

9 March 2020

Contact: [REDACTED]
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Our ref: *D2020/18400*

Western Sydney Planning Partnership
PO Box 257
Parramatta NSW 2124

Dear Sir/ Madam

RE: Western Sydney Aerotropolis

I refer to the exhibition of various strategic planning documents concerning the Western Sydney Aerotropolis, including the Draft Western Sydney Aerotropolis Plan (Draft WSAP), Western Sydney Aerotropolis Discussion Paper on the proposed State Environmental Planning Policy (SEPP Discussion Paper) and Draft Western Sydney Aerotropolis Development Control Plan (Draft DCP) Phase 1.

Background

WaterNSW owns and manages the Warragamba Pipelines corridor, which forms the entire northern boundary of the Aerotropolis. The Pipelines are critical water supply infrastructure that transfer bulk raw water for 80% or greater of Sydney's drinking water supply. The corridor is a declared Controlled Area under the *Water NSW Act 2014*, and public access is prohibited.

It is essential this water supply infrastructure is protected from the potential impacts of development on adjoining land and from potential increased flooding risks arising from development upstream. It is also essential that this critical water supply infrastructure be considered during all stages of planning and development.

Studies commissioned by WaterNSW have found that current hydrological flows are increasing the risk of pipeline failure through the limited conveyance of runoff from local catchments within the pipeline corridor, and backwater effects due to the pipeline corridors proximity to large creeks or rivers. WaterNSW audits have also identified that scouring and misalignment of sills due to flooding impacts can lead to failure of the pipeline. Any increase in water velocity through this area could intensify this risk of failure.

Comments

In general, WaterNSW notes that the various Aerotropolis strategic planning documents recognise the importance of the Warragamba Pipelines. However, there is less detail within the exhibited documents as compared to the pre-exhibition draft materials. As such, many of the provisions recognising the Warragamba Pipelines corridor as significant are no longer included.

WaterNSW has prepared a set of detailed comments (see **Attachment A**) outlining its concerns, suggestions and position regarding the Aerotropolis, under the following headings:

1. Flooding Risk
2. Draft Western Sydney Aerotropolis Plan
3. Draft SEPP Discussion Paper
4. DCP Provisions
5. Other Issues.

Our primary concern with the development of the Aerotropolis is that it may lead to increased flooding and water velocities into South Creek, which increases the risk of the Warragamba Pipelines being knocked off their anchor-blocks.

WaterNSW notes that the flood studies that have been done for South Creek have been based on the existing flood risk to existing land uses and not the effect of new proposed urban land uses. WaterNSW recommends that a flood risk study is commissioned to predict the effect of the proposed land uses of the Aerotropolis on stormwater and floodwater.

Further consultation

WaterNSW is currently in discussions with the Department of Planning, Industry and Environment (DPIE) regarding new planning provisions for developments occurring within or adjacent to the Warragamba Pipelines and Upper Canal Corridors. Specifically, we are seeking for new development adjoining the Pipelines Corridor to be referred to WaterNSW for its concurrence.

We also met with Anthony Pizzolato and Patrice Grzelak of the Planning Partnership Office (PPO) on Tuesday 25 February 2020 regarding the potential impacts of the Aerotropolis on the Upper Canal Corridor and the draft documents that are the subject of this submission.

WaterNSW requests to be involved in the precinct planning stages, subsequent DCP stages and any technical workshops for the Aerotropolis that will have any consideration for the Warragamba Pipelines Corridor. With regard to future planning of the Aerotropolis, WaterNSW will need to have the opportunity to comment on:

- the road layout adjacent to the Warragamba Pipelines
- complying development
- flood studies, and
- DCP2 controls.

Should you have any questions regarding the above matters, please contact 


Yours sincerely


CLAY PRESHAW
Manager Catchment Protection

Attachment A

1. Flooding Risk

As the Warragamba Pipelines lie immediately downstream of the Aerotropolis, the risk of impacts and failure from increased flooding and stormwater runoff arising from the Aerotropolis is increased. As background, it is important to note that the Warragamba Pipelines and associated stormwater management infrastructure were designed and built over 60 years ago to withstand conditions of a rural landscape (pre-development).

