *To create sustainable and liveable communities that protects amenity and enhances public domain outcomes.*

To compliment this approach its recommended that objective PO6 in the draft DCP (*Western Parkland City - Landscape Led Approach*) be amended as follows (see Italics)

> Development contributes to the *amenity*, activity, vibrancy, diversity and safety of streets and the public domain through the day and night.

Its noted in Section 1.11 of the draft DCP, an Acoustical Study will be required to support any Development Applications. This will be important especially where a night-time economy is being sought to help develop appropriate mitigation and management approaches that delivers the range of outcomes being sought above.

Contaminated Land

The proposed SEPP and draft plan for Western Sydney Aerotropolis do not appear to provide any information on contaminated land and its future management. It would be beneficial if these documents discuss how to manage contaminated land to satisfy the requirements of SEPP 55.

Contamination issues are unlikely to be limited to within a precinct or zone. Contamination management will need to be considered holistically across the entire Aerotropolis area and consider the receiving waterbodies of Kemps and South Creeks. Hence, detailed and staged contamination assessments are recommended for all precincts prior to development and occupation.

There are several potential sources of pollution and contamination identified within the Aerotropolis area. These include some regulated by the EPA under the *Protection of the Environment Operations Act 1997* including active landfills and waste facilities. Those situated within the Aerotropolis precincts, include the Suez facility, the Brandown site, Sydney Recycling Park and the Hi-Quality Quarry in Kemps Creek.

In addition, the Western Sydney Airport draft EIS previously identified multiple sources of potential contamination within the airport footprint, arising from historical illegal dumping, use of farm chemicals, and leaks and spills of petroleum hydrocarbons. Given most areas of the region have been used for similar purposes (being largely agricultural and some industrial), it follows that the Airport and the precincts within the proposed Aerotropolis need to consider similar contaminants of concern for future assessments and future management plans.

The Aerotropolis proposal should also consider emerging contaminants such as per- and poly-fluoroalkyl substances, as part of its baseline contamination assessment. These emerging contaminants are known to be persistent and highly mobile in the environment and are associated with airport facilities.

The DCP needs to consider contaminated land in planning for sustainability and resilience to make sure that exposure to natural and urban hazards is reduced. Soil and groundwater contamination are urban hazards which will require careful management as the precinct grows, and as land uses change. This is particularly important when planning for more sensitive land uses such as primary schools and low-density residential neighbourhoods, in or around areas with the potential for pre-existing contamination.

Key areas for the DCPs to consider may include:

1. Identify areas with contaminated land by mapping the list of contaminated sites notified to the EPA under Section 60 of the Contaminated Land Management Act. The EPA provided GIS data for the Western Sydney Place Based Infrastructure Compact (WS PIC) in September/October 2019. A copy can be provided upon request. The information would assist in understanding existing contamination in the area.

2. Identify areas with risk of contamination by considering historical land use information and potentially contaminating industries and contaminants such as those listed in Appendix A of the *Managing Land Contamination Planning Guidelines – SEPP 55 Remediation of land.*

3. Consider contaminated land and the surrounding area of the contaminated land in its decision making for development applications in and around areas with the potential for pre-existing contamination.

4. Prepare a risk matrix of known contaminated sites within the area and to consider if any known sites should be notified to the EPA in accordance with Section 60 of the CLM Act.

5. Develop policy on contaminated land management in areas of pre-existing contamination, or its immediate surrounding area. Sample policy may include (but not limited to) the following:
   - In development consent conditions, consent authority to require use of EPA accredited site auditor to provide a Section A site audit statement, when contaminated land is identified and proposed to be developed into more sensitive land use.
   - Planning, siting and design of sensitive land uses to avoid whenever possible, areas where contamination could exist. Alternatively, there should be systems in place to mitigate any risks associated with land use change to a more sensitive land use.

Waste Management

The Draft Western Sydney Aerotropolis SEPP appears to provide limited strategic planning objectives on how waste and resource will be managed in the future. Current waste infrastructure within the region and its surrounds is currently under pressure from urban encroachment and population growth. Western Sydney already accommodates waste and recycling infrastructure that supports waste arising from across the greater Sydney region. Future development of this region will continue to place pressure on this infrastructure.

The Aerotropolis will also see a significant growth in a range of waste streams including municipal solid waste, commercial and industrial, hazardous waste and liquid waste. The quantities of waste arising from all phase of development (including demolition and excavation, construction and occupation) needs to be better understood and planned.

