
Bradfield Development Authority

Regional Stormwater Infrastructure (RSI)

Response to Submissions

11 December 2024

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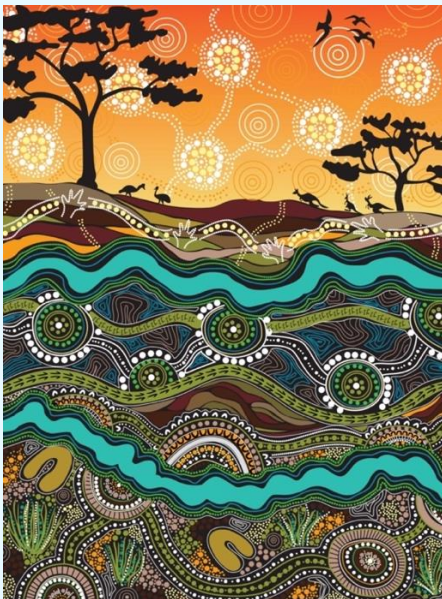
Acknowledgement of Country

Aboriginal people have had a continuous connection with the Country in the Western Sydney region from time immemorial. They have cared for Country and lived in deep alignment with this important landscape, sharing and practicing culture while using it as a space for movement and trade.

We Acknowledge that four groups have primary custodial care obligations for the area: Dharug/Darug, Dharawal/Tharawal, Gundungurra/Gundungara and Darkinjung . We also Acknowledge others who have passed through this Country for trade and care purposes: Coastal Sydney people, Wiradjuri and Yuin.

Western Sydney is home to the highest number of Aboriginal people in any region in Australia. Diverse, strong and connected Aboriginal communities have established their families in this area over generations, even if their connection to Country exists elsewhere. This offers an important opportunity for the future.

Ensuring that Aboriginal communities, their culture and obligations for Country are considered and promoted will be vital for the future. A unique opportunity exists to establish a platform for two-way knowledge sharing, to elevate Country and to learn from cultural practices that will create a truly unique and vibrant place for all.



Garungarung Murri Murri Nuru (Beautiful Grass Country)

Artwork created by Dalmarrri artists Jason Douglas and Trevor Eastwood for the Bradfield Development Authority.

Response to Submissions

This Response to Submissions Report has been prepared by Ethos Urban on behalf of Bradfield Development Authority* (the Authority) in response to submissions received during the consultation process for Bradfield City Centre's Regional Stormwater Infrastructure (RSI) Review of Environmental Factors (REF).

Consultation occurred in May 2024 with a range of government agencies and adjoining landowners. This includes compulsory and voluntary consultation with the following stakeholders.

- Adjoining landowners
- Liverpool City Council (LCC)
- NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW)
 - Water Group
 - Biodiversity Conservation and Science Group (BCS)
 - Heritage NSW
- State Emergency Services (SES)
- Sydney Metro
- Sydney Water
- Western Sydney Airport (WSA)
- DPI Fisheries
- Transport for NSW (TfNSW)

We received feedback from the government agencies. We did not receive comments from adjoining landowners.

In response to the comments raised, the Authority has:

- liaised with specialist consultants and obtained feedback from aviation and wildlife consultants
- incorporated additional mitigation measures such as those relating to Aboriginal Heritage, construction methods and requirements and flooding
- undertaken further consultation with:
 - Sydney Water (as owner of the RSI) and Western Sydney Airport in relation to wildlife management.
 - Sydney Water on design development of the RSI
 - DPI Fisheries and Heritage NSW
 - Heritage NSW to confirm an amended AHIP is not required.

A response to submissions is provided below.

***Note, Bradfield Development Authority (the Authority) was Western Parkland City Authority (WPCA) at the time of the consultation. References to WPCA in the comments can be read as the Authority.**

Liverpool City Council (LCC)

Notification letters were issued to LCC on 15 May 2024. Comments were received on 14 June 2024. A response to comments is provided in **Table 1**.

Table 1 Response to LCC submission

Comment	Response
As the design progresses from the current 50% design, it is requested that later and final designs are provided to Council for comment, especially where such works are located within land that is identified as “Local Open Space and Drainage” under the Land Reservation Acquisition Mapping layer of State Environmental Planning Policy (Precincts – Western Parkland City) 2021.	<p>Consultation has occurred and detailed plans have been provided to Council.</p> <p>The Authority remains open to continued consultation with LCC as the design progresses.</p>
The civil plans should include consideration as to how regional stormwater infrastructure is to be maintained at the proposed capacity when future road and metro infrastructure crosses; Thompsons Creek, associated riparian areas and proposed regional stormwater infrastructure and landscaping. Ideally in relation to road crossings, WPCA should provide an indicative engineering response as to how road crossings can be achieved without disrupting the proposed regional stormwater system.	<p>Noted.</p> <p>Access ramps/maintenance tracks are currently proposed as per Sydney Water requirements.</p> <p>For detailed design - Metro and TfNSW infrastructure can be accommodated within the stormwater infrastructure area if required in the future when there is further information on whether the infrastructure is above or below ground.</p>
The plans submitted with the Regional Stormwater Infrastructure Review of Environmental Factors for the Bradfield City Centre (the REF) show changes to the area and configuration of local open space and water management assets as currently shown on the WPC SEPP maps. These local assets will be owned and managed by Council at some point in future.	The Bradfield City Centre Master Plan has since been approved. The Activity is consistent with the amended maps. Sydney Water will have ultimate ownership over the RSI.
Our understanding is the amended local open space and water management assets are the outcomes of the changes to the SEPP maps during the master planning process. The master plan for Bradfield City Centre hasn't been approved by the Department yet to give effect to the amended SEPP maps. When the master plan is finalised, further discussions between Council and WPCA is required to define how these assets will be transferred to Council.	The Bradfield City Centre Master Plan has since been approved. The Activity is consistent with the amended maps. Sydney Water will have ultimate ownership over the RSI.
To date, Council has not received any letters of offer from WPCA indicating their intention to enter into a VPA with Council. The amended local open space and stormwater management are included in the Draft S7.12 Aerotropolis Contributions Plan that is currently being finalised by the Department. Council	<p>Noted.</p> <p>Consultation regarding contributions will occur outside this REF process.</p>

