

VARIATION ADDENDUM

for

REVIEW OF ENVIRONMENTAL FACTORS

Proposed Stormwater Mitigation Works and Synthetic Football Field



CONTENTS

REF VARIATION	3
1. Project title	3
2. Approved REF	3
3. Works that have been completed	3
4. Variation description and justification for proposed variation.....	3
5. Additional community and / or stakeholder consultation requirements and outcomes	4
6. Additional permits, approvals and licences	5
7. Assessment of any additional potential impacts associated with the variation to the activity	6
Environmental factors:.....	6
7.1 Clause 171(2) of the EP&A Regulation.....	6
7.2 Clause 171A of the EP&A Regulation - Activities in catchments Clauses 6.6 – 6.9 of SEPP (Biodiversity and Conservation) 2021.....	13
8. Summary of additional and / or modified impacts and mitigation measures and approval conditions	22
7.1 Clause 171(2) of the EP&A Regulation	22
7.2 Clause 171A of the EP&A Regulation.....	23
Summary of impacts	23
9. Additional supporting documentation	26
DETERMINATION	26
REF variation submission	26
Decision statement	27

1. PROJECT TITLE

RFT9-2021 Norman Griffiths Stormwater Mitigation and Synthetic Sports Field Upgrade

2. APPROVED REF

Approved REF V9 - [2025/008184](#)

3. WORKS THAT HAVE BEEN COMPLETED

The works at Norman Griffiths commenced 13/03/2023. The works completed are:

- Installation of the GPT
- Installation of pit & pipe from GPT to pits 1 & 2
- Removal of existing turf and subgrade preparation including cut & fill of subgrade.
- Preliminary bulk excavation of the Bio Basin
- Preliminary bulk excavation of the French Drain to install Stormtech Chambers for the flood mitigation and drainage.
- Construction of permitter plinth installation
- Construction of footpath and accessibility ramps on Northern face of field

4. VARIATION DESCRIPTION AND JUSTIFICATION FOR PROPOSED VARIATION

The proposed variations described in this document are a consequence of detailed design undertaken to date and largely a response to the independent modelling and assessment provided in the report - *Detailed Flood Impact Assessment and stormwater management sign-off* completed by Orion Group (see Appendix 16). This independent modelling, assessment and sign-off was undertaken in response to concerns raised regarding the validity of the Optimal Stormwater produced report – *Technical Memorandum (3/2/23) Review of Stormwater Management System (Hydraulic Assessment) initial Stormwater Certification*.

The approved REF generally assessed the same detention and overland flow by-pass arrangement; however the Orion Group report specifies some detailed design elements that are slightly different to the original concept.

The proposed variation to the REF includes the following amendments:

1. **Construction of the 3m-wide concrete pathway** at levels specified by Orion Group in accordance with revised markups to ensure sufficient capacity for managing overland flow during significant flood events.
2. **Construction of the diversion wall** to the top of wall levels specified by Orion Group in the revised flood impact assessment to ensure the field is flood free in a 1% AEP storm event. The diversion wall also needs to be constructed to the engineered specification as required by Orion Group.

These variations are detailed on the plans in Appendix 17.

The proposed variation considers the potential flood effects on the adjacent Endangered Ecologically Community (EEC), surrounding infrastructure and human safety for a 1% Annual Exceedance Probability (AEP) flood event.

The proposed variation is required to address critical design and construction considerations identified during detailed assessments and in response to recommendations provided by the independent consultant. These changes are essential for ensuring the project's objectives are met effectively and sustainably:

1. **Flood Risk Mitigation:** The adjustment to the pathway levels and the construction of the diversion wall are necessary to meet the capacity requirements for managing overland flows during significant flood events.

This ensures the site remains safe and functional while minimizing flood risks to adjacent areas and infrastructure.

In addition to the provision of an overland flow path with sufficient capacity to keep the field flood free in a 1%AEP event, the Orion Group report confirms the designed under-field detention will operate as intended (noting specified construction and material requirements).

2. **Environmental and Compliance Considerations:** These variations do not substantially alter the environmental management principles outlined in the REF. All water quality and flow treatments are retained, improving stormwater management, and preventing adverse impacts on Quarry Creek and the surrounding environment.

All construction and environmental management requirements remain and continue to apply.

Alternatives to construction of the 3m wide path and diversion wall considered include:

Do nothing – the original design did not provide for sufficient capacity to prevent local overland flows onto the field during large events, all the way up to the 1% AEP. This would result in damage to the field surface and potential loss of material at an unacceptable frequency.

Additional under-field bypass or storage – this option is not considered appropriate for a number of reasons:

- a. The appropriate site for additional under-field infrastructure is limited by the location of the sewer main and asbestos containment layer.
- b. The required inlet capacity to capture the overland flows up to the 1% AEP event could not be effectively achieved on site.

