



REVIEW OF ENVIRONMENTAL FACTORS

Public domain works

New Brighton Golf Course Planning Agreement

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Review of Environmental Factors

Construction of pathways, tidal reflux valve and foreshore
landscaping

New Brighton Golf Course Planning Agreement

Prepared for

Mirvac Homes (NSW) Pty Ltd on behalf of Liverpool City Council

By



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Executive summary

Mirvac Homes (NSW) Pty Ltd (**Mirvac**) has been progressively developing their Brighton Lakes estate in Moorebank under a Project Delivery Agreement with the New Brighton Golf Club (**NBGC**). To make provision for local infrastructure that supports the masterplanned outcome for the estate, Mirvac has entered into a Planning Agreement with Liverpool City Council (**Council**) to deliver works and dedicate various pieces of land.

This document is a Review of Environmental Factors (**REF**) for the agreed approval pathway for the remaining local infrastructure works required by the New Brighton Golf Course Planning Agreement (**VPA**) and additional works within Brighton Lakes Estate under Part 5 of the *Environmental Planning and Assessment Act 1979* (**EP&A Act**). These works will be carried out by NBGC on the behalf of Council.

The purpose of this REF is to describe the proposal, to document the likely impacts of the proposal on the environment and to detail the protective measures that would be implemented during construction. The proposed works include the following components:

- Construction of a 2.5m shared pedestrian/bike path (**shared pathway**) within the Georges River foreshore land (Lot 4 in DP 1193300) to be dedicated to Council
- Riparian planting within the foreshore land (Lot 4 in DP 1193300) in accordance with an approved Vegetation Management Plan, adjacent to the shared pathway and golf course land
- Minor tree removal and construction of a 2.5m shared pathway between Brickmakers Drive and the Georges River foreshore land (Lots 1 and 2 in DP 1193300, Lots 304 and 310 in DP 1118048 and Lot 21 in DP 1207736)
- Continuation of the shared pathway over Lot 3 in DP1193300. The construction of the pathway in this location minimises additional vegetation removal and will require the creation of easements benefitting Council
- Overland stormwater drainage will be piped under the shared path at its eastern extent (Lot 2 in DP 1193300), through a series of drainage pits from an existing swale drain and turfed areas immediately adjacent to the proposed footpath. Stormwater will be discharged into the Georges River via a concrete headwall and tidal reflux valve also to be constructed.

The works are identified as items 3.1(a), 3.1 (b) and 3.2(b) of the VPA. In addition to the above works, it has also become necessary to install the headwall and tidal reflux valve on Lot 4 in DP 1193300 and 3 x 300mm stormwater drainage line over Lot 2 in DP 1193300 to better manage stormwater over Lot 2 (site of shared pathway) and adjoining Lot 21 in DP 1207736 owned by the NBGC. For ease of description in this REF, these works are referred to as the '**additional works**'.

The site is zoned E2 - Environmental Conservation and a small section of RE1 - Public Recreation in accordance with the *Liverpool Local Environmental Plan 2008* (**LEP**). The proposed pathway and drainage works are either 'exempt' development or permissible 'without consent'. Despite this, section 5.5 of the EP&A Act requires the Determining Authority to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity. This REF contains that assessment.

The REF has been prepared in accordance with the relevant requirements of the *Environmental Planning and Assessment Regulation 2000* (**EP&A Regulation**) and outlines the potential environmental impacts of the Proposal and safeguards to satisfactorily manage them.

This REF concludes that the proposed activity is unlikely to have a significant impact on the environment. On this basis, it is not necessary to prepare an environmental impact statement, and approval for the works can be self-determined by the Council under Part 5 of the EP&A Act.

1 Introduction

This section outlines the Proposal and includes a discussion of the approval process as well as the purpose of the REF and the matters that the REF must address.

1.1 Proposal identification

This REF has been prepared for the following proposed works as detailed in **Table 1** below:

Table 1. Proposed works, land and landowners

VPA Item No.	VPA Description	Location	Landowner
3.1(a)	Construction of a 2.5m shared pedestrian/bike path within the Georges River foreshore land to be dedicated to Council	Lot 4 in DP 1193300	Liverpool City Council
3.1(b)	Construction of a 2.5m shared pedestrian/bike path between Brickmakers Drive and the Georges River foreshore land	Lot 310 in DP 1118048 Lot 2 in DP 1193300 Lot 21 in DP 1207736	Liverpool City Council New Brighton Golf Club (easement to be granted to benefit Liverpool City Council)
3.2(b)	Riparian planting within the Public Recreation Land along the foreshore (in accordance with an approved Vegetation Management Plan) and adjacent to cycleway links and golf course land	Lot 4 in DP 1193300	New Brighton Golf Club To be dedicated to Liverpool City Council
Additional Works	Install a headwall and tidal reflux valve	Lot 4 in DP 1193300	New Brighton Golf Club To be dedicated to Liverpool City Council
	300mm stormwater drainage line	Lot 2 in DP 1193300 Lot 21 in DP 1207736	Liverpool City Council New Brighton Golf Club

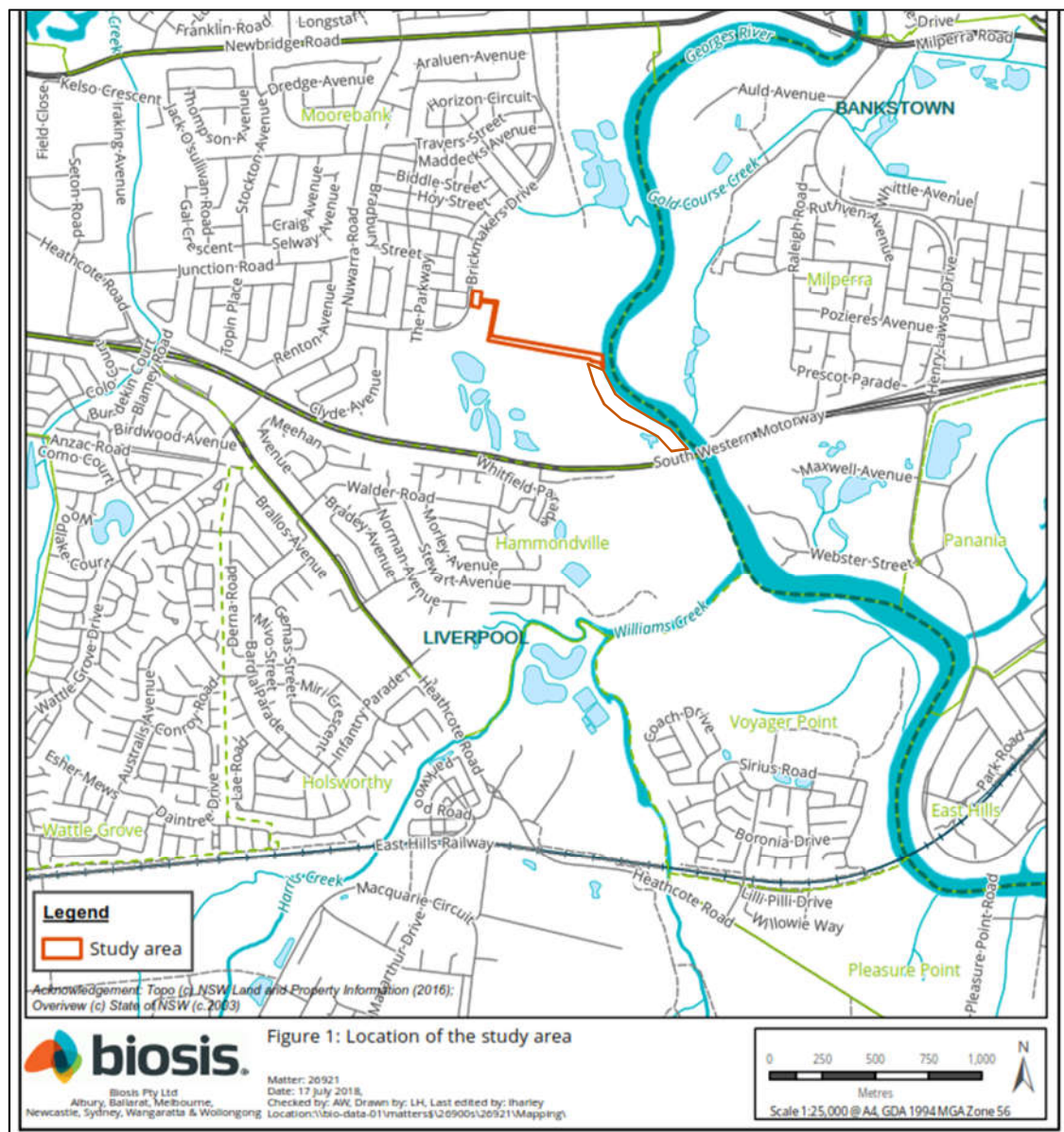
The activity area is zoned primarily E2 - Environmental Conservation and a small section of RE1 - Public Recreation in accordance with the *Liverpool Local Environmental Plan 2008*.

The proposed works are identified as items 3.1(a), 3.1 (b) and 3.2(b) of the VPA (see **Appendix A**). An associated stormwater drainage and headwall with a tidal reflux valve are proposed to compliment the proposed works under the VPA. The location of the proposed works in context to the Brighton Lakes Estate is shown within **Figure 1**.

The proposed works include:

- Construction of a 2.5m shared pathway within the Georges River foreshore land (Lot 4 in DP 1193300) to be dedicated to Council

- Riparian planting within the foreshore land (Lot 4 in DP 1193300) in accordance with an approved Conservation Management Plan, adjacent to the shared pathway and golf course land
- Minor tree removal and construction of a 2.5m shared pathway between Brickmakers Drive and the Georges River foreshore land (Lots 1 and 2 in DP 1193300, Lots 304 and 310 in DP 1118048 and Lot 21 in DP1207736)
- Installation of a 3 x 300mm stormwater drainage line in connection with the shared pathway
- Installation of a headwall and tidal reflux valve



Source: Biosis, 2018

Figure 1. Site location of the proposed works

The Proposal is subject to assessment by a Review of Environmental Factors and Determination by Council under Part 5 of the EP&A Act. The Brighton Lakes estate has been the subject of various Development Applications for residential development and approved under Part 4 of the EP&A Act by Liverpool City Council.

The proposed works are programmed to commence construction in late 2019 and include:

- Site works to prepare the activity area (earthworks and tree removal)
- Construction of the shared pathway, stormwater drainage works and headwall with tidal reflux valve
- Make good and riparian landscaping works

1.2 Purpose of the REF

The purpose of this REF is to describe the Proposal, to document the likely impacts of the Proposal on the environment, and to detail the protective measures (safeguards) that would be implemented during construction.

The REF has been prepared having regard to the relevant regulatory requirements including:

- *Environmental Planning and Assessment Act 1979*
- Clause 228 of the *Environmental Planning and Assessment Regulation 2000*
- *Biodiversity Conservation Act 2016*
- *NSW Fisheries Management Act 1994*
- *Environment Protection and Biodiversity Conservation Act 1999*
- *Water Management Act 2000*
- *State Environmental Planning Policy (Infrastructure) 2007*

This REF details the necessary information for the proposal to be assessed by the Council, including a description of the site and its surrounds and an assessment of the environmental impacts of the Proposal. The REF concludes that the impacts of the Proposal would not be materially significant and therefore can be self-determined by Liverpool City Council under Part 5 of the EP&A Act.

1.3 Structure of the REF

A summary of the matters addressed in each section of this REF is provided within **Table 2**.