Comment	Response
will be in a better position to discuss any changes to the contributions items when the Plan is finalised.	
<p>Council has reviewed provided civil Design Drawings and noted that Sediment Basins, Wetlands and Ponds have been moved towards Moore Gully and Thompson Creek. While the design is satisfactory from stormwater management perspective, this infrastructure is now located within the floodway or flood storage area and as such, it could potentially have adverse impact of flooding to the vicinity.</p> <p>It is therefore recommended that a Flood Impact Assessment be provided which reflects the proposed development and that appropriately demonstrates that no adverse impact to the vicinity will occur as a result of the proposal.</p>	<p>The Flood Impact Assessment which accompanied the Bradfield City Centre Master Plan found that the full development potential of Bradfield City Centre would increase flooding near the Thompsons Creek and Moore Gully range. However, this increase was considered acceptable as it ranges between 0.03 and 0.06m in floor levels. An increase in flooding in this area would not cause an adverse impact to the future land use and affected lands. The Flood Impact Assessment considered this impact as being acceptable.</p> <p>The location of Moore Gully remains consistent with the Flood Impact Assessment. The Flood Impact Assessment has accurately reported all flooding impacts. Additional flood reporting is not required.</p>
Based on the information provided, it seems that the proposed planting will be guided by a landscape plan that has been prepared by a landscape architect. Projects that require restoration works such as this project are typically informed by a Vegetation Management Plan prepared by a person with appropriate knowledge, qualifications and experience in current best practices of indigenous vegetation rehabilitation and management. This ensures that the right indigenous plants are planted in the right locations, in a manner that will maximise the chance of a successful outcome. It's requested that Council is given an opportunity to review any Vegetation Management Plans prepared for the project, particularly if they apply to land that will be acquired by, or dedicated to, Council.	A Vegetation Management Plan is required to be prepared in accordance with Mitigation Measure 28. The Vegetation Management Plan will be prepared by a suitably qualified ecologist. The final VMP will be issued to Liverpool City Council and Sydney Water for their record.
Consultation and appropriate licences and approvals should also be sought from DPI Fisheries and DCCEE Water due to the impacts proposed to the watercourse and surrounding land.	<p>Noted.</p> <p>The Authority have consulted with DPI Fisheries and DCCEE Water Group separately.</p>
Council acknowledges the tree planting proposal, which primarily uses Cumberland Plain Woodland species. However, recommend incorporating more canopy trees to better align with the design theme of extensive new tree canopy and shade cover. High planting targets in these areas are essential to compensate for lower targets that will be limited in the surrounding city centre.	<p>This Activity involves the planting of approximately 3,977 trees. Tree species balance the requirement for providing native species without contributing to leaf litter which would impact the functionality of the RSI.</p> <p>Design recommendations have been provided in Appendix N (Bushfire Advice) confirming that the Activity can comply with the requirements of <i>Planning for Bush Fire Protection</i>.</p>

Comment	Response
Council notes that all proposed tree plantings are currently 200mm, and strongly recommend using a variety of pot sizes (e.g., 200mm to 100L) to enhance environmental resilience and ensure trees at different growth stages. Given the rapid development of this area, relying solely on 200mm trees makes them much more vulnerable to damage during delivery and construction phases of surrounding development. Key locations of the proposal should also explore the use larger pot sizes for design and aesthetic reasons (i.e., entry points etc).	Noted. This recommendation is included as Mitigation Measure 29.
Intersections between crossing access paths should not be treated like a T or X intersection but rather use soft radial corners to enable better cyclist / pedestrian movement. There are current examples where pathways within this space indicate harsh angular corners, in which people will end up walking or cycling through the shrub creating desire lines through the vegetation.	Noted. This recommendation is included as Mitigation Measure 30.
The landscape plan indicates several instances where tree plantings are proposed within the middle of the access paths (AP), which is likely a production error, however, should be rectified. Most of these paths are intended to be shared by both pedestrians and cyclists (as part of key routes) and must ensure they are unobstructed and use appropriate surfaces.	Noted. This will be considered by the Landscape Architect during their detailed documentation. Mitigation Measure 30 requires access paths to be unobstructed and feature appropriate surface treatment.
It is not entirely clear what material is proposed for the shared path routes (AP). The colouring used in the plans and renders would imply a crushed granite or gravel. Whilst Council appreciate the use of gravel within this environmentally sensitive space, this is not a viable material to use and support active transport (as part of a broader network). Many commuter and road cycling bikes use thin tyres meant for hard surfaces only. At a minimum, there should be a single concrete shared path link for cyclists to utilise within the open space.	AP refers to Access Paths and are not required to include concrete as they are not shared paths. The Master Plan recommends paths are permeable and use gravel/stone/rock finishes. However, the main 'Eastern' crossing can be hard paved. This will be resolved during detailed design.
Council suggests exploring alternative finishes for the stainless-steel hand railings indicated on the western bridge, such as timber or black powder-coated steel, to better match the bridge's aesthetic and environmental character.	This will be considered during detailed design.
The landscape proposal should include furniture, fixtures, and fittings like seating, drinking fountains, bike racks, signage, and picnic tables etc. The Landscape Design Report should specify a furniture	This is outside the scope of the RSI. This will be considered by the Authority as part of Bradfield Public Domain Manual.