Increased diversion wall height (above proposed variation) – raising the diversion wall higher introduces increased upstream flood risk, particularly if the level of the wall is above Lofberg Road, as such this option is not proposed.

Retaining existing footpaths and swale construction – the option of retaining existing footpaths and formalising a grass swale around the field was considered, however it did not provide the design capacity to convey the 1%AEP overland flow.

Chamfer the NE corner of the field – A 3m wide concrete flow path is still required, and this option didn't alter the need to adjust the existing asphalt footpaths. Impacts to the field and surrounding infrastructure would be significant compared to marginal benefits to surrounding environment and the rarity of events impacting the flow path area.

Providing a 3m wide overland flow path as asphalt or grass – this option considered provision of the overland flow path in materials other than concrete, however these alternatives did not provide the design capacity to convey the 1%AEP overland flow due to the roughness co-efficient.

A diversion wall along the north end of the field, with a 3m wide concrete path, that extends a minimum of 6.81m past the corner, at the levels specified by Orion Group is the most effective way to achieve the required capacity to accommodate the required overland flow diversion.

5. ADDITIONAL COMMUNITY AND / OR STAKEHOLDER CONSULTATION REQUIREMENTS AND OUTCOMES

Changes to the design and the impacts to flood levels were consulted with the NSW SES. A response was received to the consultation and can be found in Appendix 18.

Response to the advice provided is outlined in the table below:

Advice provided:	Response:
<p>Consider the impact of flooding on the infrastructure and people using the facility up to and including the Probable Maximum Flood (PMF), along with the impact of climate change on the flood risks.</p>	<p>There is no change to the original REF consideration.</p> <p>The project has been designed to keep the sporting field flood free up to the 1% AEP event.</p> <p>The field is an existing facility that currently involves flood detention on the surface, with significant inundation at the 5% AEP. Providing for detention beneath the surface with a defined overland flow path up to the 1% event provides less impacts to users than the existing scenario.</p> <p>Appropriate signage will be installed to inform users of flow paths and areas subject to flooding – similar to other areas of Bicentennial Park.</p>
<p>Consider the risks associated with this site being a low flood island, particularly given the short time to onset of flooding. As stated in our previous advice, low flood islands represent a significant risk factor that would be best avoided for development due to the large risk of mass rescue, as people cannot safely evacuate once the site becomes isolated.</p>	<p>The field is an existing facility that currently involves flood detention on the surface for more frequent events. Providing for detention beneath the surface with a defined overland flow path up to the 1% event provides less impacts to users than the existing scenario. Signage will be used to direct users on safe evacuation paths up the slope, away from the main flow.</p>
<p>Consider closing the site prior to site use (such as sporting events), or prior to the start of the workday during site works, if there is a risk of flooding, on receipt of advice from them Bureau of Meteorology (BoM), or when other evidence leads to an expectation of flooding.</p> <p>Check the BoM website prior to start of vents/the workday for any Severe Weather Warnings.</p>	<p>Noted.</p>
<p>Pursue site design and stormwater management that minimises any risk to the community.</p>	<p>Noted – that has been considered in the re-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 and by using signage.</p>	<p>Noted - signage will be installed as part of the field upgrade. Please see <i>"Flood Warning Sign Plan"</i> in Attachment 16.</p>

6. ADDITIONAL PERMITS, APPROVALS AND LICENCES

N/A – The changes outlined in this variation do not result in any additional permit, approval or license requirement.

7. ASSESSMENT OF ANY ADDITIONAL POTENTIAL IMPACTS ASSOCIATED WITH THE VARIATION TO THE ACTIVITY

ENVIRONMENTAL FACTORS:

The clauses specified in Table 7.1 CLAUSE 171(2) OF THE EP&A REGULATION of this variation document must be read in conjunction with the approved REF documentation. The details provided herein supplement and amend the approved REF as required by the proposed variation and should not be considered in isolation. All environmental assessments, mitigations, and conditions outlined in the approved REF remain applicable unless explicitly stated otherwise in this document.

7.1 CLAUSE 171(2) OF THE EP&A REGULATION

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(a) the environmental impact on the community,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low
(b) the transformation of the locality,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low
(c) the environmental impact on the ecosystems of the locality,	Y	In addition to the comments outlined in the approved REF, Potential impacts from the new proposed works include localized disturbances to soil, vegetation, and water quality due to earthworks, drainage installations, and other construction activities. Construction impacts are temporary, small in size, and limited in extent to the project area. The severity is low, given that the construction activities are not expected to significantly impact ecologically sensitive areas or critical habitats.	None Low Medium High Positive Low