Table 2. Structure of REF

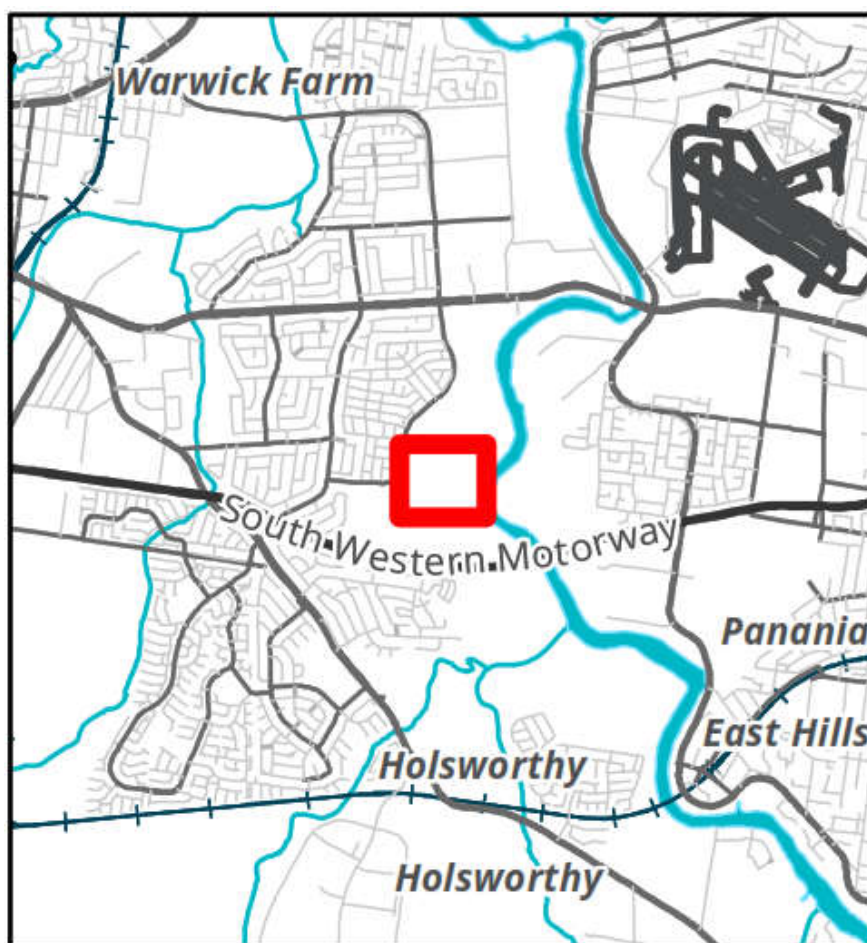
Review of Environmental Factors	
Section 1	Introduction - Proposal identification, approval process and purpose of REF.
Section 2	The Site and Locality - Identification of site location, site description and surrounding area.
Section 3	The Proposal - Description of the Proposal including existing land use and construction activities.
Section 4	Statutory Planning Framework - Review of the Proposal and assessment against relevant legislation
Section 5	Environmental Assessment and Mitigation
Section 6	Stakeholder and Community Consultation
Section 7	Conclusion

2 The Site and Locality


This section of the report describes the physical characteristics of the site, the adjoining development and character of the locality relevant to the preparation of a site analysis.

2.1 Site Location

The site is located adjacent to the Brighton Lakes development within the in the Liverpool Local Government Area. The study area is located approximately 2 kilometres south east of Moorebank suburban centre and approximately 33 kilometres west of the Sydney CBD.



Legend

 Study area

Source: Biosis, 2018

Figure 2. Location plan

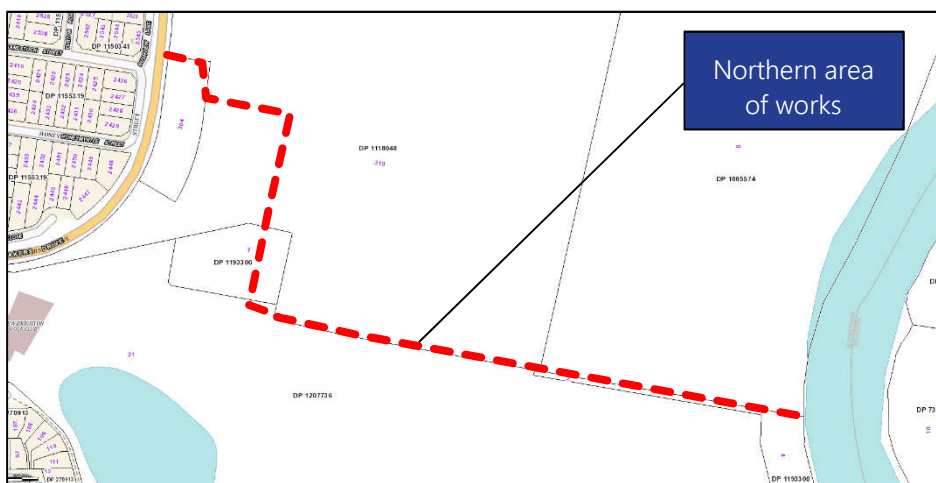
2.2 Site Description

The majority of the proposed construction activity area is located along an existing fire trail located within Wurrungwuri Nature Reserve situated north and adjoining to the NBGC. The shape of the activity area is irregular and measures approximately 1,925m² in area - refer to **Figure 3**. The shared path has an overall length of approximately 770m and is 2.5m wide. The broader area is flat with areas mostly cleared of vegetation and others with scattered trees and understorey. The activity area associated with the shared pathway works has generally been aligned within the footprint of existing bush trails. This extent of works is contained within Lots 304 and 310 in 1118048, Lot 1, 2 and 4 in DP 1193300 as shown in **Figure 4**. The drainage line, headwall and tidal reflux valve associated with the pathway will be constructed along the western end of the pathway on Lot 2 in DP 1193300 that has frontage to the Georges River.



Source: Biosis, 2018

Figure 3. Location of northern activity area



Source: Six Maps, 2018

Figure 4. Location of northern activity area

The western extent of works includes the construction of a shared path along the interface of the NBGC and foreshore to the Georges River. Works also include revegetation and riparian planting works in accordance with the approved Conservation Management Plan adopted in DA-517/2013. The shape of the activity area is irregular and measures approximately 2.7 hectares in area - refer to **Figure 5**. The path has an overall length of approximately 620m and is 2.5m wide. The site is flat and falls to the east to the Georges River. It is mostly cleared of vegetation with significant trees remaining on the bank of the Georges River.



Source: NearMaps, 2018

Figure 5. Location of western activity area

2.3 Surrounding Locality

Surrounding land use consists primarily of the New Brighton public golf course along the southern boundary and vegetated reserves to the north. Directly to the west of the study area is the residential suburb of Moorebank known as Mirvac's Brighton Lakes estate. The Georges River forms the eastern boundary to the extent of works.

3 The Proposal

This section provides a description of the Proposal and how it relates to the existing site context and conditions and how these have informed the key design parameters.

3.1 Overview

This REF outlines the likely impacts associated with the following proposed works:

- Site works to prepare the activity area (earthworks and tree removal)
- Construction of the pathway, installation of associated picnic and revegetation and landscape works
- Construction of stormwater pipes and pits
- Construction of headwall and tidal reflux valve
- Sediment and erosion control measures and other ancillary works.

Each component is described in more detail in the sections below.

3.2 Description of the Proposal

As agreed in the VPA, NBGC, on Council's behalf, is to construct a shared pathway and carry out revegetation and riparian planting in accordance with the approved Conservation Management Plan (DA-517/2013). The intent being to improve and provide public access and landscaped amenity to the Georges River foreshore.

The works required to achieve this objective require the formalisation and extension of existing fire trails and pathways within the site area to allow construction of the footpath. The shared pathway is to be constructed to Council's construction specification as per Standard Drawing No. R23A. Overland stormwater drainage will be piped under the footpath at its eastern extent, through a series of drainage pits from an existing swale drain and turfed areas immediately adjacent to the proposed footpath. Stormwater will then be discharged into the Georges River via a concrete headwall and tidal reflux valve. This will also serve to mitigate existing waterlogging issues that occur along the pathway alignment and golf course land to the south.

Works will be undertaken to prepare the site. This will include earthworks to level the site and removal of trees and vegetation. Appropriate sediment and erosion control measures will also be installed prior to construction works commencing and maintained throughout the duration of the works in accordance with the submitted Engineering Plans (refer to **Appendix B**). The geotechnical investigations have confirmed that the existing ground conditions at the site can support the proposed pathway construction and associated works.

The proposal is located within land owned by the Council, NBGC and land identified to be dedicated to Council. The dedication of Lot 4 in DP 1193300 is currently underway and awaiting finalisation by Council.

The following works will be undertaken as part of the Proposal:

- Cordoning off work area from public access
- Clearly identifying trees for removal that cannot be avoided and establishment of tree protection areas

- Installation of erosion and sediment control measures
- Installation of stormwater pipes within a trench and stormwater junction pits to discharge to Georges River
- Construction of headwall and tidal reflux valve.
- Backfilling the trench to restore to existing ground levels
- Minor grading to level alignment of the pathway
- Construction of pathway and associated landscape works and infrastructure
- Line marking and installation of signage
- Revegetation and riparian planting as detailed in the landscape specifications and plans

Table 3 provides a list of drawing numbers documenting the works to be undertaken. A full set of the Engineering Plans is provided at **Appendix B** and supported by comprehensive Landscape Plans at **Appendix C**. The landscaping works will also be carried out in accordance with the Technical Specification prepared by Stuart Noble provided at **Appendix D**.

Table 3. Works Plan details

Drawing Number	Drawing Name	Revision
12250E17 Sheet 1	Cover Sheet	E
12250E17 Sheet 2	Overall Plan Sheet 1 of 2	A
12250E17 Sheet 3	Overall Plan Sheet 2 of 2	A
12250E17 Sheet 4	Soil & Water Management Plan, Longitudinal Section & Typical Section of Path (Sheet 1 of 5)	E
12250E17 Sheet 5	Soil & Water Management Plan, Longitudinal Section & Typical Section of Path (Sheet 2 of 5)	E
12250E17 Sheet 6	Soil & Water Management Plan, Longitudinal Section & Typical Section of Path (Sheet 3 of 5)	E
12250E17 Sheet 7	Soil & Water Management Plan, Longitudinal Section & Typical Section of Path (Sheet 4 of 5)	E
12250E17 Sheet 8	Soil & Water Management Plan, Longitudinal Section & Typical Section of Path (Sheet 5 of 5)	E
12250E17 Sheet 9	Soil & Water Management Notes	A
12250E17 Sheet 10	Details of Proposed Works	E
12250E17 Sheet 11	Proposed Foreshore Shared Path Setout Details (Sheet 1 of 2)	A
12250E17 Sheet 12	Proposed Foreshore Shared Path Setout Details (Sheet 2 of 2)	A
CD-1420-F-101	Hardscape Plan 01	B
CD-1420-F-102	Hardscape Plan 02	B
CD-1420-F-103	Hardscape Plan 03	B

Drawing Number	Drawing Name	Revision
CD-1420-F-104	Hardscape Plan 04	B
CD-1420-F-105	Hardscape Plan 05	B
CD-1420-F-106	Hardscape Plan 06 & 07	B
CD-1420-F-107	Hardscape Plan 08 & 09	B
CD-1420-F-108	Hardscape Plan 10 & 11	B
CD-1420-F-109	Hardscape Plan 12	B
CD-1420-F-201	Planting Plan 01	B
CD-1420-F-202	Planting Plan 02	B
CD-1420-F-203	Planting Plan 03	B
CD-1420-F-204	Planting Plan 04	B
CD-1420-F-205	Planting Plan 05	B
CD-1420-F-206	Planting Plan 06 & 07	B
CD-1420-F-207	Planting Plan 08 & 09	B
CD-1420-F-208	Planting Plan 10 & 11	B
CD-1420-F-209	Planting Plan 12	B
CD-1420-F-210	Plant Schedules	A
CD-1420-F-800	Details	A
1420-NBGC Foreshore spec	Brighton Lakes Foreshore Reserve & Link Path Moorebank - Landscape Technical Specification	Initial Issue
12250E18 Sheet 1	Line marking & Signage Plan of Proposed Foreshore Shared Path (Sheet 1 of 2)	A
12250E18 Sheet 2	Line marking & Signage Plan of Proposed Foreshore Shared Path (Sheet 2 of 2)	A

3.3 Equipment, hours of operation and duration

The equipment to be used will include a range of machinery for pathway construction, site grading and landscaping. This will likely include:

- Restricted size excavators for grading of the area of works
- Restricted size dump trucks for the importation or disposal of material generated or required by the works
- Concrete pump unit for the construction of new pathways

- Tractor driven pump unit for herbicide application to landscaped areas
- Tractor driven scarification unit to prepare subgrade of landscaped areas
- Chipper equipment to mulch green waste from fallen trees on site for re-use in landscape works
- Hand equipment for planting of native plant stock

Work hours are in accordance with the Interim Construction Noise Guideline¹:

- Monday to Friday 7.00am to 6.00pm
- Saturday 8.00am to 1.00pm
- No work on Sunday or public holidays

It is anticipated that these works should take approximately 3 months to complete. A detailed program would be developed during the detailed design phase of the Proposal in consultation with the NBGC to ensure works will not have significant impact on the operation of the golf course.

3.4 Design rationale and alternative options

The design of the proposed works has been directly influenced by a number of constraints and limitations of the site as well as the pre-existing planning framework that applies. Key considerations affecting the alignment of the proposed pathway and flood mitigation works that informed the design are as follows:

- **Extent of existing vegetation** – Where possible, existing walking tracks and disturbed areas have been utilised for the alignment of the shared pathway and flood mitigation works to minimise the extent of vegetation removal and ground disturbance.
- **Shared pathway construction** – The safety of shared pathway, including collision risk, the speed of cyclists and potential impact on pedestrians has been considered in the design. Wherever possible, the shared pathway is compliant with AusRoads. However, there are instances where compliance with AusRoads is not readily achievable due to the utilisation of existing fire trails, walking tracks. The use of the fire trails and areas with minimal vegetation impact is required to minimise removal of vegetation within the E2 - Environmental Conservation and RE1 – Public Recreation zoned land. A generous alignment is to be used to provide good operating characteristics. Corners have been designed with the intention to increase through sight lines. Physical measures are incorporated into the design to moderate speeds at the entry to the shared pathway and areas shared with pedestrians and supported by adequate regulatory signage and line marking.
- **Interface with operational golf course** – Opportunities to further push the shared pathway works outside of the proposed alignment are limited due to the existing golf course. The current alignment presents an appropriate buffer between the use of the golf course and shared pathway link. Repositioning the shared pathway closer to the fairways would compromise the use of the golf course and potentially present a safety concern for shared pathway users.
- **Acquisition of additional land** - Further encroachments into the golf course do not have owner's consent from the NBGC and would be outside of the scope of the VPA. If further

¹ Prepared by Department of Environment Climate Change and Water, 2009.

realignment was required, Council would potentially need to acquire additional land that is outside of the VPA and also consider implications on the use of the golf course.