Clear plans, strategic principals and a better understanding of the waste arisings is important to ensue waste generated is managed within the region and aligns with the Government's circular economy policy and the 20-Year Waste Strategy.

Work underway on the WS PIC is examining future waste and recycling generation rates and future waste and recycling infrastructure needs. The Proposed draft SEPP and DCP documents should help address these strategic objectives and ensure land is identified and supported by suitable zonings for future waste and resource recovery infrastructure needs.

There is an opportunity to demonstrate circular economy principals through the Western Sydney Aerotropolis SEPP by ensuring new ways of managing our waste resources are considered through the land use planning. For example; co-locating resource recovery facilities near advanced manufacturing sector, allowing for reuse and repair hubs within residential zones and setting the direction for government procurement policies (which will help drive recycled content in new building materials and road construction). To make this happen land needs to be made available to allow for new resource recovery infrastructure, space for the community to separate waste into clean streams and to recycle. Construction waste also needs to be carefully planned to create opportunities for reuse of construction waste in other parts of the development.

The WSAP identifies that precinct planning will consider the need to integrate waste, energy and circular economy design principles and that requirements will be determined through precinct planning. It is important that the location of waste and resource recovery infrastructure is undertaken in the current planning of the Aerotropolis. This is to ensure any risks of land use conflict can be avoided, is located in an area that can be serviced by future transport connections (including road and freight rail) and that mechanisms in the Draft SEPP and supporting DCP can be identified to enable such a precinct. Potential sites for this infrastructure could include the Badgerys Creek Precinct or the Northern Gateway Precinct. Approaches such as a circular economy precinct could be investigated as part of planning for the WSAP which is also being considered as part of the WS PIC. DPIE EES (Energy, Climate Change and Sustainability). The EPA would like to discuss this further with DPIE Planning to explore suitable locations and appropriate enabling provisions to guiding zoning and future development as part of the Aerotropolis.

There are a range of waste and resource recovery facilities from potentially high impact facilities such as energy from waste facilities requiring stringent planning controls to low impact facilities that can allow the community to recycle and reuse items within their communities (such as container deposit collection points or reuse and repair hubs). To enable a circular economy and reduce waste to landfill, a range of facilities will be needed. The Draft Western Sydney Aerotropolis SEPP should provide the means to ensure land is set aside and spaces are considered for how waste is managed into the future.

The Draft SEPP allows for waste and resource recovery facilities to be located in the Enterprise Zone. Types of facilities that will be needed to manage waste and could be located in the Enterprise Zone include:

- Waste transfer stations
- Materials recycling facilities
- Energy from waste facilities
- Reprocessing facilities for plastics and glass to prepare them for market
- Community recycling centres.

The Agribusiness Zone should also allow for co-location of waste management facilities such as composting facilities or anerobic digestors to manage food production waste from within the zone. The Mixed-Use Zone should allow for low impact resource recovery facilities such as reverse

vending machine, container deposit collection points, reuse and repair hubs or community recycling centres.

The *Western City District Plan* recognises the need to protect existing and identify new locations for waste recycling and management (Action 83). An example of existing waste and resource recovery infrastructure within the region includes the Suez Kemps Creek recycling and recovery facility located at Elizabeth Drive. This facility currently includes a mechanical biological technology (MBT) facility for processing household and some Commercial & Industrial (C&I) waste and a landfill. The facility processes approximately 120,000 tonnes per annum of municipal solid waste and C&I waste. Further investigation is needed to identify all waste and resource recovery facilities within the Aerotropolis and where possible these sites should be either protected or relocated to ensure capacity and services can be delivered into the future.

In the draft DCP under Urban development page 39, the following additional principals should be included:

"*Development is designed for effective waste and resource recovery by allowing for waste services to occur in a safe, seamless and timely manner*".

"*Systems are designed to maximise waste separation and resource recovery and innovative and best practice waste management collection systems and technologies are supported where appropriate*"

ATTACHMENT B - ADDITIONAL GUIDANCE

The following comments provide additional approaches and principles to help guide the adoption of appropriate planning controls.