Our primary concern is that development of the Aerotropolis will potentially increase the flooding risk and water velocities into South Creek increasing the risk of the Warragamba Pipelines being knocked off their anchor-blocks, ultimately depriving Sydney of its water supply and increasing flooding downstream.

In that regard, the following points are relevant:

1. It is essential that all planning and development in the Aerotropolis adheres to the principle that 'post-development flows are to be less than or equal to pre-development flows from the development site'. This should be a provision in the Development Control Plan (DCP). Any increase in post-development flows and velocity will amplify the risk of failure to WaterNSW assets, infrastructure and land within the Pipelines corridor as well as contributing to adverse downstream impacts outside of the Aerotropolis.
2. Development near the Warragamba Pipelines corridor should be designed to safeguard the critical infrastructure and not adversely affect water quantity or quality flowing onto, through, or within, the Controlled Area.
3. The flood studies that have been completed for South Creek have been based on the existing flood risk to existing land uses and not the effect of new proposed urban land uses on flooding risk. For example, the Penrith Draft South Creek Floodplain Risk Management Study (2019) discusses existing land uses under the current LEP in Section 11 including Figures 11.1 and 11.3. Similarly, Liverpool City Council's South Creek Floodplain Risk Management Study and Plan is clearly outdated (2004).

WaterNSW strongly recommends that DPIE commission a flood risk study that predicts the effect of the proposed land-uses of the Aerotropolis on stormwater and floodwater flows including the impact that this will have on South Creek and downstream uses. This should then be used to reinform the boundary of the Wianamatta-South Creek Precinct as well as the DCP Phase 2 controls required for stormwater and flood-risk management within the Aerotropolis, including within the Wianamatta-South Creek Precinct.

4. Two major farm dams in the adjoining Twin Creeks area have not been assessed for their risk of dam failure even under existing land uses (see Callout-Box 4 of Figure 8-1 of the Penrith Council 2019 South Creek Floodplain Risk Management Study, extract provided in Map 1 attached). The South Creek Floodplain Management Study indicated that these dams first overtopped in a greater than 0.2% AEP Event. Any increase in stormwater runoff arising from the Aerotropolis has the propensity to exacerbate the risk of these dams collapsing. The risk of these dams collapsing needs to be included in a stormwater and flood-risk management study suggested above, and based on the proposed land uses.
5. Any Masterplans considered in the short-term should be made to assess the impacts of the urban development on the downstream flooding risk, taking into account expected cumulative impacts of the proposed land uses across the catchment, and not based on current rural uses that may potentially buffer impacts.

The SEPP Discussion Paper states: "*alterations to flood storage capacity and flood behaviour through filling and excavation or other earthworks is not desirable. Under the proposed SEPP these types of works will not be permitted below the flood planning level and will be discouraged in other areas of the floodplain*" (p 24).

We are unclear of the intention here and are concerned that this provision works against the permissibility requirements for 'flood mitigation work'. As described below, we believe that 'flood mitigation work' in the 'Environment and Recreation' zone should be made 'permissible with consent' rather than being 'permissible without consent'. This would then enable any proposed flood mitigation work to be assessed on its merits.

As raised in our Submission to the LUIPP, it is critical that any flood and stormwater planning, or the alteration of flow/flood regimes in the South Creek Precinct, including the creation of permanent water bodies, is undertaken in a manner that does not increase the quantity of water currently traversing the corridor, including during high flows and floods. Drainage flowing across the Pipelines corridor from the other adjacent Precincts, including the Northern Gateway, North Luddenham and Mamre Rd Precincts should also not change in quantity or quality from the current, pre-development state.

2. Draft Western Sydney Aerotropolis Plan (Draft WSAP)

In October 2019, WaterNSW provided comments on the earlier Draft Western Sydney Land Use and Infrastructure Implementation Plan (Stage 1 LUIPP), which was released in August 2018 (our ref: D2018/105462). We note that the Draft WSAP revises the Stage 1 LUIPP.