- **Tidal inundation of the shared pathway and surrounds** – This element of work is required to improve the functionality and availability of the shared pathway network. Whilst it could be excluded, it is likely to impact on the useability/enjoyment of the shared pathway as well as potentially limit the frequency of use of the shared pathway.
- **Hydrological conditions of existing basin**– The proposed works are limited to the top of the basin wall and behind the basin wall. The shared pathway does not cross the outlet channel until the point where a 750mm culvert is proposed as detailed within **Appendix B**. As such, works are not anticipated to affect drainage patterns from the existing basin. This will be reviewed further on site when setting out the pathway to ensure compliance.
- **Connection to wider Georges River foreshore open space**– A key outcome of the masterplan and rezoning of the wider release area was the delivery of public access, and shared pathway connections, along the Georges River foreshore to link the community to Council's future open space reserves. The rezoning of the land in 2012 and accompanying VPA and Conservation Management Plan anticipated these works and reasonable expectation from the community that this link will be delivered.

In terms of alternative options, the works are required to be delivered on behalf of Council as part of the VPA and is consistent with the masterplan and land use regime that applies to the site. The extent of works avoids significant impacts on vegetation through limited ground disturbance. Without Council acquiring additional land from the NBGC, it is not possible to avoid all tree removal at the south east extent of Lot 2 in DP 1193300. Further land acquisition may also serve to compromise the function of the existing golf course.

Whilst it is possible for the flood mitigation works to be excluded, the footprint of these works are contained within the extent of the shared pathway works. The tail out works to the Georges River have been designed in a way to avoid impacts on existing vegetation and will be carried out in accordance with the Natural Resource Access Regulator's requirements. It is considered that the inclusion of these works will improve the useability and availability for the shared pathway to be used by the community by avoiding continual tidal inundation.

4 Statutory planning framework

This section identifies the statutory and planning context for approval of the proposed works and responds to the requirements of other relevant legislation.

4.1 Environmental Planning and Assessment Act 1979

The EP&A Act establishes the system for the review and assessment of land use and development decisions in NSW. Developments that require consent are generally assessed under Part 4 of the EP&A Act. Activities that do not require consent are still required to have their environmental impacts assessed under Part 5 of the Act. There are two key aspects of the EP&A Act that need to be considered for this Proposal. These are outlined in the sections below:

4.1.1 Section 1.7 of the EP&A Act

This section of the EP&A Act requires consideration as to whether a proposed development will have a significant effect on threatened species, populations or ecological communities relating to terrestrial and/or aquatic environments.

The site and surrounds consist of a variety of vegetation types including exotic vegetation, planted native vegetation and existing native vegetation. Key vegetation communities over the site include:

- Cook's River/Castlereagh Ironbark Forest
- Castlereagh Swamp Woodland
- River-flat Eucalypt Forest
- Recorded occurrence of *Epacris purpurascens var purpurascens* (Port Jackson Heath)
- Potential movement corridor for *Litoria aurea* (Green and Golden Bell Frog)
- Potential critical habitat for a variety of fauna known to occur in proximity to the site

Where possible, impacts to vegetation from the shared pathway have been avoided by aligning the path within existing, cleared fire trails. The alignment of the tidal influx valve and stormwater drainage line will necessitate the removal of vegetation along the north eastern extent of the site. In total, 104 native canopy trees are required to be removed to facilitate the works and are located in areas that form the above vegetation types. These vegetation types are identified as vulnerable species, Threatened Ecological Communities and Endangered Ecological Communities under the *Biodiversity Conservation Act 2016 (BC Act)* and Critically Endangered Ecological Communities under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*.

As such a comprehensive Flora and Flora Assessment has been prepared for works over the northern extent of the site and include Tests of Significance under the BC Act and Species Impact Criteria Assessment under the EPBC Act. Refer to **Appendix E**. Of consideration under the BC Act, the works require the removal of key species as follows:

- 0.25ha of Cooks River/Castlereagh Ironbark Forest which is identified as a Threatened Ecological Community (TEC)
- 0.13ha of Castlereagh Swamp Woodland which is identified as a TEC
- 0.03ha of River-flat Eucalypt Forest which is identified as a TEC
- 0.05ha of planted natives
- 0.22ha of potential movement corridor for Green and Golden Bell Frog

Further, whilst not recorded through field survey, there is potential for Green and Golden Bell Frog and Port Jackson Heath to occur within the site. On this basis, Tests of Significance were prepared for each of these key species and confirmed that a significant impact is not likely from the proposed works given the relatively small amount of vegetation to be removed. The Flora and Fauna Assessment confirms that the proposed works are unlikely to have a significant impact on the TECs and provides recommendations to avoid and mitigate impacts. The recommendations have been adopted in the design of the works as well as ongoing construction management measures to be implemented during the works. A pre-clearance survey of the trees to be removed will be undertaken by a suitably qualified ecologist prior to works commencing. The removal of vegetation will be undertaken in a manner that is consistent with the recommendations made by the qualified ecologist. These measures form part of the recommendations in **Table 10** to mitigate the impacts of the proposed works during construction.

The eastern portion of site works include the construction of the shared pathway within the existing golf course land that is clear of any significant vegetation. As such, an impact on vegetation is not anticipated from these works. The revegetation of this area was previously considered, and approved by Council in DA 517/2013 with endorsement of a Conservation Management Plan (Vegetation and Habitat Management Plan) (**CMP**) prepared by Anne Clements and Associated Pty Ltd (dated 27 March 2013). The proposed landscaping and revegetation works along the Georges River foreshore are to be carried out in accordance with the approved CMP.

With regard to the EPBC Act, Cook's River/Castlereagh Ironbark Forest is a Critically Endangered Ecological Community and the Green and Golden Bell Frog is identified as a vulnerable species. Given their status and that the works may contain an appropriate movement corridor for Green and Golden Bell Frog, a Species Impact Criteria Assessment has been carried out for the proposed works.

The assessment concludes that the proposed works are unlikely to have a significant impact on Green and Golden Bell Frog primarily as the works will not involve the removal of habitat or areas for breeding that is important to the support of the Georges River community. The assessment makes appropriate measures for construction works to mitigate impacts and include a pre-clearing survey prior to vegetation disturbance and adoption of the National Parks and Wildlife Service's Frog Hygiene Protocol to reduce the likelihood of spreading Chytrid disease. These measures form part of the recommendations in **Table 10** to mitigate the impacts of the proposed works during construction.

For the impacts on Cook's River/Castlereagh Ironbark Forest, the Assessment concludes that the existing vegetation does not meet the condition threshold for listing under the EPBC Act. As such the proposed removal of 0.13ha of this vegetation community will not have a significant impact on the Cook's River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion. The Flora and Fauna Assessment provides recommendations to avoid impacts that have been adopted in the design of the works as well as ongoing measures to minimise and mitigate impacts. These measures form part of the recommendations in **Table 10** to mitigate the impacts of the proposed works during construction.

In addition to the impacts associated with the removal of existing vegetation, the change in hydrological conditions, as a consequence of the tidal reflux valve, were also considered in the Flora and Fauna Assessment. The assessment concluded that any changes to hydrological conditions would be minor and highly localised. It is not anticipated that there will be any substantial impact on vegetation retaining along the periphery to the path. The stormwater pipe and tidal reflux valve will not influence the flooding regime of the river, which would deliver sediment, salt, other nutrients

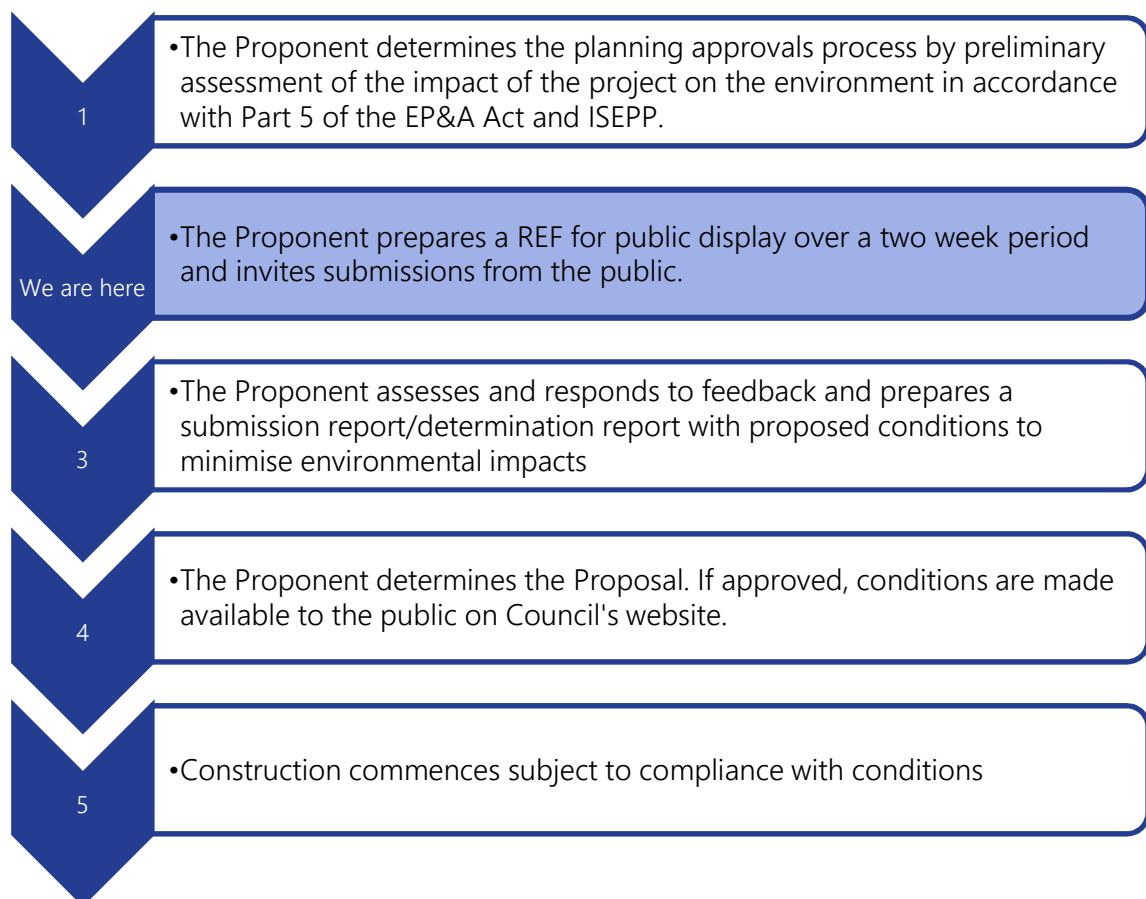
and result in water-logging during flooding events. The hydrological influences of the river are considered much more important in maintaining the riparian and floodplain vegetation within the study area than the small man-made drainage channel to be removed as a result of the works.

4.1.2 Part 5 - Environmental Impact Assessment

In accordance with *State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)*, this Proposal does not require development consent under Part 4 and hence is subject to the environmental impact assessment and planning approval requirements of Part 5 of the EP&A Act. In accordance with Sections 5.5 and 5.7 of the EP&A Act, the Proponent and Determining Authority, must examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity.

Clause 228 of the EP&A Regulation defines the factors which must be considered when determining if an activity assessed under Part 5 of the EP&A Act has a significant impact on the environment. The assessment of the proposal against clause 228 matters is contained in this REF. NBGC will deliver the proposed works on behalf of Council being the proponent and a public authority. Consequently, the proposal may be assessed and determined by Council under Part 5 of the EP&A Act.

Figure 6 illustrates the planning approval proposed for the Proposal.



Source: GLN Planning, 2018

Figure 6. Planning Approval Process

Any other works associated with the remainder of the Brighton Lakes development fall outside the scope of this REF and require a development application under Part 4 of the EP&A Act to be lodged with Council.

4.2 State Environmental Planning Policies

As outlined in **Section 4.2.1**, the components of the project meet the definition of 'exempt development' and 'development without consent' as per the requirements of ISEPP. Meeting these development definitions has the effect of not needing to comply with the requirements of other State Environmental Planning Policies (**SEPP**), local environmental planning instruments, development control plans and other strategies. Nonetheless, relevant legislation has been used as a framework to assess and guide the context of the Proposal and its acceptability within the environment in which it is located as outlined in the following sections.