		<p>Noting the required changes to footpath connections, existing footpath sections will be decommissioned where not required. These changes have been assessed by Council's Tree Management Officer (Appendix 20), who has provided mitigation measures for trees assessed.</p> <p>Post construction the works will create changes to the hydrology of the area with the diversion of flood waters up to the 1% AEP event. Impacts of these effects have been assessed – refer 'FFIA addendum – Thrive Ecology - Proposed changes to stormwater mitigation works at Norman Griffiths Oval' (Appendix 20), this report includes an Assessment of Significance under the BC Act and a Significant Impact Criteria Assessment under the EPBC Act that have determined that the Proposal is unlikely to have a significant impact on the CEEC – see 7.1(g).</p>	
Mitigation measures and approval conditions			
<p>Mitigation measures include implementing erosion and sediment controls to prevent runoff into adjacent ecosystems, ensuring proper management of construction materials to avoid contamination, and scheduling works to minimize disruption to local fauna and flora.</p> <p>As per the requirements outlined in Council's Tree Management Officer Advice (Appendix 20) and the AIA (Appendix 21), the following measures are to be implemented during footpath works:</p> <ul style="list-style-type: none"> The AIA requires all works in the TPZs of these trees to be supervised by an AQF Level 5 consulting Arborist. Alternatively works within the TPZs can be directly supervised by one of Council's Tree Management Officers. Specific Measures for Tree #2 (Turpentine) (T61 AIA) and Tree #5 (Turpentine) (T67 AIA) <ul style="list-style-type: none"> <u>Arrange in advance for Council's Tree Management Officer to be present when excavating within the TPZ for trees two (T61 AIA) and five (T67 AIA).</u> <u>Excavate carefully under direct supervision of Council's Tree Management Officer using small excavator.</u> General Tree Protection Measures (see Appendix 20 and 21 for SRZ and TPZ measurements) <ol style="list-style-type: none"> The design/plan should avoid tree structural root zones (SRZ) unless AQF Level 5 Arborist or Council Tree Management Officer inspection has demonstrated there are no major tree roots present and minimise incursion into tree protection zones (TPZ). Move site fencing to allow for excavation and exclude plant and machinery from tree protection zones not affected by necessary excavation as directed by Council's Tree Management Officer. Avoid over-excavation. No tree roots are to be cut or damaged within structural root zones without Project Arborist or Council Tree Management Officer approval. Outside structural root zones, tree roots less than 50mm diameter may be pruned as required using clean, sharp pruning saw or secateurs. If roots larger than 50mm diameter are encountered, you may have to amend your plans or contact Council's Tree Management Section for further advice. Allow a reasonable time for Council Officer to attend. No materials, plant or equipment is to be stored or positioned within tree drip lines. No materials are to contaminate soil such as wash from concreting equipment, fuel etc. You must exercise care to avoid damage to tree trunk and branches. 			Residual (-) impact level
			None Low Medium High Positive
			Low

<p>9. No tracking of machinery within tree protection zones.</p> <p>Design mitigations such as locating relocated footpath in degraded section of EEC with reduced native groundcover and the rehabilitation of any 'decommissioned' footpath section with species aligning to the STIF CEEC are included.</p> <p>A pre-works clearance check is to be undertaken by Council's Environment Staff (Bushland Technical Officer; Environmental Volunteering Programs Officer; Natural Areas Officer or Environmental Programs Leader) or the Project Ecological consultant to confirm area within CEEC to be cleared. Revegetation is to be undertaken in consultation with the local Bushcare group and Council's Bushland Operations Team. Noting works are adjacent to the known works area for the Bushcare group, Council's Environmental Volunteering Programs Officer is to be notified prior to any clearing works to ensure appropriate communication with the volunteer bushcare group is undertaken.</p>	
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Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
d) reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	Y	<p>The proposed amendment will have minimal impact on the aesthetic, recreational, scientific, or other environmental quality or value of the locality. Temporary impacts may arise during the construction phase, including visual disruptions due to construction equipment, noise from works, and reduced recreational access to the site. These impacts are localized to the project area, moderate in size, and short in duration.</p> <p>Post construction the introduction of additional walling on the Eastern and Southern boundary of the field is considered to have minimal impact. This additional proposed wall is required to be part engineered reinforced concrete as specified.</p>	<div>None Low Medium High Positive</div> <div>Low</div>
Mitigation measures and approval conditions			
<p>Mitigation measures include minimizing construction noise and visual disturbances through careful scheduling of works, using low-impact machinery, and maintaining clear communication with the community about the project timeline and progress.</p> <p>Temporary signage and barriers will ensure public safety and provide alternative recreational access where feasible.</p> <p>Where possible, sandstone blocks which are in keeping with the overall site design and a material used more widely throughout Bicentennial Park will be used, and public art will be considered on the section of engineered concrete wall where appropriate.</p>			<div>Residual (-) impact level</div> <div>None Low Medium High Positive</div> <div>Low</div>