Air Quality

The NSW Government's submission on the Western Sydney Airport draft Environmental Impact Statement (EIS) and Airport Plan dated 17 December 2015 stated our commitment to economic development in Western Sydney while also understanding and mitigating potential risks to human health and the environment in the planning process. The submission stated that the EIS had not fully explored the cumulative air quality impact of the airport in relation to urban development in Western Sydney. It also advised that Western Sydney's geography poses unique problems for air quality because the South Creek Valley traps pollution under certain meteorological conditions.

Air quality is already a significant issue for Western Sydney and climate change and urban growth will increase future pressures on the region's air quality. Population growth focussed in Western Sydney also means more people will be exposed to air pollution. As stated in the Greater Sydney Regional Plan 2018, *although Greater Sydney's air quality is good by world standards, air pollution can exceed national standards at times and continues to have an impact on human health. Even if air pollution is maintained at current levels, population growth in the north west and south west of Greater Sydney, which has greater exposure to air pollution, raises the risk of more people being exposed to pollution.*

It is important that the proposed Aerotropolis take into account findings of the Site Based and Regional Air Quality Modelling undertaken for the Airport and also recognise the information gaps in the modelling work at that time. The assessment predicted a contribution to regional ozone from the airport development greater than the EPA's maximum allowable increment and exposure of a number of residences to one-hour concentrations of nitrogen dioxide (N02) greater than the criterion. The assessment did not consider cumulative projected emissions for sources other than the proposed airport nor did it consider emissions and exposure relating to the precincts that are now proposed.

Substantial public health and economic benefits are available from planning approaches that reduce long-term exposure to air pollution. The Western Sydney District Plan (which the proposed Western Sydney Aerotropolis State Environment Planning Policy (SEPP) intends to implement) identifies air pollution as an urban hazard and includes Objective 37, *"Exposure to natural and urban hazards is reduced."*

The EPA provision of baseline information and advice for the Western Sydney Growth Infrastructure Compact (see **Attachment C**) is also directly relevant to planning for the Aerotropolis. As identified in the advice, the NSW Government has set a target: *"Improve average air quality across NSW"* and a Clean Air Metric as a measure for tracking progress against this goal. It aims to ensure the population of Western Sydney experiences air quality that meets national air quality standards. To achieve this a reduction in current levels of population exposure to air quality that does not comply with the standards will be required.

The Draft DCP refers to *Western Parkland City – Landscape Led Approach* and includes performance outcomes that help deliver improved air quality outcomes. These could be strengthened and revised through:

- Strengthening the language used. For example, phrases such as *"concentrated levels of air contaminants"* does not reflect how air quality is discussed.
- The provision of additional outcomes as follows:
    - Minimise industrial and commercial emissions, by avoiding new emissions sources and utilising best practice emission controls.
    - Restrict domestic wood heaters

- Control air emissions from construction sites and construction plant/equipment.

Ensuring that proponents address the air quality protection principles in "*Development near rail corridors and busy roads – interim guideline*" for residential and other sensitive developments along transport corridors will improve health and liveability for these future developments. Implementing setbacks and design excellence for sensitive development along major roads in accordance with the Interim Guideline has multiple co-benefits. These include but are not necessarily limited to:

- increased green space at the interface of roads helps reduces air quality impacts by providing filtration of air pollutants, mitigation of urban heat and creation of healthier environments for active transport.
- complements and contributes to Councils tree canopy targets, including by providing opportunities to increase canopy on private land.
- can address overshadowing of roadways which contributes to poor public and pedestrian amenity and discourage social interactions within the community; and
- minimises risks of canyoning which can impact air quality and can contribute to poor liveability and public health outcomes.

Further protections for children are provided in the Child Care Planning Guideline available at: *https://www.planning.nsw.gov.au/Policy-and-Legislation/Education/Child-care-facilities*.

The place-based planning approach should also explore and recognise approaches being undertaken for the Parramatta Road Transformation Project to help guide some of the key areas undergoing transformation adjacent to existing or new transport corridors: *https://www.landcom.com.au/assets/Uploads/5ae1d8536a/parramatta-road-implementation-tool-kit-planning-and-design-guidelines-november-2016.pdf*.

DPIE Planning may also want to consider air quality management approaches being applied in the draft Wilton DCP which were developed in consultation with EPA and former OEH. The DCP states that the transition of land from its current land uses will gradually occur over the next 20 to 30 years. It further states that the Precinct planning is to make provision to address the transition and management of agricultural land uses and ensure that adequate buffers are provided between incompatible uses in the interim to manage potential conflicts that may arise, for example, the impact that noise, odour and farm chemicals and amenity.