4.2.1 State Environmental Planning Policy (Infrastructure) 2007

The aim of this Policy is to facilitate the effective delivery of infrastructure across NSW by identifying whether certain types of infrastructure require consent, can be carried out without consent or are exempt development. **Table 4** below defines each of the elements of work against the requirements of ISEPP. An assessment against the relevant provisions of the ISEPP is provided at **Appendix F** for Council's information.

Table 4. Definition of works under ISEPP

VPA Item No.	VPA Description	Location and Landowner	ISEPP Provision
3.1(a)	Construction of a 2.5m shared pedestrian/bike path within the Georges River foreshore land to be dedicated to Council	Lot 4 in DP 1193300 - Liverpool City Council	Defined as a public reserve. Division 12, Clause 66 - Meets requirements for exempt development for Parks and other public reserves.
3.1(b)	Construction of a 2.5m shared pedestrian/bike path between Brickmakers Drive and Georges River foreshore land	Lot 310 in DP 1118048 - Liverpool City Council Lot 2 in DP 1193300 - Liverpool City Council Lot 21 in DP 1207736 - New Brighton Golf Club	Defined as a public reserve. Division 12, Clause 65 - Meets requirements for development without consent for Parks and other public reserves. Due to minor impacts on vegetation and scope of works, development can be carried out without consent subject to REF.
3.2(b)	Riparian planting within the Public Recreation Land along the foreshore (in accordance with an approved Vegetation Management Plan) and adjacent to cycleway links and golf course land	Lot 4 in DP 1193300 - New Brighton Golf Course, to be dedicated to Liverpool City Council	Defined as a public reserve. Division 12, Clause 66 - Meets requirements for exempt development for Parks and other public reserves. Works can be carried out as exempt development as they involve the construction of walking tracks and routine maintenance (landscaping and weeding) that is commonly carried out over public reserves by Council.

VPA Item No.	VPA Description	Location and Landowner	ISEPP Provision
Additional Works	Install a headwall and tidal reflux valve	Lot 4 in DP 1193300 - New Brighton Golf Course, to be dedicated to Liverpool City Council	Defined as a stormwater management system. Division 20, Clause 111 - Meets requirements for development without consent for stormwater management works.
	3 x 300mm stormwater drainage line	Lot 2 in DP 1193300 - Liverpool City Council Lot 21 in DP 1207736 - New Brighton Golf Course	Defined as a stormwater management system. Division 20, Clause 111 - Meets requirements for development without consent for stormwater management works.

The works to be undertaken within the VPA requirements (Items 3.1(a) and 3.2(b)) are works confined within Lot 4 in DP 1193300 that will be dedicated to Council and are zoned RE1 Public Recreation. Mirvac has prepared general concept plans for the pathway alignment and revegetation works and Council is agreeable to the extent of works. Mirvac and NBGC has also taken care to avoid the removal of any vegetation to facilitate the shared pathway alignment in accordance with the CMP. It is noted the shared pathway is not fully compliant with AusRoads due to the utilisation of existing fire trails, walking tracks and areas that have minimal vegetation impact in an effort to reduce removal of vegetation within the E2 -Environmental Conservation and RE1 – Public Recreation zoned land. Horizontal curves, vertical curves and longitudinal grade have all been considered in the design with a maximum grade of 5%. A separate Line marking and Signage Plan has been prepared and considered risk factors including estimates of path use (commuter versus recreational), traffic volumes, gradient and sight lines.

As these works are proposed over a public reserve, they can be carried out as exempt development under clause 66 of ISEPP as they involve the construction of walking tracks and routine maintenance (landscaping and weeding) that is commonly carried out over public reserves by Council. An assessment against the relevant provisions of the ISEPP is provided at **Appendix F** for Council's information.

The portions of the shared pathway as required by Item 3.1(b) of the VPA within the Council land (Lot 310 in DP 1118048 and Lot 2 in DP 1193300) where possible, the shared pathway has been aligned to follow existing access trails that have since overgrown. To facilitate the delivery of this portion of the shared pathway, **it will be necessary to remove existing vegetation that is mapped as Cumberland Plain Woodland.** As per clause 65 of the ISEPP, the additional works meet the definition of a 'Park and other public reserves'. Due to the scope of works proposed and impact on vegetation, the Item 3.1(b) works would constitute 'development without consent' as demonstrated in **Appendix F**. These works require the preparation of a REF for endorsement by Council to manage the works. Council has indicated that NBGC will be required to complete the works on their behalf.

The proposed additional works meet the definition of a stormwater management system as per clause 110 of the ISEPP. The scope of works proposed result in the additional works constituting 'development without consent' as demonstrated in **Appendix F**. These works require the preparation of a REF for endorsement by Council to manage the works. Council has indicated that NBGC will be required to complete the works on their behalf.

4.2.2 State Environmental Planning Policy (Clearing of vegetation in non-rural areas)

This SEPP sets considerations and the approval process that is required to remove vegetation in urban areas in NSW. Clause 8(1) of the SEPP permits an authority (including Council) to clear vegetation without an authority where the clearing is of a kind authorised under Section 60O of the *Local Land Services Act 2013*, with the exception that it is not clearing merely in association with the carrying out of exempt development.

As outlined in **Table 4**, it is important to note that the proposed clearing of trees is only associated with works on Lot 310 in DP 1118048, Lot 2 and 4 in DP 1193300 and Lot 21 in DP 1207736. Specifically, the clearing of vegetation is only associated with the construction of the shared pathway, tidal reflux valve, associated headwall and stormwater drainage line. These works are not proposed as 'exempt development' but instead meet the definition of 'development without consent', hence the requirement for approval under Part 5 of the EP&A Act and assessment in this REF. Section 60O (b) specifically provides an authorisation for the clearing of native vegetation for works under Part 5 of the EP&A Act as follows:

For the purposes of this Part, the clearing of native vegetation in a regulated rural area is authorised under other legislation in any of the following cases:

(b) Other planning authorisation

The clearing was:

- (i) a part of or ancillary to the carrying out of exempt development within the meaning of the Environmental Planning and Assessment Act 1979, or*
- (ii) an activity carried out by a determining authority within the meaning of Part 5 of that Act after compliance with that Part, or*
- (iii) authorised by an approval of a determining authority within the meaning of Part 5 of that Act granted after compliance with that Part.*

On the basis that the tree removal forms part of the works defined as 'development without consent', no authority is required from the Native Vegetation Panel or the *SEPP (Vegetation in Non-Rural Areas) 2017* under clause 8(1). This is further confirmed by clause 24(4) of *SEPP (Vegetation in Non-Rural Areas) 2017* that states:

- (4) To avoid doubt, the Native Vegetation Panel is not a determining authority for the purposes of Part 5 of the Act when granting or modifying an approval under this Part.*

4.2.3 State Environmental Planning Policy No. 44 - Koala Habitat

State Environmental Planning Policy No. 44 - Koala Habitat (SEPP 44) aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for *Phascolarctos cinereus* (Koala) to ensure a permanent free-living population over their present range and reverse the current trend of Koala population decline.

The Proposal's impact on flora and fauna is discussed in **Section 5** of this REF. The works are unlikely to impact on any threatened species/populations or ecological communities.

As discussed in the Flora and Fauna Assessment at **Appendix E**, whilst the study area supports a single Koala feed tree species identified in Schedule 1 of SEPP 44, the species does not make up 15% of the total number of trees in the upper or lower strata of the tree component. As such, the vegetation does not meet the definition of 'potential Koala habitat'. As such, no further consideration of SEPP 44 is required.

4.2.4 State Environmental Planning Policy 55 – Remediation of Land

This Policy provides a state-wide planning approach to remediation and aims to promote the remediation of any contaminated land for the purpose of reducing the risk of harm to human health and/or the environment.

JBS&G Australia Pty Ltd (**JBS&G**) was engaged by Mirvac to review existing documentation and to provide specialist advice in relation to the assessment and management of site contamination, salinity and acid sulphate soil conditions over the site (refer to **Appendix G**). The scope of works for this investigation comprised a review of previous investigation reports and available site history and background information to identify potential areas of environmental concern and associated contaminants of potential concern (**COPC**), soil sampling, analysis of selected samples for identified COPC, comparison of collected data against relevant Environment Protection Agency's (**EPA**) endorsed criteria. This culminated in the preparation of a Preliminary Site Investigation report in general accordance with relevant EPA Guidelines, from a site contamination perspective, for the proposed development of the pathway corridor.

The site investigation works comprised a detailed site inspection, drilling of 11 bore holes and soil samples across the assessment area, from which selected samples were submitted for laboratory analysis to sufficiently characterise site conditions.

The soil analytical results indicated that concentrations of polycyclic aromatic hydrocarbons, organochlorine pesticides, polychlorinated biphenyls were all reported below the adopted land use criteria for recreational/open space land use and that there unacceptable human or ecological risks with respect to the current or future use of the land.

Whilst no visible asbestos containing material was found during the site inspection, a fragment of bonded asbestos was recorded in the BH03 location. Whilst below the health based site assessment criteria, as the construction of the footpath involves minor excavation of material, there is a minor asbestos exposure risk for construction workers in the vicinity of BH03. As such, JBS&G has prepared a Construction Environment Management Plan (**Appendix H**) incorporating an Asbestos Register and an unexpected finds protocol to address regulatory requirements under *SEPP No. 55 – Remediation of Land* (**SEPP 55**) to be implemented during the site establishment works.

Therefore, Council can be satisfied that the Proposal satisfies and is consistent with SEPP 55.

4.2.5 Greater Metropolitan Regional Plan No. 2 – Georges River Catchment

Deemed State Environmental Planning Policy *Greater Metropolitan Regional Environmental Plan No. 2 – Georges River Catchment* (**GMREP**) applies to the site. The broad aim of the GMREP is to ensure the impact of urban development on the Georges River catchment is minimised by considering catchment management, water quality and quantity, and protection and management of environmentally sensitive areas, flora and fauna and wetland habitats.

Consideration of the aims and objectives of the plan, planning strategies and policies have been outlined in **Table 5**.

Table 5. Consistency with GMREP No. 2

Clause	Comment
Part 1 - Introduction	
<p>5 Aims and objectives</p> <p>The relevant aims and objectives of this plan are:</p> <ul style="list-style-type: none"> (a) General aims and objectives and; (b) Specific aims and objectives 	<p>The proposed works are consistent with the general aims of GMREP. In particular the works will improve the environmental quality and access for the community. The works will have negligible impacts on the water quality and flow of the Georges River.</p> <p>The proposed works are consistent with the environmental protection and water quality and river flow aims. In particular the works result in the rehabilitation of bushland along the Georges River foreshore in line with the land use controls that apply to the site under the LEP.</p> <p>The proposed works are consistent with the regional role and land use aims as the works are consistent with the masterplan for the NBGC and complementary land use controls that apply to the site.</p>
Part 2 – Planning principles	
7 When planning principles are to be applied	The Planning Principles in Part 3 apply and are considered as works that do not require consent as proposed.
8 General Principles	<p>The aims and principles of this and other relevant plans have been considered by the proposed works.</p> <p>In rezoning the land and designating a foreshore public recreation area, Council has generally considered the requirements of GMREP and associated impacts on the Georges River catchment.</p> <p>The proposed works will have negligible impact on downstream local government areas or result in any cumulative impact on the Georges River. The works are required to provide access to the foreshore in line with the land use controls that apply to the site and also to rehabilitate vegetation along the foreshore. The tidal reflux valve is required to improve the access and useability of land and will not be detrimental to the flows or water quality of the Georges River.</p> <p>The works are also consistent with aims of the Georges River Estuary Coastal Management Plan (July 2013) as they will serve to enhance the riparian habitat, continue to protect the foreshore and provide opportunities for recreation and amenity.</p>
9 Specific Principles	Response to each of the specific principles is provided below:
Clause 9(1) Acid Sulfate soils	Whilst Council's mapping identified potential for class 2, 3 and 4 acid sulfate soils on the site, a Preliminary Site Investigation including soil sampling was prepared. This assessment confirms that acid sulfate soils have not been identified on the site of the proposed works and that given the shallow excavation involved, there is low risk of encountering acid sulfate soils.
Clause 9(2) Bank disturbance	The proposed works involve the revegetation of the Georges River foreshore buffer area that had previously been cleared as part of the NBGC and will serve to minimise bank degradation in the future. During

Clause	Comment
	construction, construction vehicles will be restricted from traversing within 4m of the top of bank of the Georges River.
Clause 9(3) Flooding	<p>No additional fill material is to be imported to the site to facilitate the works and the works will not result in any significant changes to floor storage capacity. The site must have a balanced cut and fill so only excavated material from the site will be used in filling operations.</p> <p>The proposed works do not result in an increased flood pollution hazard to the Georges River as it does not result in additional urban development.</p> <p>The tidal reflux valve removes areas of inundation to improve the useability and access of the shared pathway and adjoining recreation lands. The removal of this periodic inundation does not affect the vegetation communities in this area.</p>
Clause 9(5) Land degradation	The proposed works have been designed in line with Council's engineering specification to manage stormwater discharge as well as soil and sediment erosion control. The proposed works do not result in a significant change in soil salinity conditions or pollution of groundwater. Whilst some areas of vegetation removal on the foreshore is unavoidable due to the need to install the tidal reflux valve, this loss is generally offset by the wider revegetation works that will occur along the foreshore. Further the proposed vegetation removal is not considered to impact on any ecological communities.
Clause 9(7) River-related uses	The proposed works are consistent (and permissible) with the RE1 Public Recreation zone that Council identified as being appropriate along the George River foreshore.
Clause 9(9) Urban/stormwater runoff	The proposed works do not result in a change to urban stormwater runoff conditions. The proposed works do not alter existing quality of stormwater runoff that discharges to the Georges River. Stormwater discharge to the Georges River continues to convey stormwater from the surrounding bushland and recreation areas. Appropriate flow dissipation measures (i.e. rock rip rap) are to be installed at the headwall to manage the rate of discharge and mitigate bank erosion.
Clause 9(11) Vegetated buffer areas	The revegetation of the Georges River foreshore is consistent with the vegetated buffer that applies and that has been identified in the New Brighton masterplan and associated land use controls.
Clause 9(12) Water quality and river flows	The proposed works do not alter existing quality of stormwater runoff that discharges to the Georges River.
Clause 9(13) Wetlands	The proposed works do not impact on existing wetland areas. The proposed landscaping regime further strengthens vegetation within the existing riparian corridor along the Georges River foreshore.
Part 3. Planning Requirements	
Project specific planning requirements and considerations for this plan are as follows	
(6) FLOOD CONTROL WORKS	As ISEPP prevails over GMREP, in the case of inconsistencies, development consent is not required for the proposed works, nor does the development need to be advertised.