The Warragamba Pipelines border four precincts, Mamre Road and Northern Gateway (initial precincts), North Luddenham (planned for later development) and the Wianamatta-South Creek precinct that is proposed for open space and environmental purposes. We also note that Northern Luddenham is not an Initial Precinct and that the Mamre Road Precinct will be developed under *State Environmental Planning Policy (Western Sydney Employment Area) 2009*.

The Draft WSAP notes the essential need to protect the safety, integrity and operation of Warragamba Pipelines, and that Precinct Planning will consider the Guidelines (see Section 5.4.1, page 40). This statement is supported. It should also be acknowledged that the corridor acts as a barrier to northwards movement and is a significant constraint for planning purposes. To this end, the Figure 1 in the Structure Plan (p.27 of the Draft WSAP) would benefit by identifying the location of the Warragamba Pipelines Corridor.

3. Draft SEPP Discussion Paper

General

WaterNSW notes and supports that the proposed SEPP will exclude the Warragamba Pipelines Corridor to the north of the Aerotropolis (as depicted in the Draft Land Application Map) as well as the Mamre Road Precinct which will be developed under *State Environmental Planning Policy (Western Sydney Employment Area) 2009*. However, provisions are needed in both the SEPP and supporting DCP to ensure that Pipelines Corridor (being the direct neighbour) is protected from development.

Zoning Controls: Environment and Recreation zoning

The Draft Zoning Maps accompanying the Draft SEPP Discussion Paper cover the proposed zoning for the Northern Gateway and Wianamatta-South Creek Precinct. The new SEPP proposes to apply a new 'Environment and Recreation zoning' to the Wianamatta-South Creek. The proposed zoning will permit, without consent, environmental protection works and flood mitigation work. Several issues are relevant here:

Zoning Objectives

We suggest expanding the zoning objectives to include flood mitigation and stormwater management so that that the objectives support the uses allowed in the zone. Such an objective could be tied to delivering such measures in accordance with water sensitive urban design (WSUD) principles. Appropriate wording could be drawn from the Leichardt LEP 2013, cl 1.2(2)(u) and Ku-ring-gai LEP 2015, cl 6.5(1).

The 5th zoning objective currently reads “to ensure that development is secondary and complementary to the use of land as public open space, and enhances public use, and access to, the open space”. To enable flood mitigation and stormwater management to occur as a primary purpose when needed (see below), we suggest that the word ‘secondary’ be removed. We also suggest that reference to public access be removed as this may not always be achievable for flood mitigation and stormwater management, whereas enhancing *amenity* (rather than access to open space’) would be attainable. Modified wording is advised.

Permissibility – Flood Mitigation Work

WaterNSW requests that ‘flood mitigation work’ be listed as ‘permissible with consent’. We are concerned that ‘flood mitigation work’ is currently listed as ‘development without consent’, switching off the Integrated Development approvals process and specifically WaterNSW’s powers for flood work approvals (Division 4.8 of the EP&A Act and clause 90 of the *Water Management Act 2000*).

Listing flood mitigation work as ‘permissible with consent’ is in keeping with current provisions of the Penrith and Liverpool LEPs that make ‘flood mitigation work’ permissible with consent for many of the existing zones (e.g. E2, RU1, RU2, RU4) where the new ‘Environment and Recreation’ zoning will apply.

Permissibility – Stormwater Management Works

We believe that separate additional provisions may be required that list ‘stormwater management measures’ as being ‘development permissible with consent’. Stormwater management measures are based on retaining water in the landscape to slow flows and improve water quality.

Such measures are not necessarily encompassed within the definition of ‘flood mitigation works’ as stated in the *Standard Instrument—Principal Local Environmental Plan (Standard Instrument)* and as proposed to be adopted by the SEPP. Such measures would therefore default to ‘prohibited development’ which is not advisable if stormwater management measures are required in the ‘Environment and Recreation’ zone.

