



Our reference: DOC16/633999-17:PW  
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Land Release  
GPO Box 39  
SYDNEY NSW 2001

Dear Sir or Madam

**INGLESIDE PRECINCT – PRIORITY GROWTH AREA**

I am writing in reply to your request to provide comment on the above proposed draft Precinct Plan and supporting Draft Land Use and Infrastructure Strategy including associated studies received by the Environment Protection Authority (EPA) on 15 December 2016.

The EPA has attached comments and information (**Attachment A**) for the Department of Planning and Environment's (DPE) consideration in their assessment of the proposal. These comments relate to:

- Air Quality
- Noise
- Water Quality and Waterway Health
- Contaminated Land Management
- Waste Management.

The EPA is available to meet with DPE at a mutually convenient time to discuss any of the attached comments. If you have any questions regarding this matter, please contact Mr Paul Wearne on (02) 4224 4100.

Yours sincerely

 07/03/17  
**PETER BLOEM**  
**Manager Illawarra**  
**Environment Protection Authority**

Attachment A

## ATTACHMENT A

### 1. AIR QUALITY

The Ingleside Priority Growth Area should provide sustainable growth that delivers the following key air principles:

- Ensures air quality is maintained or improved and that the exposure of populations to air pollution emissions is reduced.
- New potential sources of air emissions use best practice controls.
- Prevent land use conflict.

There are a range of approaches that should be delivered to support the above principles and documented in an appropriate study.

Although Sydney's air quality has improved and is relatively good by world standards, air pollution at times exceeds national health-based standards and there is clear evidence of health impacts on residents, even at levels which are generally within the standards. Further information on air quality in greater Sydney is provided in the recently released *Clean Air Plan for NSW Consultation Paper*. This paper presents a proposed approach and actions for government to meet its goal of improving average air quality results across NSW. A copy of this paper can be obtained at: <http://www.epa.nsw.gov.au/air/clean-air-nsw.htm>.

The proposal should provide improved liveability by promoting connectivity. For example, new growth areas should require active transport routes to be laid out prior to designing roads and allotments, so these routes are in the most favourable places. New release areas should be fully integrated with public transport and active transport routes early in development to reduce vehicle kilometres travelled. In addition, employment and services should also be located nearby and be reasonably accessible by public transport and active transport routes.

Air impacts arising from changes in land uses and their intensity also need to be considered and addressed, for example, where residential growth intensifies around emission sources such as employment and urban service lands.

The proposal is in the vicinity of key employment and urban service lands including the Kimbriki Resource Recovery Centre. The future planning for this area needs to carefully plan the future need and operation of these key urban service lands in conjunction with any surrounding residential housing growth. Environmental issues such as the management of noise and air quality (for example, odour) need complementary land use approaches to manage any potential risks of land use conflict. The potential to address noise and air quality issues retrospectively following development can be challenging and expensive. For example, the Kimbriki Resource Recovery Centre has been identified as being a moderate potential for land use conflict in the map titled *Protecting Key Employment and Urban Service Lands in Greater Sydney* in the Greater Sydney Commission's Sustainability Profile for Greater Sydney.

As well as having noise impacts, high traffic volumes along roads (for example, Mona Vale Road) can create air pollution impacts on sensitive land uses. These include residences, schools, aged care and child care facilities. Air pollution impacts can be reduced through careful site planning and architectural design of developments along these corridors. Developments should be required to meet air quality siting and design measures in the *Development Near Rail Corridors and Busy Roads—Interim Guideline*. The *Infrastructure SEPP* should also be consulted.

DPE should also consider the approaches being applied in the Parramatta Road Corridor Urban Transformation Strategy. A copy of these measures can be obtained at:

<http://www.urbangrowth.nsw.gov.au/assets/Projects/Parramatta-Road/Publications-161109/Strategy-Documents/6.-Implementation-Tool-Kit-Planning-and-Design-Guidelines-November-2016.pdf>.