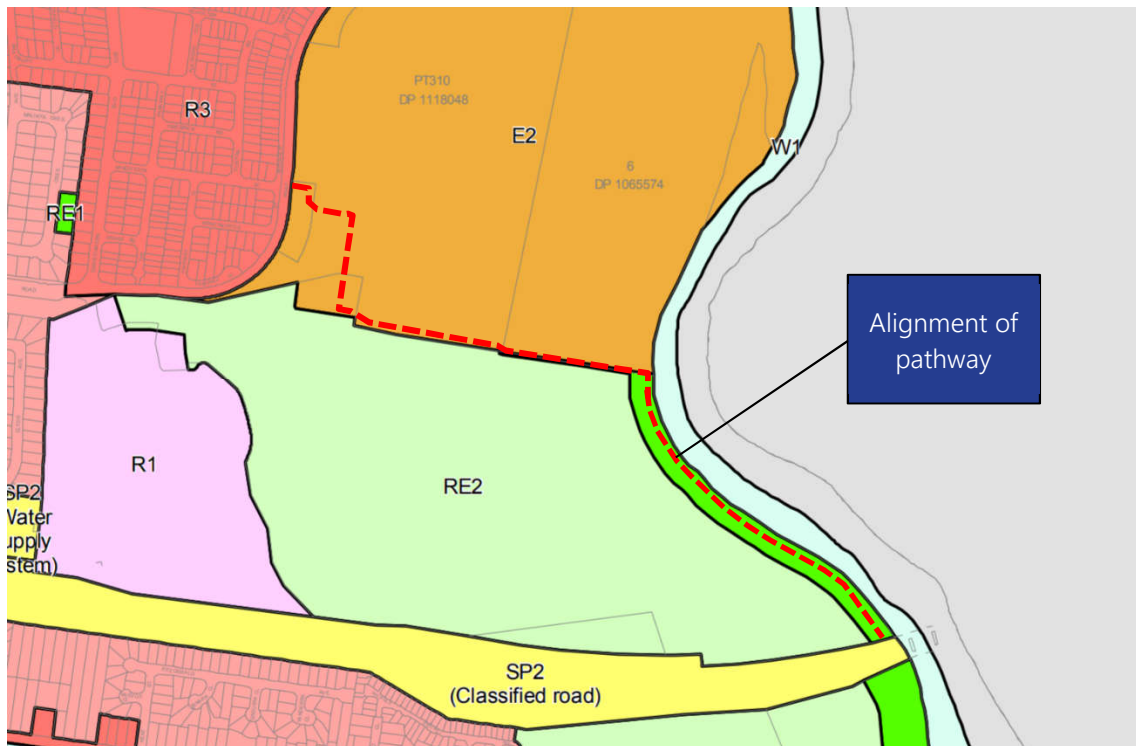
Clause	Comment
	The proposed tidal reflux valve is to be installed to improve useability and access to the shared cycleway and surrounding recreation lands. The valve has been designed in line with Council's engineering specification. It is consistent with the NSW Floodplain Development Manual and does not significantly impact on upstream or downstream flood conditions, nor major flows in the Georges River and serves to implement specific improvements on the site.
(17) RECREATIONAL FACILITIES	<p>As ISEPP prevails over GMREP, in the case of inconsistencies, development consent is not required for the proposed works, nor does the development need to be advertised. In addition to the shared cycleway, only minor recreation structures (i.e. picnic tables) are to be installed.</p> <p>All works are well distanced from the top of bank of the Georges River and are unlikely to contribute to bank instability.</p> <p>As outlined earlier acid sulfate soils do not present a constraint for the proposed works. Due to the limited depth of soil disturbance, there is low risk of encountering acid sulfate soils.</p> <p>The proposed works contribute to improving access to the Georges River foreshore within a revegetated setting in line with the masterplan and land use controls.</p> <p>The proposed recreation facilities do not obstruct, alienate or pollute the Georges River.</p>
(20) STORMWATER MANAGEMENT WORKS	<p>As ISEPP prevails over GMREP, in the case of inconsistencies, development consent is not required for the proposed works, nor does the development need to be advertised. The proposed works involve the construction of a stormwater drainage line that will convey stormwater from the surrounding bushland areas and shared pathway to the Georges River in line with Council's engineering specification. Appropriate flow dissipation measures (i.e. rock rip rap) are to be installed at the headwall to manage the rate of discharge and mitigate bank erosion.</p>
(21) DEVELOPMENT IN VEGETATED BUFFERS	<p>As ISEPP prevails over GMREP, in the case of inconsistencies, development consent is not required for the proposed works, nor does the development need to be advertised. The proposed works serve to revegetate foreshore land that had previously been cleared as part of the NBGC. The revegetation of this area will serve to improve habitat connectivity and biological diversity along the foreshore. Further stormwater management works will be instated to manage flows back to the Georges River.</p>
(23) WETLANDS AND FRESHWATER RIVERS	No clearing, dredging or draining of wetland areas are proposed.

4.3 Local Environmental Plans and strategies

4.3.1 Liverpool Local Environmental Plan 2008

Liverpool Local Environmental Plan 2008 establishes the land use zoning for the site of the proposed works as RE1 Public Recreation and E2 Environment Conservation as shown in **Figure 7**. Whist the

LEP specifies development permitted with and without consent in the respective zones and the land use table in Part 2, these provisions are superseded by the application of ISEPP.



Source: NSW Legislation, 2018 - *Liverpool Local Environmental Plan 2008*, Tile 15

Figure 7. Land Use Zoning

Whilst the other provisions of the LEP do not apply due to the application of ISEPP, a brief statement of consistency with relevant clauses is provided in **Table 6** below.

Table 6. Consistency with provisions of Liverpool Local Environmental Plan 2008

Clause	Requirement	Comment
Part 5 - Miscellaneous provisions		
5.1	Relevant acquisition authority	The RE1 zoned portion of the site will be dedicated to Council as per the VPA that already applies to the land. The proposed works are to be completed to transfer Council a completed asset and remove the need for Council to carry out further embellishment works.
5.1A	Development on land intended to be acquired for a public purpose	The proposed works are consistent with the intended purposes of the RE1 zoned land, VPA and Brighton Lakes masterplan.

Clause	Requirement	Comment
5.7	Development below mean high water mark	The tidal reflux valve is required to minimise waterlogging of the shared pathway corridor and adjoining golf course land to the south that is caused by tidal change from the Georges River.
5.10	Heritage conservation	<p>The area of works has generally been disturbed due to the current uses as a golf course and fire trails. An Aboriginal Archaeological Due Diligence Assessment, prepared in accordance with the NSW Office of Environment and Heritage's Due Diligence Code of Practice for the protection of Aboriginal Objects in NSW, confirmed there is low risk of Aboriginal objects occurring within the extent of the proposed works (refer to Appendix I). The assessment includes appropriate recommendations to manage works on site that will be implemented during construction.</p> <p>No local heritage items are contained within the area of works.</p>
Part 7 - Additional local provisions		
7.6	Environmentally sensitive land	This site is mapped as environmentally sensitive land. Care has been taken to align the pathway and stormwater management works within disturbed areas clear of vegetation. This minimises the need to remove existing vegetation. The Flora and Fauna Assessment has confirmed that the proposed works will not have any significant impact on threatened species or communities. Further, the landscaping works along the Georges River foreshore seek to revegetate the riparian area in accordance with the approved Conservation Management Plan.
7.7	Acid sulfate soils	This site is mapped as having potential for class 2, 3 and 4 acid sulfate soils. The Preliminary Site Investigation confirms that under previous assessments, acid sulfate soils have not been identified on the site of the proposed works and that given the shallow excavation involved, there is low risk of encountering acid sulfate soils.
7.8	Flood planning	The proposed works are located on partially flood prone land. The works do not result in any significant level change or significant increase in impervious area. As such, it is considered there will be negligible impacts to existing flood conditions or impact on flood storage. Further, no fill material is to be imported to the site to facilitate the desired landform levels and will not impact on overall flood storage volume of the Georges River.
7.9	Foreshore building line	The proposed shared pathway, picnic areas and landscaping works are consistent with the range of uses encouraged within foreshore areas.
7.31	Earthworks	The extent of earthworks is minimal and is required to allow the delivery of additional public domain land and pedestrian links in line with the land use zone, VPA and masterplan for Brighton Lakes. No additional fill is required to be imported to the site to facilitate the delivery of works and existing material has been determined to be suitable for the proposed recreational uses. The site must have a balanced cut and fill so only excavated material from the site will be used in filling operations.

4.3.2 Liverpool Development Control Plan 2008

The *Liverpool Development Control Plan 2008* (**DCP**) provides guidelines for development. While not applicable to the proposed works under this REF, a review against Part 1 of DCP has been undertaken to assess and guide the context of the Proposal as outlined within **Table 7**.

Table 7. Review against Liverpool DCP 2008

Clause	Comment
2 Tree Preservation	The removal of trees has been limited to the proposed shared pathway. The preservation of vegetation has been prioritised in the design through the utilisation of existing fire trails, walking tracks and areas that have minimal vegetation impact in an effort to reduce removal of vegetation within the E2 - Environmental Conservation and RE1 – Public Recreation zoned land.
3 Landscaping	Replanting is proposed to be undertaken. Landscape plans are submitted with this REF.
4 Bushland and Fauna Habitat Preservation	This REF is supported by a specialist Flora and Fauna Report, refer to Appendix E .
5. Bush fire Risk	The Proposal involves the construction of a shared pathway and ancillary stormwater and revegetation works. The works are located on existing fire trails. No residential development is proposed as part of the works.
6. Water cycle Management	Stormwater runoff from the shared pathway will be captured within the pit and pipe system proposed and conveyed to the Georges River via the proposed headwall and tidal reflux valve.
7. Development near a Watercourse	A Controlled Activity Approval for the proposed works adjacent to the Georges River will be obtained from the Natural Resource Access Regulator prior to works commencing within 40m of the Georges River. However, if the land is transferred prior to works commencing, a CAA is not required to be obtained by Council as per the exemption granted under clause 41 of the <i>Water Management (General) Regulation 2018</i> .
8. Erosion and Sediment Control	All works will be undertaken in accordance with the 'Blue Book'. Erosion and Sediment Control Plans have been prepared with this REF.
9. Flooding Risk	No works will give rise to additional flooding risk.
10 Contaminated Land Risk	Refer to discussion in Section 4.2.4 .
11 Salinity Risk	A Geotechnical Report (refer to Appendix J) has been prepared and is submitted with this REF and confirms the suitability of soil and land conditions for the proposed works.
12 Acid Sulfate Soils Risk	Refer to discussion in Table 6 .
13 Weeds	The works will enable the removal of weeds within the activity area as part of the site establishment phase and finalisation phase of works.
16 Aboriginal Archaeology	Refer to discussion in Table 6 .
24 Landfill	There is some evidence of prior filling in the area of the proposed works. The Preliminary Site Investigation considers this and provides for appropriate mitigation methods.

4.4 Commonwealth Legislation

4.4.1 Environmental Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* protects matters of National Environmental Significance (**NES**), such as threatened species and ecological communities, migratory species (protected under international agreements), and National Heritage places (among others).

Any actions that will, or are likely to have a significant impact on the matters of NES require referral and approval from the Commonwealth Minister for the Environment. Significant impacts are defined by the Commonwealth² for matters of NES.