Environmental consideration	Y / N	Comments on likely impact	Potential (-) impact level
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		(impact types, extent, size, duration, severity, importance; and level of community concern)	
(e) the effects on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations,		NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(f) the impact on the habitat of protected animals (within the meaning of the Biodiversity Conservation Act 2016),	Y	The change to the footpath location will impact some vegetation that provides potential habitat of protected animals including threatened species. Noting Threatened Species are most likely to be impacted by habitat alteration – The FFIA assessment (Appendix 20) includes an assessment of potential impacts on threatened species likely to occur at the site and concludes that all species were ruled out of requiring assessments of significance under the EPBC Act 1999 and NSW BC Act 2016 as they are mostly dependant on the canopy species which are being retained. Other Fauna recorded in the vicinity of the works are highly mobile, urban adapted and highly unlikely to be impacted by the proposed variation.	None Low Medium High Positive Low
Mitigation measures and approval conditions			
Refer to 7.1 (c) (g) (h)			Residual (-) impact level
			None Low Medium High Positive
			Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(g) the endangering of a species of animal, plant or other form of life, whether living on land, in water or in the air,	Y	In addition to the approved REF the additional proposed works impact on the EEC to the east and south of the field. The FFIA assessment (Appendix 20) considered removal of an up to 124m2 of vegetation from PCT3262. This removal does not include any canopy species and is within degraded areas of the EEC. The ground-storey to be removed includes <i>Cenchrus clandestinus</i> (Kikuyu), <i>Lomandra longifolia</i> (Spiny-head Mat-rush), and <i>Imperata cylindrica</i> (Blady Grass). Two <i>Acacia linifolia</i> (Flax-leaved Wattle), one <i>Breynia oblongifolia</i> (Coffee Bush) and one <i>Ozothamnus diosmifolius</i> (Rice Flower) will be removed.	None Low Medium High Positive Low

		<p>Detailed plan show that 87m2 of new footpath will be constructed within the "CEEC extent"</p> <ul style="list-style-type: none"> ○ 42m2 in the ecotone area between the "good" and "poor" condition CEEC; ○ 45m2 within the area identified as "poor" condition CEEC. <p>The proposal includes direct offset through the remediation of 83m2 of decommissioned footpath area and 161ms of additional planting - providing a total of 244m2 additional planting areas (see "Replanting Plan").</p> <p>The FFIA addendum (Appendix 20) only considered re-planting of around 40m2 of removed footpath.</p>	
Mitigation measures and approval conditions			
<p>In addition to the approved REF erosion and sediment controls will be installed to prevent runoff into Quarry Creek, and pre-construction ecological surveys will be undertaken to identify and address any potential risks to local fauna or flora.</p> <p>The amended footpath has been positioned to reduce the erosive nature of surface stormwater runoff during flooding events on the surrounding STIF CEEC.</p> <p>The decommissioned footpath, and surrounding landscaped areas, will be rehabilitated and replanted with suitable species for the PCT 3262, at a density identified in Appendix K of the 'FFIA addendum – Thrive Ecology - Proposed changes to stormwater mitigation works at Norman Griffiths Oval' (Appendix 20).</p> <p>All replanting works are to be conducted by qualified Bush Regenerators.</p> <p>See "Replanting Extents" in Appendix 18 for all Identified replanting areas.</p>			Residual (-) impact level
			None Low Medium High Positive
			Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(h) long-term effects on the environment,	Y	In addition to the approved REF, the scope of works, including adjustments to the concrete pathway and additional diversion walls. Once completed, the improved infrastructure will contribute positively to the site's long-term environmental sustainability by enhancing flood mitigation, drainage efficiency, and water quality management.	None Low Medium High Positive
			Positive
Mitigation measures and approval conditions			
The amended footpath has been positioned to reduce the erosive nature of surface stormwater runoff during flooding events on the surrounding STIF. The decommissioned footpath will be rehabilitated and replanted with suitable species for the PCT as identified in Appendix 20.			Residual (-) impact level
			None Low Medium High Positive
			Positive