While buffers can be used to address incompatibility, such measures may not fully address the extent of potential impacts from these activities as more sensitive activities encroach within their vicinity. This is a significant issue within the existing Western Sydney growth areas especially where industry/agricultural activities such as poultry and industry wish to remain in conjunction with residential growth. The planning of the Aerotropolis would benefit the development of a transitional process/pathway to help guide existing landowners, industries and developers to best respond to future land use changes.

The Future of Agriculture and Food Production in Sydney A Discussion Paper prepared by the Sydney Agriculture Strategic Approaches (SASA) Working Group (March 2017) should be consulted. Planning approaches such as *"reverse onus of proof"* requirements could also be investigated as a tool. Such an approach is practised in the New Zealand Planning System: see information on Reverse Sensitivity Analysis: *http://www.tba.co.nz/kete/PDF_files/ITP406_reverse_sensitivity_analysis.pdf*.

Noise

It is important that adequate planning controls are in place to identify and manage noise-based land use conflict issues. The potential to address noise issues retrospectively following development can be challenging and expensive and lead to community complaint. The EPA considers that implementing noise control at a strategic planning level provides the most effective means of minimising noise impacts on communities. This is best achieved by applying the following hierarchical approach to noise control.

1. Spatial separation of incompatible land use through appropriate zoning and placement of activities to minimise noise-related land use conflicts.
2. Minimising noise emissions at source through best practice selection, design, siting, construction and operation as appropriate.
3. Reducing noise impacts at receivers through best practice design, siting and construction.

Guidelines including the *NSW Road Noise Policy* (DECCW, 2011) and the *Rail Infrastructure Noise Guideline* (EPA, 2013) provide guidance in relation to land use planning to manage road and rail noise respectively. This compliment planning guidance provided in the *Development Near Rail Corridors and Busy Roads—Interim Guideline* (Department of Planning, 2008) which recognises the need for judicious land use planning, architectural design, building orientation and good internal layout to achieve acceptable acoustic amenity for residential development in proximity of busy transport corridors. This type of approach has been applied successfully to provide an early indication to potential developers of expected noise emission requirements, and to preserve the noise amenity in adjacent areas.

The I-SEPP, and the advice in the Development in Ra*il Corridors and Busy Roads – Interim Guideline* is applicable where the average daily traffic volume is 20,000 vehicles per day. The I-SEPP is only activated however once the above traffic volumes are triggered. For roadways where there are predicted increases in traffic growth that could trigger the above requirements, the DCP should ensure that provisions are in place to plan these areas early to ensure development is appropriately designed for traffic noise related impacts.

A range of noise mitigation strategies can also be implemented at the subdivision design stage to manage unavoidable noise impacts. This can include the application of noise control measures into the building design to ensure internal noise levels are acceptable. Advice is provided in *Noise Guide for Local Government* (EPA, 2013) and the Department of Planning's *Development Near Rail Corridors and Busy Roads—Interim Guideline*.

ATTACHMENT C - EPA BASELINE REPORT INPUT FOR WS PLACE INFRASTRUCTURE COMPACT (WS PIC) – AIR QUALITY

Purpose

Assessment of current performance and capacity to accommodate future growth within the WS PIC area.

The advice should identify existing levels of provision, pressure points, emerging pressures.

Air quality pressures

- Western Sydney currently experiences elevated air pollution, when national health-based standards for fine particles and ground-level ozone are exceeded.

- Even assuming current air pollution levels in Western Sydney, the increase in population and densities over the next 40 years would significantly increase the number of people exposed to air pollution. However, air pollution concentrations are set to increase as business, transport, and household activities increase, unless future intervention is undertaken.

- Although Sydney as a whole experiences relatively good air quality as a whole, fine particles (PM2.5) and ozone pollution have an important public health impact, causing approximately 2 per cent of deaths and 1.8 per cent of life-years lost.[1] Especially for fine particle pollution, there is no known safe threshold for exposure, and public health impacts and costs still occur at levels below the standards. Young children, the elderly and those with existing health conditions are most affected. Health costs due to fine particle exposures in the Greater Sydney area have been estimated to be $6.4 billion each year.

- Climate change is predicted to result in increased high pollution days, including high ozone days resulting from increased temperatures (which result in more ozone being formed in the air) and high particle days from more extreme weather events such as bushfires and dust storms.