The proposal should also document approaches for the management and control of ozone and particle precursors (NO<sub>x</sub>, SO<sub>x</sub>, VOC and particulates). This includes the following:

- There has been interest in adoption of distributed power generation, including cogeneration and back-up power generation in Sydney. These technologies usually employ combustion of gas or diesel fuel. Gas-fired cogeneration can be one of the most greenhouse-friendly forms of electricity generation using fossil fuels. However, gas and liquid fired distributed generation has the potential to adversely affect local and regional air quality as it can emit significant amounts of NO<sub>x</sub>, which reacts in the air to form harmful nitrogen dioxide and ozone. Some guidance can be found in the following EPA guideline: <http://www.epa.nsw.gov.au/air/cogentrigen.htm>.
- Wood heaters are a major contributing source of elevated particle levels in Sydney. Approaches undertaken in Sydney's Growth Centres have included restricting installation of wood heaters and open fire places.
- Diesel and gas powered equipment used in construction can cause air pollution. The proposal should provide for best management practices at the construction stage. Please refer to information available on the EPA website at: <http://www.epa.nsw.gov.au/air/managenonroaddiesel.htm>.
- With the precinct including an indicative location for a school site, consideration should be given in relation to reducing exposure of schools to air pollution along major roads for information. The US EPA Office of Children's Health Protection in 2015 has developed best practice approaches to mitigate school children's exposure to air pollution along major roads. This guideline includes recommended set back distance for schools based on other issues as well as air exposure. DPE may wish to consider this guidance in relation to the suitability of the location of the school site and include measures in the DCP in relation to the future design of the school: [http://www.epa.gov/sites/production/files/2015-10/documents/ochp\\_2015\\_near\\_road\\_pollution\\_booklet\\_v16\\_508.pdf](http://www.epa.gov/sites/production/files/2015-10/documents/ochp_2015_near_road_pollution_booklet_v16_508.pdf).

The Methodology for Valuing the Health Impacts of Changes in Particle Emissions, supported by an Air Quality Appraisal Tool can be used to estimate the increased health impacts as a result of either increased population (hence exposure) or increased air pollution emissions. The tool is designed for application in assessing the impacts and costs of new land use and transport proposals. The Methodology and Appraisal Tool is available at: <http://www.epa.nsw.gov.au/air/costcurves.htm>.

The *Priority Growth Area Air Technical Working Group* which includes DPE, EPA, Office of Environment and Heritage (OEH) and Transport NSW representation is currently engaging on key air information and guidance to inform the Macarthur Growth Area. This includes approaches for reducing emissions and exposure to incorporate into any relevant instruments and/or Macarthur Land Use and Infrastructure Plans. Opportunities should be explored to adopt similar approaches for this new growth area.

## 2. Noise

The Noise and Vibration Impact Assessment states that a range of noise mitigation measures will be required for the proposed low and medium density developments to reduce noise levels to satisfy appropriate noise criteria. For example, road traffic noise levels are likely to exceed the criteria presented in the *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) by up to 10 dB(A) where proposed low and medium density residential areas are close to Mona Vale Road and to a lesser extent Lane Cove and Powderworks Roads. Noise from both existing sources and proposed community facilities, shops, schools and sporting fields on existing residences on proposed residential developments may also require mitigation.

While the proposal is only conceptual at this stage it does highlight the need for more detailed noise assessment to be undertaken to inform new development at the site. This assessment should be undertaken in accordance with relevant NSW noise policies and guidelines prior to submitting a development application to the relevant consent authority. This should include a review of the adequacy of the in-principle noise mitigation recommendations, and where necessary, update and refine these. The outcomes of this assessment should be considered when developing and implementing controls and through consents, approvals or licences (as appropriate) to manage potential noise impacts on proposed sensitive developments within, and outside the Ingleside Precinct.

At this time the draft Land Use and Infrastructure Plan only discusses road traffic noise and its management and recognises that this matter will be further addressed in the preparation of the DCP. However the assessment has identified a range of other sources that may also require management. While the DCP provides an important vehicle to address these issues, the draft Land Use and Infrastructure Plan should map out how the DCP could respond to these issues and identify where further assessment maybe required. It will also be important that any proposed mitigation measures include a validation requirement that ensures noise requirements are satisfied prior to occupation.

### 3. Water Quality and Waterway Health

The Ingleside Priority Growth Area should support sustainable growth that delivers the following key water principles:

- Promote development that maintains or restores waterway health to support the community's environmental values and uses of waterways.
- Promote integrated water cycle management that holistically considers and drives investment in sustainable water supply, reuse, wastewater, and stormwater infrastructure.

The EPA also supports the principles being used to guide discussions regarding the management of water in relation to the Draft District Plans. In particular to deliver a Water Sensitive City that is resilient, liveable and sustainable into the future (*Opportunities for a Water Sensitive Greater Sydney Water 2016*). These principles should also be embedded in the Draft Land Use and Infrastructure Strategy.

