DOC21/662564
SSD 9138102

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NSW Department of Planning, Industry and Environment
4 Parramatta Square, 12 Darcy Street
PARRAMATTA NSW 2150

Dear Mr Schwebel

Subject: Notice of Exhibition – Westlink Industrial Estate (formerly ESR Kemps Creek Logistics Park) SSD 9138102 – additional waterway health comments

I refer to your email received 18 June 2021, inviting Environment, Energy and Science Group (EES) in the Department of Planning, Industry and Environment to comment on the Notice of Exhibition for the Westlink Industrial Estate (formerly ESR Kemps Creek Logistics Park) at 290-308 Aldington Road, 59-62 Abbots Road and 63 Abbots Road, Kemps Creek, within the Mamre Road Precinct.

As you are aware, on 19 July 2021 EES advised in its submission that waterway health comments would be provided separately. EES comments on waterway health are now provided below.

Waterway health

As set out in the EESs recommended SEARs under section 7 Water and Soils:

The EIS must describe background conditions for any water resource likely to be affected by the development, including:

- *Risk-based Framework for Considering Waterway Health Outcomes in Strategic Land-use Planning Decisions http://www.environment.nsw.gov.au/research-and-publications/publications-search/risk-based-framework-for-considering-waterway-health-outcomes-in-strategic-land-use-planning.*

In accordance with the *Risk-based Framework for Considering Waterway Health Outcomes in Strategic Land-use Planning Decisions*, EES has developed the NSW Government water quality and flow objectives (Tables 1 and 2 below) for the Wianamatta-South Creek catchment to achieve the vision for Western Sydney Parkland City.

The water quality and flow objectives were provided to key stakeholders at a workshop on 19 October 2020 and were included in the exhibited Draft Aerotropolis Precinct Plan. EES has also worked closely with DPIE Place Design and Public Spaces in developing the exhibited draft Mamre Road Precinct DCP and it is expected that the interim objectives in Section 2.6 in the draft Mamre Road Precinct DCP will be superseded by tables 1 and 2 below as follows:

- Page 26, Section 2.6 Integrated Water Cycle Management: Following the description of the flow components the new Table 1 (below) will be added and referred to. Also, ‘and baseflow requirements’ in the last/following sentence will be deleted.

Table 1 Ambient stream flows and requirements of waterways and water dependent ecosystems in the Mamre Road Precinct

Flow Objectives		
	1-2 Order Streams	3rd Order Streams or greater
Median Daily Flow Volume (L/ha)	71.8 ± 22.0	1095.0 ± 157.3
Mean Daily Flow Volume (L/ha)	2351.1 ± 604.6	5542.2 ± 320.9
High Spell (L/ha) ≥ 90th Percentile Daily Flow Volume	2048.4 ± 739.2	10091.7 ± 769.7
High Spell - Frequency (number/y) High Spell - Average Duration (days/y)	6.9 ± 0.4 6.1 ± 0.4	19.2 ± 1.0 2.2 ± 0.2
Freshes (L/ha) ≥ 75th and ≤ 90th Percentile Daily Flow Volume	327.1 to 2048.4	2642.9 to 10091.7
Freshes - Frequency (number/y) Freshes - Average Duration (days/y)	4.0 ± 0.9 38.2 ± 5.8	24.6 ± 0.7 2.5 ± 0.1
Cease to Flow (proportion of time/y)	0.34 ± 0.04	0.03 ± 0.007
Cease to Flow – Duration (days/y)	36.8 ± 6	6 ± 1.1

- Page 30, Section 2.6.2 Stormwater Quality: Table 6 will be replaced with the new Table 2 below.

