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Department of Planning and Environment
(Attention: Louise Drum, Manager Urban Renewal)
GPO Box 39
SYDNEY NSW 2001

Dear Madam

Telopea Precinct Proposal

I am writing in reply to your request to provide comment on the above planning proposal received by the Environment Protection Authority (EPA) on 15 November 2017.

On the basis of a review of the adequacy of the information provided there appears to be a range of environmental matters that have not been addressed in the planning proposal. These include an assessment of approaches to manage water quality, air quality and noise impacts. These matters are important to ensure the precinct can deliver key sustainability and liveability outcomes in the Revised Draft District Plans and Draft Greater Sydney Regional Plan.

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

- Air Quality
- Noise
- Land Use Conflict
- Water Quality
- Waste Management.

The EPA is currently reviewing the Contaminated Sites Assessment and will be providing comments shortly under a separate letter.

If you have questions regarding the above, please phone the contact officer on (02) 4224 4100.

Yours sincerely

29/11/17

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Attachment A

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ATTACHMENT A

1. Air Quality

Although air quality has improved and is relatively good by world standards across NSW, air pollution at times exceeds national health-based standards. In areas such as Greater Sydney population growth and climate change will continue to put pressure on air quality. There is also clear evidence of health impacts on populations, even at levels which are generally within the standards.

The Clean Air for NSW consultation paper, fact sheets prepared for the NSW Clean Air Summit in June 2017 and the Sydney Particle Characterisation Study report released in June 2017 provides further information on air quality across NSW. This can be obtained at:
http://www.epa.nsw.gov.au/air/clean-air-nsw.htm.

To protect air quality and human health, complementary planning approaches are required to address new sources of air emissions and reduce exposure of populations to air pollution. The Greater Sydney Commission's (GSC) Revised Draft Central City District Plan recognises the need to plan for and enhance the District's liveability, as our population grows, by planning for safe and healthy places.

Actions promoting connectivity to improve liveability in any future development will also contribute to reduced vehicle kilometres travelled and improved air quality. This may include integrating urban activation with rail facilities early in development; requiring new precincts to have active transport routes laid out prior to designing roads and allotments; and locating new residential development with ready access to employment and services by public and active transport. In addition, strategies to improve urban greening along transport corridors also have air quality benefits and supported by the EPA.

Careful planning along high traffic corridors can reduce impacts on sensitive land uses such as residences, schools, sports fields, aged care, medical and child care facilities. These could include the following:

- Requiring developments to meet the air quality siting and design measures in the *Development Near Rail Corridors and Busy Roads—Interim Guideline,* and referring to the *Infrastructure SEPP*.
- Applying design approaches for housing next to busy roads from the Parramatta Road Corridor Urban Transformation Strategy. These include:
  - Using architectural and design approaches that provide separation from major roads and ensuring habitable rooms of future developments are oriented away from busy roads.
  - Where development includes mechanical ventilation (such as air conditioning), ensuring that the air intakes for the ventilation are situated away from pollution sources.

  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 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 recognising this guidance in relation to the suitability of the location of school sites:
  http://www.epa.gov/sites/production/files/2015 10/documents/ochp_2015_near_road_pollution_booklet_v16_508.pdf.

The planning proposal also provides an opportunity to drive approaches for the management and control of ozone and particle precursors (NOx, SOx, 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 NOx. Guidance can be found in the following EPA guideline: *http://www.epa.nsw.gov.au/air/cogentrigen.htm*.

- Wood heaters are the major human-made source contributing to elevated particle levels in Sydney in winter. Approaches undertaken in Sydney's Growth Centres have included restricting installation of wood heaters and open fire places and this approach is recommended in new urban developments.
- Diesel and gas powered equipment used in construction can cause air pollution, which can be mitigated by requiring 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.

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.

2. Noise

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.

Careful design and location of development offers the greatest opportunity to manage noise. Noise generating activities and noise sensitive areas should be separated where practicable; for example, separating incompatible land uses with commercial buildings or recreation space or similar will provide a physical barrier and/or spatial separation. Retrospective control options are usually limited and more expensive.

Guidelines including the *NSW Road Noise Policy* (DECCW, 2011) and the *Rail Infrastructure Noise Guideline* (EPA, 2013) provide planning guidance to manage road and rail noise respectively to minimise noise impacts on the community. In addition, the requirements in the *SEPP (Infrastructure)* 2007 and supporting *Development Near Rail Corridors and Busy Roads—Interim Guideline* (Department of Planning, 2008) should be satisfied. In particular, this guideline 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.

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*.

A provision should be included in the planning controls that requires detailed acoustic design input into the Subdivision Plans, Construction Certificate Plans and Specifications. Validation should also be required prior to the issue of an Occupation Certificate to ensure any acoustic design measures have been satisfactorily incorporated into the development as a further check and balance.