#### Ensuring the Precinct supports the community's uses and values of waterways

The site is located in a number of catchments which flow through sensitive environments including Ku-ring-gai Chase National Park, recreational grounds and the environmentally sensitive and regionally significant Warriewood Wetlands. These catchments also flow into sensitive waterways including Narrabeen Lagoon and Pittwater. The submitted studies indicate that the health of a number of waterways in these catchments including McCarrs Creek is poor due to a range of issues including elevated pollutant levels such as nutrients as a result of urbanisation.

It is important that land use changes associated with this new growth area delivers a sustainable development outcome that not only supports on-going improvement in the health of these catchments and waterways but also allows the NSW Water Quality Objectives (WQO) to be met over time where they are not currently being achieved.

The NSW WQO provide a framework and benchmarks for the community uses and values of waterways and the water quality that is needed to support these. They were developed using the *Australian and New Zealand guidelines for fresh and marine water quality* (2000) and are the NSW Government's endorsed environmental values and long-term goals for NSW's surface waters.

In general where the environmental values are being achieved in a waterway, they should be protected; and where the environmental values are not being achieved in a waterway, all activities should work towards their achievement over time. This approach will assist in meeting the actions in a *Plan for Growing Sydney* (DPE 2014).

The EPA notes that the submitted information does not provide details of expected water quality outcomes, but states that post-development water quality will comply with the generic per cent load reductions based on information from the Local Land Services (that is, Gross Pollutants 90 per cent, TSS 85 per cent, TP 65 per cent, TN 45 per cent).

It is important that ambient water quality targets for the receiving waters are developed rather than applying generic per cent load reductions that have no reference to receiving water outcomes that support the NSW WQO. Furthermore, these generic targets do not reflect contemporary Water Sensitive Urban Design (WSUD) performance and may not deliver improvements in the health of local waterways.



The EPA recommends that appropriate water quality and flow targets be developed that support the NSW WQO and determine whether proposed mitigation measures including WSUD are adequate. Further information on contributing to improving the health of waterways through strategic planning can be found at: <http://www.environment.nsw.gov.au/water/planningusingwqos.htm>.

This approach is supported in the Draft North District Plan where it is recognised as a key sustainability priority to maintain and improve water quality and waterway health. In particular it recognises that relevant planning authorities and managers of public land should:

- consider more water sensitive approaches to managing stormwater to meet the water quality and quantity targets, including harvesting and re-use of water and management of riparian corridors;
- develop mechanisms to allow offsetting between sub-catchments and facilitate cost-effective opportunities to meet the management targets for whole catchments and water quality objectives for receiving waters; and
- while management targets are being established, ensure that the quality of stormwater and wastewater from public land and new development in established urban areas maintains or improves the health of waterways, in line with community values and expectations of how waterways will be used.

#### Integrated Water Cycle Management

The supporting information states that development of the precinct will provide opportunities to incorporate water conservation and WSUD. However, the EPA considers stormwater management should also contribute to an integrated approach to water management to support a healthier water environment that considers all relevant impacts and benefits including water quality and erosion, stormwater retention and detention, public open space and recreational and visual amenity. Stormwater management should be considered within integrated water cycle management planning processes.

It is also important to ensure appropriate management measures are developed and implemented to address erosion hazard. The studies state that the subject area is considered to present as a high erosion hazard due to the characteristics of a colluvial and erosional soil landscapes combined with high rainfall intensity which can result in high soil loss conditions. The studies also state that a high erosion hazard implies that significant erosion will occur during development and after land use is established, even with intensive soil conservation measures.

In this regard, the EPA recommends that water quality and flow targets should be developed as part of the precinct planning process and secured in the DCP. These targets would then apply to any new development associated with the precinct.

There are several guidelines that should be consulted to assist in meeting the stated environmental outcomes. *The Managing urban stormwater: harvesting and reuse Guideline* (DEC 2006) provides an overview of stormwater harvesting and its potential benefits and limitations. The *WSUD Guidelines* (Landcom 2009) establishes objectives for water conservation, pollution control and mitigation of the effect of increased flow as a result of catchment urbanisation. The *Managing urban stormwater: soils and construction* series provides a range of information including guidance on erosion and sediment control during construction and other land disturbance activities.

The proposal involves a treatment train process to manage and treat stormwater. This is as follows:

- Rainwater tanks are to be provided on the developed dwellings for at source treatment and re-use of roof water
- Creek/swale systems to convey runoff to the trunk water treatment facilities
- Gross pollutant traps and trash racks to capture larger pollutants and sediments before discharge into the watercourse
- Bioretention "raingardens" to provide online treatment for effective removal of fine sediments and nutrients.