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(i) degradation of the quality of the environment,	Y	<p>Short-term impacts may include localized disturbance during construction, such as dust, noise, and potential sediment runoff. However, these impacts are limited to the construction period and will be mitigated through appropriate environmental management measures. In the long term, the improved stormwater management infrastructure will help reduce sedimentation and water quality issues</p> <p>The hydrological impacts have been assessed and modelled refer Appendix 16:</p> <ul style="list-style-type: none"> Orion Group – Detailed Flood Impact Assessment and independent sign off Orion Group – Flood Effect on EEC zone for 1% AEP Flood event <p>The additional impacts to the EEC have been assessed refer to:</p> <ul style="list-style-type: none"> Appendix 20 FFIA addendum – Thrive Ecology - Proposed changes to stormwater mitigation works at Norman Griffiths Oval 	None Low Medium High Positive Positive
Mitigation measures and approval conditions			
<p>Mitigation measures to prevent degradation include strict adherence to the environmental management plan (EMP), installation of erosion and sediment controls, and regular site inspections to ensure compliance.</p> <p>Post construction inspection and maintenance of the overland flow path and remediation works to the decommissioned footpath area will be ongoing. The revegetated areas and additional plantings will form part of a minimum 6 week maintenance schedule. Following maintenance period area to be formally handed over to the relevant council maintenance team for ongoing maintenance, particularly following flood events.</p> <p>Consultation should be undertaken with the Bushcare group to gauge interest in ongoing maintenance and monitoring.</p>			Residual (-) impact level None Low Medium High Positive Positive

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(j) risk to the safety of the environment	N	<p>Orion Group Modelling has reviewed hazard rating for flows around the field up to 1% AEP event. Hazard on the field have been reduced an increased hazard has been identified on the overland flow path.</p> <p>Notification of the variations to the design changes has been provided to the SES who have provided a list of considerations including safety.</p>	None Low Medium High Positive Low

Mitigation measures and approval conditions	
Signage is to be provided to highlight the designed flow path and nominated evacuation routes to minimize the potential impact of flood hazards. See the - Flood Warning Sign Plan in Appendix 17	Residual (-) impact level
	None Low Medium High Positive
	Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(k) reduction in the range of beneficial uses of the environment	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive
			Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(l) pollution of the environment,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive
			Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(m) environmental problems associated with the disposal of waste,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive
			Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(n) increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive
			Low

Environmental consideration	Y / N	Comments on likely impact	Potential (-) impact level
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		(impact types, extent, size, duration, severity, importance; and level of community concern)	
(o) the cumulative environmental effect with other existing or likely future activities.	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
p) the impact on coastal processes and coastal hazards, including those under projected climate change conditions.	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(q) applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(r) other relevant environmental factors.	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

The clauses specified in Table 7.2 CLAUSE 171A OF THE EP&A REGULATION - ACTIVITIES IN CATCHMENTS CLAUSES 6.6 – 6.9 OF SEPP (BIODIVERSITY AND CONSERVATION) 2021 of this variation document must be read in conjunction with the approved REF documentation. The details provided herein supplement and amend the approved REF as required by the proposed variation and should not be considered in isolation. All environmental assessments, mitigations, and conditions outlined in the approved REF remain applicable unless explicitly stated otherwise in this document.

CLAUSE 6.6 (1) IN DECIDING WHETHER TO GRANT DEVELOPMENT CONSENT TO DEVELOPMENT ON LAND IN A REGULATED CATCHMENT [SYDNEY HARBOUR CATCHMENT], THE CONSENT AUTHORITY MUST CONSIDER THE FOLLOWING —

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(a) whether the development will have a neutral or beneficial effect on the quality of water entering a waterway,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(b) whether the development will have an adverse impact on water flow in a natural waterbody,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(c) whether the development will increase the amount of stormwater run-off from a site	Y	The additional impermeable concrete pathway will have limited impacts to the amount of Stormwater coming off the site.	None Low Medium High Positive Low
Mitigation measures and approval conditions			
Impacts will be mitigated by the decommissioning and rehabilitation of existing footpath and are not significant enough to negatively impact performance of the existing proposed stormwater management system			Residual (-) impact level
			None Low Medium High Positive
			Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive

(d) whether the development will incorporate on-site stormwater retention, infiltration or reuse			Low
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Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(e) the impact of the development on the level and quality of the water table,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(f) the cumulative environmental impact of the development on the regulated catchment,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(g) whether the development makes adequate provision to protect the quality and quantity of ground water	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

CLAUSE 6.6 (2) DEVELOPMENT CONSENT MUST NOT BE GRANTED TO DEVELOPMENT ON LAND IN A REGULATED CATCHMENT UNLESS THE CONSENT AUTHORITY IS SATISFIED THE DEVELOPMENT ENSURES —

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive

(a) the effect on the quality of water entering a natural waterbody will be as close as possible to neutral or beneficial, and			Low
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Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(b) the impact on water flow in a natural waterbody will be minimized.		NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

CLAUSE 6.7 (1) IN DECIDING WHETHER TO GRANT DEVELOPMENT CONSENT TO DEVELOPMENT ON LAND IN A REGULATED CATCHMENT, THE CONSENT AUTHORITY MUST CONSIDER THE FOLLOWING—