3. Land Use Conflict

The proposal involves the integration of both residential and commercial uses and increases in residential densities along the corridor. Adequate planning controls should be implemented to manage any potential noise and air related environmental issues, to prevent land use conflict. For example, commercial activities can produce a range of noise related impacts. These can include mechanical ventilation, refrigeration, hotel/live music event noise, sirens and for shopping centres, night time cleaning/blowers/truck movements.

The planning review involves major transformation in the Telopea area. The area also includes sewerage infrastructure and the likelihood of new and/or amplified sewerage infrastructure to meet the needs of population and economic growth. Measures should be adopted to minimise the risks of land use conflict where residential encroachment is proposed in close proximity to existing or new infrastructure.

New developments should be planned to avoid noise-related land use conflicts up front through measures including spatial separation, best practice building design, siting and construction, and the use of appropriate air and noise mitigation techniques. The potential to address noise and odour issues retrospectively following development can be challenging and expensive and can lead to community complaint.

The EPA has developed the map 4.2.2 *Protecting Key Employment and Urban Service Lands in Greater Sydney* which is in the: *GSC Sustainability Profile for Greater Sydney* which could be referred to in the Guideline. This map presents key employment and urban service lands across Greater Sydney that have a range of activities (such as sewage treatment, manufacturing and freight handling) and present a high or moderate potential for land use conflict from noise, odour or air quality impacts. This map only identifies potential land use conflicts where the EPA regulates activities in Greater Sydney. It does not include some infrastructure (such as Major Roads and Rail) activities regulated by Council or managed by the Commonwealth. This map can be used to inform strategic planning decisions and highlights where careful planning is required where land use conflict is or could be an issue.

The management of land use conflict requires early engagement with developers, land owners, operators, Councils and State Government Agencies (including DPE and EPA) to understand and manage any potential risks and then documentation of a process mitigating those risks. Approaches such as co-design or co-creation acknowledge the value of local inputs and participatory processes, and is recognised in the: *NSW Government's draft Architecture and Urban Design Policy, Better Placed* (October 2016).

The use of approaches such as *"reverse sensitivity analysis"* should be considered when planning the area to address land use conflict; such an approach is used successfully in the New Zealand planning system to help inform the planning of areas as they transform. Further information on this approach can be obtained at: *http://www.tba.co.nz/kete/PDF_files/ITP406_reverse_sensitivity_analysis.pdf*.

4. Water Quality

The *NSW Water Quality Objectives* (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* (ANZECC Guidelines 2000) and are the NSW Government endorsed environmental values and long-term goals for NSW's surface waters.

In the Revised Draft Central City District Plan, Planning Priority C13 is '*Protecting and improving the health and enjoyment of the District's waterways*'. In particular it is important that future growth associated with Telopea contributes to the *'Our Living River'* initiative for the Parramatta River.

The planning proposal should deliver a sustainable development outcome that not only supports on-going improvement in the health of waterways but also allows the WQO to be met over time for the

ParCooks River, where they are not currently being achieved. The proposal should deliver the following environmental principles:

- Promote development that maintains, improves or restores water quality and waterway health to support the community's environmental values and uses of waterways.
- Promotes integrated water cycle management that includes sustainable water supply, wastewater and stormwater management and reuse and recycling initiatives where it is safe and practicable to do so and provides the best environmental outcome.

These above principles underpin key sustainability priorities in the Draft South District Plan's (Plan), in particular, *'Maintain and improve water quality and waterway health'*. It is important that this Plan be consulted in the development of the corridor. This should include exploring opportunities to develop controls that help deliver *"The Liveability Framework"* and key sustainability priorities detailed in the Plan. This should also include opportunities that help deliver the above environmental principles.

There are currently a range of approaches and targets being applied in Development Control Plans (DCP) that inform new development. Some DCP, such as these controls provide generic per cent load reductions targets including Gross Pollutants 90 per cent, TSS 85 per cent, TP 65 per cent and TN 45 per cent. These generic load reduction targets do not fulfil the existing requirements to achieve the WQO, do not reflect contemporary integrated water cycle management performance and are unlikely to deliver improvements in the health of waterways. Appropriate water quality targets should be developed and embedded in the planning controls to help inform new development that support the WQO and the benefits of proposed mitigation measures including Water Sensitive Urban Design. 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*.

Contemporary approaches such as integrated water cycle management should also be encouraged as they can provide a least cost approach to:

- meet waterway health and community urban amenity needs
- reduce and safely convey local flood waters
- increase potable demand reductions through the using of innovative lot and/or precinct scale alternative sources, including effluent recycling and stormwater harvesting and use.

