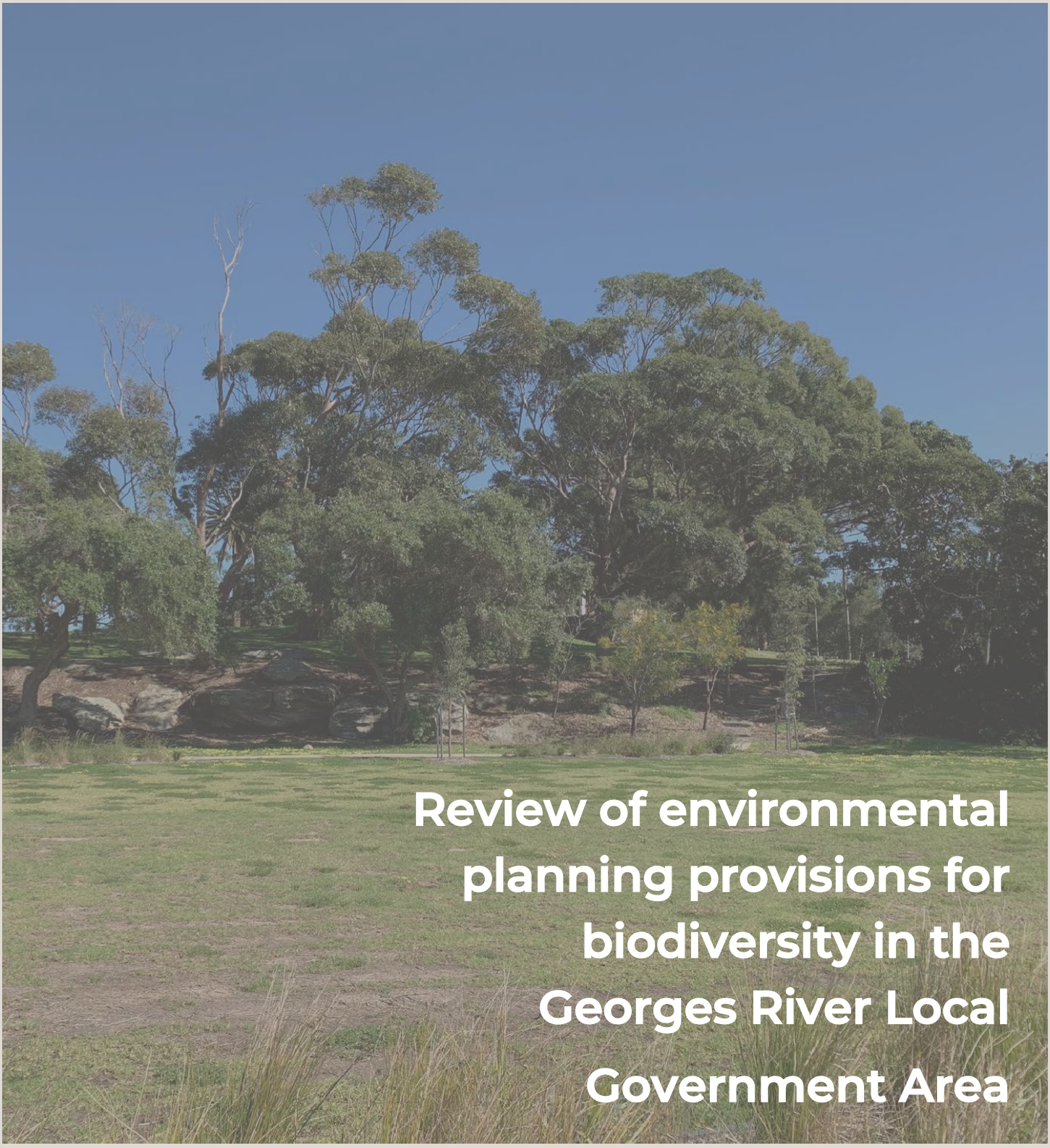

Review of environmental planning provisions for biodiversity in the Georges River Local Government Area

Prepared on behalf of Georges River Council

Final Report

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Ethos Urban

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Executive Summary

Trees are an important part of the Georges River local government area (LGA), covering an estimated 38% of its land area (including mangroves) (Total Earth Care, 2021). While present individually and in small groupings throughout the LGA, trees are particularly prevalent in suburbs such as Lugarno located in the west and south- west close to the Georges River. In these areas, native treesare frequently found in remnant or advanced regrowth patches of bushland.

Trees can have a range of environmental, social and economic benefits (United Nations, 2016). These include:

- cooling the air, reducing the urban heat island effect
- filtering air pollutants, including fine particulates
- improve water quality
- improve physical and mental health
- increase property values.

Critically, they strengthen biodiversity by providing habitat,food and protection for plants and animals. Trees have a significant role in contributing to the LGA being part of one of the most species diverse bioregions in Australia (GSC, 2018), with the LGA:

- having 460 flora species and 21 vegetation communities, including 7 Threatened Ecological Communities (TECs)
- having 139 native fauna species, including 11 threatenedfauna species
- supporting connectivity between the Holsworthy MilitaryReserve and the Georges River National Park to the west, and the Royal National Park to the south.

Importantly, engagement undertaken by council has shown the local community values the importance of trees and biodiversity. Recently (2019), Council has reported that as part of preparing the Georges River Local Strategic Planning Statement 2040 “we consistently heard the following key messages:

- our community values our trees and open spaces; they have asked that further greening across the LGA take place particularly in centres, areas with higher density living and in our neighbourhoods”.

However, if not well managed, development can have an adverse impact on trees. Total Earth Care (2021) has foundthat likely due to increased development, diversity and flora and fauna species in the LGA has decreased over time.

In response to this, in 2020 Council engaged Total Earth Care to undertake a Biodiversity Study of the LGA. The intent of this study was to provide a robust evidence base and set of recommendations as the first step in developing a comprehensive Biodiversity Strategy. One of the key recommendations was to “utilise the results of this Biodiversity Study and principles of Ecologically Sustainable Development to develop biodiversity controls inthe Georges River LEP and DCP”. Council planning officers have considered this recommendation and determined to prepare a suite of biodiversity provisions for council’s consideration.

Due to its significance, biodiversity is of interest to all threelevels of government in Australia. Consequently, there is a complex and multi-tiered framework for its management. At the Commonwealth level this includes the Environment Protection and Biodiversity Conservation Act 1999, and at the State level this includes the Biodiversity Conservation Act 2016 and State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017. Council’s measures comprise planning instruments and policy and guidance. Planning instruments are both strategic and statutory in nature, and include the Georges River Local Strategic Planning Statement, the Georges River Local Environmental Plan 2021 and the Georges River Development Control Plan 2021. Non-planning documents include the Tree Management Policy and Biodiversity Guide.

Review of this framework was undertaken to focus the scope of the biodiversity provisions. The review showed that the existing framework adequately addresses:

- trees located in very high value locations such as those in threatened ecological communities, in particular through the Environment Protection and Biodiversity Conservation Act 1999 and the Biodiversity Conservation Act 2016
- trees forming bushland in public parks and reserves, in particular through State Environmental Planning Policy (Biodiversity and Conservation) 2021
- the management of individual trees proposed to be disturbed through either the development process or separate to the development process, in particular through the Biodiversity Conservation Act 2016, State Environmental Planning Policy (Biodiversity and Conservation) 2021) and the Tree Management Policy.

The review showed that there are a number of areas where council's planning framework could be improved. This includes:

- not giving optimal protection to all areas of high value terrestrial biodiversity (as distinct from very high value areas protected by Commonwealth and State measures)
- not giving full effect to the provisions of strategic plans,including the South District Plan and Georges River Local Strategic Planning Statement 2040, in particular in relation to taking a more strategic approach to the strengthening of the Sydney Green Grid.

It is in particular considered that the framework does notfully facilitate achievement of the following council policy aims:

- increase canopy cover to 40% by 2038
- target the planting of new trees in streets and parks inareas with less than 15% canopy coverage, includingKogarah, Kogarah Bay, Sans Souci, Hurstville and Beverly Hills.

In addition, parts of council's planning framework have a number of structure and language issues, including a lackof integration of provisions and unnecessary duplication of other provisions. This can cause a lack of clarity around policy intent, resulting in implementation challenges in a development assessment (DA) context.

To inform development of provisions that are generally consistent with current practice, high level review of all other Sydney council's local environmental plans was undertaken, and detailed review was undertaken of the local environmental plans and development control plans of adjoining councils. This review found that Georges Riveris one of the few Sydney councils that does not currently have provisions for terrestrial biodiversity in its local environmental plan, and is the only council in the South District not to have such provisions.

Based on the findings of the scope and benchmarking review, it is recommended that council:

- amend the Georges River Local Environmental Plan 2021 to include a new overlay in Part 6 "Additional LocalProvisions" entitled "Terrestrial Biodiversity" aimed at protecting areas of high biodiversity value
- amend the Georges River Development Control Plan2021 to provide further support for this overlay.

The key mechanisms proposed as part of the Terrestrial Biodiversity overlay are:

- clear mapping of areas considered to be of high biodiversity significance by the Biodiversity study
- where a property is affected by mapping, trigger consideration of a number of performance based mattersas part of the DA process
- these matters are aimed at protecting and enhancing biodiversity values, and will require development to demonstrate alignment with the avoid, minimise or mitigate approach to environmental impact.

It is important to note that as this overlay is consideredto represent areas of environmentally sensitive land, development that is otherwise able to be carried out through the complying development pathway under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 will now require a DA to be approved by council. This will include new dwelling houses, and additions and extensions to dwelling houses. While in the interests of efficiency development of a planning framework based around a small number of quantifiable controls was considered, ultimately a more flexible, merit based framework was considered more appropriate due to the protection of high quality biodiversity being heavilycontext dependant.

The amendments to the Georges River Development Control Plan 2021 will further support the overlay by providing greater detail on the matters for consideration andaddress strategic biodiversity values. Address of strategic biodiversity values is proposed through:

- replacement of the existing Green Web map that onlycovers the former Kogarah LGA with clear mapping of area considered by this biodiversity study to be of valuein contributing to connectivity between areas of high biodiversity significance
- where a property is affected by mapping, trigger consideration of a number of performance based mattersas part of the DA process
- these matters are aimed at promoting supplementary planting of native trees or vegetation, in particular along property boundaries.

The mapping also has the potential to focus council's effortson areas where greatest strategic benefit may be obtained as part of its public domain planting program.

It is not considered that these LEP provisions will preclude development from otherwise being able to be considered through the complying development pathway under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

A small number of complementary text based amendments are also proposed to the Georges River Local Environmental Plan 2021 and the Georges River Development Control Plan 2021. These are not considered substantive in nature, and are not considered to have a material impact on development in their own right. Amendment to land use zoning or principal development standards such as minimum lot size, maximum building height or maximum floor spaceratio are not proposed.

Over the longer term and following the completion of the Biodiversity Strategy, it is recommended that council consider integrating the provisions of the Tree Management Policy and the Biodiversity Guide as they relate to the disturbance of trees and vegetation as part of the development process regulated under the Environmental Planning and Assessment Act 1979 intothe Georges River Local Environmental Plan 2021 and the Georges River Development Control Plan 2021 asappropriate.

Overall, it is considered that the proposed amendments achieve an appropriate balance between protecting and enhancing biodiversity and enabling reasonable development consistent with the objectives of land use zoning. In addition, it is considered that the proposed amendments:

- give effect to key State and council strategic plans suchas the South District Plan and Local Strategic PlanningStatement 2040
- are consistent with statutory drafting considerations such as Ministerial directions
- avoid unnecessary duplication of other, existing Commonwealth, State and council planning provisions.

Introduction

1.0 Introduction

What is this document?

This report presents the findings of a review of the Georges River Local Environmental Plan 2021 (the GRLEP2021) and the Georges River Development Control Plan 2021 (the GRDCP2021) provisions for terrestrial biodiversity.

Why has it been prepared?

The purpose of this review is to implement the following recommendation of the Georges River Biodiversity Study:

- (Total Earth Care) to "utilise the results of this Biodiversity Study and principles of Ecologically Sustainable Development to develop biodiversity controls in the Georges River LEP and DCP".

Who has prepared it?

This report has been prepared by Ethos Urban on behalf of council.

When was it prepared?

The report was prepared in October 2021 following the completion of the Georges River Biodiversity Study.

How is this document to be used?

This document is to be used to:

- inform conversations with broader council staff, and where appropriate stakeholders and the community, about biodiversity and its management under a proposed amended planning framework approach
- assist council in making a decision about whether to support the proposed amended planning framework
- subject to council support, assist council strategic planning staff in preparing a planning proposal seeking Department of Planning and Environment (DPE) approval to amend the existing planning framework.

How has it been prepared?

The review was based on the Georges River Biodiversity Study prepared by Total Earth Care 2021 and involved technical review supported by collaborative engagement with Total Earth Care, council strategic planning staff and council environmental planning staff.

The scope of this review is limited to:

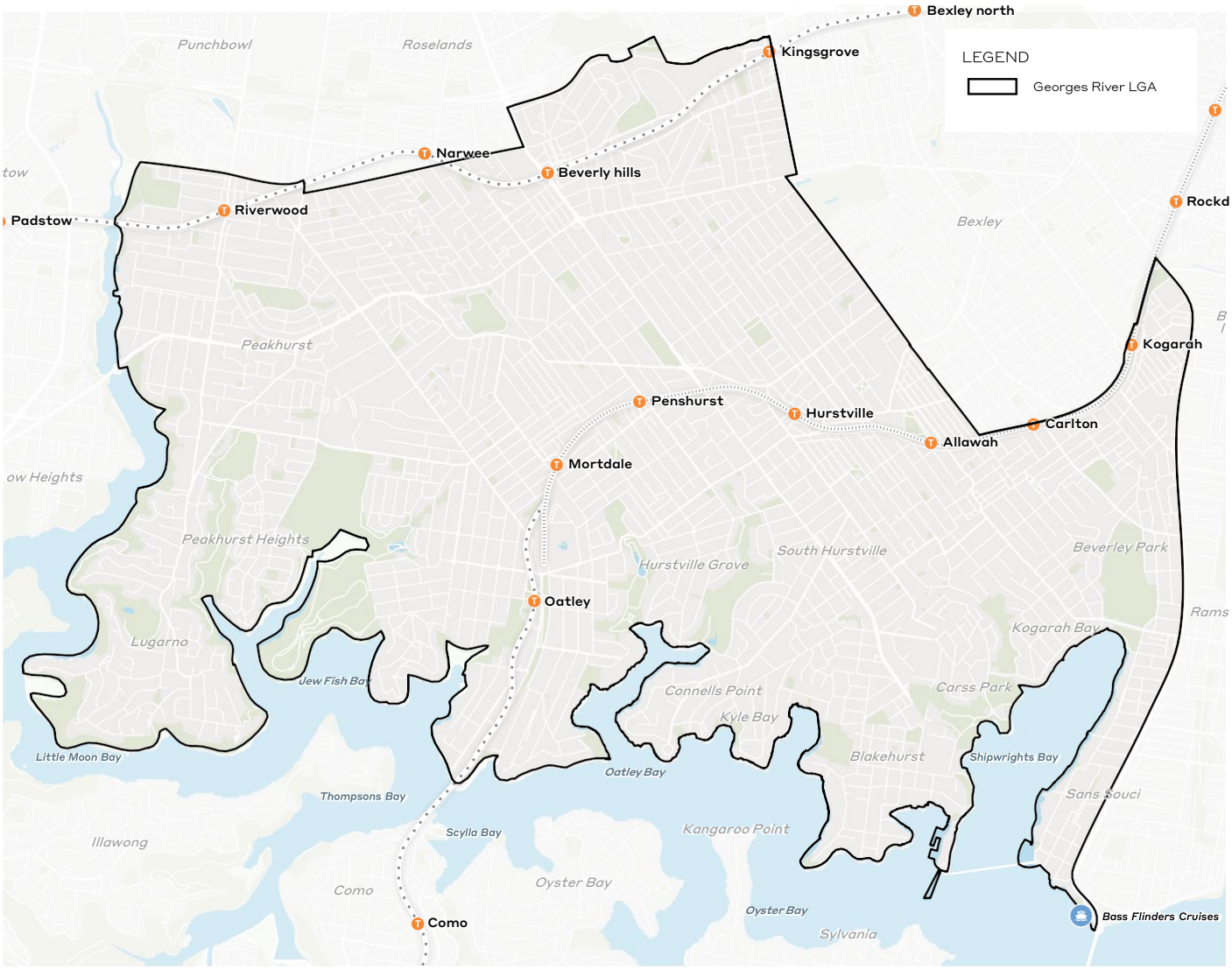
- terrestrial biodiversity
- environmental planning matters within the remit of the Environmental Planning and Assessment Act 1979 (theEP&A Act)
- the impact on biodiversity through the clearing of trees and vegetation as part of the development process regulated under the EP&A Act.

Impact on biodiversity through disturbance of trees and vegetation, including clearing, pruning or similar activities not associated with the development process under the EP&A Act will continue to be managed by council under its Tree Management Policy as provided for under the Vegetation SEPP. This involves a separate permit process, distinct from the making of a development application (DA).In addition, the focus of this review is on:

- development on private land
- development that has the potential to impact trees and vegetation of high biodiversity significance, or where a strategic approach is warranted such as creating or strengthening biodiversity corridors.

While parts extend to cover activities on public land such as parks and reserves (eg, council or other public authority construction of a new amenities building), in general this excludes roads and associated elements such as street trees unless there is a clear connection with private development.

This report applies to the entire Georges River LGA asshown in Figure 1.



01 Study Area

What is its structure?

The report is structured as follows:

- Part 1 – Introduction: introduces this review
- Part 2 – Background: outlines key relevant matters, including those that helped shape the focus and scopeof this review
- Part 3 – Review of council's planning framework: assesses the capability of the existing planning framework to effectively manage terrestrial biodiversity inGeorges River
- Part 4 – Benchmarking: reviews other Greater Sydney council approaches to terrestrial biodiversity
- Part 5 – The proposed planning framework: presents proposed amendments to better manage terrestrial biodiversity in Georges River
- Part 6 – Next steps: briefly outlines what actions council may consider taking in the future to further improving the planning framework
- Appendices: provides relevant supporting documentation.

Background

2.0 Background

2.1 Biodiversity

Biodiversity is widely regarded as important, both intrinsically and to humans (Australian Government, 2016).According to the CSIRO (2014), biodiversity not only contributes to positive environmental outcomes, but also promotes positive social and economic outcomes. Given this, it is a matter that is within the remit of environmental planning in NSW under the EP&A Act.

While there is no one single universal definition of biodiversity, there is a high level of consistency among appropriate definitions.

In Australia's Strategy for Nature 2019–2030, the Commonwealth government defines biodiversity as:

- "the variety of all life forms on earth, the different plants,animals and micro-organisms, and the ecosystems of which they are a part".

The NSW Government defines biodiversity as:

- "the variety of life on earth and can be thought of in terms of genetic diversity, species diversity and ecosystem diversity. Biodiversity includes all the different plants (from lichen and mosses to shrubs and trees), animals (invertebrates, frogs, reptiles, birds and mammals) and micro-organisms such as bacteria".

For the purposes of environmental planning in NSW, the Biodiversity Conservation Act 2016 (the BC Act) defines biodiversity as:

- "the variety of living animal and plant life from all sources, and includes diversity within and between species and diversity of ecosystems".

The key, common strand between these definitions is variety, and in particular variety across plant and animal species.

2.2 The Components of Biodiversity

Under the BC Act, biodiversity is underpinned by a number of values:

- **vegetation integrity:** being the degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state
- **habitat suitability:** being the degree to which the habitat needs of threatened species are present at a particular site.

The BC Act, together with other relevant literature, also establishes a common language in which to frame biodiversity considerations. Key terms and their definitions are provided in **Part 5 – The proposed planning framework and Appendix 1 – Glossary** of this report.

2.3 Trees as a key contributor to biodiversity

As is identified by the BC Act, vegetation, and in particular trees, are key to biodiversity. According to the United Nations (2016), trees strengthen biodiversity by providing habitat, food and protection for plants and animals. In addition, trees can have a range of other environmental, social and economic benefits, including:

- cooling the air, reducing the urban heat island effect
- filtering air pollutants, including fine particulates
- improve water quality
- improve physical and mental health
- increase property values.

Multiple trees come together to form an ecological community. Some ecological communities are considered to be threatened due to being critically endangered, endangered or vulnerable through past or current threatening process such as clearing.

While most grouping of trees can provide biodiversity value, in urban areas such as Georges River it is usually native vegetation in bushland settings that are of the highest value.

Considering the remit of the EP&A Act, it is considered that the best strategy for the GRLEP2021 and GRDCP2021 to adopt for biodiversity is to manage the effects of development on trees and other forms of vegetation.

2.4 Trees in Georges River

Trees – be they grouped together as bushland, forming avenues of street trees or individually - are an important part of the Georges River local government area (LGA). Groupings of trees to form contiguous canopy coverage make a particularly important contribution to a range of positive environmental outcomes, including biodiversity. Already located in one of the most species diverse bioregions in Australia (GSC, 2018), the LGA:

- has an estimated tree canopy cover of 38% (including mangroves)
- supports eight (8) different threatened or endangered ecological vegetation communities covering 18.4 ha
- is home to 111 native animal species, including three (3) threatened species (Total Earth Care, 2020).

The prevailing character of much of the LGA is that of detached houses in curated garden settings. On this basis, most trees are either single specimens or form part of small grouping. Mapping prepared by council and included in the LSPS shows that many streets support rows of street trees, which in particular can assist in animals moving between habitats. The main exceptions to this prevailing character are:

- areas occupied by higher intensity uses such as centres and industrial areas
- areas in the west and south-west of the LGA close to the Georges River.

In general, few trees are located in areas occupied by higher intensity uses such as centres and industrial areas. However, there is a generally a higher proportion of canopy coverage, in particular in private land, in the western and south-western parts of the LGA. Many of these trees are native and form bushland clusters, outcomes that are typically more supportive of higher biodiversity. This is supported by mapping of both urban heat island risks and bushfire risks prepared by council and included in the LSPS.

In addition, there is variance in the nature of trees in these generally more vegetated parts of the LGA. This was considered by Ethos Urban in 2020 as part of the Foreshore Scenic Character Study. This review undertook a fine grain assessment of local character which included considering trees. The results of this review showed that certain areas such as the Bush Suburban local character area have a prevalence of native vegetation in both the public and private domains.

2.5 The Views of the Community

Engagement undertaken by council as part of the recent preparation of key policy documents has shown that trees are highly valued by the Georges River community:

- "Consultation for Council's Community Strategic Plan has made it clear that our residents value trees and green spaces and want Council to be an environmental leader" (Georges River Council, 2020)
- "Our community values our trees and open spaces. They have asked that further greening across the LGA take place particularly in centres, areas with higher density living and in our neighbourhoods" (Georges River Council, 2020).

Of the over 1,000 submissions received on the draft GRLEP2021 as part of its public exhibition, the largest proportion (around 40%) of submissions were made in relation to protection of trees.

2.6 Council Policy

In response, council policy consistently seeks to protect trees. This is not only in the form of planning instruments, but also other, overarching policy. For example, the community vision statement under council's Community Strategic Plan is that "In 2028, the Georges River area is known as a clean, green and welcoming place with beautiful and accessible bushland and waterways". Similarly, council's overarching future focused policy document – Georges River 2050 – also seeks that "In 2050 the Georges River area will be an accessible, green, diverse and innovative place, community and economy. In 2050, Georges River is Connected, Naturally".

Council's planning instruments all promote the protection of trees. Under the LSPS, the vision for Georges River is "A productive place to live, work and enjoy - with diverse, active, green, well designed and connected places".

Council has adopted a goal of 40 per cent tree canopy coverage in the Georges River area by 2038. This is being promoted by council through tree planting in parks and streets, including the Forest Roads, Canopy Corridors and the Cool Places, Urban Oasis projects.

2.7 Threats to trees and biodiversity

As with many other parts of Greater Sydney, Georges River is forecast to grow and change over the next 20 years. According to the LSPS, the population is forecast to grow from 153,450 in 2016 to 185,346 in 2026. In addition, the demographic of the population is changing, with the proportion of older persons forecast to grow and householdsize forecast to decrease. This combination of a growing population and changing demographics has generated a need to provide for 14,000 new homes over the next 20 years.

Much of this growth is planned to occur in the form of higher density uses such as residential flat buildings and mixed use development in and around centres aligned with rail stations such as Hurstville and other centres such as Beverly Hills and Mortdale. While these parts of the LGA donot have a particularly high level of tree canopy coverage, there is a risk to biodiversity posed by a high proportion of sites being occupied by built form and hardscaping. Conversely, there are opportunities to implement more innovative measures such as deep soil planting, green roofs and green walls. This is addressed in the relevant parts of council's planning framework.

Lower levels of growth occurring in a more incremental manner are planned for most other parts of LGA, including those areas in the west and south-west with the highest existing levels of tree canopy coverage. However, despite this, review of recent development statistics shows that these areas are still subject to considerable development activity. Over the period 2016-18, council approved close to 400 DAs in these areas. The main types of DA were:

- additions and alterations
- new primary dwelling
- new secondary dwelling.

If not well managed through an effective local planning framework these forms of development can have an impact on trees. Total Earth Care (2021) has found that likely due to increased development, diversity and flora and fauna species in the LGA has decreased over time.

While not a large proportion of development, due to their nature, dual occupancies can also have a particular impact on trees. The greatest number of DAs were for land in Blakehurst and the greatest number of new secondary dwellings and multi-unit dwellings were for land in Lugarno. This is of note as both suburbs can be considered to have a relatively larger area of tree canopy coverage than many other parts of the LGA.

2.8 The planning process so far

In recognition of both their value and the threats they face from development, trees are protected throughout NSW through a range of measures. One of the main ways in which this occurs is through the local planning frameworks comprising LEPs and DCPs. Prior to the GRLEP2021 and GRDCP2021 taking effect in 2021, the local planning framework has been informed by a substantial body of knowledge comprising studies, strategies and plans, including:

- Hurstville Street Tree Management Study 2015
- Kogarah Street Tree Management Strategy and Masterplan 2009
- Georges River Council Vegetation Mapping Report 2018
- Sydney Green Grid – South District
- SSROC Southern Sydney Connected Corridors for Biodiversity Habitats 2018/19.

In 2018, council resolved to prepare GRLEP2021 and GRDCP2021. As part of preparing these documents, council commissioned a number of new, topic based studies to provide an updated evidence base to inform planning policy decisions. One of these studies was theGeorges River Strategic Directions Paper (the Paper) prepared by Ethos Urban. Following consideration of this study, council proposed to make changes to the Foreshore Scenic Protection Area (FSPA). This included extending the FSPA to include parts of the former Kogarah LGA, and reducing the amount of land it covered in the former Hurstville LGA. These proposed changes were publicly exhibited as part of the draft Georges River LEP 2021. Of the 1,153 community submissions were received during this period, 40% of these were made in relation to the proposed reduction in the extent of the FSPA. Key issues raised included:

- increase in housing density will impact flora and fauna in the area (specific trees, parks, gardens and fauna)
- held the 'green and leafy' character in high regard, and expressed concern that reducing the extent of the existing FSPA would erode this character
- all trees visible from the foreshore must be protected
- concerns about pollution, in particular water pollution from increased density and the potential impacts from run off into the Georges River
- objects to more development (i.e. more dual occupancies) and the associated amenity impacts such

as traffic, on street parking, safety, privacy, and increase in demand for schools

- council should undertake a full biodiversity assessment of the LGA to inform the development of the new LEP.

As can be seen, trees and biodiversity were a significant local community issue.

The Local Planning Panel (LPP) did not support the proposed reduction. Rather, the existing boundaries of the FSPA were retained, with it also being expanded into part of the former Kogarah LGA and new provisions covering minimum landscaped area and trees included. The LPP further recommended:

- 'Council as part of the preparation of the draft Local Environmental Plan in 2021/2022, further define the role, mapped extent and zoning of the FSPA, in both the former Hurstville and Kogarah Local Government Areas, having regard to those properties and ridge lines visible to and from the Georges River and its tributaries, and associated environmental protection applying to those areas in order to better reflect the objectives of Clause 6.7 of the Georges River Local Environmental Plan 2021. This may include the consideration of additional environmental protection zones or modifications of the FSPA'.

In response, council commissioned two studies:

- The Foreshore Scenic Character Study: to address the recommendations of the LPP
- The Biodiversity Study: to identify and plan for areas of high biodiversity values in the LGA.

The Foreshore Scenic Character Study found that:

- the focus of the FSPA should be on scenic character
- while trees and vegetation form a key part of scenic character, inclusion of the additional provisions wouldoverly emphasise biodiversity and risk clarity of policy intent and challenges in implementation in a development assessment context
- rather, it was suggested that biodiversity provisions be include in a new biodiversity overlay
- This would have the added benefit of strengthening council's ability to manage terrestrial biodiversity values.

2.9 The biodiversity study

Council commissioned Total Earth Care to undertake the Biodiversity Study. A copy of this study is available on Council's website.

The scope of the Biodiversity Study was to:

- identify the native and exotic flora and fauna present inthe LGA
- analyse changes in biodiversity values
- identify key opportunities to protect, conserve and manage biodiversity
- investigate options to enhance green corridors
- identify areas of high biodiversity values
- undertake engagement with stakeholders and the community.

Key findings of the study as summarised by Total Earth Care are as follows

Vegetation communities

- there are 21 vegetation communities within the LGA, covering about 724ha. This includes 17 native vegetation communities covering about 389ha (54%) and four urban/non-native communities covering about 335ha (46%)
- the most common native vegetation type is 'Coastal lEnriched Sandstone Dry Forest' which covers about174ha (24%) of the LGA. This is a dry open forest community that provides the most abundant native habitat type for flora and fauna
- there are seven Threatened Ecological Communities (TECs) within the LGA, one of which is aquatic (seagrass meadows)

Fauna

- 128 fauna species were recorded during the field surveys and another 27 species were reported from the community. This includes 139 native species (90%) and 16 exotic species (10%)
- the most diverse fauna group were birds, of which 104 species were recorded
- 11 threatened fauna species were recorded during the surveys, three of which have never been previously recorded in the LGA
- a Grey-headed Flying-fox (Pteropus poliocephalus) campis located in Oatley, around Myles Dunphy Reserve, as such this threatened species is frequently observed across the LGA

- the LGA has various habitat types present including dryand moist forests, intertidal areas and wetlands. The location of the LGA along the Georges River and Salt Pan Creek are important in supporting the diversity of habitat types
- the diversity of fauna species has generally decreased over time, this is likely due to increased development and pressures of introduced predatory species

Flora

- 460 flora species were recorded during the field surveys including 322 native species (70%) and 138 exotic species (30%)
- these species encompass 116 different plant families. The most diverse plant family is the grasses (Poaceae) ofwhich 46 species were recorded
- one threatened flora species and one threatened flora population were recorded during the field surveys
- diversity of flora species has generally decreased over time, this is likely due to extensive vegetation clearing in the early 20th century, particularly in areas with shale influence soils, as well as the invasion of weed species

Weeds and pests

- 139 weed species were recorded during the field surveys, several of which are priority weeds within NSW and/ or Weeds of National Significance
- most weed species were recorded in riparian areas and in highly disturbed areas.
- Foxes (Vulpes vulpes) and cats (Felis catus) were frequently observed. These species are a major threat to the survival of many native fauna species due to direct predation
- Noisy Miners (Manorina melanocephala) are prevalent across the LGA, particularly in urban areas and in adjacent woodlands. The species is a native aggressive honeyeater species that can often exclude other bird species in an area

Connectivity

- green corridors and habitat connectivity is most prevalent along the foreshore areas, particularly in the south and west of the LGA
- large parks and reserves, such as Georges River National Park, Gannons Park and Oatley Reserve provide important habitat refuges and support connectivity within the LGA and between the large areas outside the LGA such as Holsworthy Military Reserve and the Georges

River National Park to the west, and the Royal National Park to the south

- some street tree corridors and vegetation within private property provide important green corridors between larger parks and reserves.

The Biodiversity Study made a number of recommendations intended to “protect, conserve and improve the biodiversityof the LGA”. This includes the following recommendation for the planning framework:

- Utilise the results of this Biodiversity Study and principles of Ecologically Sustainable Development to develop biodiversity controls in the Georges River LEP and DCP.

While not specifically intended to be implemented through the planning framework, a number of recommendations are also of relevance. For example, recommendation GC1 provides guidance on what the planning framework may contain:

- include provisions for connectivity improvements and habitat structures for key species within the LGA (i.e. gliders, possums, birds)
- include consideration of gap-crossing distances, structural connectivity elements and habitat patches (islands) and increasing ground and mid-storey flowering vegetation suitable for small birds and reptiles.

2.10 A framework of measures

A comprehensive framework of Commonwealth, State and local government provisions exist to address biodiversity (refer Table 1).

It is important to consider Commonwealth and State provisions to ensure that the local planning framework focusses on the right matters, addressing gaps while avoiding duplication.

In general:

- Commonwealth provisions focus on biodiversity matters of the highest level of importance. Most matters are not of high relevance to Georges River.
- State provisions also focus on higher order matters, and also establish a common legislative framework that also gives council's measures power and enforceability.

In addition to provisions that have significant content addressing biodiversity, a number of other provisions more indirectly deals with biodiversity. These include:

- Roads Act 1993
- Work Health and Safety Act 2011
- Electricity Supply Act 1995
- State Environmental Planning Policy (Exempt and Complying Development 2008
- Australian Standard AS4373 – Pruning of Amenity Trees
- Australian Standard AS 4970 – Protection of Trees on Development Sites.

Commonwealth	State	Local
Acts	**Acts**	**Planning Instruments**
- Environment Protection and Biodiversity Conservation Act 1999	- Environmental Planning and Assessment Act - Biodiversity Conservation Act 2016 - Local Land Services Act 2013	- Georges River Local Environmental Plan2021 - Georges River Development Control Plan2021 - Georges River Local Strategic Planning Statement (GRLSPS)
	Planning instruments	**Non-planning instruments**
	- The Greater Sydney Region Plan - AMetropolis of Three Cities - South District Plan - State Environmental Planning Policy (Biodiversity and Conservation) 2021	- Tree Management Policy - Biodiversity Guide - -

Table 01 A framework of measures managing trees and biodiversity

2.11 Commonwealth and StateMeasures

2.11.1 Legislation

Environment Protection and Biodiversity ConservationAct 1999

Type	Act
Level	Commonwealth

The Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) is the Australian Government's key legislation that addresses biodiversity.

Its overall intent is "to provide for the overall protection of the environment, especially those aspects of the environment that are matters of national environmental significance (MNES).

It primarily achieves this overall intent by requiring approval of any proposal that has a significant impact on a matter ofnational environmental significance (MNES).

There are nine (9) MNES under the EPBC Act:

- world heritage properties
- national heritage places
- wetlands of international importance (often called 'Ramsar' wetlands after the international treaty underwhich such wetlands are listed)
- nationally threatened species and ecological communities
- migratory species
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mining)
- a water resource, in relation to coal seam gas development and large coal mining development.

Under the EPBC Act, approval is required for actions that have, will have, or are likely to have a significant impact on MNES.

As is identified in section 1 of this report, several MNES are within, have potential habitat within or are in proximity to the study area.

While there is potential for the provisions of the EPBC Act to be triggered, it is considered that the likelihood of this is rare and unlikely as part of ordinary, domestic scale development processes.

Biodiversity Conservation Act 2016

Type	Act
Level	State

The Biodiversity Conservation Act 2016 (the BC Act) is the NSW Government's key legislation that addresses biodiversity.

Its overall intent is "to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development".

It primarily achieves this overall intent by requiring approval for proposals that have any impact on terrestrial biodiversity. In particular, where certain thresholds are reached, a Biodiversity Offsets Scheme is triggered. This requires an Accredited Assessor to submit a Biodiversity Development Assessment Report (BDAR) before development consent can be provided.

Of relevance to Georges River are the vegetation clearing thresholds identified in Table 2.

Considering the prevailing lot size pattern in Georges River,it is unlikely that many proposals would involve the clearing of 2,500sqm or greater of vegetation. On this basis, it is expected that the BC Act would seldom be triggered as part of standard DA processes. However, clearing of areas below this threshold can still be triggered for approval by council's DCP.

Minimum lot size of land	Area of clearing
Less than 1 hectare	0.25 hectare or more
Less than 40 hectares but not less than 1 hectare	0.5 hectare or more

Table 02 Biodiversity Offsets Scheme Area Clearing Table

Environmental Planning and Assessment Act

Type	Act
Level	State

The EP&A Act is the NSW government's key environmental planning legislation.

Its overall intent is to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources.

It primarily achieves this overall intent by establishing a system to manage development, including the use of land, subdivision, building work and other works such as earthworks.

Biodiversity is integrated into the EP&A Act in a number of ways. This includes embedding ecologically sustainable development (ESD) at its highest level through object (b):

- to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment

Section 3.14 of the Act allows for environmental planning instruments, which includes the Georges River LEP 2021, to included provisions aimed at:

- (e) protecting or preserving trees or vegetation
- (e1) protecting and conserving native animals and plants, including threatened species and ecological communities, and their habitats

There are also a number of process requirements, including referral to the Chief Executive of the Office of Environment and Heritage on matters concerning threatened species and the modification or imposition of conditions of consent on development requiring an EIS "to eliminate or reduce the detrimental effect of the activity on the environment (including critical habitat) or threatened species, populations or ecological communities, or their habitats.

Under the Act, ecologically sustainable development has the same meaning it has in section 6(2) of the Protection ofthe Environment Administration Act 1991 (the PEA Act).

Section 6 (2) of PEA Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

- the precautionary principle
- inter-generational equity
- conservation of biological diversity and ecological integrity
- improved valuation, pricing and incentive mechanisms.

In this manner, the Act provides a strong safeguard against development that has the potential to cause serious harm tobiodiversity values.

2.11.2 Strategic Plans

The Greater Sydney Region Plan - A Metropolis of ThreeCities and the South District Plan

Type	Planning instrument (strategic plans)
Level	State

The Greater Sydney Region Plan - A Metropolis of Three Cities (the Region Plan) and the South District Plan (the District Plan) are the NSW government's key strategic landuse plans for the Greater Sydney Region and the South District, which includes Georges River.

Their overall intent is to reshape Sydney as a city of "three cities where most residents live within 30 minutes of their jobs, education and health facilities, services and great places".

It primarily achieves this overall by setting policy directions for three key themes, including sustainability. Sustainability is promoted through three objectives:

- Objective 27: Biodiversity is protected, urban bushland and remnant vegetation is enhanced.
- Objective 30: Urban tree canopy cover is increased.
- Objective 32: The Green Grid links parks, open spaces, bushland and walking and cycling paths.

The District Plan seeks to give effect to these objectives through the priorities and actions identified in Table 3.

The Region and District Plan also include a number of other provisions that have a relationship with sustainability, biodiversity and tees such as District Plan Planning Priority S18 Adapting to the impacts of urban and natural hazards and climate change.

Planning Priority	Action
Planning Priority S14: Protecting and enhancing bushland, biodiversity and scenic and cultural landscapes and better managing rural areas	Action 64: Protect and enhance biodiversity by: - supporting landscape-scale biodiversity conservation and the restoration of bushland corridors - managing urban bushland and remnant vegetation as green infrastructure - managing urban development and urban bushland to reduce edge-effect impacts
Planning Priority S15: Increasing urban tree canopy cover and delivering Green Grid connections	Action 69: Expand urban tree canopy in the public realm
	Action 70: Progressively refine the detailed designand delivery of: - Greater Sydney Green Grid priority corridors and projects important to the District - opportunities for connections that form thelong-term vision of the network - walking and cycling linksfor transport as well as leisure and recreational trips

Table 03 South District Plan planning priorities and actions

2.11.3 Statutory Plans

State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017

Type	Planning instrument (environmental planninginstrument)
Level	State

The overall intent of State Environmental Planning Policy (Biodiversity and Conservation) 2021 is "to protect the biodiversity values of trees and other vegetation in non-rural areas of the State" and "to preserve the amenity of non-rural areas of the Statethrough the preservation of trees and other vegetation". It primarily achieves this intent by working together with the BC Act and the Local Land Services Act 2013 to regulate clearing of native vegetation on urban land and land zoned for environmental conservation or management that does not require development consent. Specifically, it applies to the clearing of:

- native vegetation above the BOS threshold where aproponent will require an approval from the Native Vegetation Panel established under the Local Land Services Amendment Act 2016
- vegetation below the BOS threshold where a proponent will require a permit from Council if that vegetation is identified in the council's DCP.

The State Environmental Planning Policy (Biodiversity and Conservation) 2021 repealed the former clause 5.9 and 5.9AA of the Standard Instrument - Principal Local Environmental Plan and substantially reproduces the effectof these clauses. Councils will continue to regulate the clearing of vegetation (including native vegetation) below the BOS thresholds through their DCPs. However, through these changes councils are no longer able to require development consent for clearing of non-heritage vegetation under a provision in a DCP. Instead, Councils are provided with a scheme for regulating clearingof vegetation below the BOS thresholds through the issue of permits for clearing, including the ability to issue permits subject to conditions. The BOS does not apply to non-native trees or vegetation. Heritage vegetation will continue to be regulated under clause 5.10 of the Standard Instrument—Principal Local Environmental Plan.

Council's DCP will set out whether a permit is required to remove non-native trees or vegetation.

State Environmental Planning Policy No 19—Bushlandin Urban Areas

Type	Planning instrument (environmental planning instrument)
Level	State

The overall intent of State Environmental Planning Policy (Biodiversity and Conservation) 2021 is to protect and preserve remnant urban bushland in Sydney.

It primarily achieves this overall intent by providing a mechanism for the development of plans of management, regulating activities that could disturb certain bushland andproviding considerations for the making of LEPs.

In addition to protecting its environmental values, it also identifies the need to protect the aesthetic, community, recreational, educational and scientific values of bushland.

It focuses on the protection and management of bushland found on public open space and includes the minimisation of development impacts from adjoining land.

It applies to councils and public authorities as managers of public and Crown land. However, it does not apply to other public land such as national parks, forest reserves and Western Sydney Parklands.

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008

Type	Planning instrument (environmental planning instrument)
Level	State

The overall intent of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 (the Codes SEPP) is to streamline the approval process for development generally considered to be lower impact. Examples of this type of development includes:

- building a one and two storey home
- building a granny flat or secondary dwelling
- building a fence
- demolishing a building
- removing and pruning a tree.

It primarily achieves this intent by allowing certain types of development to avoid having to obtain a DA through following either an exempt or complying development pathway subject to compliance with certain pre-determined, quantifiable development standards.

Environmentally Sensitive Land

Certain development is excluded from the exempt or complying development pathways due to its location or type.

General exclusions for the exempt development pathway apply to land subject to the highest levels of environmental value such as declared areas of outstanding biodiversity value under the Biodiversity Conservation Act 2016 or land that is a wilderness area within the meaning of Wilderness Act 1987.

In addition, certain types of development such as gardensheds, driveways, earthworks and retaining walls are also excluded from the exempt development pathway where they are proposed in “an environmentally sensitive area”.

The definition of environmentally sensitive area includes a large number of areas. Of particular note for this review is the inclusion of land identified in a LEP such as the GRLEP2021 as being of high biodiversity significance.

Development is also not able to use the exempt development pathway if it involves the removal or pruning of a tree or other vegetation that requires a permit or development consent (except where certain exemptions apply) and the permit or development consent for that removal or pruning has not been obtained before the complying development certificate is issued.

The number and type of general exclusions from the complying development pathway is larger and broader. This includes most heritage items, heritage conservation areas, land subject to certain classes of acid sulfate soils and contaminated land. In terms of biodiversity matters, this includes land reserved under the National Parks and Wildlife Act, land reserved or dedicated under the Crown Land Management Act 2016 for the preservation of flora, fauna, geological formations or for other environmental protection purposes and land identified as being critical habitat under the Threatened Species Conservation Act 1995 or Part 7A of the Fisheries Management Act 1994.

Development that is otherwise subject to the complying development pathway under most housing codes such as the Housing Code and Low Rise Housing Diversity Code such as dwelling houses is also not complying development where identified in a LEP such as the GRLEP2021 as being within “environmentally sensitive land”. In addition, the complying development pathway is not available on a broad range of other areas, including within a “buffer area”, an “ecologically sensitive area” and within a protected area.

The inability to follow the complying development pathway does not mean that the development is unsuitable and will be refused as part of the DA process. Rather, it means that due to the nature of the matters advance quantification of solutions is not possible, and a more considered, merit based assessment is appropriate.

Protected Trees

The Codes SEPP defines ‘protected tree’ as follows:

- “a tree that requires a separate permit or development consent for pruning or removal, but does not include a tree that may be removed without development consent under this Policy”.

This includes trees covered by council’s Tree ManagementPolicy.

Protected trees cannot be removed as part of a Complying Development Certificate (CDC) and will require some formof protection during construction to ensure they are not damaged. For example, dwelling houses, must be setback at least 3m from each protected tree on the lot (measured from the base of the trunk of the tree).

Other Policy

A range of other policy also has an impact on biodiversity. In particular, this includes guides prepared to assist in the implementation of SEPPs such as the apartment design guideand the low rise medium density design guide. While these guides do not indirectly address biodiversity, through other provisions mainly related to landscaped open space such asminimum deep soil areas that have an indirect effect that can incrementally built up over time to increase the number of trees and therefore theoretically strengthen biodiversity.

Review of Council's planning framework

3.0 Review of Council's planning framework

3.1 Georges River Local Strategic Planning Statement 2040

Type	Planning instrument (strategic plan)
Level	Council

Assessment of effectiveness

The LSPS appropriately reflects and provides further detail on key planning policy in the Region Plan and the South District Plan. In particular, it provides clear and appropriate guidance on implementing the Green Grid.

The Georges River Local Strategic Planning Statement 2040 is council's key strategic plan.

Its overall intent is to shape a Georges River that is "a productive place to live, work and enjoy – with diverse, active,green, well designed and connected places". It primarily achieves this overall intent by giving effect to the Region Plan and District Plan through the local planning priorities and key actions set out in Table 4.

Local Planning Priority	Key Action
P17: Tree canopy, bushland,landscaped settings and biodiversity are protected, enhanced and promoted	A90: Develop a biodiversity strategy informed by the LGA-wide biodiversity study
P18: An environmentally friendly approach is applied to all development	A91: Provide provisions in Council's LEP 2021 to ensure development in business, industrial and highdensity residential zones is consistent with principles of sustainable practice and environmentally sensitive design.
P19: Everyone has access to quality, clean, useable, passive and active open and green spaces and recreation places.	A100: Investigate options to deliver Green Grid connections across the LGA A102: Prepare required new plans of management for Council-managed parksand reserves that guide the development and embellishment of open space to support a variety of uses and changing needs

Table 04 Georges River Local Strategic Planning Statement 2040 local planning priorities and key action

3.2 Georges River Local Environmental Plan 2021

Type	Planning instrument (strategic plan)
Level	Council

The Draft Georges River Local Environmental Plan 2021, as submitted to the Department of Planning and Environment in June 2020, will be council's primary environmental planning instrument following endorsement and finalisation. Its overall intent is to deliver on strategic planning policy, in particular the Georges River Local Strategic Planning Statement 2040.

It primarily achieves this overall intent by establishing a framework for the management of development. This framework has a number of integrated components, includingaims, objectives and controls. In general the framework structures its provisions in two main ways:

- place based provisions: apply to all forms of development in an area
- use or aspect based provisions: apply to a use (eg, dwelling house, residential flat building) or aspect (eg, earthworks, vegetation clearing) irrespective of location.

The GRLEP2021 contains a number of provisions that directly and indirectly address biodiversity, trees and related matters. A number of other provisions such as flood planning make reference to trees and vegetation, however they are not considered to be as focussed on these matters.

While distributed throughout the GRLEP2021, biodiversity and trees are largely addressed through Part 6: Additional Local Provisions. In general, additional local provisions follow a template structure comprising:

- objectives
- application
- matters for consideration
- decision criteria.

Assessment of effectiveness

Given the evolution in approach to administering the Standard Instrument, the distribution of provisions directly and indirectly addressing biodiversity and treesthroughout the LEP and DCP, including aims, land use zone objectives, use and development provisions, is appropriate.

A key outcome of the Biodiversity Study is the identification, mapping and description of areas considered to be of high biodiversity value. While there is mapping of these areas at the State level, the absence of a corresponding section in the GRLEP2021 dedicated to giving effect to this is considered to represent a significant risk to the protection and strengthening of these areas. It is accordingly recommended that council consider inclusionof such provisions.

The GRLPE2021 contains ten (10) particular aims covering thematic matters such as housing and jobs and cross thematic matters such as urban design. Three of the aims address biodiversity matters:

- (c) to promote and facilitate an ecologically and economically sustainable and vegetated urban environment in which the needs and aspirations of the community are realised
- (e) to protect and preserve the natural, built, cultural and Aboriginal heritage of Georges River, to build upon and enhance the character of local areas
- (g) to protect, preserve and enhance the natural landform, vegetation and open space, especially foreshores or bushland, in order to maintain landscape amenity and public access and use.

In summary, they:

- promote ecologically sustainable development
- promote a vegetated urban environment
- protect natural heritage
- enhance local character
- protect natural landform, vegetation and open space,including foreshores or bushland.

Assessment of effectiveness

While consistent with the conventional interpretation of EPIs each matter will be considered on a merit basis aspart of the planning balance, it is considered that these aims cover the right content to help achieve positive biodiversity outcomes.

3.2.2 Clause 2.1 Land Use Zones

The GRLEP2021 breaks the LGA into 15 land use zone. Each land use zone has a corresponding set of objectives and land use table.

Reflecting the prevailing land use patterns, most of the LGA is included in one of three residential zones:

- R2 Low Density Residential zone (the R2 zone)
- R3 Medium Density Residential zone (the R3 zone)
- R4 High Density Residential zone (the R4 zone).

Within this, the overwhelming majority of land is included in the R2 and R3 zones, including most of the areas in the west and south-west of the LGA with the highest existing tree canopy coverage.

The objectives for the R2 and R3 zones include the following objective:

- to provide for housing within a landscaped setting that enhances the existing environmental character of Georges River local government area.

The objectives for the R4 zone do not have a similar environment focussed objective. While this is a risk, it is considered acceptable on the basis that:

- only a relatively small part of the LGA is included within the R4 zone
- other provisions in the DCP as well as the provisions of the *State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development* enables Council to require new trees and vegetation through landscaping and deep soil.

Considerable areas of trees and vegetation are includedin the RE1 Public Recreation and RE2 Private Recreation zones. Critically, this includes higher value native vegetationin bushland locations such as Oatley Park. These zones have the following same objectives:

- to enable land to be used for public open space or recreational purposes
- to provide a range of recreational settings and activities and compatible land uses
- to protect and enhance the natural environment for recreational purposes.

A range of uses, including centre-based child care facilities, markets, recreation facilities (major) and restaurants or cafes and roads are permitted with consent in these zones. While it is acknowledged that the primary intent of these zones is to enable recreation uses, some areas are considered to be of such high biodiversity value that allowing recreation uses threatens the integrity of thesevalues.

On this basis, it is suggested that council give consideration to including a new, additional objective such as the following:

- to protect the environmental values of the land, in particular areas of high biodiversity significance

Assessment of effectiveness

Acknowledging that zone objectives are intended to primarily focus on land use and associated physical elements, most land use zone objectives are considered to provide an adequate head of power for council to require address of biodiversity through protection of trees,vegetation and other natural contributory elements such as waterways in a DA context.

However, a significant proportion of high value trees are located on land that is included in recreation zones. The objectives do not explicitly reference protection of these trees. The absence of such an objective is considered a risk to biodiversity outcomes. It is therefore recommended that council consider inserting a new objective in the recreation zones to protect areas of high biodiversity significance.

3.2.3 Clause 4.1: Minimum subdivision lot size

The objectives for minimum lot size includes the following:

- (a) to ensure that new lots created have sufficient area for development to comply with the relevant development standards and controls
- (c) to ensure lot size reflects the land's environmental capability with consideration to topography and other natural features.

The controls generally require a larger minimum lot size in theFSPA.

Assessment of effectiveness

The provision of a larger lot size in and of its own right theoretically provides greater scope for increased flexibility in building siting, layout and design. Together with other controls that limit the size of building envelopes and in some circumstances require larger areas of open space, this is considered to facilitate the retention and protection of existing tress and the planting of new trees.

3.2.4 Clause 4.1B: Minimum lot sizes & special provisions for certain dwellings

This clause provides for a minimum lot size of 1,000sqm for dual occupancies in the FSPA. While they are compatible with land use zoning, due to their often greater scale (including larger footprints for buildings and associated hardstand such as carparking areas) dual occupancies can pose a particular challenge for trees and biodiversity. This includes having a greater potential for removal of trees, and lesser scope for the planting of new trees (in particular in front setbacks). On this basis, a larger lot size is supported. It is also considered appropriate that a corresponding objective be included such as:

- To ensure that lots in the FSPA are of sufficient size to protect natural values, in particular areas of high terrestrial biodiversity value.

Assessment of effectiveness

A larger lot size for dual occupancies in the FSPA is supported. It is recommended that council consider the addition of a new objective aimed at protecting trees and biodiversity.

3.2.5 Clause 4.4: Floor space ratio

Clause 4.4 Floor space ratio includes the following objectives:

- (d) to control development density and intensity of land use, taking into account:
- (i) the environmental constraints and values of the site, including retaining the scenic, visual, and landscape qualities of the area.

FSR is generally calibrated based on the preferred type and nature of uses, and ranges from 0.5:1 in the R2 Low density residential zone to 9:1 in the Hurstville strategic centre.

Assessment of effectiveness

Floor space ratio can impact the size of a building's footprint (ie, site cover). The FSR controls are considered to be generally in accordance with that of other similar LGAs, and are considered acceptable for the Georges River context. Linking consideration of FSR in objectives relating to environmental constraints and values enables consideration of trees and vegetation.

3.2.6 Clause 5.10 Heritage conservation

Clause 5.10 Heritage conservation protects heritage items. Heritage items include "a building, work, place, relic, tree, object or archaeological site". This includes gardens associated with heritage items (eg, McWilliam House, Beverley Park), street trees (eg, The Boulevarde, San Souci) or individual trees (eg, fig tree in Binder Reserve, Hurstville).

Assessment of effectiveness

There is scope for either the incremental expansion of this list subject to appropriate and detailed studies. Alternatively, a schedule may be added to the DCP where trees are not considered to constitute heritage significance.

3.2.7 Clause 5.11 Bush fire hazard reduction

Clause 5.11 Bush fire hazard reduction enables bush fire hazard reduction work authorised by the Rural Fires Act 1997 to be carried out on any land without development consent.

Assessment of effectiveness

While this clause presents a risk to biodiversity, it is considered that the risk of loss of life or property frombushfire is a higher order outcome.

3.2.8 Clause 6.2: Earthworks

This clause applies to earthworks for most forms of earthworks, including that which is ancillary other development.

The objectives include the following:

- to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses and amenity, cultural or heritage items or features of the surrounding land.

Matters for consideration include those that address biodiversity through seeking to protect vegetation, trees and other natural features such as:

- the effect of the development on the health and vitality of trees on the land and adjoining lands
- any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development, including having regard to natural site features, such as rock features and outcrops, remnant bushland and watercourses.

Assessment of effectiveness

Given that the disturbance of land through earthworks has the potential to not only have significant direct adverse impacts on trees but also indirect impact through alteration of natural hydrology, the linking of approval to this range of environmental matters is appropriate.

3.2.9 Clause 6.6 Riparian lands and waterways

This clause applies to land identified as “Sensitive Land” on the Riparian Lands and Waterways Map.

Its objectives focus on protecting the values of waterways, including riparian species and habitats.

Matters for consideration include:

- (a) (v) impact on indigenous trees and other vegetation, including opportunities for additional planting of local native riparian vegetation.

The development consent criteria adopt a variation of the common three tier impact assessment approach of siting, designing and managing development to avoid, minimise or mitigate significant adverse impacts.

Assessment of effectiveness

While these provisions only apply to a relatively small part of the LGA, the subject land is vitally important for biodiversity outcomes, covering land immediately adjoining the Georges River. On this basis they are considered appropriate.

3.2.10 Clause 6.7 Foreshore scenic protection area

This clause applies to land identified on the Foreshore Scenic Protection Area Map.

The objectives of this clause are:

- (a) to protect, maintain and improve the scenic amenity ofthe Georges River foreshore
- (b) to protect, maintain and improve significant views to and from the Georges River
- (c) to protect, maintain and improve the diversity and condition of native vegetation and habitats
- (d) to reinforce and improve the dominance of landscape over built form, hard surfaces and cut and fill
- (e) to encourage the recovery and repopulation of threatened species and their communities, populations and their habitats
- (f) to enhance existing environmental, social and character values of the foreshore

Decision criteria are as follows:

- (3) Before determining a development application for development on land to which this clause applies, the consent authority is satisfied that the development facilitates the following:
  - (a) protection of the natural environment, including topography, rock formations, canopy vegetation or other significant vegetation
  - (b) avoids and minimises disturbance and adverse impacts on remnant vegetation communities, habitat and threatened species and populations
  - (c) maintenance and enhancement of native vegetation and habitat in parcels of a size, condition and configuration that will facilitate biodiversity protection and native flora and fauna movement through biodiversity corridors
  - (d) achievement of no net loss of significant vegetation or habitat
  - (e) avoidance of clearing steep slopes and facilitationof the stability of the land
  - (f) minimising the height and bulk by stepping the development to accommodate the fall in the land
  - (g) minimising impact on the views and visual environment, including views to and from the GeorgesRiver, foreshore reserves, residential areas and public places
  - (h) compatibility with desired future neighbourhood character, including the interrelationship between elements in the public and private domains such as buildings, open space and vegetation.

Assessment of effectiveness

As has been determined by the Foreshore Scenic Character Study, the primary intent of this clause is to protect the scenic character of land visible from the Georges River, including both the Georges River and Sutherland LGA banks. Given this, the focus of the decision criteria should be on protecting and enhancing elements and features such as sandstone outcrops and vegetation as well as general dominance of natural elements over built elements. It is considered that including biodiversity provisions, while well intentioned, has the potential to reduce policy clarity and focus. On this basis, it is recommended that biodiversity provisions be relocated to another part of the LEP, preferably in the form of a new additional local provisions specifically addressing biodiversity.

3.2.11 Clause 6.13 Landscaped areas in certain residential and environmental protection zones

Clause 6.13 Landscaped areas in certain residential and environmental protection zones requires a 5% larger proportion of lots to be provided as landscaped open space for dwelling houses and dual occupancies in the FSPA as follows:

- (b) 25% for dwelling houses located within the Foreshore Scenic Protection Area
- (d) 30% per lot for dual occupancies located within the Foreshore Scenic Protection Area

Assessment of effectiveness

Considering the relatively restrained percentage increase,the existing prevalence of trees and vegetation in the FSPA, and the strategic policy intent of the LSPS to strengthen vegetation corridors in this area, this is considered both appropriate and reasonable.

3.3 Georges River Development Control Plan 2021

As with the LEP, the GRDCP as endorsed by the Local Planning Panel on 24 March 2021 contains a number of provisions that directly and indirectly seek to address trees and biodiversity.

The main sections of relevance are Section 3.2 Biodiversity, including 3.2.1 Trees and vegetation and 3.2.2 Green web located in Part 3 – General planning considerations.

The following tables provide an assessment of the effectiveness of these provisions.

Table 05 Georges River DCP 2021 biodiversity provisions - objective

Objectives	Comment
Biodiversity	
- Ensure the protection of existing trees which contribute to the visual amenity and environment of the LGA	This objective is generally satisfactory in intent. However, it would benefit from rewording. In particular, it is suggested that greater emphasis be placed on biodiversity as opposed to visual amenity and a broad reference to “environment”
- Protect trees within and adjacent to all development sites	This objective is generally satisfactory in intent. However, it would benefit from rewording. In particular,protection of all trees within and adjacent to development sites may not be realistic nor appropriate
- Maximise healthy tree canopy coverage across the LGA, so as to maximise reduction in the urban heat island effect	This objective is generally satisfactory in intent. However, it would benefit from rewording. It is noted that the focus of this objective is on values broader than biodiversity (human comfort and strate environmental benefits)
- Identify responsibilities and requirements with respect tothe protection, retention and replacement of trees	This is not a physical planning outcome, and as such is recommended for deletion
- Provide processes which enable and facilitate citizen compliance with these provisions	This is not a physical planning outcome, and as such is recommended for deletion

Objectives	Comment
- Ensure all applications for tree removal and pruning are assessed on the basis of the best practice tree management principles	This is not a physical planning outcome, and as such is recommended for deletion
Green Web	
- Prevent direct loss of habitat in and adjoining Green Web areas and enhance long term sustainability - Prevent fragmentation of bushland - Enhance biodiversity and ensureecological resilience through greater connectivity of bushland areas - Improve the function of riparian zones and foreshores to provide linkages and corridors between areas of habitat - Minimise weed invasion and spread within Green Web areas - Revegetate habitat or corridors to compensate for detrimental impacts accruing from the development of land - Enhance vegetation corridors in urban areas - Re-establish corridors in urban areas	These objectives are generally satisfactory in intent. However, they would benefit from augmentation and rewording

Table 06 Georges River DCP 2021 biodiversity provisions - controls

Controls	Comment
Biodiversity	
- Development is to comply with the provisions of the State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 - Development is to comply with the provisions of the Biodiversity Conservation Act 2016 and the Biodiversity Regulation 2017 - Development is to comply with Council's Tree Management Policy and Appendix 1 – Green Web Map and Biodiversity Guide	It is acknowledged that as trees and biodiversity are managed by a range of Commonwealth and State policy separate to the DCP, there is merit is providing reference to other key documents to provide guidance to proponents. However, it is considered that this is most appropriately done through incorporation of notes at the start of the section. There is no need for the DCP to require compliance with other non-council provisions already covered by other acts or policy.It is therefore recommended that references to other non-council acts or policy be relocated from the controls to notes located at the startof the section. It is acknowledged that under the vegetation management system established by the BC Act and the Vegetation SEPP, DCPs can refer to a separate, stand-alone document ofthe nature of the Tree Management Policy. However, it is considered best practice planning to consolidate controls for like matters by integrating similar documents where possible. On this basis, it is considered that following the completion of the Biodiversity Strategy, council consider integrating content in the Tree Management Policy relating to disturbance of trees as part of the development process regulated under the EP&A Act into the DCP. Similarly, it is also recommended that complementary consideration be given to also integrating the provisions of the Biodiversity Guide into the DCP where it has a material impact on managing development and is not simply for information purposes.

Controls	Comment
Biodiversity	
	For example, there would be particular value in including the definition of a tree and exemptions from having to obtain approval within the DCP that are currently contained in the Tree Management Policy. The existing Green Web map is out of date and only covers the former Kogarah LGA. On this basis, it is recommended that it be superseded by a new map based on the findings of the Biodiversity Study

Controls	Comment
Green Web	

- Green Web areas are those areas mapped on the maps contained within Appendix 1
- Green Web areas are to be landscaped with species indigenous to the Georges River Council area, listed in Council's Backyard Biodiversity Guide in Appendix 1.2 and Council's Tree Management Policy (and its Appendix 1 – Tree Planting). Trees and landscaping should be provided in a form and configuration that maintains and enhances the core habitat and vegetated linkages
- Development should contributeto the maintenance of local habitats and connectivity between bushland remnants
- Development should seek to retain unique environmental features of the site including:
  - Rock outcrops
  - Wetlands and the like
  - Watercourses, drainagelines and riparian land
  - Groups of significant trees and vegetation
  - Mature trees with hollowsand other fauna habitat features on the site
- Bushfire asset protection zones must not be in identified area of key habitat and corridors, except in the case of development or redevelopmentof single dwellings and secondary dwellings on existing lots or alterations and additions to existing dwellings
- Development should ensure that off-site impacts into adjoining bushland are minimised, such as weed invasion, increased runoff andstormwater pollutants
	These controls are generally satisfactory. However, they would benefit from augmentation and rewording

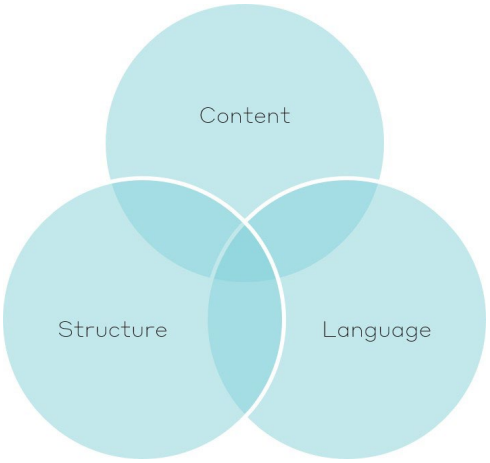
Controls	Comment
Green Web	
Controls for Green Web Habitat Corridor Areas - Development should maintain habitats in a size and configuration that ensures their ongoing viability and sustainability - Development should ensure connectivity between bushland remnants. To achieve this, corridors should be of a scale commensurate with the habitats they connect	These controls are generallysatisfactory. However, they would benefit from augmentation and rewording
Controls for Green Web Habitat Reinforcement Corridor Areas - Development should, through its siting, design and landscape treatment, maximise habitat values and minimise disruption to connectivity through: - Allocating one boundary of the site to planting of indigenous vegetation of a mix of canopy species (over 3m height at maturity) and understorey species (less than 3m height at maturity - Retention and revegetation ofremnant bushland elements	These controls are generallysatisfactory. However, they would benefit from augmentation and rewording
- The required treatment will depend upon the scale of the bushland remnants linked by the land or the quality of the remnants to be retained on site - Note: No Green web mapping was previously undertaken for the former Hurstville LGA. As such additional mapping will be required for the entire GeorgesRiver LGA	These controls are generallysatisfactory. However, they would benefit from augmentation and rewording

3.4 Principles for good planning policy

Through over 25 years in working with the NSW planning framework, Ethos Urban has developed a series of principles to guide the assessment of whether a LEP or DCP represents good practice in planning.

Best practice in planning can be considered through aframework comprising three parts (refer Figure 2):

1. content
2. structure
3. language.



02 Components of an effective local environmental planning framework

In turn, there are a number of rules under each component that can be used for evaluation:

Content

1. Is within the scope of the Environmental Planning and Assessment Act 1979 (the Act) and is consistent with and furthers its objects

2. Is development focussed, with a particular emphasis on physical form

3. Policy content is clear, unambiguous and effective

4. There is a focus on outcomes

5. Gives effect to the policy content of the LSPS

6. Is sufficiently robust to be used in the Land and Environment Court

7. Is proportional to the likely level of impact of the proposal, with higher impact uses being subject to greater level of consideration

8. Has a sound basis in strategic planning policy, and provides appropriate links to the underpinning policy basis

9. Does not duplicate or conflict with matters that are addressed in other parts of the planning framework, in particular SEPPs, and does not cover matters best addressed in complementary legislation or material, eg the Building Act 1975, the Heritage Act 1977 or Australian Standards

10. Provides a balance between certainty and flexibility through enabling a range of possible solutions to meet anoutcome

11. Where codification is not possible nor desirable (eg design must be influenced by local context), stipulate the process or set of considerations as opposed to pre-determined controls

Structure

12. Has a simple, logical structure so that users can easily and intuitively access relevant information, including a considered flow from the general to specific

13. Is able to be translated into digital systems

14. Provides a clear line of policy sight from strategic, whole of LGA matters to site specific considerations for development assessment purposes

15. Has strong horizontal and vertical policy integration

16. Provides a clear decision chain hierarchy

17. Utilises visual communication where appropriate

Language

18. Is consistent with adopted definitions, in particular those contained in the Standard Instrument LEP and the proposed standard DCP

19. Uses plain English

20. Statements are precise, simple and short, and avoid jargon.

Review of council's planning framework against these criteria has shown a number of structure and language issues, including a lack of integration of provisions and unnecessary duplication of other provisions.

This can cause a lack of clarity around policy intent, resulting in implementation challenges in a development assessment (DA) context.

Summary

It is considered that the existing Commonwealth, State and local planning framework adequately addresses:

- trees located in very high value locations such as those in threatened ecological communities, in particular through the Environment Protection and Biodiversity Conservation Act 1999 and the Biodiversity Conservation Act 2016
- trees forming bushland in public parks and reserves, in particular through State Environmental Planning PolicyNo 19 – Bushland in Urban Areas
- the management of individual trees proposed to be disturbed through either the development process or separate to the development process, in particular through the Biodiversity Conservation Act 2016, State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 and the Tree Management Policy.

However, it is also considered that there are a number of areas where council's planning framework could be improved. This includes:

- not giving optimal protection to all areas of high value terrestrial biodiversity (as distinct from very high values areas protected by Commonwealth and State measures)
- not giving full effect to the provisions of strategic plans, including the South District Plan and Georges River Local Strategic Planning Statement 2040, in particular in relation to taking a more strategic approach to the strengthening of the Sydney Green Grid.

It is in particular considered that the framework does not facilitate achievement of the following council policy aims:

- increase canopy cover to 40% by 2038
- target the planting of new trees in streets and parks inareas with less than 15% canopy coverage, including Kogarah, Kogarah Bay, Sans Souci, Hurstville and Beverly Hills.

In addition, parts of council's planning framework have number of structure and language issues, including a lack of integration of provisions and unnecessary duplication of other provisions. This can cause a lack of clarity around policy intent, resulting in implementation challenges in a development assessment (DA) context.

While provisions relating to managing clearing, pruning or otherwise disturbance of trees not associated with development should be in council's Tree Management Policy as provided for under the BC Act and Vegetation SEPP, provisions associated with development should be in the GRDCP2021. In particular, the differences between what provisions apply to clearing, pruning or otherwise interfering with trees and vegetation as part of the development process compared to the non-development process is not well articulated. It is recommended that further consideration be given to this matter over the longer term following the completion of the Biodiversity Strategy.

Benchmarking

4.0 Benchmarking

4.1 Benchmarking Greater Sydney

Table 7 identifies whether, and if so how, biodiversity is addressed in Greater Sydney LGA local environmental plans. It shows that:

- the majority of councils have provisions for terrestrial biodiversity
- except for Georges River, all councils in the South District have provisions for terrestrial biodiversity
- except for Georges River, all councils including or bordering the Georges River have provisions for terrestrial biodiversity
- except for Georges River, all councils including or bordering Botany Bay have provisions for terrestrial biodiversity.

The provisions are generally included as a stand-alone section in the form of an overlay comprising a map and supporting text in the Additional Local Provisions of the LEPs. The title of the section varied, being called variously as:

- Terrestrial biodiversity
- Biodiversity protection
- Environmentally sensitive land
- Environmentally sensitive land – terrestrial biodiversity
- Environmental protection land
- Environmentally significant land
- Development on natural resources sensitive land.

This suggests that there is no standard convention for naming.

Table 07 Greater Sydney LGAs with local environmental plan provisions for biodiversity

LGA	LEP	Biodiversity	Clause
Green Web			
Bayside Council (former City of Botany Bay and former City of Rockdale)	Botany Bay LEP 2013	Yes	- 6.4 – Terrestrial biodiversity
	Rockdale LEP 2011	Yes	- 6.8 – Biodiversity protection
	Draft Bayside LEP 2020	Yes	- 6.4 – Terrestrial biodiversity
Blacktown City Council	Blacktown LEP 2015	Yes	- 7.2 – Terrestrial biodiversity
Blue Mountains City Council	Blue Mountains LEP 2015	Yes	- 6.1 – Impact on environmentally sensitive land - 6.2 – Assessment of certain environmentally sensitive land - 6.3 – Terrestrial biodiversity - 6.7 – Protected area – ecological buffer area
Burwood Council	Burwood LEP 2012	No	- N/A
Camden Council	Camden LEP 2010	No	- N/A
Campbelltown City Council	Campbelltown LEP 2015	Yes	- 7.5 – Preservation of the natural environment - 7.20 – Terrestrial biodiversity

LGA	LEP	Biodiversity	Clause
City of Canada Bay Council	Canada Bay LEP 2013	Yes Supporting docs of LEP – Biodiversity Maps	- 6.3 – Environmentally Sensitive land
City of Canterbury-Bankstown (former City of Bankstown and former City of Canterbury)	Bankstown LEP 2015	Yes	- 6.4 – Biodiversity
	Canterbury LEP 2012	No	- N/A
	Draft Canterbury-Bankstown LEP 2020	Yes	- 6.5 – Biodiversity
Cumberland City Council (former Auburn City Council, former City of Holroyd and part of former City of Parramatta)	Auburn LEP 2010	No	- N/A
	Holroyd LEP 2013	Yes	- 6.5 – Terrestrial biodiversity
	Parramatta LEP 2011	Yes	- 6.4 – Biodiversity protection
	Draft Cumberland LEP 2020	Yes	- 6.2 – Biodiversity protection
Fairfield City Council	Fairfield LEP 2013	Yes	- 6.5 – Terrestrial biodiversity
Georges River Council (former Hurstville City Council and former Kogarah City Council)	Hurstville LEP 2012	No	- N/A
	Kogarah LEP 2012	No	- N/A

LGA	LEP	Biodiversity	Clause
	Draft Georges River LEP 2021	No	N/A
Hawkesbury City Council	Hawkesbury LEP 2012	Yes	- 6.4 – Terrestrial biodiversity
Hornsby Shire Council	Hornsby LEP 2013	Yes	- 6.4 – Terrestrial biodiversity
The Hills Shire Council	The Hills LEP 2019	Yes	- 7.4 – Terrestrial biodiversity
Hunter's Hill Council	Hunters Hill LEP 2012	Yes	- 6.4 – Terrestrial biodiversity
Inner West Council (former Municipality of Ashfield, former Municipality of Leichhardt and former Marrickville Council)	Ashfield LEP 2013	No	- N/A
	Leichhardt LEP 2013	No	- N/A
	Marrickville LEP 2011	Yes	- 6.4 – Terrestrial biodiversity
	Draft Inner West LEP 2020	Yes	- 6.4 – Terrestrial biodiversity
Ku-ring-gai Council	Ku-ring-gai LEP 2015	Yes	- 6.3 – Biodiversity protection
Lane Cove Council	Lane Cove LEP 2009	Yes	- 6.4 – Environmental protection land

LGA	LEP	Biodiversity	Clause
Liverpool City Council	Liverpool LEP 2008	Yes	- 7.6 – Environmentally significant land
Mosman Council	Mosman LEP 2012	No	N/A
North Sydney Council	North Sydney LEP 2013	No	- N/A
Northern Beaches Council (former Manly Council, former Pittwater Council and former Warringah Council)	Manly LEP 2013	Yes	- 6.5 – Terrestrial biodiversity
	Pittwater LEP 2014	Yes	- 7.6 – Biodiversity
	Warringah LEP 2011	No	- N/A
City of Parramatta	Draft Parramatta LEP 2020	No	- N/A
City of Parramatta	Draft Parramatta LEP 2020	Yes	- 6.4 – Biodiversity protection
Penrith City Council	Penrith LEP 2012	Yes	- 7.3 – Development on natural resources sensitive land
Randwick City Council	Randwick LEP 2012	Yes	- 6.5 – Terrestrial biodiversity
City of Ryde	Ryde LEP 2014	No	- N/A
Strathfield Municipal Council	Strathfield LEP 2012	Yes	- 6.11 – Terrestrial biodiversity

LGA	LEP	Biodiversity	Clause
Sutherland Shire Council	Sutherland Shire LEP 2015	Yes	- 6.5 – Environmentally sensitive land – terrestrial biodiversity
City of Sydney	Sydney LEP 2012	No	- N/A
Waverley Council	Waverley LEP 2012	Yes	- 6.4 – Terrestrial biodiversity
Willoughby City Council	Willoughby LEP 2012	No	- N/A
Wollondilly Shire Council	Wollondilly LEP 2011	Yes	- 7.2 – Biodiversity protection
Woollahra Municipal Council	Woollahra LEP 2014	No	- N/A

4.1.1 Select Greater Sydney Council LocalEnvironmental Plans

While there is no drafting requirement in the Standard Instrument, Additional Local Provisions typically have a map supported by text comprising:

- objectives
- matters for consideration
- consent requirements.

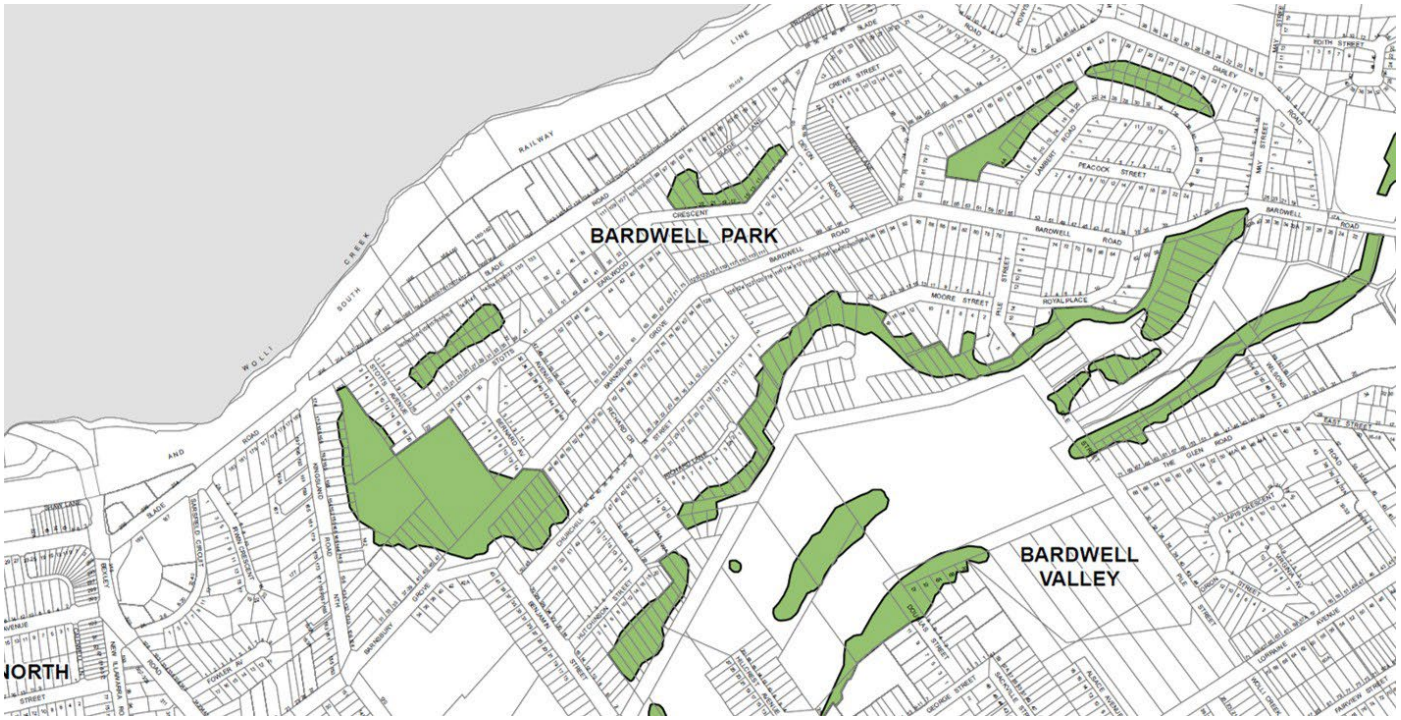
Table 8 shows the structure of the terrestrial biodiversity provisions for a selection of Greater Sydney LGAs considered to have a similar context to Georges River. This shows that this structural convention is consistently applied in these other LGAs.

Table 08 Structure of biodiversity provisions in select Greater Sydney Council Local Environmental Plans

LGA	Title	Application	Objective	Consideration	Consent Requirement
Bayside	Terrestrial Biodiversity	Land identified as "Biodiversity" on the Terrestrial Biodiversity Map	Yes	Yes	Yes
Sutherland	Environmentally sensitive land—terrestrial biodiversity	land identified as "Environmentally Sensitive Land" on the Terrestrial Biodiversity Map.	Yes	Yes	Yes
Ku-ring-gai	Biodiversity protection	land identified as "Biodiversity" on the Terrestrial Biodiversity Map.	Yes	Yes	Yes
Pittwater	Biodiversity	land identified as "Biodiversity" on the Biodiversity Map.	Yes	Yes	Yes

4.1.2 Mapping Approach

Figure 3 shows how terrestrial biodiversity is typically mapped in LEPs. As is shown, it is typically not mapped on a cadastral basis, but rather based on an approximate location of trees and vegetation that contribute to terrestrial biodiversity.



03 Terrestrial biodiversity mapping in Bayside Council (Source: Bayside Council)

4.1.3 Objectives

Table 9 shows the objectives for a selection of Greater Sydney LGAs considered to have a similar context to Georges River. There is a high level of consistency in these provisions, and include:

- protection and enhancement of terrestrial biodiversity
- identification of how this outcome can be achieved through:
  - protecting native fauna and flora
  - protecting supporting ecological processes
  - encouraging recovery of native fauna and flora.

Half of the councils include reference to biodiversity corridors.

Table 09 Structure of biodiversity provisions in select Greater Sydney Council Local Environmental Plans

Bayside	Sutherland	Ku-ring-gai	Pittwater
(1) The objective of this clauseis to maintain and enhance terrestrial biodiversity by: - (a) protecting native fauna and flora and the ecological processes necessary for their continued existence, and - (b) encouraging the recovery and conservation of native fauna and flora and their habitats, and - (c) protecting, restoring and enhancing biodiversity corridors	(1) The objective of this clause is tomaintain terrestrial biodiversity by: - (a) protecting native fauna and flora,and - (b) protecting the ecological processes necessary for their continued existence, and - (c) encouraging the conservation and recovery of native fauna and flora and their habitats	The objective of this clauseis to protect, maintain and improve the diversity and condition of native vegetationand habitat, including: - (a) protecting biological diversity of native fauna and flora, and - (b) protecting the ecologicalprocesses necessary for their continued existence, and - (c) encouraging the recovery of threatened species, communities, populations and their habitats, and - (d) protecting, restoring and enhancing biodiversity corridors	The objective of this clause is to maintain terrestrial, riparian and aquatic biodiversity by: - (a) protecting native faunaand flora, and - (b) protecting the ecological processes necessary for their continued existence, and - (c) encouraging the conservation and recovery of native fauna and flora and their habitats

4.1.4 Matters for consideration

Table 10 shows matters for consideration for a selection of Greater Sydney LGAs considered to have a similar context to Georges River. There is a focus on considering whether a development:

- has an impact on values, vegetation and elements such as structure, function and composition
- is proposing appropriate measures to avoid, minimise or mitigate the impacts of the development.

Table 10 Matters for consideration in select Greater Sydney Council Local Environmental Plans

Bayside	Sutherland	Ku-ring-gai	Pittwater
In deciding whether to grant development consent for development on land to which this clause applies, the consent authority must consider: - (a) the objectives of this clause, and - (b) whether the developmentis likely to have: - (i) any adverse impact on the condition, ecological value and significance of the faunaand flora on the land, and - (ii) any adverse impact on the importance of the vegetation on the land to the habitat and survival of nativefauna, and - (iii) any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and - (iv) any adverse impact on the habitat elements Providing connectivity on the land, and - (b) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development, and - (c) any opportunity to restore or enhance remnant vegetation, habitat and biodiversity corridors	In deciding whether to grant development consent for development on land to which this clause applies, the consent authority must consider: - (a) whether the development is likelyto have— - (i) any adverse impact on the condition, ecological value and significance of the fauna and flora onthe land, and - (ii) any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and - (iii) any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and - (iv) any adverse impact on the habitat elements providing connectivity on the land, and - (b) any appropriate measuresproposed to avoid, minimise or mitigate the impacts of the development.	Before determining a development application for development on land to which this clause applies, the consent authority must consider: - (a) the impact of the proposed development onthe following— - (i) any native vegetation community, - (ii) the habitat of any threatened species, population or ecological community, - (iii) any regionally significant species of plant, animal or habitat, - (iv) any biodiversity corridor, - (v) any wetland, - (vi) the biodiversity values within any reserve, - (vii) the stability of the land, and - (b) any proposed measureto be undertaken to ameliorate any potential adverse environmental impact, and - (c) any opportunity to restore or enhance remnant vegetation, habitat and biodiversity corridors.	Before determining a development application for development on land to which this clause applies, the consent authority must consider: - (a) whether the development is likely to have— - (i) any adverse impact on the condition, ecological value and significance of the fauna and flora on the land, and - (ii) any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and - (iii) any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and - (iv) any adverse impact on the habitat elements providing connectivity on the land, and - (b) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.

4.1.5 Consent requirements

Table 11 shows matters for consideration for a selection of Greater Sydney LGAs considered to have a similar context to Georges River. It shows a consistent adoption of the well-established avoid, minimise and mitigate strategy for environmental impacts.

Table 11 Consent requirements in select Greater Sydney Council Local Environmental Plans

Bayside	Sutherland	Ku-ring-gai	Pittwater
Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that: - (a) the development is designed, sited and will be managed to avoid any potentially adverse environmental impact, or - (b) if any potentially adverse environmental impact cannotbe avoided by adopting feasible alternatives: - (i) the development is designed, sited and will be managed to minimise that impact, and - (ii) the development includes measures to offset the loss of biodiversity values	Development consent must not begranted for development on land to which this clause applies unless the consent authority is satisfied that— - (a) the development is designed,sited and will be managed to avoid any significant adverse environmental impact, or - (b) if that impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or - (c) if that impact cannot be minimised—the development will be managed to mitigate that impact	Development consent must not be granted to developmenton land to which this clause applies unless the consent authority is satisfied that the development— - (a) is consistent with the objectives of this clause,and - (b) is designed, and will be sited and managed, to avoidany potentially adverse environmental impact or, if a potentially adverse environmental impact cannot be avoided— - (i) the development minimises disturbanceand adverse impacts on remnant vegetation communities, habitat andthreatened species and populations, and - (ii) measures have been considered to maintain native vegetation and habitat in parcels of a size, condition and configuration that will facilitate biodiversity protection and native flora and fauna movement through biodiversity corridors, and - (iii) the development avoids clearing steep slopes and facilitates the stability of the land, and - (iv) measures have been considered to achieve no net loss of significant vegetation or habitat	Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that— - (a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or - (b) if that impact cannotbe reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or - (c) if that impact cannot be minimised—the development will be managed to mitigate that impact

4.2 Summary

Georges River is one of the few Sydney councils that

does not currently have provisions for terrestrial biodiversity in its local environmental plan. In particular, it is the only council in the South District not to have such provisions.

The provisions are generally included as a stand-alone section in the form of an overlay comprising a map and supporting text in the Additional Local Provisions of the LEPs. Mapping is based on the approximate location of trees and vegetation that contribute to terrestrial biodiversity. The Additional Local Provisions typically have a map supported by text comprising:

- objectives
- matters for consideration
- consent requirements.

Objectives generally:

- seek to protect and enhance terrestrial biodiversity
- identify how this outcome can be achieved through:
  - protecting native fauna and flora
  - protecting supporting ecological processes
  - encouraging recovery of native fauna and flora.

Matters for consideration have a focus on considering whether a development:

- has an impact on values, vegetation and elements such as structure, function and composition
- is proposing appropriate measures to avoid, minimise or mitigate the impacts of the development.

The proposed planning framework

5.0 The proposed planning framework

Based on the findings of the scope and benchmarking review, it is recommended that council:

- amend the Georges River Local Environmental Plan 2021 to include a new overlay in Part 6 “Additional Local Provisions” entitled “Terrestrial Biodiversity” aimed at protecting areas of high biodiversity value
- amend the Georges River Development Control Plan2021 to provide further support for this overlay.

The key mechanisms proposed as part of the Terrestrial Biodiversity overlay are:

- clear mapping of areas considered to be of high biodiversity significance by this Biodiversity Study
- where a property is affected by mapping, consideration of a number of performance-based matters as part of theDA process is triggered
- these matters are aimed at protecting and enhancing biodiversity values, and will require development to demonstrate alignment with the avoid, minimise or mitigate approach to environmental impact.

This proposal has implications for complying development. Refer to part 1 of this report for discussion of this matter. The amendments to the Georges River Development Control Plan 2021 will further support the overlay by providing greater detail on the matters for consideration and address strategic biodiversity values. Address of strategic biodiversity values is proposed through:

- replacement of the existing Green Web map with LGA wide mapping of green corridors assessed by this Biodiversity Study as having high biodiversity connectivity
- where a property is affected by mapping, consideration of a number of performance-based matters as part of the DA process is triggered
- these matters are aimed at promoting supplementary planting of native trees or vegetation, in particular along property boundaries.

The mapping also has the potential to focus council’s efforts on areas where greatest strategic benefit may be obtained as part of its public domain planting program. It is not considered that these LEP provisions will preclude development from otherwise being able to be considered through the complying development pathway under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 will now require a DA.

A small number of complementary text based amendments intended to support these provisions are also proposed to the Georges River Local Environmental Plan 2021 and the Georges River Development Control Plan 2021. These are not considered to substantive in nature, and are not considered to have a material impact on development in their own right. Amendment to land use zoning or principal development standards such as minimum lot size, maximum building height or maximum floor space ratio are not proposed.

5.1 The Georges River Local Environmental Plan 2021

5.1.1 Objectives

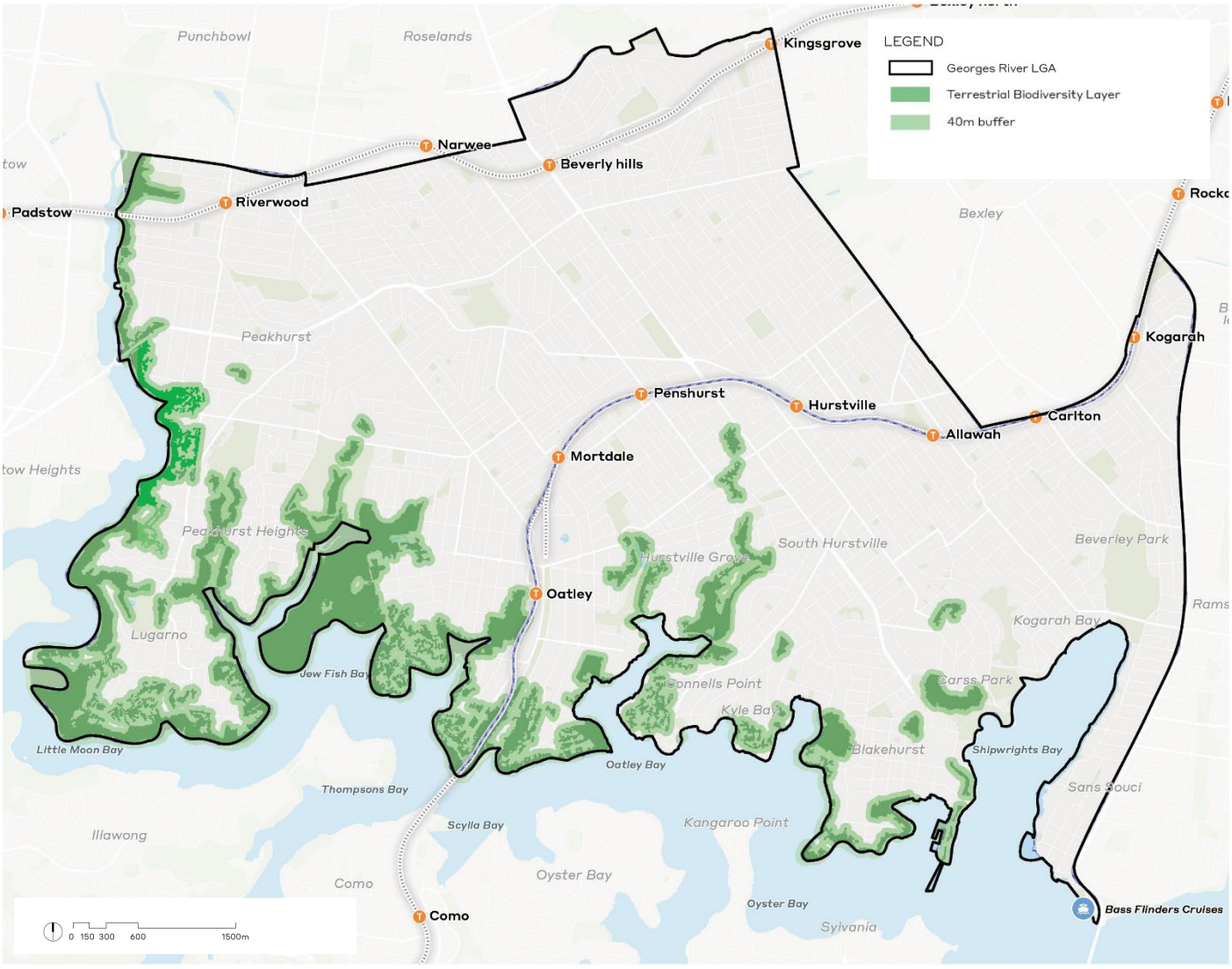
The following content is proposed:

- 1) The objective of this clause is to protect and enhance terrestrial biodiversity by:
  - a) protecting native plants and animals, and
  - b) protecting the ecological processes necessary for their continued existence, and
  - c) encouraging the recovery of native plants and animals.

5.1.2 Land application

The following content is proposed:

This clause applies to land identified as "Terrestrial Biodiversity" on the Terrestrial Biodiversity Map.



04 Terrestrial Biodiversity

5.1.3 Matters for consideration

The following content is proposed:

- 1) In deciding whether to grant development consent for development on land to which this clause applies, the consent authority must consider:
- a) the impact of the development on:
  - i) the condition, ecological value and significance of native plants and animals on the land, and
  - ii) the importance of the vegetation on the land to the habitat and survival of native animals, and
  - iii) the potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and
  - iv) habitat elements providing connectivity on the land, and
  - v) any opportunity to restore native vegetation

5.1.4 Consent criteria

The following content is proposed:

1) Development consent must not be granted for development on land to which this clause applies unless the consent authority is satisfied that—

a) the development is sited, designed and will be managed to avoid any significant adverse environmental impact, or

b) if that impact cannot be reasonably avoided by adopting feasible alternatives—the development is sited, designed and will be managed to minimise that impact, or

c) if that impact cannot be minimised—the development will be managed to mitigate that impact.

5.2 The Georges River Development Control Plan 2021

05 Green Corridor

5.2.1 Using this part

The follow content is proposed:

In using this part, reference should also be made to Part 1 – Introduction and Part 2- Application Process.

The following other parts of this DCP will also likely apply:

- Part 3.3 – Landscaping.

5.2.2 Relationship with other planninginstruments

The follow content is proposed:

This part seeks to:

- give effect to the Georges River Local Strategic Planning Statement
- provide further, more detailed guidance to clause [insert number] “Terrestrial Biodiversity” of the Georges River Local Environmental Plan 2021.

Land identified as “Terrestrial Biodiversity – High Biodiversity Significance” on the Terrestrial Biodiversity Map in the Georges River Local Environmental Plan constitutes an environmentally sensitive area for the purposes of State Environmental SEPP). On this basis under clause 1.17SA (1) (e) of the Codes SEPP, complying development may not be carried out in this area. Rather, a development application is to be made to council for development consent.

Development that involves the disturbance of vegetation will also need to comply with other provisions, including:

- Environment Protection and Biodiversity Conservation Act 1999
- Biodiversity Conservation Act 2016
- State Environmental Planning Policy (Biodiversity and Conservation) 2021

5.2.3 Definitions

The following content is proposed:

In using this part the following terms are used in addition to those in the Dictionary:

Table 12 Definitions

Term	Definition	Source
Animal	Any animal, whether vertebrate or invertebrate and in any stage of biological development, but does not include: - humans, or - fish within the meaning of the Fisheries Management Act 1994	Biodiversity Conservation Act 2016
Biodiversity	The variety of living animal and plant life from all sources, and includes diversity within and between species and diversity of ecosystems	Biodiversity Conservation Act 2016
Biodiversity values	- Vegetation integrity—being the degree to which the composition, structure and function of vegetation at a particular site and the surrounding landscape has been altered from a near natural state - Habitat suitability—being the degree to which the habitat needs of threatened species are present at a particular site - Biodiversity values, or biodiversity-related values, prescribed by the regulations	Biodiversity Conservation Act 2016
Bushland	Land on which there is vegetation which is either a remainder of the natural vegetation of the land or, if altered, is still representative of the structure and floristics of the natural vegetation	State Environmental Planning Policy (Biodiversity and Conservation) 2021
Clearing	Includes: - cut down, fell, uproot, kill, poison, ringbark, burn or otherwise destroy the vegetation, or - lop or otherwise remove a substantial part of the vegetation	State Environmental Planning Policy (Biodiversity and Conservation) 2021
Damage	Habitat includes damage caused by: - removing or relocating any part of the habitat - activities that prevent the continued use of the habitat by animals	Biodiversity Conservation Act 2016
Ecological community	An assemblage of species occupying a particular area	Biodiversity Conservation Act 2016
Edge effects	Adverse effects on the biodiversity values and ecological processes of habitat areas, caused by incompatible adjacent land uses	Proposed new
Habitat	Includes: - an area periodically or occasionally occupied by a species orecological community - the biotic and abiotic components of an area	Biodiversity Conservation Act 2016
Harm	An animal includes kill, injure or capture the animal, but does not include harm by changing the habitat of the animal	Biodiversity Conservation Act 2016
Key threatening process	A threatening process listed in Schedule 4 Biodiversity Conservation Act 2016	Biodiversity Conservation Act 2016

Term	Definition	Source
Native vegetation	Has the same meaning as in Part 5A of the Local Land Services Act2013. Note: this includes any of the following types of plants native to New South Wales: - trees (including any sapling or shrub or any scrub) - understorey plants - groundcover (being any type of herbaceous vegetation) - plants occurring in a wetland	Biodiversity Conservation Act 2016
Plant	Any plant, whether vascular or non-vascular and in any stage of biological development, and includes fungi and lichens, but does not include marine vegetation	Biodiversity Conservation Act 2016
Protected animal	An animal of a species listed or referred to in Schedule 5 of the Biodiversity Conservation Act 2016	Biodiversity Conservation Act 2016
Protected plant	A plant of a species listed or referred to in Schedule 6 of the Biodiversity Conservation Act 2016	Biodiversity Conservation Act 2016
Species	Includes: - a defined subspecies - a taxon below a subspecies - a recognisable variant of a subspecies or taxon - a population of a particular species (being a group of organisms, all of the same species, occupying a particular area)	Biodiversity Conservation Act 2016
Threatened ecological community	A critically endangered ecological community, an endangered ecological community or a vulnerable ecological community listed in Schedule 2 of the Biodiversity Conservation Act 2016	Biodiversity Conservation Act 2016
Threatened species	A critically endangered species, an endangered species or a vulnerable species listed in Schedule 1 of the Biodiversity Conservation Act 2016	Biodiversity Conservation Act 2016
Tree	A tree is defined as having a: - height of 3 metres or more, or - circumference of 300mm (or greater) when measured at 450mm above the ground; or - branch spread of 3 metres or more	Tree Management Policy
Vegetation	A tree or other vegetation, whether or not it is native vegetation.	State Environmental Planning Policy (Biodiversity and Conservation) 2021

5.2.4 Objectives

The following content is proposed:

Table 13 Objectives

Objectives
Biodiversity - overall
To protect trees and other natural landscape features that contribute to biodiversity outcomes within and adjacent to development sites
To maximise healthy tree canopy coverage across the LGA
To ensure development respects existing biodiversity characteristics within the site and context
To manage infrastructure provision and bushfire hazard in a way that seeks to protect biodiversity values
Areas of Terrestrial Biodiversity - High Biodiversity Significance
To minimise the adverse impacts of development in areas of high terrestrial biodiversity value
Land within 40m buffer to Terrestrial Biodiversity – High Biodiversity Significance
To prevent degradation of areas of high terrestrial biodiversity value through management of edge effects, including weed invasion and spread
To encourage strengthening of areas of high terrestrial biodiversity value through supplementary landscaping.
Green Corridors
To prevent direct loss of habitat in and adjoining Green Corridors and enhance their long term sustainability
To prevent fragmentation of bushland
To enhance biodiversity and ensure ecological resilience through greater connectivity of bushland areas
To improve the function of riparian zones and foreshores to provide linkages and corridors between areas of habitat
To protect, strengthen and create continuous treed corridors, in particular those that connect large areas of biodiversity value
To revegetate habitat to compensate for detrimental impacts accruing from the development of land
Local character areas
To retain and strengthen the green and leafy character of Georges River, including trees that contribute to scenic character, local character and visual amenity in both the private and public domains

5.2.5 Controls

The follow content is proposed:

Table 14 Controls

Controls
For all areas
General Biodiversity
Development is to comply with Council's Tree Management Policy
Environmental Features
Development retains environmental features of the site including: - Rock - outcrops - Wetlands - Watercourses, drainage lines and riparian land - Groups of significant trees and vegetation Mature trees with hollows and other fauna habitat features on the site
Site and context description and design response
In addition to the requirements in Part 3 - Site and context description and design response, documentation is submitted as part of any DA that: - identifies and describes all existing trees on the site - identifies and describes existing trees on adjoining sites, including the public domain, that may be impacted by the development demonstrates how the design response respects existing trees on the site and adjoining sites, including adjoining public domain and any nearby significant areas Note: compliance with this may be shown by retaining as many trees of value as is possible and optimising the amount, location and nature of new tree and vegetation plantings
Infrastructure
Infrastructure is sited and designed to facilitate the growth and maintenance of trees, and in particular their canopy Note: this will generally involve precinct wide solutions in established urban areas identified for significant future growth
Management of bushfire hazard
Bushfire asset protection zones are not in identified areas of key habitat and corridors, except in the case of development or redevelopment of single dwellings and secondary dwellings on existing lots or alterations and additions to existing dwellings -
Street trees
Development: does not remove or adversely affect a street tree identified as having value by council; or provides replacement planting within the same area of street where a street tree identified as having value by council is required to be removed or adversely affected to site or construct a development

Controls

Where on land identified as "Terrestrial Biodiversity – High Biodiversity Significance" on the Terrestrial Biodiversity Map in the Georges River Local Environmental Plan 2021

Development maintains habitats in a size and configuration that ensures their ongoing viability and sustainability

Where appropriate, development is encouraged to facilitate the safe movement of native animals through the layering of new plantings, including canopy, understorey and ground cover

Where on land within 40m buffer ("buffer areas") of land identified as "Terrestrial Biodiversity – High BiodiversitySignificance" on the Terrestrial Biodiversity Map in the Georges River Local Environmental Plan 2021

Edge effects

Development ensures that off-site impacts into adjoining bushland are minimised, such as weed invasion, increased runoff and stormwater pollutants

Landscaping

New plantings are:

- indigenous to the local community, or
- comprise species selected from Schedule 1: Preferred planting species and Council's Tree Management Policy (and its Appendix 1 – Tree Planting)

Development is to provide:

- continuous canopy planting of species selected from Schedule 1: Preferred planting species along the site boundary most consistent with the biodiversity corridor; or
- a minimum of 10% of the site as deep soil area planted with a minimum of four (4) canopy planting species found in Council's Backyard Biodiversity Guide

Development should, through its siting, design and landscape treatment, maximise habitat values and minimise disruption to connectivity through:

- Allocating one boundary of the site to planting of indigenous vegetation of a mix of canopy species (over 3m height at maturity) andunderstorey species (less than 3m height at maturity
- Retention and revegetation of remnant bushland elements

Where development is within land identified as "Green Corridor" on the Green Corridor Map in the Georges River
Development Control Plan 2021

Statement of Intent

The main intent of this buffer is:

- to prevent degradation of the values of important terrestrial biodiversity areas through management of edge effects
- to encourage strengthening of important terrestrial biodiversity areas through supplementary landscaping.

Trees and landscaping are provided in a form and configuration that maintains and enhances core habitat and vegetated linkages

Controls
Connectivity
Development ensures connectivity between bushland remnants through providing for corridors of a scale commensurate with the habitatsthey connect Note: required treatment will depend upon the scale of the bushland remnants linked by the land or the quality of the remnants to be retainedon site
Landscaping
A minimum of 50% of new plantings comprise species selected from Schedule 1: Preferred planting species and Council's Tree Management Policy (and its Appendix 1 – Tree Planting)
Where development is within land identified as "Local Character Area" on the Local Character Area Map in the Georges River Development Control Plan 2021
New plantings are compatible with any identified pattern of tree and vegetation plantings, including proportion of the site, location and type of species

Table 15 DCP Schedule 1: Preferred plant species

Botanical Name	Common Name	Height
Local Native Trees		
Acacia implexa	Two-veined Hickory	8m
Acacia parramattensis	Sydney Green Wattle	5m
Acmena smithii	Lilly Pilly	8m
Allocasuarina littoralis	Black She-Oak	5m
Allocasuarina torulosa	Forest-Oak	30m
Angophora costata	Smooth-Barked Apple	25m
Angophora floribunda	Rough-Barked Apple	20m
Avicennia marina	Grey Mangrove	4m
Banksia integrifolia	Coastal Banksia	10m
Banksia serrata	Old Man Banksia	8m
Casuarina glauca	Swamp Oak	20m
Ceratopetalum apetalum	Coachwood	20m
Corymbia gummifera	Red Bloodwood	20m
Elaeocarpus reticulatus	Blueberry Ash	10m
Eucalyptus botryoidies	Bangalay	18m

Botanical Name	Common Name	Height
Eucalyptus haemastoma	Scribbly Gum	15m
Eucalyptus pilularis	Blackbutt	30m
Eucalyptus piperita	Sydney Peppermint	15m
Eucalyptus punctata	Grey Gum	30m
Eucalyptus resinifera	Red Mahogany	20m
Eucalyptus robusta	Swamp Mahogany	30m
Ficus rubiginosa	Port Jackson Fig	15m
Glochidion ferdinandi	Cheese Tree	8m
Syncarpia glomulifera	Turpentine	20m
Local Native Plants		
Acacia falcata	Hickory Leaf Wattle	4m
Acacia floribunda	White Sallow Wattle	4m
Bursaria spinosa	Blackthorn bush	1-2m
Daviesia ulicifolia	Gorse bitter-pea	2m
Dillwynia parvifolia	Small Parrot-pea	1m
Dodonea triquetra	Hop Bush	1m
Lasiopetalum parviflorum	Velvet Bush	1m
Ozothamnus diosmifolius	Everlasting	1m
Persoonia hirsuta	Geebung	1m
Pultenaea villosa	Hairy Bush Pea	1m
Rapanea variabilis	Mutton Wood	3-4m
Dianella caerulea	Blue Flax Lily	Sedge
Dianella longifolia	Mauve Flax Lily	Sedge
Dianella revoluta	Blueberry Lily	Sedge
Echinopogon	Tufted Hedgehog Grass	Grass
Lomandra longifolia	Spiny Mat-rush	Sedge

5.3 Related implications of the proposed planning framework

It is important to note that as this proposed Terrestrial Biodiversity overlay in the GRLEP2021 is considered to represent areas of environmentally sensitive land and buffer areas, development that is otherwise able to be carried out through the complying development pathway under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 will now require a DA to be made to, considered and approved by council. This will include new dwelling houses, and additions and extensions to dwelling houses. While in the interests of efficiency development of planning framework basedaround a small number of quantifiable controls was considered, ultimately a more flexible, merit based framework was considered appropriate due to high quality biodiversity being heavily context dependant.

5.4 Next Steps

Over the longer term following the completion of the Biodiversity Strategy, it is recommended that council consider integrating the provisions of the Tree Management Policy and the Biodiversity Guideas they relate to the disturbance of trees and vegetation a spart of the development process regulated under the Environmental Planning and Assessment Act 1979 into the Georges River Local Environmental Plan 2021 and the Georges River Development Control Plan 2021 as appropriate.