- Air emission sources contributing to Western Sydney's air pollution include wood heaters, industry, transport and other diesel and emission sources associated with the construction and operation of infrastructure. Some sources make a continuing or increasing contribution to air pollution and threaten gains made over time through actions such as regulating vehicles, fuels and industry. Sources relevant to infrastructure planning that need additional focus include, for example:
    - Non-exhaust vehicle emissions, including from road, brake and tyre wear, which are not regulated and continue to rise as vehicle numbers and vehicle kilometres travelled increase.
    - Diesel locomotives, which are not subject to emission standards, and can result in health impacts when freight corridors or hubs are located close to communities or in areas where air quality is already under pressure.
    - Non-road diesel equipment, which is not currently subject to emission standards, and can impact on communities close to areas of heavy use, for example, industrial sites or construction zones for infrastructure and new developments.

- Even where regional air quality complies with standards, local impacts and land use conflicts still occur where sources of harmful emissions, such as busy roads, freight corridors, ports, industry (for example, waste processing) and agriculture, are not adequately separated from sensitive land uses such as residences, child care, schools, hospitals and aged care facilities.

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[1] Broome R A, Fann N, Cristina T J N, Fulcher C, Duc H and Morgan G G 2015, The health benefits of reducing air pollution in Sydney, Australia Environ. Res. 143 19–25

Methodology

- *statement of service levels and/or metrics used as the basis of the performance assessment and* No. people living within 500 m of major road – average
- *any policy or regulatory considerations related to the sector.*

Service levels and metrics

NSW air quality is measured against national health-based standards under the National Environment Protection (Ambient Air Quality) Measure (NEPM). Air quality in Western Sydney is generally good but does not always meet national standards and some pollutants such as fine particles have harmful health effects at extremely low levels.

The NSW Government has set a target for air quality across NSW: "Improve average air quality across NSW". The Clean Air Metric (CAM) is the measure for tracking progress against this goal. The CAM methodology has been peer reviewed and published in the proceedings of an international conference.

Clean Air Metric

Indicator: 100 per cent of population enjoys ambient air quality meeting National ambient air quality standards

Metric: NSW Clean Air Metric below 100 for the Council area.
About the Clean Air Metric

The NSW Government has set a target for air quality across NSW: "Improve average air quality across NSW".

The Clean Air Metric (CAM) is the measure for tracking progress against this goal. The CAM methodology has been peer reviewed and published in the proceedings of an international conference.

Riley M. L, *Scorgie Y., Jiang, N., Capnerhurst, J. and Salter, D. (2017) A metric for assessing population weighted average air quality in NSW. Proceedings of the 23rd International Clean Air and Environment Conference, Brisbane, Australia, 16-18 October 2017.*

Metric Owner: Office of Environment and Heritage: Matt Riley, Director Climate and Atmospheric Science.

Other uses (and best practice examples)
The Clean Air Metric is the NSW Government's metric for measuring progress to improving air quality (see Clean Air Plan Consultation Paper). It is also used by NSW to meet requirements under the National Clean Air Agreement which commits Government to managing local air quality issues and priorities in accordance with local circumstances.

Best practice examples in Greater Sydney: The GSC District Plans recognises the need to reduce exposure to air pollution through the design of new buildings, and through support for public transport, walking and cycling. The Parramatta Road Corridor Urban Transformation Strategy requires setbacks or mechanical ventilation for new housing in Auburn, Granville and Homebush situated along Parramatta Road.

Policy considerations

Policy considerations for future air quality management in Western Sydney include:

- There are substantial health, economic and social benefits available from plans and strategies that continue to manage and improve air quality, particularly by delivering long-term reductions in population exposure to fine particle pollution. Significant health gains are available from even small reductions in pollutants.

- Infrastructure planning and delivery under the WS PIC presents major opportunities for integrated solutions that realise multiple benefits relating to objectives for environment, liveability, health, resilience and efficiency. Multiple benefits should be recognised, and actions prioritised that deliver multiple benefits.

- Land use and transport planning have a key role to play in minimising emission impacts on human health and in avoiding land use conflicts. Land use planning also affords opportunities to manage and sequence changes in land use so that exposure impacts are minimised.

- Planning decisions around transport, in particular, can impact both local and regional quality impacts. Planning needs to address both ameliorating local impacts, by mechanisms such as setbacks of sensitive developments from major road and rail freight corridors, and also minimising total regional emissions, by supporting cleaner transport modes and reduced vehicle travel.