Table 2 Ambient water quality of waterways and waterbodies in the Mamre Road Precinct

Water Quality Objectives	
Total Nitrogen (TN, mg/L)	1.72
Dissolved Inorganic Nitrogen (DIN, mg/L)	0.74
Ammonia (NH_3-N, mg/L)	0.08
Oxidised Nitrogen (NOx, mg/L)	0.66
Total Phosphorus (TP, mg/L)	0.14
Dissolved Inorganic Phosphorus (DIP, mg/L)	0.04
Turbidity (NTU)	50
Total Suspended Solids (TSS, mg/L)	37
Conductivity (µS/cm)	1103
pH	6.20 - 7.60
Dissolved Oxygen (DO, %SAT)	43 - 75
Dissolved Oxygen (DO, mg/L)	8

EES has also developed stormwater management targets that achieve the water quality and flow objectives, following the 5-step process outlined in the Risk-based framework for considering waterway health outcomes in strategic land use planning decisions. These targets are provided in the Tables 3-5 (below) and it is expected that compliance with these stormwater targets will be included in the Mamre Road DCP as a specific development control.

To assist the applicant, EES has also prepared the attached MUSIC model toolkit.

EES notes that the exhibited Civil Infrastructure report (App I) provides MUSIC model parameters and conceptualisations to support stormwater management under Section 9. This modelling is inconsistent with the calibrated music model that has now been prepared by EES. It is recommended that the applicant use the MUSIC modelling toolkit to demonstrate compliance with the objectives and targets. Note also that the toolkit provides controls for sediment and erosion during the construction phase which must also be met. Regarding the evaporative roof misting, the applicant should provide evidence that it is an effective measure that can be maintained over time.

EES recommends that the flow targets can be met at a range of scale including lot, estate, catchment/regional.

Table 3. Construction Phase Targets

Parameter	Target
Total suspended solids (TSS) and pH	All exposed areas greater than 2500 metres must be provided with sediment controls which are designed, implemented and maintained to a standard that would achieve at least 80% of the average annual runoff volume of the contributing catchment (i.e. 80% hydrological effectiveness) to 50mg/L Total Suspended Solids (TSS) or less, and pH in the range (6.5–8.5)
Oil, litter, and waste contaminants	No release of oil, litter, or waste contaminants
Stabilisation	Prior to completion of works for the development, and prior to removal of sediment controls, all site surfaces must be effectively stabilised including all drainage systems. An effectively stabilised surface is defined as one that does not or is not likely to result in visible evidence of soil loss caused by sheet, rill or gully erosion or lead to sedimentation water contamination.

Table 4 Operational Phase Targets – Stormwater Quality

Parameter	Target
Gross Pollutants (anthropogenic litter >5mm and coarse sediment >1mm)	90% reduction (minimum) in mean annual load from unmitigated development
Total Suspended Solids (TSS)	90% reduction in mean annual load from unmitigated development
Total Phosphorus (TP)	80% reduction in mean annual load from unmitigated development
Total Nitrogen (TN)	65% reduction in mean annual load from unmitigated development

Table 5. Operational Phase Targets - Stormwater Quantity (Flows)

Flexibility for showing compliance with the performance criteria has been provided in response to feedback from the urban development industry. Option 1 is primarily based on MARV and is simpler to calculate using industry standard models, whereas Option 2 is based key percentiles of a flow duration curve. Development must comply with either Option 1 or Option 2.

Parameter	Target
Option 1: Mean Annual Runoff	
Mean Annual Runoff Volume (MARV)	≤ 2 ML/ha/year at the point of discharge to the local waterway
90%ile flow	1000 to 5000 L/ha/day at the point of discharge to the local waterway
50%ile flow	5 to 100 L/ha/day at the point of discharge to the local waterway
10%ile flow	0 L/ha/day at the point of discharge to the local waterway
Option 2: Flow Duration Curve Approach	
95%ile flow	3000 to 15000 L/ha/day at the point of discharge to the local waterway
90%ile flow	1000 to 5000 L/ha/day at the point of discharge to the local waterway
75%ile flow	100 to 1000 L/ha/day at the point of discharge to the local waterway
50%ile flow	5 to 100 L/ha/day at the point of discharge to the local waterway
Cease to flow	Cease to flow to be between 10% to 30% of the time

Should you have any queries regarding this matter, please contact Marnie Stewart, Senior Project Officer Planning on 9995 6868 or marnie.stewart@environment.nsw.gov.au.

Yours sincerely

S. Harrison

04/08/21

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