Comment	Response
palette including proposed locations, quantities, and materials. For example, seating and drinking fountains could be strategically placed along pathways, while picnic benches and bike racks should be included at indicated rest stop areas.	
The information provided is also silent in relation to the potential inclusion of public art. This would ideally be considered as the design progresses.	This Activity includes features which contribute to visual interest such as pavilions and strong visual connections to landscape embellishments. Other forms of artwork may occur outside this REF and are being investigated in the Bradfield City Centre Art Strategy.

DCCEEW - Water Group

Notification letters were issued to DCCEEW Water Group on 15 May 2024. Comments were received on 12 June 2024. A response to comments is provided in **Table 2**.

Table 2 Response to Water Group submission

Comments	Response
The subject site proposal contains Moore Gully which is a 4th order watercourse which flows into Thompsons Creek which is 4th/5th order and adjoining the site. The REF should give due consideration to the Departments Guidelines for Controlled Activities - Riparian Corridors and should seek to apply the recommended corridors for the respective stream orders for Moore Gully and Thompsons Creek. Despite Thompsons Creek being outside of the project site, allowance should be made for the necessary riparian corridor to be accommodated where that is identified to encroach on this site.	Mitigation Measure 16 require the detailed design to demonstrate general compliance with the DPIE Departments Guidelines for Controlled Activities - Riparian Corridors. The design as approved by this REF will be reviewed and developed in consultation with a suitably qualified Aquatic Ecologist.
Where proposals deviate from guideline riparian corridor and instream works requirements, watercourse modifications or removal etc, these must be appropriately justified for the Department's consideration and endorsement.	Noted. The Authority met with DCCEEW Water Group on 25 September 2025 to discuss the preliminary design. It was agreed, ongoing consultation would occur with DCCEEW Water Group during detailed design and to prepare for construction. The Authority has engaged an Aquatic Ecologist to provide guidance on the detailed design stage.
Riparian corridors are measured from the top of bank and should be established as fully vegetated riparian zones. The proposal should establish/enhance riparian connectivity along the full length of the watercourses with a consistent width corridor in accordance with guideline corridor requirements. This does not preclude incorporating proposed wetlands into the outer riparian corridors so long as riparian values, connectivity and function are maintained.	Noted. The Authority will establish fully vegetated riparian zones (VRZs) and will indicate VRZs on all relevant drawings.
The Report identifies that a dedicated corridor of 40m offset from the top of the low flow channel is required on each side for Moore Gully but this is not reflected in the civil plans. The civil plans and the Report illustrate substantial works (wetland embankments) are proposed in the outer 50% of the riparian zone and within the dedicated corridor. It is also unclear if other infrastructure such as pathways encroach the corridor.	Inner and outer VRZ of Moore Gully and Thompsons Creek to be reflected in the Detailed Design Civil and Landscaping Plans. Consideration to be made in detailed design to reduce and avoid crossings and batters in the inner 50% VRZ.

Comments	Response
Various works can be considered in the outer 50% of the riparian zone but encroachments should be suitably offset on the development site and should contribute to riparian values and function.	Noted.
The REF and plans should consider the full extent of the Moore Gully and Thompsons Creek Riparian Corridors to ensure that fully vegetated riparian zones can be accommodated. It is noted that the southern extent of the Moore Gully riparian corridor is outside of the subject project area but should be duly considered in this proposal.	Noted. This REF fully considers the project and the southern extent of the riparian corridor. The vegetation management plan will identify areas to offset riparian habitat affected by the relocation of the ephemeral stream. Suitable potential offset areas have been identified to ensure this can occur.
Where watercourses are degraded and/or in this case, proposed to be reconstructed, watercourse design and rehabilitation should seek to provide for naturalised outcomes for the watercourses and their vegetated riparian zones as much as possible. The Report notes the proposed Moore Gully low flow channel will be fully rock lined with rock rip rap to mitigate the risks of erosion suggesting the channel lacks capacity and/or is under designed. A fully rock lined channel is inconsistent with guidelines and is undesirable. The REF should consider alternative design options for Moore Gully realignment to emulate a natural functioning stream incorporating geomorphic features including bed controls, pools and riffles and fully structured riparian vegetation.	Noted. The Moore Gully channel will be designed with meandering curves, riffle and pools alongside guidance with an Aquatic Ecologist. Rip rap will be provided at all pipe outlets. Detailed design will be updated with Ecological consultant and DECCW recommendations. These designs will be provided to DECCW for consideration prior to construction commencement.
A Vegetation Management Plan should be developed in accordance with Department guidelines.	Mitigation Measure 28 requires a Vegetation Management Plan to be prepared prior to commencement of any works.
The REF should ensure the design and construction of watercourse crossings and outlets are in accordance with the Guidelines for Controlled Activities. • <i>The Departments Guidelines for Controlled Activities can be found at https://water.dpie.nsw.gov.au/licensing-and-trade/controlled-activity-approvals</i>	The REF will consider the guidelines throughout the detailed design. Mitigation Measure 16 requires the Authority to consider these guidelines.
The REF should consider site constraints such as bushfire asset protection zones and flooding. Flooding constraints typically correlate and/or exceed the Departments recommended riparian guidelines but nevertheless, proposals should consider that riparian corridors/buffers are fully vegetated when considering these constraints.	These matters have been addressed in the REF. The RSI is consistent with the Flood Studies and bushfire asset protection investigations completed with the Bradfield City Centre Master Plan. The Master Plan studies have been complemented by specific advice prepared for this REF.