The general location of the proposed shared pathway and stormwater works is shown in **Figure 8**. This shows the activity area has been disturbed through other activities over the site. There has been some regrowth and the as proposed works have been proposed to limit the vegetation to be removed.

As confirmed in the Flora and Fauna Assessment, no matters of NES have been identified at or near the site. A referral to the Commonwealth Department of Environment is therefore not required.



Source: Nearmap, 2018

Figure 8. Aerial photo showing location of activity area

4.5 Other relevant legislation

Table 8 provides a list of other relevant legislation applicable to the Proposal.

² <http://www.environment.gov.au/epbc/guidelines-policies.html>

Table 8. Summary of other legislative requirements

Legislation	Requirements for the Proposal
Fisheries Management Act 1994	The development does not involve harm to mangroves or other protected marine vegetation, dredging or reclamation, blocking of fish passage and does not involve impact to a Key Fish Habitat waterway. Therefore, the works will not require a Part 7 Fisheries Permit under the <i>Fisheries Management Act 1994</i> . Refer to Flora and Fauna Assessment.
National Parks and Wildlife Act 1974	The site has been highly disturbed and contains no listed Aboriginal heritage items. As per the Aboriginal Archaeological Due Diligence Assessment, works can proceed with caution.
Heritage Act 1977	A section 60 approval is required where items listed on the State Heritage Register are to be impacted. The site does not contain any items on the State Heritage Register.
Protection of the Environment Operations Act 1997	<p>The Proposal is not a Scheduled Activity under the <i>Protection of the Environment Operations Act 1997</i> and the Proposal is not likely to cause water pollution. Therefore, an environmental protection licence under this Act is not required.</p> <p>Part 5 provides a duty to notify the Department of Primary Industries - Water in the event of a pollution incident occurring.</p>
Roads Act 1993	<p>Section 138 of the <i>Roads Act 1993</i> requires an approval from the roads authority for certain works in, on or over a public road, or to connect to a classified road.</p> <p>There are no works associated with the public roads adjacent to the site.</p>
Rural Fires Act 1997	The Proposal involves the construction of a pathway and ancillary stormwater and vegetation works. The works are located on existing fire trails. No residential development is proposed as part of the works.
Water Management Act 2000	<p>Council does not currently own the land along the Georges River foreshore where works are proposed. As these works are within 40m of the Georges River, a Controlled Activity Approval (CAA) is required under the <i>Water Management Act 2000</i>. Prior to commencing works, Mirvac and NBGC will obtain a CAA from Natural Resource Access Regulator prior to works within 40m of the Georges River commencing.</p> <p>However, if the land is transferred prior to works commencing, a CAA is not required to be obtained by Council as per the exemption granted under clause 41 of the <i>Water Management (General) Regulation 2018</i>.</p>

5 Environmental assessment and mitigation

This section of the REF describes how the Proposal would be managed, via environmental management plans and specific safeguards, to reduce the potential environmental impacts throughout detailed design, construction and operation.

Clause 228 of the EP&A Regulations sets out 16 factors that need to be considered when assessing environmental impact under Part 5 of the EP&A Act. These factors are addressed in this report and outlined within **Table 9**.

Table 9. Assessment against Clause 228 of the EP&A regulation

No.	Factors to be considered when assessing the impact of an activity on the environment	Is the impact Positive / Negative / Neutral?
1	Any environmental impact on a community?	Neutral
2	Any transformation of a locality?	Neutral
3	Any environmental impact on the ecosystems of the locality?	Neutral
4	Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?	Neutral
5	Any effect 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?	Neutral
6	Any impact on the habitat of protected fauna (within the meaning of the National Parks and Wildlife Act 1974)?	Neutral
7	Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?	Neutral
8	Any long-term effects on the environment?	Neutral
9	Any degradation of the quality of the environment?	Neutral
10	Any risk to the safety of the environment?	Neutral
11	Any reduction in the range of beneficial uses of the environment?	Neutral
12	Any pollution of the environment?	Neutral - Negative
13	Any environmental problems associated with the disposal of waste?	Neutral
14	Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?	Neutral
15	Any cumulative environmental effect with other existing or likely future activities?	Neutral
16	Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	Neutral

Table 10 contains the assessment of potential environmental aspects, impacts and mitigation measures (safeguards). This comprehensive list of safeguards will minimise the potential adverse impacts of the Proposal.

Table 10. Environmental assessment and mitigation measures

Environmental aspects	Potential impacts	Safeguards to address these impacts	Minimal or no impact?
Topography, geology and soils			
Will the work lead to erosion and sedimentation?	The trenching works and stockpiling of excavated material may be prone to erosion and potentially cause sedimentation of land.	<ol style="list-style-type: none"> 1. Prepare and implement an erosion and sediment control plan. 2. Install erosion and sediment control measures before construction commences consistent with 'the Blue Book' Managing Urban Stormwater, Soils and Construction Vol 1 and 2A (Landcom, 2004 and DECC 2008). Specifically, silt fencing is to be installed and maintained at least 4m from the top of bank with the Georges River. 3. Stockpiles will be managed in accordance with the soil erosion and sediment control plans and the 'Blue Book'. 	Yes
Will the works disturb contaminated land / material / Acid Sulphate Soils / saline soils?	<p>The activity area is not identified on the NSW EPA Contaminated Lands Database. Based on the Preliminary Site Investigations and earlier site investigations there is a low likelihood for gross contaminants in the area of the proposed works.</p> <p>The site of the proposed works has potential for low to moderate saline soils.</p> <p>A review of Australian Soil Resource Information System indicates that the activity area is located within an area of 'extremely low probability of occurrence' of Acid Sulphate Soils.</p>	<ol style="list-style-type: none"> 4. Divert surface runoff away from sensitive areas, stockpiles and erodible material. 5. Inspect erosion controls weekly and after rainfall. Fix damaged controls immediately. 6. Install measures to prevent tracking soils/sediments offsite. 7. Sweep roads/pathways at least daily, and before rainfall. 8. Keep vehicles in designated areas. 9. Stabilise disturbed areas as soon as possible. 	

Environmental aspects	Potential impacts	Safeguards to address these impacts	Minimal or no impact?
Will the works permanently change surface topography and drainage patterns?	The works includes the construction of a pathway and associated drainage works. This will increase non-permeable surface area of the site. However, the overall design of the aims to retain the natural drainage patterns and ultimately connect into the Georges River Creek to the east.	<p>10. Include procedures for dealing with unexpected rain in the Construction Environmental Management Plan (CEMP).</p> <p>11. Implement salinity management measures identified in the DCP during construction.</p> <p>12. Implement the contamination CEMP provided at Appendix H including the Unexpected Finds Protocol and Asbestos register.</p> <p>13. Construction vehicles are to be prohibited from tracking through the site within 4m of the top of bank of the Georges River.</p> <p>14. No fill material is to be imported to achieve the finished design levels. The site must have a balanced cut and fill so only excavated material from the site will be used in filling operations.</p>	
Water quality and hydrology			
<p>Will the works potentially impact a waterway / floodplain / groundwater / drinking water catchment land /commercial fishing or aquaculture areas?</p> <p>Will the works require dewatering? Can the works be classified as 'minimal impact activity', as per the Aquifer Interference Policy?</p>	<p>No impacts anticipated provided appropriate soil erosion and sediment control measures are put in place.</p> <p>No dewatering works will be required.</p>	<p>1. Contractors will be able to rely on site amenities installed as part of works.</p> <p>2. Keep a functioning 'spill kit' on site at all times for clean-up of accidental spills.</p> <p>3. If required, chemicals and fuels are to be stored within designated bunded areas and identified with appropriate signage.</p> <p>4. Record all stored chemicals on a register with their Material Safety Data Sheets.</p>	Yes
Will the works require the use or storage of fuels or other chemicals?	It is unlikely that the proposed works will require the storage of fuel or chemicals.	<p>5. Do not use equipment with fuel, oil or hydraulic leaks. Repair or remove equipment immediately.</p> <p>6. Include emergency procedures for chemical/fuel spills in the CEMP.</p> <p>7. Prior to works commencing, path set out is to review the existing basin location and ensure impacts to basin performance is minimised.</p>	

Environmental aspects	Potential impacts	Safeguards to address these impacts	Minimal or no impact?
Flora and Fauna (see Appendix E)			
Will the works require clearing of native vegetation? Undertake a flora and fauna assessment if any habitat will be disturbed and/ or vegetation clearing is required	The activity area is relatively small and has been disturbed due to fire trails and filling undertaken. The pathway has been aligned to minimise the extent of tree removal and the foreshore will be revegetated in line with the approved Conservation Management Plan.	1. Delineate no-go areas on site plans to protect flora and fauna. 2. Identify vegetation that may be cleared on site plans. 3. Install appropriate tree protection measures for vegetation (that is not required to be removed) in close proximity to the works, in particular <i>Epacris purpurascens</i> var. <i>epacris</i> . At a minimum this should include 'No Go Zones' demarcated by exclusion fencing.	Yes
Will the works impact any threatened species/populations, ecological communities, critical habitat, Coastal Saltmarsh, or migratory species?	Unlikely. The activity area small and located within the existing fire trails in the area.	4. Clearly identify trees to be removed from the site prior to works commencing.	Yes
Is any vegetation Bio-certified?	No	5. All weeds, propagules, other plant parts and excavated topsoil material that is likely to be infested with weed propagules that are likely to regenerate will be bagged, removed from site and disposed of at a licensed waste disposal facility.	
Will the works impact wetlands?	No	6. Toolbox talk to be undertaken with all contracted staff to familiarise workers with description and locale characteristics for <i>Epacris purpurascens</i> var. <i>epacris</i> . If found works must be stop and an appropriately qualified ecologist contacted.	
Will the works impact any parks or reserves administered by OEH or land subject to a Conservation Agreement?	No	7. During construction works ensure frogs are excluded from the construction areas via frog proof exclusion fencing and retained vegetation is protected via proper erosion and sedimentation controls. Fencing is to be removed following completion of works to prevent barriers to movement.	
Do the works involve Key Threatening Processes?	No	8. Undertake appropriate hygiene measures in accordance with the NPWS Frog Hygiene Protocol (DECC 2008b).	
Will the works impact any other protected terrestrial, marine or aquatic habitats?	No	9. Undertake pre-clearing inspections to ensure no frogs or other threatened species are	
Will clearing of exotic vegetation or weeds be required?	If weeds or exotic vegetation is present, there is potential that the disturbance of soil will increase their propagation.		

Environmental aspects	Potential impacts	Safeguards to address these impacts	Minimal or no impact?
		<p>present in the vegetation prior to any vegetation removal.</p> <p>10. Install grating over the drainage pits at the eastern extent of the footpath to prevent Green and Golden Bell Frogs from falling into the drain. This grating is to be designed in consultation with, and approved by, a qualified ecologist.</p> <p>11. Removal of mangroves is not permitted unless separate approval is obtained from the Department of Primary Industries – Fisheries under the <i>Fisheries Management Act 1994</i>.</p> <p>12. Trees identified for removal are to be felled and lowered to the ground slowly to allow any resident fauna time to escape and to ensure they aren't injured by falling trees and branches. Any native fauna found that do not self-relocate are to be relocated to adjoining E2 zoned land. This is to be done under the supervision of a qualified ecologist. If any injured fauna are found, WIRES is to be contacted immediately.</p> <p>13. Treat all weeds prior to undertaking works to minimise weed spread.</p> <p>14. As soon as practical after earthworks are completed in the Georges River foreshore area, land is to be direct seeded in accordance with Objective 3.1.6 of the CMP.</p> <p>15. A mixture of local native tree, shrub and grass species are to be utilised to enhance the foreshore to the Georges River in accordance with Objective 3.1.7 of the CMP.</p>	
Air quality and energy			
Will the works cause offensive odour, dust or air pollution?	There is potential for excavation and stockpiling of fill material to be blown away during windy periods or in proximity to vehicle haulage routes.	1. Monitor work areas and stockpiles for dust generation and seed/cover/spray to suppress.	Yes

Environmental aspects	Potential impacts	Safeguards to address these impacts	Minimal or no impact?
Are there any existing air pollution sources?	There are no odour sources on site.	2. Cover loads of any material to be carted off site.	
Will the work impact Sydney Water’s energy use more than a minimal/trivial amount?	No, provided appropriate site practices are employed.	3. No matter of any kind is to be burnt. 4. Maintain equipment to ensure no exhaust particulates are visible for more than 10 continuous seconds. 5. Do not leave vehicles idling. 6. Schedule works to minimise the number of journeys. 7. Any air pollutant emission complaints will be dealt with promptly and the source will be eliminated wherever practicable. Details of the complaint will be recorded by the Project Manager.	
Waste and hazardous materials			
Will the works involve managing waste or hazardous waste or hazardous building materials?	During construction of the road, excavation of the trenching for the installation of services and stormwater there is likely to be some excess fill material.	1. Excavated material is to be stock piled in a suitable location for reuse on site.	Yes
What types and volumes of waste will be generated and how will they be stored/disposed of?	The excavation of the trench for the sewer lead is limited to the points of connection. The remainder of the site will be bored between these two points. The works are expected to generate 60m³ of excavated material. This fill material will be reused on site wherever possible to back fill the trench once the main has been laid. Need to dispose of surplus fill material from trench excavation. Potential to uncover uncontrolled fill material during excavation.	2. Waste will be reused or classified and removed as soon as practicable and disposed of in accordance with the Department of Environment and Climate Change's <i>Waste Classification Guidelines</i> (2009). 3. Waste disposal (spoil, building waste, contaminated material) will occur at licenced waste disposal depots. 4. Transport and disposal dockets will be kept as proof of correct disposal. 5. Stop works and notify the Project Manager (PM) if any contamination (e.g. asbestos, discoloured soil, chemical or petrol odours, refuse or leachate) is discovered. 6. Secure all wastes to avoid pollutants escaping. 7. Re-useable and recyclable materials and fittings will be removed and stored safely and securely.	