- Evidence and public awareness of health exposures and impacts, particularly along major road corridors and around freight hubs is growing. Vehicle exhaust emissions have declined in NSW due to national vehicle emission and fuel standards, but future gains will be realised more slowly, including due to delay in the adoption of stricter national fuel standards. Meanwhile, non-exhaust emissions from brakes, tyres and road wear are making an increasing contribution to harmful fine particle emissions from roads and transport. There will also be increased focus on nitrogen dioxide (NO^2) emissions, to which vehicles are the main contributor, given increasing roadside monitoring and health research on NO^2 impacts near roads, and current review of the national ambient air quality standard for NO^2.

- There is a need for specific action to reduce emissions and manage exposure around major transport emission sources, as a direct benefit to the community and to enable responsible development of freight infrastructure.

Findings

- *any constraints and gaps to catering for growth within the next 10 years*
- *any relevant policy positions pertinent to future planning.*

Gaps

- The WS PIC process provides a major opportunity to improve environment and public health outcomes from the development of Western Sydney but is missing the concept of meeting health-based environmental standards and the strategic environmental assessment component critical to support this. Environmental assessment is needed to genuinely consider and address cumulative environmental and health impacts rather than deferring them to the project assessment stage.

- The environment agencies have drawn together relevant available datasets but need the information from other agencies, for example, population and housing scenarios and the proposed network of major roads/freight corridors, in order to advise meaningfully on environmental constraints. This will enable environment agencies to provide exposure projection maps so that information is readily available to improve development of scenarios in terms of reducing environment and health risks. This work requires ongoing targeted collaboration with environment agencies and the environmental health area of NSW Health.

Relevant Policy Positions

The EPA is leading the Clean Air for NSW process to meet the government's commitment to improve air quality across NSW.

The Western Sydney District Plan recognises air pollution as an urban hazard with significant public health impacts. It includes:

- Objective 37 – **Exposure to natural and urban hazards is reduced**
- Action 87 – Avoid locating new urban development in areas exposed to natural and urban hazards and consider options to limit the intensification of development in existing urban areas most exposed to hazards.

There are multiple benefits, including for climate change resilience, environmental health and air quality, available from a broad range of actions that deliver on the sustainability priorities and objectives of the District Plan, including under:

Adapting to the impacts of urban and natural hazards and climate change

- Objective 36: People and places adapt to climate change and future shocks and stresses
- Objective 37: **Exposure to natural and urban hazards is reduced**
- Objective 38: Heatwaves and extreme heat are managed

An efficient city: reducing carbon emissions and managing energy water and waste efficiently.

- Objective 33: A low-carbon city contributes to net-zero emissions by 2050 and mitigates climate change.
- Objective 34: Energy and water flows are captured, used and re-used.
- Objective 35: More waste is re-used and recycled to support the development of a circular economy.

The WS PIC process should support best practice planning and design of development along major transport corridors, to minimise unhealthy air and noise impacts. This involves adopting and applying the Development near rail corridors and busy roads interim guideline (currently being updated) and the Parramatta Road Corridor Urban Transformation Guidelines – Implementation Tool Kit (UrbanGrowth NSW Nov 2016).

The WS PIC process should support, in all infrastructure construction, implementation of the NSW Government Resource Efficiency Policy, which promotes low-emission diesel equipment, and best practice management of diesel emissions.

Implications

the implications of the findings for the next stages

Decisions made on the urban form and infrastructure investments in Greater Sydney – particularly in high growth areas of Western Sydney – will be critical to government's ability to achieve the NSW Government's Clean Air target and net Zero ambitions under the NSW Climate Policy Framework.

The EPA seeks further discussion with GSC and recommends:

- investigation of further actions to address the gaps in the WS PIC process identified above.
- in particular, provision for strategic assessment of carbon pollution and environmental health impacts, including cumulative impacts.
- support for science and modelling for carbon and air quality required to underpin assessment of environmental impacts of and constraints on potential scenarios.
- an increased focus on opportunities to deliver solutions that integrate multiple benefits for liveability and sustainability.

- that DPE, in collaboration with other WS PIC agencies, strengthen air quality provisions in the Development near rail corridors and busy roads interim guideline and develop Planning and Design Guidelines for Western Parkland City transport corridors using the Parramatta Road Corridor Planning and Design Guideline as a template.