Comments	Response
Asset Protection Zones, water quality treatments/structures etc should be located outside of the designated riparian corridors. Identification of Riparian Corridors and APZ's footprints is important to avoid overlapping and conflicts between meeting their individual objectives.	This will be considered and required during the detailed design stage.
The proposal should provide construction details formalised in a Construction Management Plan including but not limited to: o defining a minimum disturbance footprint required for works, o earthwork details, construction methods, o construction site management – access, storage/stockpile areas, erosion and sediment control o schedule, sequence, and duration of works, o rehabilitation plan for all disturbed areas.	A Construction Environmental Management Plan is attached to the REF at Appendix D . Mitigation Measure 26 requires the CEMP to be updated to include these requirements.
An Erosion & Sediment Control Plan should be developed in accordance with the publication Managing Urban Stormwater: Soils and Construction (Landcom 2004).	An Erosion and Sediment Control Plan is detailed in the CEMP and is required to be enforced under Mitigation Measure 1.
The REF should quantify all water take for the project including water demands during construction and ongoing, water take due to aquifer interference during excavation or take associated with water storages.	The CEMP is required to be updated to quantify water demand after detailed design is completed. This is reflected in Mitigation Measure 26.
The REF should assess impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.	An Aquatic Ecologist will advise the Authority on recommendations which will be incorporated into the detailed design (as required under Mitigation Measure 7).
The REF should ensure the identification of an adequate and secure water supply for the project. This includes confirmation that water can be sourced from an appropriately authorised and reliable supply or demonstration sufficient entitlement can be obtained prior to take.	This is required to be achieved prior to commencement of construction (as required under Mitigation Measure 26).
The REF should Identify required approvals and assessment of any exemptions which may apply to the project. The project will be exempt from a Controlled Activity Approval under Section 41 of the Water Management (General) Regulation 2018 as Western Parkland City Authority (WPCA) is a public authority. This exemption relies on the WPCA	Relevant approvals are identified throughout the REF. The Authority is exempt from a Controlled Activity Approval under the <i>Water Management Act 2000</i> (NSW). Notwithstanding, the Authority will consult with DCCEEW Water Group under Mitigation Measure 13.

Comments	Response
maintaining responsibility for and supervision of the implementation of the works on waterfront land.	
A water supply work approval or water access licence may be required depending on if there is any water take/stormwater reuse associated with the scope of works.	The Authority have confirmed that this is not required at this time. Additional consultation will occur should licensing be needed.
The Department requests that the final REF and draft civil designs be referred to Licensing & Approvals for consideration and endorsement.	Consultation has occurred with DCCEEW Water Group. The Authority will consult with Water Group if any further licensing is needed (in accordance with Mitigation Measure 13).

DCCEEW Biodiversity, Conservation and Science (BCS) Group and Heritage NSW

Notification letters were issued to DCCEEW BCS and Heritage NSW on 15 May 2024. Comments were received on 18 June 2024. A response to comments is provided in Table 3. Further, the Authority issued the updated Biodiversity Strategy and Impact Assessment and received additional comments from BCS Group. On 4 November 2024, the Authority wrote to BCS, demonstrating how these comments have been closed out with the current design. These details are provided in **Table 3**. It is noted that most comments were in relation to the finalisation of the Bradfield Master Plan, which was approved by the Minister for Planning and Public Spaces in September 2024.

Table 3 Response to DCCEEW BCS and Heritage NSW submission

Comment	Response
In addition, the Western Sydney Parkland Authority must obtain DCCEEW's approval to vary Aboriginal Heritage Impact Permit 5244.	Further consultation with Heritage NSW has been undertaken which confirmed that an amended AHIP is not required.
Permit 5244 was issued on 28 March 2024 for the Bradfield City Centre Master Plan. It only allows for partial/limited harm to Aboriginal Heritage Information Management System (AHIMS) sites 45-5-5481 and AHIMS 45-5-5492, and limited harm to AHIMS sites 45-5-5480 and AHIMS 45-5-2622. The proposed stormwater infrastructure works have the potential to increase impacts to these sites.	A mitigation measure is included which states that works are not permitted within the buffer zone of TP15 (Mitigation Measure 6).
DCCEEW recommends that the Western Parkland City Authority conducts an updated Aboriginal cultural heritage assessment and further consultation with registered Aboriginal parties to support an application to vary permit 5244.	Refer to response above.

Further consultation

<p>Significant issues with the adequacy of the flood impact assessment</p>	<ul style="list-style-type: none"> • Additional flood investigations were undertaken as part of the finalisation of the Master Plan to address issues raised by DECCEW - BCS Group. The addendum Flood Impact Risk Assessment (FIRA) built on the original modelling of the 1% Annual Exceedance Probability (AEP) and included assessing the impacts of the 1 in 500-year AEP event as well as the Probable Maximum Flood (PMF) for post development conditions. • The updated FIRA was submitted to DPHI in June 2024 as part of the response to submission phase of the Master Plan. This has since provided to BCS Group via DPHI. Please refer to the Response to Submissions (RtS) Appendix 3. • As part of the Master Plan final assessment, DPHI carefully considered the findings of the FIRA and was satisfied that the development of the City Centre would not lead to significant off-site flood impacts. DPHI's detailed assessment of the flood impact is included in the Assessment Report for the Master Plan. • Further flood modelling will be required to support the development of the residential superlot south of Moore Gully, separate to this REF.
<p>Inconsistencies in the biodiversity assessment and the assessment of impacts on biodiversity values</p>	<ul style="list-style-type: none"> • The Master Plan Biodiversity Strategy and Impact Assessment (BSIA) has been updated to address BCS comments on inconsistencies and impacts on biodiversity values. Please refer to the RtS Appendix 2. • Additionally, the latest RSI specific BSIA determined that the Detailed Design has been modified to avoid bio-certified land and ENV. This BSIA was provided to BCS Group on 4 November 2024.
<p>Additional information is required to ensure the proposed erosion and sedimentation controls and water sensitive urban design for the master plan area can achieve the required Wianamatta South Creek waterway health and stormwater management targets in accordance with the DECCEW's Technical guidance for achieving <i>Wianamatta – South Creek stormwater management targets</i>.</p>	<ul style="list-style-type: none"> • BCS Group provided comments on the Music Model and tool kit through the entire TAP Process for the Master Plan. BCS Group requested access to the MUSIC Model and tool kit which was provided in February 2024. Sydney Water provided and developed the Music Model and tool kit as part of the Master Plan. The Integrated Water Cycle Management Plan submitted in support of the final Master Plan demonstrates that future development in Bradfield City Centre can achieve the required

	<p>Wianamatta South Creek waterway health and stormwater management targets in accordance with the DCCEEW's Technical guidance for achieving Wianamatta – South Creek stormwater management targets.</p> <ul style="list-style-type: none"> • Additionally, the Regional Stormwater Infrastructure (RSI) REF Design drawings and report which has been developed in consultation with Sydney Water - were issued to BCS Group during the RSI REF Notification Period in July 2024. • The Authority has consulted DPI Fisheries, DCCEEW Water Group and Sydney Water directly to ensure the design can meet the necessary requirements.
<p>BCS notes the works proposed by the REF are within the area of the draft BCC Master Plan (BCCMP) which had not been finalised at the time and BCS therefore recommended the BDA defer determination of the REF until the BCCMP (and any additional assessments) were finalised.</p> <p>BCS' 4 July 2024 advice (ref: DOC24/462890) on the Response to Submissions for the BCCMP noted many issues raised in BCS' previous advice (15 March 2024, ref: DOC24/89203) on the exhibited BCCMP regarding biodiversity, flood risk, erosion and sedimentation controls, stormwater management and waterway health had not been adequately addressed. While the BCCMP was finalised on 4 September 2024, it is unclear how the issues raised by BCS have been addressed as we received no advice regarding the finalisation of the masterplan or how BCS's advice was considered.</p>	<ul style="list-style-type: none"> • The final RtS documents and DPHI Assessment Report to the finalised <u>Bradfield City Master Plan</u> documents the consideration and response to BCS submissions to the Master Plan and any comments which apply to the RSI. • Further advice was provided directly to BCS on 4 November 2024 outlining how each specific matter was addressed and was being considered in this REF.
<p>BCS also questions whether the impacts on biodiversity values from clearing native vegetation and realigning Moore Gully to enable the proposed stormwater and other infrastructure has been adequately assessed.</p> <p>This include areas of 'minor encroachment into vegetated buffer' and 'offset of encroachment into vegetated buffer' which are noted in the Master Plan but not discussed in the BSIA or Master Plan (Master Plan, p. 144). It also includes potential impacts to large areas of Key Fish Habitat (KFH) which the BSIA recommends should be avoided noting that any impacts within the 50m KFH buffer would require liaison the Department of Primary</p>	<ul style="list-style-type: none"> • A revised BSIA was prepared to support the final Master Plan and subsequently this RSI REF. It considered the realignment of Moore Gully. A copy of the revised BSIA is included at Appendix P of this REF. • DPI Fisheries and DCCEEW Water Group have been further consulted on the realignment of Moore Gully. • Key Fish Habitat has been provided for in the detailed design and will be complemented by offset areas permanently conserved and guided by a vegetation management plan. • DCCEEW confirmed with BDA during REF Notification (14/6/24) that NRAR did not need to comment on the REF.

<p>Industries and the Natural Resources Access Regulator (BSIA, p.89).</p> <p>BCS recommends these matters be addressed in a revised biodiversity assessment prior to finalising the Master Plan.</p>	
<p>BCS recommends the location and status of Moore Gully be clarified prior to finalising the Master Plan. A revised biodiversity assessment should be prepared to consider any proposed realignment of Moore Gully (in addition to any other changes proposed in a revised Master Plan).</p>	<ul style="list-style-type: none"> • A revised BSIA was prepared to support the final Master Plan and subsequently this RSI REF. It considered the realignment of Moore Gully. A copy of the revised BSIA is included at Appendix P of this REF.
<p>No functional design drawings for the water sensitive urban design (WSUD) systems appear to have been submitted with the Masterplan. This has made a review of the proposed stormwater solution challenging as several design details are not clear.</p>	<ul style="list-style-type: none"> • This is subject to detailed design and discussion with Sydney Water in relation to the stormwater requirements. • The RSI REF Design drawings and report which was developed in consultation with Sydney Water and provided to BCS in July 2024.
<p>It is recommended that further information, including diagrams, be provided to explain the use of flow diversions/secondary drainage links within the MUSIC model and other rationale for the modelling choices.</p> <p>In addition, the MUSIC model and strategy should be revised to ensure consistency with the Toolkit and Sydney Water Study.</p>	<ul style="list-style-type: none"> • Sydney Water Music Model and Toolkit Excel files were provided to BCS which are in accordance with the DCP requirements. It is consistent with the Toolkit and Sydney Water Study.

State Emergency Services

Notification letters were issued to the SES on 15 May 2024. Comments were received on 12 June 2024. A response to comments is provided in **Table 4**.

Table 4 Response to SES submission

Comment	Response
<p>We have reviewed the proposed upgrade and the flood risk information available to the NSW SES (e.g. Liverpool City Local Flood Plan, Wianamatta South Creek Catchment Flood Study 2022 etc.) and note the site in its current condition is impacted by flooding as frequently as a 1% Annual Exceedance Probability (AEP) event¹ with depths in excess of 1 metre during a Probable Maximum Flood (PMF) event². Based on this review, we provide the following advice:</p> <p>Consider the impact of flooding on the infrastructure and people using the site up to and including the Probable Maximum Flood (PMF), along with the impact of climate change on the flood risks. This should also include the impact of the proposed bulk earth works.</p>	<p>Noted.</p> <p>Stormwater Infrastructure is designed so that the basin embankments are above the 1% AEP Water Level.</p> <p>Landscaping design will consider flooding risks and its implication to the RL's of the proposed boardwalks and crossings where inundation can occur. This is to be considered in ongoing detailed design.</p>
<p>Ensure workers and people using the site during and after the upgrades are aware of the flood risk, for example through site inductions, by using signage and other flood information tools.</p>	<p>A mitigation measure has been adopted which requires workers to be educated on flood risk during induction (Mitigation Measure 27)</p>
<p>Consider closing the worksite and securing all materials and equipment prior to the start of the working day if there is a risk of riverine flooding, on receipt of advice from the Bureau of Meteorology (BoM), or when other evidence leads to an expectation of flooding where it is safe to do so. During site works, check the BoM website prior to start of the workday for any Flood or Severe Weather Warnings.</p>	<p>As above.</p>
<p>Consider developing an appropriate emergency plan for the duration of works on the site including specific triggers for stopping work and evacuation.</p>	<p>As above.</p>

Sydney Metro

Notification letters were issued to Sydney Metro on 15 May 2024. Comments were received on 11 June 2024. A response to comments is provided in **Table 5**.

Table 5 Response to Sydney Metro submission

Comment	Response
As previously discussed and agreed with WPCA, Sydney Metro's Systems, Stations, Trains, Operations and Maintenance (SSTOM) contractor requires a layflat pipe route across WPCA land to discharge water from its construction water treatment plant into Thompsons Creek. The location of Sediment Basin E and Ponds B-2 as proposed in the General Arrangement Plan, impacts part of the agreed layflat pipe route. Sydney Metro recommends resolution of this discrepancy through existing Interface Working Group forum to avoid impact to the SSTOM scope of works.	<p>Noted.</p> <p>The construction of the ponds to Thompsons Creek is not proposed to be constructed at this stage under the scope of the REF. Delivery of Basin B2 is scheduled to be constructed after completion of the Metro and likely removal of the layflat pipe. The Authority will coordinate with Sydney Metro on this matter if there is any predicted impact on the layflat pipe.</p> <p>Further, it is recognised there the RSI stormwater works in Stage 2A do not encroach on Sydney Metro easements for stormwater discharge, confirming there are no impacts on these areas at this stage of development.</p>
It is noted that the proposed Pond A-2 sits above an underground rail alignment. Although its current depth is acceptable, should there be any changes to vertical depths depicted in the plans and associated documentation, it is requested that WPCA inform and liaise with Sydney Metro to undertake a further review of this to ensure there are no adverse impacts to the future tunnel.	This is no longer envisioned to be an issue due to the revised design. However, Mitigation Measure 8 requires further consultation with Sydney Metro if any of the stormwater works above the underground rail alignment increase in depth.

Sydney Water

Notification letters were issued to Sydney Water on 15 May 2024. Comments were received on 5 July 2024. A response to comments is provided in **Table 6**.

Table 6 Response to Sydney Water submission

Comment	Response
Please ensure the activities listed in the attached (Operations and Maintenance Plan) are captured in the REF to ensure they can be carried out during the operations of the RSI.	The Maintenance Plan is provided in Appendix S of the REF and is listed as an approved document in Mitigation Measure 1. The activity is required to be undertaken in accordance with the approved documents as per Mitigation Measure 1(c).
Typo in the footer change RIS to RSI.	This error has been corrected.
Sediment and erosion control plan should comply with the construction phase targets within the Technical guidance for achieving Wianamatta–South Creek stormwater management targets (DPE 2022). These guidelines are more stringent than the traditional Blue Book approach.	Sediment and erosion control will be implemented in the CEMP and enforced through Mitigation Measure 1 and 38.
Plan sheets and other relevant documents identified should be updated (when appropriate) to the latest versions/plans endorsed by Sydney Water. Including changes to incorporate landscape design changes.	The Authority will continue to consult openly with SW on detailed design progress as Sydney Water are the eventual asset owners and Regional Stormwater Authority.
5.6 Add text to recognise that the proposed works will help deliver part of the regional stormwater infrastructure identified within the Aerotropolis Precinct Plan. Noted that the exact location of the regional infrastructure have been amended via the masterplan process and endorsed by Sydney Water	The REF has been updated accordingly.
5.9.6 Add text to note that despite not requiring a controlled activity approval the works to realign and rehabilitate Moore Gully will align with the appropriate guidelines including provision of required Vegetated Riparian Zones for a 4th order stream.	The REF has been updated accordingly.
Ensure the required Vegetated Riparian Zone for a 4th order stream is included in the landscaping plans for the Moore Gully rehabilitation as per Figure 5. This should include appropriate native replanting and/or bush regeneration to the south of the project site.	This detail will be confirmed in the Vegetation Management Plan which is required under Mitigation Measure 28.

<p>An effort should be made to remove/reduce the infrastructure impacting sensitive vegetation and VRZ at the east of the site. This can be done via adjustments being made in the landscape planning.</p>	<p>The Authority and the design team continue to consult with Sydney Water on solutions to reduce basins footprint and outlet positions to avoid encroachment into ENZ land and the inner 50% Vegetated Riparian Zone (VRZ).</p> <p>The Authority and the project team are working with an Aquatic Ecologist to iterate detailed design planting community solutions which offset infrastructure encroachment within the inner 50% VRZ.</p> <p>Refer to Mitigation Measure 16.</p>
<p>Sediment and erosion control plan and references to it in the CEMP should comply with the construction phase targets within the Technical guidance for achieving Wianamatta–South Creek stormwater management targets (DPE 2022). These guidelines are more stringent than the traditional Blue Book approach. Control measures in the CEMP should align with the DPE guide including utilisation of flocculation ponds.</p>	<p>As per response above.</p>
<p>Not sure why the Flood Impact Assessment Report is part of the CEMP.</p>	<p>The Flood Impact Assessment was one of many documents appended to the CEMP as it related to the Master Plan Application. No further change is required.</p>
<p>Sydney Water note that these documents (revision b April 2024) are a preliminary design and are currently being further developed in consultation with Sydney Water.</p>	<p>Noted.</p> <p>Since initial engagement, the Authority has undertaken further consultation with Sydney Water. Sydney Water have provided their in-principal support to proceed with the detailed design. The Authority will continue to consult with Sydney Water throughout the detailed design phase.</p>

Western Sydney Airport

Notification letters were issued to Western Sydney Airport (WSA) on 15 May 2024. Comments were received on 20 June 2024. A response to comments is provided in **Table 7**.

Table 7 Response to WSA submission

Comment	Response
Airport Safeguarding is imperative to the success of WSI, which will consequently bring significant benefit to the Bradfield City Centre. The extent of water bodies and a regional stormwater strategy will result in significant wildlife attraction and risk associated with potential wildlife movement across operational airspace. Therefore, it is critical to ensure that the future regional stormwater system is appropriately located, designed, managed and monitored to manage wildlife attraction.	Noted. Refer to comments below.
It is noted that Bradfield City Centre will connect to the Aerotropolis regional stormwater network that will be managed and maintained by Sydney Water. WSI have previously engaged with Sydney Water, particularly on the stormwater basin design and minimising wildlife attraction, however we have not been provided the draft Sydney Water Design Guidelines to date. Important factors in the design include steepness of batters, depth of water being retained, and the opportunity any vegetation will have to attract wildlife.	Noted. The Authority has been informed that Sydney Water has continued to keep this forum open.
We have been in contact with Sydney Water recently to request further discussion regarding the regional stormwater design guidelines, timing and wildlife management and in particular wildlife monitoring and reporting on the regional stormwater basins when they are in Sydney Water ownership and management.	Refer to response above.
Given the site is identified as 'relevant development' under the State Environmental Planning Policy (Western Parkland City 2021) (SEPP) and within a 3km buffer area, and your notification letter identifies that the proposal complies with the SEPP, WSI would like to understand further: <ul style="list-style-type: none"> • How the basin design mitigates against bird attraction, • What the ongoing maintenance regime will be to minimise wildlife attraction, and • What will be the monitoring and reporting program in regarding wildlife on the site. 	Sydney Water has developed an Aerotropolis and Mamre Road Precincts – Bird and Bat Mitigation Strategy. This strategy applies the wildlife strike risk management frameworks developed by the Western Sydney Airport to the planned RSI. This is further discussed in Section 8.13 of the REF. Further, the recommendations of the Wildlife Management Plan are to be adopted prior to commencement of construction (refer to Mitigation Measure 31).

There was limited information in the notification regarding the environmental assessment of the impact the works have on airport operations. Information should include matters outlined above, particularly around minimising wildlife attraction and to also provide measures how the development will mitigate risk of wildlife to the operation of the Airport.

The notification letter achieves all legislative requirements. Further information on impacts with WSA is detailed in the Airport Safeguard Statement (**Appendix V**) and in Section 8.13 and 8.14 of the REF.

DPI Fisheries

Notification letters were issued to DPI Fisheries on 15 May 2024. Comments were received on 14 June 2024. A response to comments is provided in **Table 8**.

Table 8 Response to DPI Fisheries submission

Comment	Response
Under s199 of the <i>Fisheries Management Act</i> , the Minister for Agriculture must be consulted over any dredging or reclamation works before the works are proposed to be authorised, or carried out by a public authority (i.e. any works that require excavation within, or filling or draining of, water land or the removal of woody debris, snags, rocks or freshwater native aquatic vegetation or the removal of any other material from water land that disturbs, moves or harms these in-stream habitats).	The Authority will continue consulting with DPI Fisheries. At this stage, it is not envisioned that an approval under s199 of the <i>Fisheries Management Act 1994 (NSW)</i> be required. However, Mitigation Measure 13 requires further consultation with DPI Fisheries to confirm an approval is not required.
s199 consultation may be carried out by emailing all relevant documents to ahp.central@dpi.nsw.gov.au . Relevant documents include plans for the works, any environmental studies carried out (i.e. aquatic habitat survey, flora and fauna report, vegetation management plan etc) and a Review of Environmental Factors (REF) for the proposed works.	Noted.
DPI Fisheries general information requirements may be used in the preparation of an REF for this proposal are listed below in Attachment 1. Attachment 2 contains links to important DPI Fisheries reference documents that may be useful.	Noted.
Obstructions to fish passage through the realignment of waterways, construction of dams, weirs, floodgates, and culverts can negatively impact on native fish. The design should incorporate	The revised design includes appropriate fish passages as confirmed under Appendix B .

fish friendly features to ensure fish passage is maintained throughout Moore Gully.	
Riparian buffer zone widths should be implemented as outlined in DPI Fisheries P&Gs s.3.2.3.2. NSW DPI will require the design of riparian buffer zones to incorporate the maintenance of lateral connectivity between aquatic and riparian habitat. Installation of infrastructure, terraces, retaining walls, cycle ways, pathways and grass verges within the riparian buffer zone should be avoided or minimised.	<p>The Authority is committed to implementing riparian buffer zones outlined in DCCEEW Water Group Controlled Activities.</p> <p>A mapping exercise by an Aquatic Ecologist delineates the Vegetated Riparian Zone of the realigned Moore Gully and Thompsons Creek.</p> <p>Detailed design adjustments to be made to avoid certain functions within the 50% VRZ. Provisional connected planting offsets for Riparian zones to be documented with detailed design progress.</p> <p>Refer to Mitigation Measure 16.</p>
A Rehabilitation Strategy should be developed to guide the establishment and rehabilitation of the riparian zone. The rehabilitation strategy should include native in-stream vegetation and snags where appropriate. Local native riparian vegetation species should be used across the riparian buffer zone to improve riparian habitat values.	A Rehabilitation Strategy will form part of the VMP as required through Mitigation Measure 28.

Transport for NSW

Notification letters were issued to Transport for NSW (TfNSW) on 15 May 2024. Comments were received on 19 July 2024. A response to comments is provided in **Table 9**.

Table 9 Response to TfNSW submission

Comment	Response
There is no mention of how the construction will be managed for the proposed drainage works, in particular, how would the construction vehicles access the site in advance of adjacent roads being built? This matter should be conditioned for attention in the Construction Management Plan.	Construction will be managed in line with the CEMP provided in Appendix D and the detailed CEMP to be prepared by the Contractor.
Do WPCA's calculations for the sizing of the sediment basins and wetlands consider any drainage flows from the TfNSW proposed interchange and bus layovers? Further advice is requested.	The catchment area as shown in Drawing 304000968-100-C2301 described the stormwater treatment measures for each of the contributing catchment areas. Sediment basins and wetlands have been designed to cater for the interchange and bus layover.
Ensure design enables pedestrian and cycling networks outlined in Bradfield City Centre Master Plan to be delivered. Off street bike trail and pedestrian path were identified as following Moore Gully to the north (within the project area).	The Bradfield Master Plan specifies two crossings for pedestrians and cyclists. This application is consistent with the Master Plan. Additional crossings may be considered as part of separate planning and design work (such as applications involving regional parks).
Stormwater drainage pipes are located in the kerb and gutter along Centre Loop South (Road 5), Centre Loop West (Road 6) and Innovation East and these may need to be altered as per ongoing discussion between TfNSW and WPCA regarding the traffic lane widths and intersection footprints. Confirm whether changes to the arrangement of Roads 5 & 6 have any impacts on stormwater management?	Stormwater drainage pipes will be per the dimension and location approved in the Stage 2A approval (outside the scope of this REF).
Section 2.5 (Table 2-2) – States that streets would have a 25% perviousness. It is noted that the Bradfield City Centre 2A Enabling Works REF states that kerbside lanes on Centre Loop South (Road 5) and Centre Loop West (Road 6) are to be of a permeable pavement. It is advised that TfNSW is currently working with WPCA on the ability of the permeable pavement to withstand bus use and therefore there is the potential that the permeable pavement may need to be changed to a sealed pavement, should it not be able to support bus use	Noted. The percentage of impervious area was calculated based on the proposed landscape area in the road corridor. The pavement in the carriageway was assumed to be impervious.

or other heavy vehicle access. Consider the potential for sealed pavement within the kerbside lanes and undertake the necessary design changes to the subject stormwater REF to accommodate this.

Confirm that the proposed stormwater drainage system including proposed piped infrastructure is designed to support the full buildout of the Bradfield city centre (i.e. new buildings, etc). The need to upgrade infrastructure over time can have significant impact on the transport network and the operation of buses and other transport customers.

The Authority confirm stormwater drainage systems have considered the fully developed Bradfield City Centre, including stub connections to the development lots.

Please advise in the report on the design parameters stormwater/ excess stormwater detention (ie.1 in 20 years, 1 in 100 year flood etc)?

The basins are designed to accommodate the 1% AEP event.

Is it expected that any of the new roads within the precinct may be affected by water over the roadway as a result of this, or any floodwater? Please advise on impacts for key roads and their management to mitigate impacts.

The 1% AEP water levels in the basins are proposed below road levels.

Overland flow paths are confirmed in the Stage 2A REF.

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