Environmental aspects	Potential impacts	Safeguards to address these impacts	Minimal or no impact?
Aboriginal heritage			
Are there any registered Aboriginal heritage objects or declared Aboriginal places within 200 metres of any work areas?	No. An Aboriginal Archaeological survey and assessment report for the site was prepared by Extent in March 2018 for Mirvac. The report concluded that the land is not archaeologically sensitive and that there are no archaeological constraints to its development.	1. If an item (or suspected item) of heritage potential is discovered, cease works and contact the PM as soon as possible. 2. Stop work if human remains are found and contact NSW Police.	Yes
Is the work in an Aboriginal high risk landscape: * within 200m of waters * in a sand dune system (particularly in Pleistocene or Holocene sand soil layers) * on a ridge top, ridge line or headland (turn on contours) * within 200m below or above a cliff face * within 20m of or in a cave, rock shelter or cave mouth?	Yes, however has already been the subject of significant disturbance for the proposed surface works.		
Are there any Aboriginal culturally modified trees within 200 metres of the work areas (including associated activities)?	No.		
Will the works impact an AHIMS site? Is an AHIP required?	No, provided works are contained to the activity area only.		
Non-Aboriginal heritage	No non-Aboriginal heritage items have been identified within the area of works or proximity to the wider site.	1. If an item (or suspected item) of heritage potential is discovered, cease works and contact the PM as soon as possible.	No
Do the works involve excavation, or are they in an area of high	Yes, however not in an area of high archaeological potential.		Yes

Environmental aspects	Potential impacts	Safeguards to address these impacts	Minimal or no impact?
archaeological potential?		1. Comply with the site boundaries as shown in the site plan. 2. If an item (or suspected item) of heritage is discovered, cease works and contact the PM as soon as possible.	
Do the works involve work in or near the curtilage of items on the Sydney Water s.170 Heritage Register or of State or Local Heritage significance?	No		
Could the works affect any world heritage properties, or places on the National Heritage List or Commonwealth Heritage List?	No		
Noise and vibration			
Will temporary or permanent noise and/or vibration impact nearby receivers (residences, heritage buildings, education institutions, hospitals, nursing homes, places of worship, important native fauna populations)?	Potential temporary noise impacts from plant equipment used to trench or mulch green waste. The area of works is generally buffered by significant vegetation or golf course land from residential receptors.	1. Work and deliveries will only occur during the following times: * Monday to Friday 7am to 6pm * Saturday 8am to 1pm *No construction work or deliveries will occur on Sundays or public holidays. 2. Surrounding residences will be given reasonable notice of the proposed works (including proposed start date, work methods and duration). 3. Equipment will have noise mufflers and be well maintained.	Yes
Are the works likely to exceed noise criteria in the Industrial Noise Policy (EPA 2000) or Interim Construction Noise Guideline (DECC 2009)?	No		
Will the works generate noise at night?	No.		
Traffic and access			
Will the work impact street parking/access for residents, businesses or community areas?	Minor delays and need for traffic management to surrounding roads if heavy plant equipment is required.	1. Council requirements regarding traffic control, access and road/footway restoration will be complied with.	Yes

Environmental aspects	Potential impacts	Safeguards to address these impacts	Minimal or no impact?
Will the works involve partial or complete road closures?	No.	2. Erect signs regarding proposed works, temporary road / pavement closures, diversions etc.	
Are the works in land managed / regulated by a government authority?	Yes. The works are proposed over land that is owned by Council.	3. Avoid blocking access to vehicular or pedestrian roads, and private driveways, wherever possible.	
Will the works require new access roads?	No, access to the activity area will be provided over private property and will not impact on existing arrangements.	4. Adequately notify affected landowners if road closures or traffic management measures are required. 5. Reduce impacts on public roads as soon as possible.	
Are temporary or interim solutions required which involve tankering of wastewater?	No.	6. Prepare a Construction Environmental Management Plan prior to construction works commencing which outlines construction vehicle routes, delivery zones, delivery times, access arrangements, pedestrian safety and traffic control measures to be implemented. 7. Appropriate signage is to be erected to identify for the community that the area is subject to flooding and to avoid use in flood events. 8. Consistent with Council's management of other foreshore reserves along the Georges River, the shared pathway is to be closed in early stages of flooding of the Georges River. 9. Based on current best practice, a range of risk factors have been considered, including estimates of path use, traffic volume, gradient and sight lines. A Line marking and Signage Plan has been prepared to warn cyclists and pedestrians of upcoming points of potential conflict. Council is required to submit a shared pathway proposal to Council's Local Traffic Committee for approval. 11. Should any changes to existing road line marking and signage be required, approval from the Local Traffic Committee is to be obtained prior to carrying out these works.	

Environmental aspects	Potential impacts	Safeguards to address these impacts	Minimal or no impact?
Social, visual and land use			
Will the works temporarily or permanently change the land use or visual character of the environment?	The proposed works form a small part of the overall Brighton Lakes estate. The proposed works were anticipated by the Planning Agreement and will be in keeping with the area which is being redeveloped for urban purposes.	1. Contain all work within the boundaries designated on the site plan. 2. Minimise spread of stockpiles, waste, and parking. 3. Display accurate public information and complaint contact signs until site restoration is complete. 4. Restore work sites to as close to their original condition as possible. 5. Carry out community and stakeholder liaison with adjoining property owners and occupiers. 6. Notify the PM immediately of any complaints. 7. Notify the PM immediately of any accidental damage to property. 8. Locate services on Dial Before You Dig search and peg out no-go areas to avoid service-disruption. 9. All personnel will exercise courtesy in dealing with the community.	Yes
Will the works require lights at night?	No.		
Will the works impact the area's commercial or community use?	Minor loss of amenity to the NBGC during construction.		
Will the works disrupt water or wastewater services?	No.		
Cumulative impacts			
Will the works contribute to any cumulative impacts?	The works link in with the overall development of the Brighton Lakes estate. The proposed pathway and associated works will be undertaken to minimise disruption and potential impacts to adjoining properties and occupiers.	1. Liaise with other development sites to co-ordinate works and minimise impacts (e.g. delivery times, parking etc).	Yes

6 Stakeholder and community consultation

This section summarises the consultation strategy for the Proposal and the consultation to occur during construction. It includes consultation with the community, relevant government agencies and stakeholders.

6.1 Consultation strategy

Community consultation requirements have been determined under Division 1 of ISEPP and are outlined within **Table 11**.

Table 11. Consultation Strategy

ISEPP Clause	Clause relevance	Consultation required
Clause 13	<p>Impacts on council-related infrastructure or services</p> <p>Consultation is required if the public authority is of the opinion that the development:</p> <ul style="list-style-type: none"> (a) will have a substantial impact on stormwater management services provided by a council, or (b) is likely to generate traffic to an extent that will strain the capacity of the road system in a local government area, or (c) involves connection to, and a substantial impact on the capacity of, any part of a sewerage system owned by a council, or (d) involves connection to, and use of a substantial volume of water from, any part of a water supply system owned by a council, or (e) involves the installation of a temporary structure on, or the enclosing of, a public place that is under a council's management or control that is likely to cause a disruption to pedestrian or vehicular traffic that is not minor or inconsequential, or (f) involves excavation that is not minor or inconsequential of the surface of, or a footpath adjacent to, a road for which a council is the roads authority under the <i>Roads Act 1993</i> (if the public authority that is carrying out the development, or on whose behalf it is being carried out, is not responsible for the maintenance of the road or footpath). 	<p>No.</p> <p>Internal review by Council officers only.</p>
Clause 14	<p>Impacts on local heritage</p> <p>Consultation is required if the development:</p> <ul style="list-style-type: none"> (a) is likely to have an impact that is not minor or inconsequential on a local heritage item (other than a local heritage item that is also a State heritage item) or a heritage conservation area, and (b) is development that this Policy provides may be carried out without consent. 	No
Clause 15	<p>Impacts on flood liable land</p> <p>In this clause, flood liable land means land that is susceptible to flooding by the probable maximum flood event, identified in accordance with the principles set out in the manual entitled Floodplain Development Manual:</p>	<p>Yes</p> <p>21 days notice to be provided to Council prior to</p>

ISEPP Clause	Clause relevance	Consultation required
	the management of flood liable land published by the New South Wales Government and as in force from time to time.	commencing works.
Clause 16	<p>Consultation with public authorities other than councils</p> <p>Consultation is required if the development is:</p> <p>(a) development adjacent to land reserved under the <i>National Parks and Wildlife Act 1974</i>—the Office of Environment and Heritage,</p> <p>(b) development adjacent to a marine park declared under the <i>Marine Parks Act 1997</i>—the Marine Parks Authority,</p> <p>(c) development adjacent to an aquatic reserve declared under the <i>Fisheries Management Act 1994</i>—the Department of Environment and Climate Change,</p> <p>(d) development in the foreshore area within the meaning of the <i>Sydney Harbour Foreshore Authority Act 1998</i>—the Sydney Harbour Foreshore Authority,</p> <p>(e) development comprising a fixed or floating structure in or over navigable waters—the Maritime Authority of NSW,</p> <p>(f) development for the purposes of an educational establishment, health services facility, correctional centre or group home, or for residential purposes, in an area that is bush fire prone land (as defined by the Act)—the NSW Rural Fire Service.</p>	No

Due to works being undertaken within 40m of Georges River, a CAA is required under the *Water Management Act 2000*. Prior to commencing works, NBGC will obtain a CAA from the Natural Resource Access Regulator. However, if the land is transferred prior to works commencing, a CAA is not required to be obtained by Council as per the exemption granted under clause 41 of the *Water Management (General) Regulation 2018*.

It is anticipated that Council will publicly notify the REF for a period of two weeks inviting comments from members of the public on the Proposal. The notification strategy should include:

- Notification on Council's website along with access to the documents
- Hard copies to be available at Council
- Advertisement in the Local newspaper
- Letters to adjoining property owners.

6.2 Prior to and during construction works

Mirvac or the NBGC will notify Council by letter 28 days prior to the commencement of works to inform them of the intention to start works. The letter will identify the nature and extent of the proposed works, the intended duration of the works and provide contact details for the Construction Project Manager.

Signs will be posted around construction site fences with contact details for the Construction Project Manager. An example sign has been provided at **Appendix K**.

7 Conclusion

This REF has been prepared for the construction of a pathway, associated stormwater and landscape works, headwall and tidal reflux valve.

The proposed works are adjacent to the NBGC and form part of the VPA works required to be undertaken in connection with the Brighton Lakes Estate development

This REF has been prepared to fulfil the requirements of Section 5.5 of the EP&A Act to facilitate determination of an activity by the Determining Authority, which in this case is the Council.

This REF outlines the potential environmental impacts of the Proposal. The key potential impacts are temporary soil and erosion impacts as a result of the construction works.

All anticipated environmental impacts can be satisfactorily managed through the implementation of site specific mitigation measures as described within this REF.

8 REF Determination Page

8.1 Assessor declaration

This REF provides a true and fair review of the activity in relation to its likely effects on the environment. It addresses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the project, and provides sufficient information to determine whether there is likely to be a significant impact on the environment as a result of the Proposal.

I have considered all environmental impacts and safeguards to the best of my knowledge, and have sought advice where required.

Project Name:	New Brighton Golf Course Planning Agreement Public Domain Works
Prepared by: Project Planner: Jillian Sneyd Location: GLN Planning, Sydney Phone: 9249 4100	Signature: Date:
Reviewed by: Project Director: Matt Cooper	Signature: Date:
Approved by: Development Manager: Andrew Kesby Location: Mirvac Homes (NSW) Pty Ltd Phone: 9080 8769	Signature: Date:

8.2 Determiner declaration & approval

I have reviewed the document and consider that the project will not have a significant impact and can proceed subject to the controls outlined in this REF.