As the proposal involves increased densities and possible basement or underground car parking areas it is important that measures are provided to collect and manage any seepage waters from these underground areas in a manner that will prevent pollution of waters.

The Office of Environment and Heritage and the EPA have developed a *'Risk-based Framework for Considering Waterway Health Outcomes in Strategic Land-Use Planning Decisions'* to assist decisions that maintain, improve or restore water quality in the strategic planning process to help meet the NSW Water Quality and River Flow Objectives. This planning proposal should identify opportunities to adopt this risk-based framework. The framework can be used to:

- ensure the community's environmental values and uses for our waterways are integrated into strategic land-use planning decisions
- identify relevant objectives for the waterway that support the community's environmental values and uses, and can be used to set benchmarks for design and best practice
- identify areas in the catchment where management responses cost-effectively reduce the impacts of land-use activities on our waterways
- support management of land-use developments to achieve reasonable environmental performance levels that are sustainable, practical, and socially and economically viable.

Early adoption of the framework enables decision makers to:

- determine the appropriate stormwater and wastewater management targets that contribute to maintaining or improving water quality to meet the community's values environmental values and uses
- consider more water sensitive approaches to managing stormwater to meet the water quantity and quality targets, including harvesting and re-use of water and management of riparian corridors.

Water management techniques involving a treatment train, for example, raingardens or bioswales are reliant on effective and ongoing maintenance and monitoring. Council should explore opportunities through Section 94 contributions, Voluntary Planning Agreements or a Special Infrastructure Contribution to secure any management arrangements, financial contributions and accountable parties. This will ensure that any proposed integrated system will have an effective funded governance structure in place to ensure these measures are maintained in perpetuity and will continue to meet the expected environmental performance outcomes into the future.

Sewage Management

Infrastructure planning for the new precinct should include clear direction for the provision of sewage treatment services to meet rapid population and economic growth. It should also consider whether proposed growth will result in increased loads of sewage pollution on the receiving environment and 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 sewerage reticulation systems (for example, sewer pipes and pumping stations) and discharges from any sewage treatment plants (STP).

The planning proposal should deliver the following environmental outcomes specific to sewage management:

- For existing sewage treatment systems:
  - utilisation of all reasonable and feasible measures (for example, wastewater reuse and recycling in line with the Growth Centres SEPP) to minimise additional sewage effluent loads from STPs to waters
  - no increase to existing levels (that is, frequency and volume) of pollution of waters, as a result of sewage overflows from the reticulation network during dry weather or wet weather.
- For new sewage treatment systems:
  - no discharge of sewage effluent to inland waters, estuaries or ocean shorelines from STPs during average and dry weather conditions, and only during wet conditions as a last resort
  - no pollution of waters, as a result of sewage overflows from the reticulation system during dry weather
  - avoidance of sewage overflows during wet weather from the reticulation system wherever reasonably practicable.

5. Waste Management

The planning review appears to contain limited information on the future management of waste. The following guiding waste principles should be used to help inform future waste and resource recovery systems. These approaches would help deliver the *NSW Waste Avoidance and Resource Recovery (WARR) Strategy* 2014-2021.

1: Environmental sustainability and best practice

Developments will meet requirements for long-term environmental sustainability and best practice when:

systems are designed to maximise waste separation and resource recovery

innovative and best practice waste management collection systems and technologies are considered and supported where appropriate

flexibility in design allows for future changes in waste generation rates, materials collected and methods of collection.

2: Effective waste and resource management

Developments will achieve effective waste and resource management when:

waste services are provided in a seamless and timely manner

collection points, street widths and street configurations, especially in new subdivisions and precinct developments, allow for waste to be removed safely and conveniently

the distance residents must travel to dispose of waste is minimised and access is safe and easy for all residents

functional and convenient storage spaces are provided for waste and recycling, including temporary storage areas for bulky materials like cardboard boxes and bulky household waste.

3: Clean, safe and healthy living environments
Developments will protect and enhance the quality of life for the community when:
negative impacts on amenity for residents, neighbours and the public, such as visually unpleasant waste storage areas, noise from waste collection including traffic noise and bad odours, are minimised
illegal dumping and litter from bins are minimised through good planning and installation of adequate storage and waste recovery infrastructure
safe and easy access to waste and recycling storage areas is provided for residents, tenants, building managers and collection contractors.

4: Affordability
Developments will provide affordable living and working when:
careful design and construction prevents costly retrofits
operational waste management is cost-effective for residents and tenants.

There are a range of waste management guidelines and information available to assist in delivering the above principles. These can be obtained at: *http://www.epa.nsw.gov.au/waste/index.htm*.

The NSW Government's Container Deposit Scheme will roll out across NSW from 1 December 2017. The planning review provides an opportunity to identify and plan for any infrastructure needs such as collection points to compliment this initiative.