4. DCP Provisions

Flooding

The DCP addresses flooding risks under Clause 4.2. For those developments adjoining the Warragamba Pipelines Corridor, the final levels and design of the proposal must not result in an increase in surface water or groundwater into the Pipeline corridor of either quantity or quality. As raised previously, the development must be designed, operated and maintained to ensure post-development flows do not exceed pre-development flows into and through the Pipelines Corridor.

The following performance outcomes should be added to DCP section 4.2.2:

- post-development flows that enter or are conveyed across the Pipelines corridor must be equal to or less than the pre-development flows for each storm event up to and including 1% AEP event
- developments need to consider the cumulative impact of flooding risk on the Warragamba Pipelines Corridor and the need to protect this infrastructure from flooding impacts.

Provisions for the Warragamba Pipelines (Clause 5.3 Services and Utilities)

As the Phase 1 DCP contemplates development applications (DAs) being lodged in advance of precinct planning (see cl 1.6.1), there is significant risk that development proposed adjacent to the Pipelines Corridor will precede the completion of the development controls of Chapters 7 (Subdivision Designs) and 8 (Potential Development Types).

From our meeting with the PPO on 25 February 2020, WaterNSW understand that masterplans will be required for developments proposed on lands zoned under the proposed SEPP before precinct planning has occurred. However, there are no such provisions in the Draft DCP or SEPP Discussion paper.

The implications of the above for the Warragamba Pipelines is that any DA lodged before the completion of the Phase 2 DCP, will only be subject to the objectives and performance requirements listed under Clause 5.3 Services and Utilities. While the protection of the Warragamba Pipelines Corridor is mentioned in the objectives of clause 5.3.1, protection is only afforded by the stated performance criteria and not any actual standards or requirements.

There is a real risk that the Pipelines will not be adequately protected from impacts such as flooding, stormwater, illegal access, etc. For this reason, WaterNSW requests that the following requirements be instated under Clause 5.3 of the Phase 1 DCP:

- Any new development on land adjacent to or proposing to cross the Warragamba Pipelines Corridor must be referred to WaterNSW for comment and conform to the requirements of the WaterNSW publication '[Guidelines for Development Adjacent to the Upper Canal and Warragamba Pipelines](#)'.

Performance outcome PO2 from section 5.3.2 also needs to be reworded as the current wording of items (c) & (d) infer a performance outcome where impact is permissible and where ongoing access for maintenance is not required.

Other Matters

The aims of the DCP (cl 1.3) would benefit by adding an additional aim to deliver development in accordance with the principles of water sensitive urban design (WSUD).

We support the landscape-led approach stated in cl 1.8 and specifically the principle of retaining water in the landscape. However, the emphasis here appears to be on the provision of blue-green (infra)structure. Ideally, the statements here should also expand to include the adoption of WSUD principles in urban development across the entire Aerotropolis.

5. Other Issues

South Creek

While beyond the scope of the Aerotropolis Discussion documents, there needs to be an integrated South Creek Floodplain Risk Study done across the entire South Creek Catchment and taking into account the future proposed urban land uses in the catchment and their cumulative effect on downstream flooding risk. We also understand from our meeting with the PPO on 25 February 2020 that there are multiple data sources for South Creek Flood Studies. We would therefore like to enquire about the possibility of obtaining the flood studies information.