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(a) whether the development will have a direct, indirect or cumulative adverse impact on terrestrial, aquatic or migratory animals or vegetation,	Y	The impact of flood flows from construction of the diversion wall and footpath has been considered in the Orion Flood model review Report (Appendix 16) and the FFIA Addendum (Appendix 19). The FFIA Addendum (Appendix 19) notes that the design amendments have been made to minimise potential flood and overland flow impacts to the adjacent Critically Endangered Ecological Community (STIF). The report notes that the proposal is unlikely to significantly change the local hydrology under regular rainfall events and has assessed the potential impacts from changes in inundation extent and flow velocities for larger events. an Assessment of Significance under the BC Act and a Significant Impact Criteria Assessment under the EPBC Act have determined that the Proposal is unlikely to have a significant impact on the CEEC (see Appendices G and H in Appendix 19).	None Low Medium High Positive Low
Mitigation Measures and Approval Conditions			
The diversion wall and footpath conveying the overland flows are to be constructed in accordance with the details and levels specified by Orion Group to ensure impacts on surrounding vegetation are low.			Potential (-) impact level
The operation and maintenance plan is to include a requirement that following extreme rainfall events, the area is to be inspected for erosion and stabilized as appropriate.			None Low Medium High Positive
Refer to 7.1 (c) (g) (h) for replanting conditions relating to direct works.			Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(b) whether the development involves the clearing of riparian vegetation and, if so, whether the development will require—(i) a controlled activity approval under the Water Management Act 2000, or (ii) a permit under the Fisheries Management Act 1994,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(c) whether the development will minimise or avoid – (i) the erosion of land abutting a natural waterbody, or (ii) the sedimentation of a natural waterbody,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(d) whether the development will have an adverse impact on wetlands that are not in the coastal wetlands and littoral rainforests area,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact	Potential (-) impact level
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		(impact types, extent, size, duration, severity, importance; and level of community concern)	
(e) whether the development includes adequate safeguards and rehabilitation measures to protect aquatic ecology,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	<div>None Low Medium High Positive</div> <div>Low</div>

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(f) if the development site adjoins a natural waterbody—whether additional measures are required to ensure a neutral or beneficial effect on the water quality of the waterbody.	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	<div>None Low Medium High Positive</div> <div>Low</div>

CLAUSE 6.7 (2) DEVELOPMENT CONSENT MUST NOT BE GRANTED TO DEVELOPMENT ON LAND IN A REGULATED CATCHMENT UNLESS THE CONSENT AUTHORITY IS SATISFIED OF THE FOLLOWING—

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(a) the direct, indirect or cumulative adverse impact on terrestrial, aquatic or migratory animals or vegetation will be kept to the minimum necessary for the carrying out of the development,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	<div>None Low Medium High Positive</div> <div>Low</div>

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(b) the development will not have a direct, indirect or cumulative adverse impact on aquatic reserves,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(c) if a controlled activity approval under the Water Management Act 2000 or a permit under the Fisheries Management Act 1994 is required in relation to the clearing of riparian vegetation—the approval or permit has been obtained,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(d) the erosion of land abutting a natural waterbody or the sedimentation of a natural waterbody will be minimized,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(e) the adverse impact on wetlands that are not in the coastal wetlands and littoral	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

rainforests area will be minimised.			
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CLAUSE 6.8 (1)

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider the likely impact of the development on periodic flooding that benefits wetlands and other riverine ecosystems.	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

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CLAUSE 6.8(2) DEVELOPMENT CONSENT MUST NOT BE GRANTED TO DEVELOPMENT ON FLOOD LIABLE LAND IN A REGULATED CATCHMENT UNLESS THE CONSENT AUTHORITY IS SATISFIED THE DEVELOPMENT WILL NOT—

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(a) if there is a flood, result in a release of pollutants that may have an adverse impact on the water quality of a natural waterbody, or	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(b) have an adverse impact on the natural recession of	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

floodwaters into wetlands and other riverine ecosystems.			
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CLAUSE 6.9(1) IN DECIDING WHETHER TO GRANT DEVELOPMENT CONSENT TO DEVELOPMENT ON LAND IN A REGULATED CATCHMENT, THE CONSENT AUTHORITY MUST CONSIDER—

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(a) the likely impact of the development on recreational land uses in the regulated catchment, and	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(b) whether the development will maintain or improve public access to and around foreshores without adverse impact on natural waterbodies, watercourses, wetlands or riparian vegetation.	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

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CLAUSE 6.9(2) DEVELOPMENT CONSENT MUST NOT BE GRANTED TO DEVELOPMENT ON LAND IN A REGULATED CATCHMENT UNLESS THE CONSENT AUTHORITY IS SATISFIED OF THE FOLLOWING—

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(a) the development will maintain or improve public access to and from natural waterbodies for recreational purposes, including fishing, swimming and boating,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	None Low Medium High Positive Low

without adverse impact on natural waterbodies, watercourses, wetlands or riparian vegetation,			
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Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(b) new or existing points of public access between natural waterbodies and the site of the development will be stable and safe,	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	<div>None Low Medium High Positive</div> <div>Low</div>