Water management techniques are reliant on effective and ongoing maintenance and monitoring. The EPA recommends that DPE explore opportunities through section 94 contributions or a Special Infrastructure Contribution (SIC) to secure any management arrangements, financial contributions and accountable parties. This will ensure that the integrated system will have an effective governance structure in place maintained in perpetuity and will continue to meet the expected environmental performance outcomes into the future:

#### Sewage Management

The supporting information also states that sewage from the precinct is proposed to be directed to the Warriewood Wastewater Treatment Plant.

There has been significant investment to consolidate sewerage infrastructure to reduce the environmental impact of local sewage outfalls, improve the quality of local waterways and provide recycled water to industrial, residential, commercial and municipal users in the region. Growth across greater Sydney will utilise either existing sewerage system capacity or require new treatment capacity. There are a range of approaches for the provision of new sewerage infrastructure, including private sector involvement.

Infrastructure planning for the area should include clear direction for the provision of sewerage services. It should also consider whether proposed growth will result in increased loads of pollution on the receiving environment as a result of additional sewage capacity. It should also identify what practical and cost effective measures can be taken to maintain or restore the community's uses and values of waterways and protect public health. This would include consideration of impacts from sewage overflows from any existing sewerage reticulation systems (e.g. sewer pipes and pumping stations) and discharges from any existing sewage treatment plant.

The supporting information states that a new pumping station would be needed. The EPA's policy is that for new systems there should only be discharge of treated effluent to waters as a last resort, there should be no pollution of waters as a result of overflows during dry weather and that overflows during wet weather should be avoided. Sewage overflows have been identified as one of the major contributors to diffuse source water pollution in urban environments.

The Growth Centres SEPP also encourages water recycling and water reuse initiatives. The EPA supports such initiatives in particular, proposed integrated approaches to managing sewage effluent and stormwater. These approaches present a significant opportunity to meet the community's environmental objectives for the lowest cost and provide a source of water to improve the liveability of the development to support a Water Sensitive Greater Sydney.

With one of the site's catchments flowing into Cowan Creek, it is important to note that the EPA is currently examining a potential framework for the regulation of nutrient discharges in the Hawkesbury Nepean River system. The intent of this framework is to ensure that population growth in the catchment does not cause further deterioration in the condition of the river and its ability to meet the community's desired uses. Several options are being considered including a catchment based nutrient load limit. In the interim, the EPA recommends that infrastructure planning for the new area should deliver an outcome that ensures any new sewage treatment scheme will achieve no net increase in nutrient load to the river. Offsets and other measures such as integrated approaches to water management can be used to achieve this outcome. In addition any proposed discharge would need to be assessed in accordance with the ANZECC (2000) *Guidelines for Fresh and Marine Water Quality*.

#### On site Wastewater Treatment

The studies state that an On-site Effluent Assessment was undertaken to determine the capacity and constraints associated with on-site treatment of residential effluent within Wirreanda Valley and Bayview Heights. This was undertaken due to site constraints for connection to the Sydney Water reticulation system. The assessment found a number of significant constraints to subdivision in these areas including slope limitations, soil depths and soil chemistry (particularly phosphorous loading).



The Draft Infrastructure and Land Use Strategy also states that collectively, landowners within Wirreanda Valley and Bayview Heights may consider options for alternate or centralised solutions aimed towards the selection of a suitable site specific system that minimises the areas considered not suitable for conventional effluent management practises. The EPA considers that any system would need to satisfy the following:

- there is no pollution of waters (including surface and groundwater) except in accordance with an EPL (it should be noted that the EPA is unlikely to issue an EPL to the proponent that allows pollution of waters by non-scheduled activities except in exceptional circumstances).
- maintains or restores the community's environmental values and uses of waterways (including human and environmental health) through the achievement of relevant NSW Water Quality and Flow Objectives; and
- promotes integrated water cycle management that includes sustainable water supply, wastewater and stormwater management and reuse initiatives where it is safe and practicable to do so and provides the best environmental outcome.

The EPA has concerns about development taking place in the regions of Bayview Heights and Wirreanda Valley without a suitable solution being developed for the sewage and stormwater infrastructure in accordance with the aforementioned water quality objectives.

#### 4. CONTAMINATED LAND MANAGEMENT

A review of the submitted information reveals that there are no land parcels that have been identified within the growth area that are currently regulated under the *Contaminated Land Management Act* (see <http://www.epa.nsw.gov.au/prclmapp/aboutregister.aspx>). It is important that any proposed future development does not result in a change of risk in relation to any pre-existing contamination on the site so as to result in significant contamination. As this would render the proponent the 'person responsible' for the contamination under section 6(2) of CLM Act. A search of contaminated land that has been notified to the EPA under the Contaminated Land Management Act is available at: <http://www.epa.nsw.gov.au/clm/publiclist.htm>

The EPA recommends the following should be considered by DPE in its assessment of the proposal.

1. The processes outlined in *State Environmental Planning Policy 55* be followed in order to assess the suitability of the land and any remediation required in relation to the proposed use.
2. Where any contamination which meets the trigger in the Guidelines for the Duty to Report Contamination ([www.epa.nsw.gov.au/resources/clm/150164-report-land-contamination-guidelines.pdf](http://www.epa.nsw.gov.au/resources/clm/150164-report-land-contamination-guidelines.pdf)) the contamination should be notified in accordance with requirements of section 60 of the CLM Act.
3. The following guidance should be considered in accordance with the proposal:
  - Technical Note: Investigation of Service Station Sites.
  - NSW EPA Sampling Design Guidelines [www.epa.nsw.gov.au/resources/clm/95059samppgdline.pdf](http://www.epa.nsw.gov.au/resources/clm/95059samppgdline.pdf)
  - Guidelines for the NSW Site Auditor Scheme (2nd edition) 2006 <http://www.epa.nsw.gov.au/resources/clm/auditorlines06121.pdf>
  - Guidelines for Consultants Reporting on Contaminated Sites, 2011 [www.epa.nsw.gov.au/resources/clm/20110650consultantsglines.pdf](http://www.epa.nsw.gov.au/resources/clm/20110650consultantsglines.pdf)
  - The National Environment Protection (assessment of contamination) Measures 2013 as amended.
4. Should the consent auditor require independent assessment of the suitability of any parcels of land for the proposed use then consideration should be given to the use of an independent site auditor accredited under the Contaminated Land Management Act to assess the suitability of the land for the proposed use.

#### WASTE MANAGEMENT

The Draft Land Use and Infrastructure Strategy and its associated studies contain limited information on the future management of waste. The EPA recommends that the Strategy should include guiding waste



principles to help inform the planning and design of any future waste and resource recovery systems needs to support future development at Ingelside. Such an approach would contribute supporting the approaches and initiatives to deliver the NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014-2021. For example an important NSW waste initiative is the NSW Government's Container Deposit Scheme which will roll out across NSW from 1 December 2017. The draft Land Use and Infrastructure strategy provides an opportunity to identify and plan for any infrastructure needs such as collection points to compliment this initiative.

In addition, such principles could also underpin any waste management provisions in any associated Development Control Plan (DCP).

The EPA would like to work with DPE on the development of appropriate waste principles that can be secured in the in the Draft Land Use and Infrastructure Strategy.

The EPA also has a range of information and guidance available to assist DPE in development of a DCP and guide new development. These include:

- The *Waste Not Development Control Plan Guideline* (EPA 2008) which provides suggested planning approaches regarding waste provisions to inform the development of a DCP or associated policy. A copy of the guideline can be obtained at the following site:  
<http://www.epa.nsw.gov.au/resources/warr/08353SiteWasteMin2.pdf>.
- The *Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities* (EPA, December 2012). This guide can be accessed at:  
<http://www.epa.nsw.gov.au/warr/BPGuideCIFacilities.htm>
- The *Better Practice for Public Place Recycling* (DEC 2005) provides information on standards for recycling systems in public places, such as parks, shopping centres, footpaths, bus-stops, etc. This guideline can be accessed at: <http://www.epa.nsw.gov.au/warr/publicrecycling.htm>.
- The *Better Practice Guide for Waste Management in Multi-Unit Dwellings* (DECC 2008) provides waste management strategies for multi-unit residential developments. This guide can be accessed at: <http://www.epa.nsw.gov.au/warr/BetterPracticeMUD.htm>.

#### Kimbriki Resource Recovery Facility

The planning proposal adjoins the Kimbriki Resource Recovery Facility. This facility is jointly owned by Northern Beaches Council and Mosman Council. A new recycling and waste processing facility being built at Kimbriki is scheduled to open by 2019-20. In this regard, the EPA supports the recommendations in the GSC's North District Plan in that when making plans, relevant planning authorities should:

- use appropriate land use zones to minimise the potential for conflict with the operation and expansion of existing waste facilities.
- protect precincts that have functioning waste management facilities from encroachment by residential and other sensitive development.