Urban Form and Stormwater Management

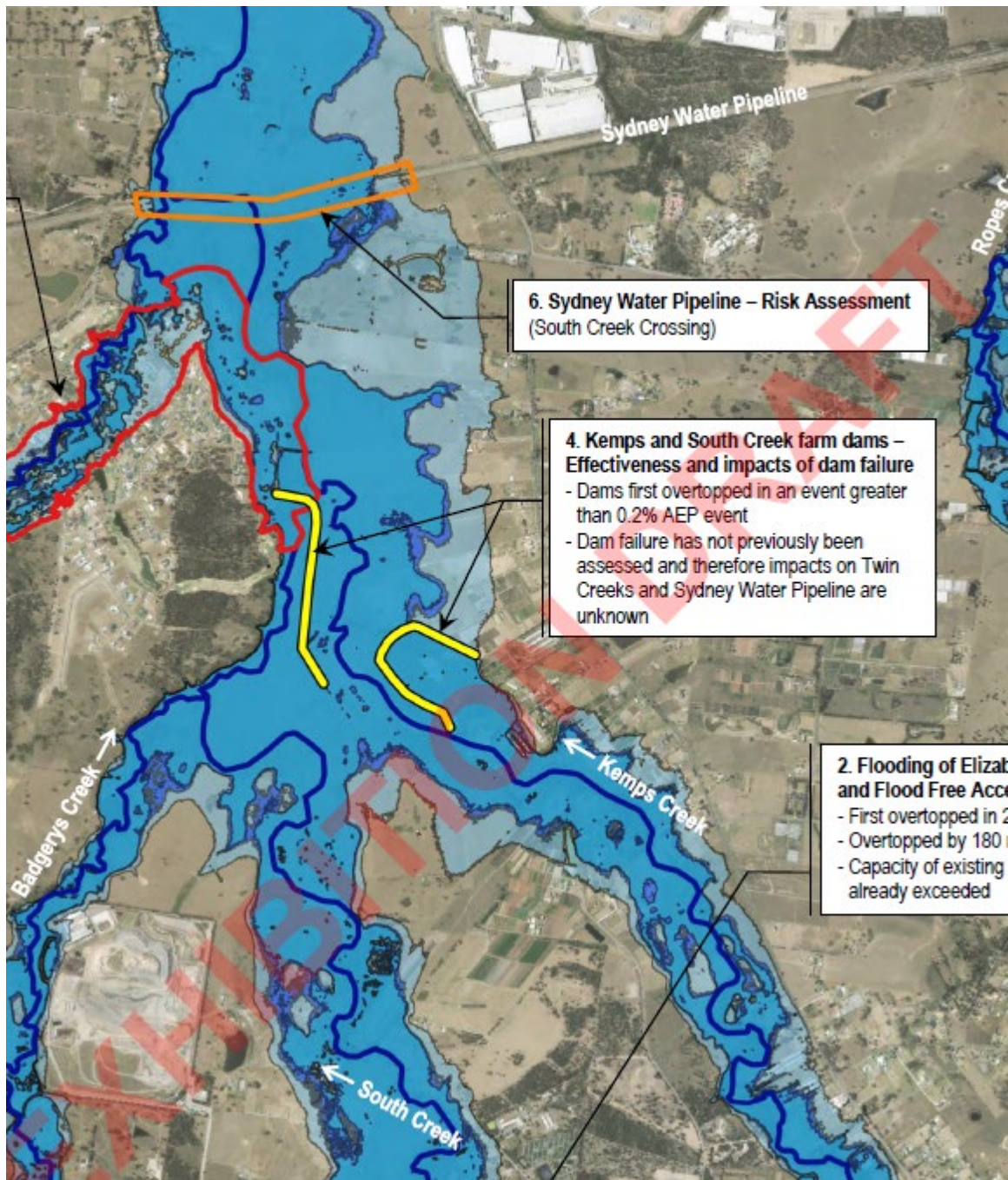
We support the proposed WSUD measures proposed to manage flooding and stormwater by retaining water in the catchment such as by incorporating pervious areas (p.23 of the WSAP).

Farm Dams

Section 4.1, Principle 4 of the SEPP Discussion paper states 'Suitably sized and located farm dams will be protected to support water retention in the landscape'. Farms dams for stock water are not, and should not be assumed to be adequately designed for stormwater retention or floodwater detention for managing water flows from upstream urban development. If farm dams are to be used in this way, then they may require modification. Again, this reasserts the need for flood mitigation measures and stormwater management measures being listed as 'permissible with consent' in the Land Use Table for the proposed Environment and Recreation Zone.

New farm dams would appear to be prohibited under the proposed Land Use Table provisions for the Environment and Recreation Zone. The following issues are relevant here:

- Farm dams are used primarily for stock water or on-farm irrigation. They are not designed to manage urban stormwater runoff, stormwater control or flood mitigation.



Map 1. Extract from Figure 8-1 of Penrith Council 2019 South Creek Floodplain Risk Management Study.