Environmental consideration	Y / N	Comments on likely impact (impact types, extent, size, duration, severity, importance; and level of community concern)	Potential (-) impact level
(c) if land forming part of the foreshore of a natural waterbody will be made available for public access as a result of the development but is not in public ownership—public access to and use of the land will be safeguarded.	N	NO CHANGES TO THE REF PROPOSED TO THIS CLAUSE IN THE VARIATION	<div>None Low Medium High Positive</div> <div>N/A</div>

8. SUMMARY OF ADDITIONAL AND / OR MODIFIED IMPACTS AND MITIGATION MEASURES AND APPROVAL CONDITIONS

This summary applies to:

7.1 CLAUSE 171(2) OF THE EP&A REGULATION
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- (c) the environmental impact on the ecosystems of the locality;
- (d) reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality;
- (f) the impact on the habitat of protected animals (within the meaning of the Biodiversity Conservation Act 2016),
- (g) the endangering of a species of animal, plant or other form of life, whether living on land, in water or in the air,
- (h) long-term effects on the environment,
- (i) degradation of the quality of the environment,
- (j) risk to the safety of the environment

7.2 CLAUSE 171A OF THE EP&A REGULATION

6.6(1)(c) whether the development will increase the amount of stormwater run-off from a site

SUMMARY OF IMPACTS

- **Localized disturbance to soil, vegetation, and water quality.**
- **Minor impacts to the aesthetic of the sporting field**
- **Removal of up to 124m² of degraded vegetation within the EEC (87m² confirmed)**
- **Rehabilitation of decommissioned footpath area approximately 83m² + 161m² of additional native planting.**
- **Post construction changes to hydrology of the area with diversion of flood waters up to 1% AEP event.**
- **Minor changes in impervious area through introduction of additional concrete pathways, largely offset by decommissioning of unused pathways.**

DESIGN Mitigation measures and approval condition

- **The amended footpath has been positioned to reduce the erosive nature of surface stormwater runoff during flooding events on the surrounding STIF CEEC.**
- **Location of the additional footpath works within degraded area of CEEC.**
- **Design to remediate decommissioned section of redundant footpath with vegetation from the relevant PCT.**
- **Elements to meet specifications of the third party certify for stormwater management to ensure design is fit for purpose.**
- **The diversion wall and footpath conveying the overland flows are to be constructed in accordance with the details and levels specified by Orion Group**

CONSTRUCTION Mitigation measures and approval conditions

- **Update of the Site Erosion and Sediment Controls to include new proposed works**
- **'No-go Zones' to be maintained within CEEC.**

- **As per the requirements outlined in Council's Tree Management Officer Advice (Appendix 20) and the AIA (Appendix 21), the following measures are to be implemented during footpath works:**
 - The AIA requires all works in the TPZs of these trees to be supervised by an AQF Level 5 consulting Arborist.
 - Alternatively works within the TPZs can be directly supervised by one of Council's Tree Management Officers.
 - Specific Measures for Tree #2 (Turpentine) (T61 AIA) and Tree #5 (Turpentine) (T67 AIA)
 - Arrange in advance for Council's Tree Management Officer to be present when excavating within the TPZ for trees two (T61 AIA) and five (T67 AIA).
 - Excavate carefully under direct supervision of Council's Tree Management Officer using small excavator.
 - General Tree Protection Measures (see Appendix 20 and 21 for SRZ and TPZ measurements)
 1. The design/plan should avoid tree structural root zones (SRZ) unless demonstrated there are no major tree roots present and minimise incursion into tree protection zones (TPZ).
 2. Move site fencing to allow for excavation and exclude plant and machinery from tree protection zones not affected by necessary excavation as directed by Council's Tree Management Officer.
 3. Avoid over-excavation.
 4. No major tree roots are to be cut or damaged within structural root zones.
 5. Outside structural root zones, tree roots less than 50mm diameter may be pruned as required using clean, sharp pruning saw or secateurs.

If roots larger than 50mm diameter are encountered, you may have to amend your plans or contact Council's Tree Management Section for further advice. **Allow a reasonable time for Council Officer to attend.**