Details	Signature
Name: Position: Location:	Date:

9 Glossary

Abbreviation	
Additional works	Stormwater drainage line, concrete headwall and tidal reflux valve on Lot 4 in DP 1193300
BC Act	<i>Biodiversity Conservation Act 2016</i>
CAA	Controlled Activity Approval
CEMP	Construction Environment Management Plan
CMP	<i>Conservation Management Plan (Vegetation and Habitat Management Plan) prepared by Anne Clements and Associates Pty Ltd dated March 2013</i>
COPC	Contaminants of potential concern
Council	Liverpool City Council
DCP	<i>Liverpool Development Control Plan 2008</i>
DP	Deposited Plans
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPA	Environment Protection Agency
GMREP	<i>Greater Metropolitan Regional Environmental Plan No. 2 - Georges River Catchment</i>
ISEPP	<i>State Environmental Planning Policy (Infrastructure) 2007</i>
JBS&G	JBS&G Australia Pty Ltd
LEP	<i>Liverpool Local Environmental Plan 2008</i>
Mirvac	Mirvac Homes (NSW) Pty Ltd
NBGC	New Brighton Golf Club
NES	National Environmental Significance
PM	Project Manager
Proposal	Proposed Pathway and associated works including stormwater drainage works, headwall and tidal reflux valve, the subject of this Review of Environmental Factors
REF	Review of Environmental Factors
SEPP	State Environmental Planning Policy
SEPP 44	<i>State Environmental Planning Policy No. 44 - Koala habitat</i>
SEPP 55	<i>State Environmental Planning Policy No. 55 – Remediation of land</i>
Shared Pathway	Shared pedestrian/bike path
TEC	Threatened Ecological Community
VPA	New Brighton Golf Course Planning Agreement

APPENDIX A: NEW BRIGHTON GOLF COURSE PLANNING AGREEMENT

APPENDIX B: ENGINEERING PLANS

APPENDIX C: LANDSCAPE PLANS

APPENDIX D: LANDSCAPE TECHNICAL SPECIFICATION

APPENDIX E: FLORA AND FAUNA ASSESSMENT

APPENDIX F: ASSESSMENT OF WORKS AGAINST ISEPP

Clause	Requirement	Compliance
Division 4 Exempt Development		
20 (1)	This clause applies to any development that this Policy provides as exempt development.	The proposed works include the construction of a shared pathway, landscape planting and maintenance works commonly associated with the establishment and upkeep of open space and public reserves as per clauses 66(a) and 66(b)
20 (2)	To be exempt development, the development: must meet the relevant deemed-to-satisfy provisions of the Building Code of Australia, or if there are no such relevant provisions, must be structurally adequate, and must not, if it relates to an existing building, cause the building to contravene the Building Code of Australia, and must be carried out in accordance with all relevant requirements of the Blue Book, and must not be designated development, and if it is likely to affect a State or local heritage item or heritage conservation area, must not involve no more than minimal impact on the heritage significance of the item or area, and must be installed in accordance with the manufacture's specifications, if applicable, and must not involve the removal or pruning of a tree or other vegetation that requires a permit or development consent for removal or pruning, unless that removal or pruning is undertaken in accordance with a permit or development consent.	There are no works that require compliance with the BCA. Mirvac will commit to carrying out the works in accordance with the requirements of the Blue Book. The site does not contain items of State or local heritage significance. The works do not constitute designated development under clause 77A of the Environmental Planning and Assessment Act 1979. The works will be carried out in accordance with Council's Engineering Specifications and the Conservation Management Plan approved for the site. No tree removal or pruning is required to facilitate the proposed pathway or landscaping works within the portion of exempt development works
20A	Exempt development carried out by public authorities for purposes in Schedule 1	Not applicable. The proposed pathway and landscaping works are not listed in schedule 1 of the Infrastructure SEPP.
Division 12 Parks and other public reserves		
64	In this Division: Public reserve has the same meaning as it has in the Local Government Act 1993, but does not include a Crown reserve that is dedicated or reserved for a public cemetery.	The site forms a public park as the definition in Local Government Act 1993.
266 (1)	Development for any of the following purposes is exempt development if it is carried out by or on behalf of a public authority in connection with a public reserve or on land referred to in clause 65(1), and if it complies with clause 20:	The works involve the construction of a walking track and routine maintenance on a public reserve, including weeding and landscape planting, in accordance with

Clause	Requirement	Compliance
	<p>construction, maintenance and repair of:</p> <p>(i) walking tracks, boardwalks, and raised walking paths, ramps minor pedestrian bridges, stairways, gates, seats barbecues, shelters and shade structures,</p> <p>(ii) viewing platforms with an area not exceeding 100m², or</p> <p>(iii) sporting facilities, including goal posts, sight screens and fences, if the visual impact of the development on surrounding land uses is minimal, or</p> <p>(iv) play equipment where adequate safety provisions (including soft landing surfaces) are provided, but only if it is at least 1.2m away from any fence,</p> <p>routine maintenance (including earthworks associated with playing field regrading or landscaping and maintenance of existing access roads)</p>	<p>the approved Conservation Management Plan.</p>
66 (2)	<p>Development of any kind referred to in subclause (1) is exempt development if it is carried out on land referred to in clause 65(2) by or on behalf of the person specified in respect of that land in that subclause, if the development:</p> <p>complies with clause 20, and</p> <p>involves no greater disturbance of native vegetation than necessary, and</p> <p>does not result in an increase in stormwater run-off or erosion, and</p> <p>for the purposes of implementing a plan of management adopted for the land under the Act referred to in clause 65(2) in relation to the land.</p>	<p>Compliance with clause 20 has been demonstrated.</p> <p>Disturbance to existing native vegetation will be limited to weeding in accordance with the Conservation Management Plan. No tree removal is required to facilitate the delivery of the landscaping or walking track.</p> <p>Mirvac will adopt appropriate measures from the Blue Book to ensure there will be no increase in stormwater run-off or erosion.</p> <p>The works are required to implement the Plan of Management that applies to the land.</p>

Items 3.1(a) and 3.2(b) consistency with State Environmental Planning Policy (Infrastructure) 2007

Clause	Requirement	Compliance
Division 4 Exempt Development		
20 (1)	This clause applies to any development that this Policy provides as exempt development.	The proposed works include the construction of a shared pathway, landscape planting and maintenance works commonly associated with the establishment and upkeep of open space and public reserves as per clauses 66(a) and 66(b)
20 (2)	<p>To be exempt development, the development:</p> <ul style="list-style-type: none"> must meet the relevant deemed-to-satisfy provisions of the Building Code of Australia, or if there are no such relevant provisions, must be structurally adequate, and must not, if it relates to an existing building, cause the building to contravene the Building Code of Australia, and must be carried out in accordance with all relevant requirements of the Blue Book, and must not be designated development, and if it is likely to affect a State or local heritage item or heritage conservation area, must not involve no more than minimal impact on the heritage significance of the item or area, and must be installed in accordance with the manufacture's specifications, if applicable, and must not involve the removal or pruning of a tree or other vegetation that requires a permit or development consent for removal or pruning, unless that removal or pruning is undertaken in accordance with a permit or development consent. 	<p>There are no works that require compliance with the BCA.</p> <p>Mirvac will commit to carrying out the works in accordance with the requirements of the Blue Book.</p> <p>The site does not contain items of State or local heritage significance.</p> <p>The works do not constitute designated development under clause 77A of the Environmental Planning and Assessment Act 1979.</p> <p>The works will be carried out in accordance with Council's Engineering Specifications and the Conservation Management Plan approved for the site.</p> <p>No tree removal or pruning is required to facilitate the proposed pathway or landscaping works.</p>
20A	Exempt development carried out by public authorities for purposes in Schedule 1	<p>Not applicable.</p> <p>The proposed pathway and landscaping works are not listed in schedule 1 of the Infrastructure SEPP.</p>
Division 12 Parks and other public reserves		
64	<p>In this Division:</p> <p>Public reserve has the same meaning as it has in the Local Government Act 1993, but does not include a Crown reserve that is dedicated or reserved for a public cemetery.</p>	The site forms a public park as the definition in Local Government Act 1993.
66 (1)	Development for any of the following purposes is exempt development if it is carried out by or on behalf of a public authority in connection	The works involve the construction of a walking track and routine maintenance on a public reserve, including weeding and

Clause	Requirement	Compliance
	<p>with a public reserve or on land referred to in clause 65(1), and if it complies with clause 20:</p> <p>construction, maintenance and repair of:</p> <p>(i) walking tracks, boardwalks, and raised walking paths, ramps minor pedestrian bridges, stairways, gates, seats barbecues, shelters and shade structures,</p> <p>(ii) viewing platforms with an area not exceeding 100m², or</p> <p>(iii) sporting facilities, including goal posts, sight screens and fences, if the visual impact of the development on surrounding land uses is minimal, or</p> <p>(iv) play equipment where adequate safety provisions (including soft landing surfaces) are provided, but only if it is at least 1.2m away from any fence,</p> <p>routine maintenance (including earthworks associated with playing field regrading or landscaping and maintenance of existing access roads)</p>	<p>landscape planting, in accordance with the approved Conservation Management Plan.</p>
66 (2)	<p>Development of any kind referred to in subclause (1) is exempt development if it is carried out on land referred to in clause 65(2) by or on behalf of the person specified in respect of that land in that subclause, if the development:</p> <p>complies with clause 20, and</p> <p>involves no greater disturbance of native vegetation than necessary, and</p> <p>does not result in an increase in stormwater run-off or erosion, and</p> <p>for the purposes of implementing a plan of management adopted for the land under the Act referred to in clause 65(2) in relation to the land.</p>	<p>Compliance with clause 20 has been demonstrated.</p> <p>Disturbance to existing native vegetation will be limited to weeding in accordance with the Conservation Management Plan. No tree removal is required to facilitate the delivery of the landscaping or walking track.</p> <p>Mirvac will adopt appropriate measures from the Blue Book to ensure there will be no increase in stormwater run-off or erosion.</p> <p>The works are required to implement the Plan of Management that applies to the land.</p>

3.1(a) and 3.2(b) consistency with State Environmental Planning Policy (Infrastructure) 2007

Clause	Requirement	Compliance
Division 12 Parks and other public reserves		
64	<p>In this Division:</p> <p>Public reserve has the same meaning as it has in the Local Government Act 1993, but does not include a Crown reserve that is dedicated or reserved for a public cemetery.</p>	<p>The site forms a public park as the definition in Local Government Act 1993.</p>

Clause	Requirement	Compliance
65 (1)	<p>Development for any purpose can be carried out without consent:</p> <ul style="list-style-type: none"> on land reserved under the National Parks and Wildlife Act 1974, if the development is for a use authorised under that act, or on land declared under the Marine Estate Management Act 2014 to be a marine park if the development is for a use authorised under that Act, or on land declared under the Fisheries Management Act 1994 to be an aquatic reserve if the development is for a use authorised under that Act. 	The land is not reserved as National Park or declared as a marine park or aquatic reserve.
65 (3)	<p>Development for any of the following purposes may be carried out by or on behalf of a council without consent on a public reserve under the control of or vested in the council:</p> <ul style="list-style-type: none"> roads, cycleways, single storey car parks, ticketing facilities and viewing platforms, outdoor recreational facilities, including playing fields, but not including grandstands, information facilities such as visitors' centres and information boards, lighting, light spill and artificial sky glow is minimised in accordance with AS/NZ 1158:2007, Lighting for Roads and Public Spaces, landscaping, including irrigation schemes (whether they use recycled or other water), amenity facilities, maintenance depots, environmental management works 	As the works involve the removal of vegetation, the works cannot meet the requirements of clause 66 to be 'exempt development'. Under clause 65(3), the proposed works meet the definition of cycleway. The works are proposed on behalf of Council on land owned by Council
Clause	Requirement	Compliance
Division 20 Stormwater management systems		
110	<p>In this Division:</p> <p>Stormwater management system means:</p> <ul style="list-style-type: none"> works for the collection, detention, distribution or discharge of stormwater (such as channels, aqueducts, pipes, drainage works, embankments, detention basins and pumping stations), and stormwater quality control devices (such as waste entrapment facilities, artificial wetlands, sediment ponds and riparian management), and stormwater reuse schemes 	The site works include a pipe and headwall construction associated with the distribution of stormwater (ie. discharge bask to Georges River)

Clause	Requirement	Compliance
111 (1)	Development for the purpose of stormwater management systems may be carried out by or on behalf of a public authority without consent on any land.	The works are proposed to be carried out on behalf of Council.
111 (2)	<p>A reference in this clause to development for the purpose of stormwater management systems includes a reference to development for any of the following purposes if the development is in connection with a stormwater management system:</p> <p>construction works, and routine maintenance works, including maintenance dredging to remove sediment build up in a stormwater canal or at exit points to natural waterways that affects the efficiency of the stormwater management system, environmental management works</p>	The construction works are associated with providing a stormwater management system.

APPENDIX G: PRELIMINARY SITE INVESTIGATION

APPENDIX H: CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

APPENDIX I: ABORIGINAL ARCHAEOLOGY DUE DILIGENCE ASSESSMENT

APPENDIX J: GEOTECHNICAL REPORT

APPENDIX K: EXAMPLE CONTACT DETAILS SIGN