 6. No materials, plant or equipment is to be stored or positioned within tree drip lines.
 7. No materials are to contaminate soil such as wash from concreting equipment, fuel etc.
 8. You must exercise care to avoid damage to tree trunk and branches.
 9. No tracking of machinery within tree protection zones.
- **The decommissioned footpath and surrounding landscaped areas will be rehabilitated and replanted with suitable species for the PCT 3262, at a density identified in Appendix K of the 'FFIA addendum – Thrive Ecology - Proposed changes to stormwater mitigation works at Norman Griffiths Oval' (Appendix 20).**
- **A pre-works clearance check is to be undertaken by Council's Environment Staff or the Project Ecological consultant to confirm area within CEEC to be cleared**
- **All replanting works are to be conducted by qualified Bush Regenerators. Revegetation is to be undertaken in consultation with the local Bushcare group and Council's Bushland Operations Team. Noting works are adjacent to the known works area for the Bushcare group, Council's Environmental Volunteering Programs Officer is to be notified prior to any clearing works to ensure appropriate communication with the volunteer bushcare group is undertaken.**
- **Mitigation measures to prevent degradation include strict adherence to the environmental management plan (EMP), installation of erosion and sediment controls, and regular site inspections to ensure compliance.**

- **Installation of flood warning signage as recommended by the SES**
- **Regular inspection and maintenance to be undertaken within the overland flow path surrounding the field to be incorporated into the Operation and Maintenance plan.**
- **Plant inspection and maintenance within the remediated areas of the CEEC.**
- **Post construction inspection and maintenance of the overland flow path and remediation works to the decommissioned footpath area will be ongoing.**
- **The revegetated areas and additional plantings will form part of a minimum 6 week maintenance schedule. Following maintenance period area to be formally handed over to the relevant council maintenance team for ongoing maintenance, particularly following flood events**
- **Consultation should be undertaken with the Bushcare group to gauge interest in ongoing maintenance and monitoring.**

9. ADDITIONAL SUPPORTING DOCUMENTATION

Appendix 16 Flood model review

- [2025/151474](#) Orion Group – Civil Engineering Design Review and Flood Impact Assessment Certification for Norman Griffith Oval Refurbishment.

Appendix 17 Updated Plans showing Variation details

- All updated plans showing variation details - [2025/153211](#)

Appendix 18 SES Advice February 2025

- [2025/074004](#)

Appendix 19 FFIA addendum – Thrive Ecology

- [2024/403199](#) FFIA addendum – Thrive Ecology - Proposed changes to stormwater mitigation works at Norman Griffiths Oval (see [2025/152141](#) for easy to read version – appendices removed)

Appendix 20 Arborist Advice

Council Tree Management Officer Advice (2024/262346)

Appendix 21 AIA

- AIA TPP - Norman Griffiths Sports Field v2 [2025/160459](#)
- Appendix I - Tree Data v2 [2025/160462](#)
- Appendix II - Arboricultural Impact Assessment Drawings [2025/160487](#)
- Appendix III - Tree Protection Plan Drawings [2025/160489](#)

DETERMINATION

REF VARIATION SUBMISSION

I have completed this REF variation for *Norman Griffiths Oval Proposed Stormwater Mitigation Works and Synthetic Football Field* in accordance with Part 5 of the *Environment Planning and Assessment Act 1979* and Part 8 of the *Environmental Planning and Assessment Regulation 2021* and this is a complete and comprehensive assessment of the environmental impacts for the proposed activity variation.

REF variation author 1	
Name:	
Position:	
Signature:	Date:
REF variation author 2	
Name:	
Position:	
Signature:	Date:

I have reviewed and endorse this REF variation for *Norman Griffiths Oval Proposed Stormwater Mitigation Works and Synthetic Football Field*, in accordance with Part 5 of the *Environment Planning and Assessment Act 1979* and Part 8 of the *Environmental Planning and Assessment Regulation 2021*.

REF variation reviewer	
Name:	
Position:	
Signature:	Date:

DECISION STATEMENT

I certify that I have reviewed and endorsed the contents of this REF variation document, and to the best of my knowledge it is in accordance with the *Environment Planning and Assessment Act 1979*, the *Environment Planning and Assessment Regulation 2021* and the Guidelines approved under clause 170 of the *Environment Planning and Assessment Regulation 2021*, and the information it contains is neither false nor misleading.

Based on the information presented in this REF variation document, other information available and any relevant advice, it is determined that:

- The proposed activity variation is not likely to have a significant impact on the environment and therefore an Environmental Impact Statement (EIS) is not required.
- The proposed activity variation will not be carried out in a declared Area of Outstanding Biodiversity Value (AOBV) and is not likely to significantly affect threatened terrestrial and aquatic species, populations, ecological communities, or their habitats, and a Biodiversity Development Assessment Report (BDAR) or Species Impact Statement (SIS) is not required.
- The proposed activity variation is not likely to significantly affect matters of national environmental significance (MNES) and is therefore not a controlled action under the *Environmental Protection and Biodiversity Conservation Act 1999*. A referral to the Commonwealth Department of the Environment is not required.
- The proposed activity variation may proceed subject to the mitigation measures and approval conditions outlined in this REF variation document.

Authorised person 1 on behalf of the determining authority	
Name:	Position:
Signature:	Date:
Authorised person 2 on behalf of the determining authority	
Name:	Position:
Signature:	Date: