GREENWAY MASTER PLAN

Cooks to Cove GreenWay

July 2018

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INNER WEST

greenway

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Executive Summary

The Cooks to Cove GreenWay was first conceptualised more than fifteen years ago by enthusiastic local community advocates who saw the potential for an environmental, cultural and sustainable transport corridor, including active (non-motorised) transport and public transport (light rail) along the route of the former Dulwich Hill Goods Line. Since its first conception, the idea has evolved into a clear vision for:

"A recognisable environmental, cultural and nonmotorized transport corridor linking the subcatchments of two of Sydney's most important waterways"

This Master Plan represents a significant step forward for the Cooks to Cove GreenWay. For the first time in its history, there is significant funding available to build the physical infrastructure of the GreenWay. At this point in time, the Master Plan has a key role to play in setting out how this funding should be allocated, what should be delivered and how it should be implemented.

The Master Plan has been informed by existing documents that have previously established the vision and articulated strategic plans for the GreenWay, including the 2009 GreenWay Master Plan and Co-ordination Strategy, and 2012 Biodiversity and Active Transport Strategies. These existing documents have provided the basis for the objectives and planning strategies that have shaped the Master Plan.

A review of the broader strategic context around the GreenWay has highlighted important changes since previous plans and strategies were prepared. The light rail was opened in 2014, significant development is underway along the GreenWay corridor, natural areas are under increasing pressure and there is more demand for open space and transport infrastructure. These pressures are reflected across Sydney, and one of the responses at State Government level has been to plan for "green grid" infrastructure in district plans. Completion of the Cooks to Cove GreenWay has been identified as the number one Green Grid priority project in the Eastern City District Plan for Sydney (Greater Sydney Commission 2018). The Cooks to Cove GreenWay has the potential to become a high quality exemplar of green grid infrastructure in Sydney and to set the benchmark for future GreenWay projects.

The Cooks to Cove GreenWay has regional significance as a recreational and active transport route, an ecological corridor and a place of cultural significance. Stakeholder consultation undertaken during the Master Plan process also highlighted the desire for the GreenWay to meet a diverse range of local community aspirations, and for it to retain the local character of places that people know and love.

Other greenways around the world have also evolved from grassroots beginnings, and some of the most successful examples have managed to strike a balance between their role as a regional destination and their role in meeting local community needs. greenways around the world have succeeded when they have:

- Successfully integrated multiple uses and met multiple objectives
- Created trails as destinations in their own right, with cultural programs supporting this goal
- Staged implementation in sections, with each section being delivered as a complete package
- Involved strong community partnerships
- Created places where people can connect with nature in urban landscapes

The Master Plan includes capital works plans organised into six precincts along the GreenWay. Proposed works aim to achieve four main outcomes:

- A connected ecological corridor, supporting diverse locally native species and links to the surrounding neighbourhoods
- A connected active transport corridor, with a main spine between the Cooks River and Iron Cove, and links into the surrounding neighbourhood
- Diverse recreation opportunities, including the opportunity to connect with nature
- An engaging cultural experience, which integrates public art and facilitates education and engagement with local stories

This Master Plan seeks to integrate these four outcomes through design for multifunctional infrastructure and places.

The Master Plan proposes approximately $57 million in capital works along the GreenWay. The highest priority works have current funding available, and are focused on:

- Completing the major "Missing Links" in the shared path, which include the "central links" between Parramatta Road and Old Canterbury Road, and the "southern links" between Old Canterbury Road and the Cooks River
- Creating new public spaces along the light rail corridor, including significant spaces at Lewisham West and Dulwich Hill
- Integrating ecological restoration, public art and community infrastructure with proposed works

Beyond these highest priority works, the Master Plan also proposes:

- Improved path connections across roads throughout the corridor, including grade-separated crossings where possible, and improved at-grade crossings elsewhere
- A major upgrade of the Hawthorne Canal parks, including Richard Murden and Hawthorne Reserves
- Major renewal in the precinct where the GreenWay meets the Cooks River – with plans for this area to be integrated with planning also underway for the Marrickville Golf Course and Ewen Park

The table below summarises the estimated funding required to implement the GreenWay Master Plan. Proposed works have been classified as:

- Priority A: 1-5 year timeframe
- Priority B: 5-10 year timeframe
- Priority C: 10+ years timeframe

Table 1. Summary of implementation costs

Precinct	Priority A	Priority B	Priority C
Hawthorne Canal Precinct	$302,000	$4,301,500	$14,612,500
Gadigal Reserve Precinct	$6,084,000	$1,527,000	$-
Mills Precinct	$3,537,600	$724,400	$1,948,000
Dulwich Hill Parks Precinct	$9,742,000	$513,000	$429,000
Dulwich Grove Precinct	$4,025,000	$2,534,000	$429,000
Cooks River Precinct	$1,717,000	$4,869,000	$562,000
	$25,407,600	**$14,468,900**	**$17,980,500**

1.0
INTRODUCTION

1.1 What is the Cooks to Cove GreenWay?

The Cooks to Cove GreenWay is envisaged as an urban green corridor, which functions as a biodiversity corridor, a continuous and connected 5.5km long shared path, and a platform for cultural engagement and recreation. The name 'Cooks to Cove GreenWay' embodies these ideas: 'Cooks to Cove' representing local places of cultural significance from the Cooks River to Iron Cove, 'Green' representing environment and 'Way' representing movement along a path.

The Cooks to Cove GreenWay has previously been known simply as 'the GreenWay', however the term 'greenway' is used around the world and is becoming more widely used in Australia to refer to other urban green corridors. Therefore the name 'Cooks to Cove GreenWay' has been proposed to distinguish this greenway from others, with a simple reference to its location, linking the Cooks River to Iron Cove.

Where is the Cooks to Cove GreenWay?

The Cooks to Cove GreenWay is located in Sydney's inner west. A location map is at right. The Cooks to Cove GreenWay links the Cooks River in Earlwood to the Parramatta River at Iron Cove, and for much of its route, it follows the alignment of the former Long Cove Creek - now Hawthorne Canal. It also follows the route of the light rail (and former Rozelle goods line) corridor via Dulwich Hill, Summer Hill, Lewisham, Haberfield and Lilyfield. It links two well established shared paths – the Bay Run around Iron Cove at its northern end, and the Cooks River shared path at its southern end.

What makes this GreenWay special?

An important feature of the Cooks to Cove GreenWay is that the concept has evolved from a grassroots idea that was first conceived around 20 years ago. Several community groups, including environment and cycling groups, have worked hard to build support for the GreenWay, and are still closely involved in its development. The community's and Inner West Council's vision for the GreenWay, as articulated in the 2009 Master Plan (Marrickville Council 2009) is for:

"a recognisable environmental, cultural and non-motorised transport corridor linking the subcatchments of two of Sydney's most important waterways".

What is a 'greenway'?

A greenway is a linear corridor, typically used for recreation and/or active (non-motorised) transport (e.g. walking, running, riding) and sometimes including public transit uses. As the term implies, it is typically a 'green' or vegetated corridor.

The term 'greenway' is used around the world, and while greenways in different places all have a local flavour, typically:

- They are located in urban areas
- Being green corridors, they often feature ecological restoration and/or a biodiversity focus, but always feature vegetation
- They follow the routes of other urban infrastructure (such as rail corridors)
- A central feature is an off-road shared path, continuous over several kilometres
- Some emphasise recreational use and present an opportunity to escape from urban areas into nature
- Others emphasise active transport use and feature strong connections to local destinations
- They often invite engagement with local culture, and may feature local history, public art, or other interpretive elements

Figure 1. Regional location

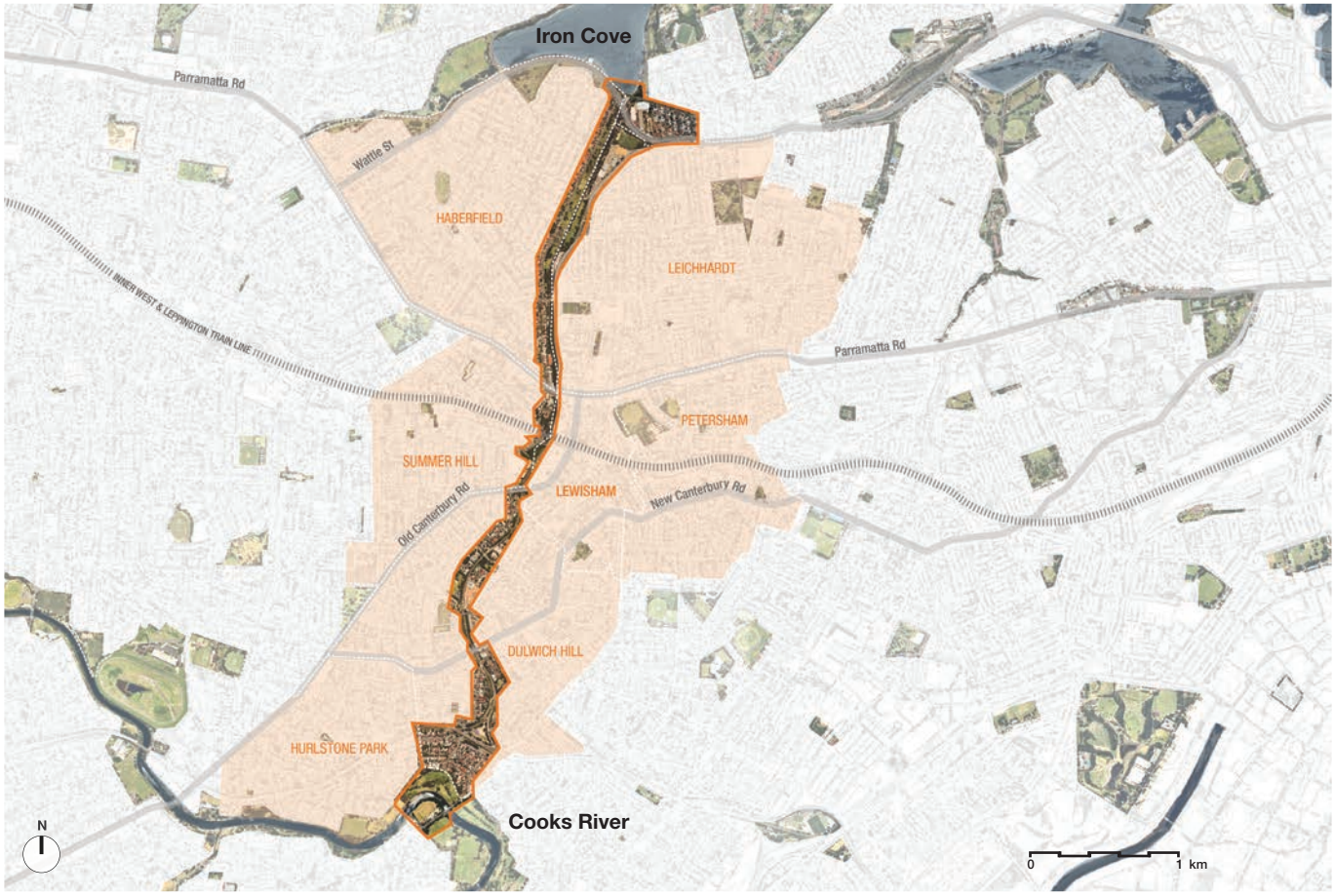


Figure 2. Suburbs around the GreenWay

Evolution of the GreenWay

The Cooks to Cove GreenWay is not a new concept – it has been evolving over the last twenty years. It is therefore important to understand its context and build on the foundations established by previous efforts.

1990s: : the Cooks to Cove GreenWay had its genesis in the 1990s. At this time, local environmental advocates began working on bushcare sites within the rail corridor and first conceptualised the idea of an off-road trail for walking and riding within the rail corridor, plus a wildlife corridor connecting two of Sydney's most important waterways – Cooks River and the Parramatta River. An early funding application was for an arts trail along the corridor. The community's vision for the GreenWay therefore always included active transport, bushcare and public art at its heart. Over the years, the idea has evolved to also incorporate sustainability education and promotion, and placemaking.

2001: the GreenWay concept began to gather momentum, and the first grant funding was awarded to a GreenWay related project. The Inner West Environment Group (IWEG) was formed and it formally established a series of bushcare sites in the rail corridor. Around the same time, local advocates began to promote the concept to the local councils and State Government. The NSW Roads and Traffic Authority (RTA) undertook a preliminary investigation into a pathway link under Parramatta Road.

2002: the local councils (Ashfield, Canterbury, Leichhardt and Marrickville) first agreed in principle to support the GreenWay vision. However there was still limited funding available to build on the vision.

2003-2007: the GreenWay concept was refined through Steering Committee meetings, community workshops and "think tank" consultations. Another community group called Friends of the GreenWay (FoG) formed to further advocate to councils and local members of parliament for the realisation of the GreenWay vision. Important projects progressed, including "Creating a Green Link" and "Hawthorne Canal Active Transport (HCAT)" projects. Over this period, several grants were obtained for the GreenWay, including funding to develop the Co-ordination Strategy and funding for pathway works at Gadigal Reserve. Creating a Green Link also received funding under the 2007 Federal Envirofund program.

2008: the GreenWay was included in key State Government planning strategies including the Inner West Sub-Regional Plan and the Sydney Metropolitan Recreational Trails Network.

2009: the GreenWay Master Plan and Coordination Strategy (Marrickville Council 2009) was completed and adopted by the local councils (Marrickville, Canterbury, Leichhardt, Ashfield). This remains a key foundational document articulating the vision and objectives for the GreenWay, setting the direction and informing the current Master Plan.

2009-2012: the GreenWay Urban Sustainability Project was funded by a $1.8 million grant from the NSW Environmental Trust. This facilitated:

- Engagement with community and other stakeholders
- Development of a governance model for the GreenWay
- Development of strategies including a biodiversity strategy and active transport strategy
- Installing signage and wayfinding along the GreenWay corridor
- Increased effort towards bushcare along the GreenWay, including resources and training for volunteers
- New activities along the GreenWay, including a GreenWay festival, art exhibitions, a primary school sustainability program, cycling courses for local residents, and community environmental events such as Clean Up Australia Day and National Tree Day

In 2010, the former State Government committed to the extension of the light rail from Lilyfield to Dulwich Hill. This also included a commitment to complete the southern section of the GreenWay, and the NSW Roads and Traffic Authority commissioned a study "Strategic Concepts for a Cooks River to Iron Cove Shared Path" (The Environment Works 2010). However the shared path was deferred indefinitely, following the State election in 2011.

2012: the local councils (Marrickville, Canterbury, Leichhardt, Ashfield) established the GreenWay Place Management program and committed ongoing funding to support it (funding is now committed until at least 2019). The five main elements of the Place Management Program are:

1. Place management/place making
2. Sustainable transport
3. Urban bushcare
4. Art and community culture
5. Sustainability education and promotion

2015: the Missing Links report made a significant step to redefine how the GreenWay shared path could be realised following completion of the light rail. The Missing Links report is focused only on the main shared path itself, but was important in defining what would be involved in completing this element of the vision and in attracting funding to build this infrastructure.

2016-2018: in 2016, the NSW State Government and Inner West Council announced a joint funding commitment of $14.4 million towards the GreenWay, to be spent over the following five years. In 2018, Greater Sydney Commission announced a further $8.8 million for GreenWay works, as part of the Parramatta Road Urban Amenity Improvement Program. These funds represent a major step forward for the GreenWay, and this Master Plan will guide how this funding should be implemented.

Table 2. Timeline of the GreenWay

Year	Significant publications / events	Funding
1998	Community bushcare and cycling groups become active along the GreenWay	
2001	The Inner West Environmental Group (IWEG) establishes a number of bushcare sites	First grant funding for GreenWay related projects was awarded
2002	Ashfield, Canterbury, Leichhardt and Marrickville Councils agree in principle to support the GreenWay Vision	
2006		Funding obtained under the Metropolitan Greenspace Program for a coordination strategy
2008	The GreenWay is included in key planning strategies	
2009	GreenWay Coordination Strategy & Master Plan exhibited and adopted by the four councils (Marrickville, Canterbury, Leichhardt, Ashfield)	
2010		GreenWay Urban Sustainability Project funded by $1.8M NSW Environmental Trust grant (3 years)
2011	Inner West Light Rail construction starts. Completion of the GreenWay is deferred by State Government	
2012	GreenWay Biodiversity Strategy developed by the four councils	
2012	GreenWay debate in NSW Parliament House	
2012	GreenWay Place Management Program established	
2014	Light rail opened	
2015	Missing Links Report	
2016	Funding announcements	In 2016, NSW State Government and Inner West Council announced a joint funding commitment of $14.4 million towards the GreenWay
2018	Funding announcements	In 2018, Greater Sydney Commission announced a further $8.8 million for GreenWay works

The GreenWay today

The GreenWay already incorporates several important elements:

- The light rail line
- Sections of shared path along approximately 50% of the GreenWay corridor (the route is currently on-road in the remainder of the corridor);
- Well-established bushcare sites;
- Other established vegetation with habitat value;
- A series of parks incorporating a range of existing passive and active uses
- Public art pieces along the corridor, and a well-established cultural program

For the last six years, the GreenWay Place Management Program has focused on the following elements:

1. Place management/place making, with a focus on the 9 new light rail stops
2. Sustainable transport, in particular the publication of the "Missing Links" report (2015), calling for the completion of the remaining 50% of the GreenWay Trail
3. Urban bushcare, maintenance of 10 existing and establishment of 6 new GreenWay bushcare sites
4. Art and community culture, celebrating the natural and historical qualities of the GreenWay
5. Sustainability education and promotion, using the GreenWay as an outdoor class room to learn about urban sustainability


Hawthorne light rail station


Existing public art


Restored bushland in Gadigal Reserve


Existing off-road shared path

1.2 This Master Plan

This Master Plan is a long-term strategic plan which sets the direction for the development of the Cooks to Cove GreenWay.

Structure

The Master Plan:

1. introduces the Cooks to Cove GreenWay and explains the purpose and scope of the Master Plan
2. provides background information on the strategic context of the GreenWay as well as the context around active transport, ecology, recreation and culture
3. presents an overview of the existing character of the GreenWay corridor, divided into six precincts
4. summarises the outcomes of stakeholder engagement
5. presents lessons from other GreenWays around the world
6. presents the strategies which guide the Master Plan and future design & implementation
7. presents the Master Plan itself, including plans for six precincts
8. summarises the proposed implementation strategy for the Master Plan
9. presents guidelines for the design stage, including recommendations on materials, finishes and planting

Scope

It is intended that this Master Plan becomes the principal plan guiding the implementation of physical elements of the GreenWay, both built and natural.

The diagram below shows three main elements related to the actualisation of the GreenWay:

- This Master Plan, which focuses on physical elements (built and natural) of the GreenWay
- Programs currently planned and delivered by the GreenWay Place Management Program in collaboration with various sections of Council, including ecology, sustainability education, living arts, active transport and recreation programs.
- Management and maintenance of new and existing infrastructure, natural areas, open space, and land owner agreements

While programs and the management and maintenance of the GreenWay are not covered by this master plan, they are closely linked. For example, in order to plan the physical works proposed in this Master Plan, it has been important to consider how the GreenWay will be used and managed.

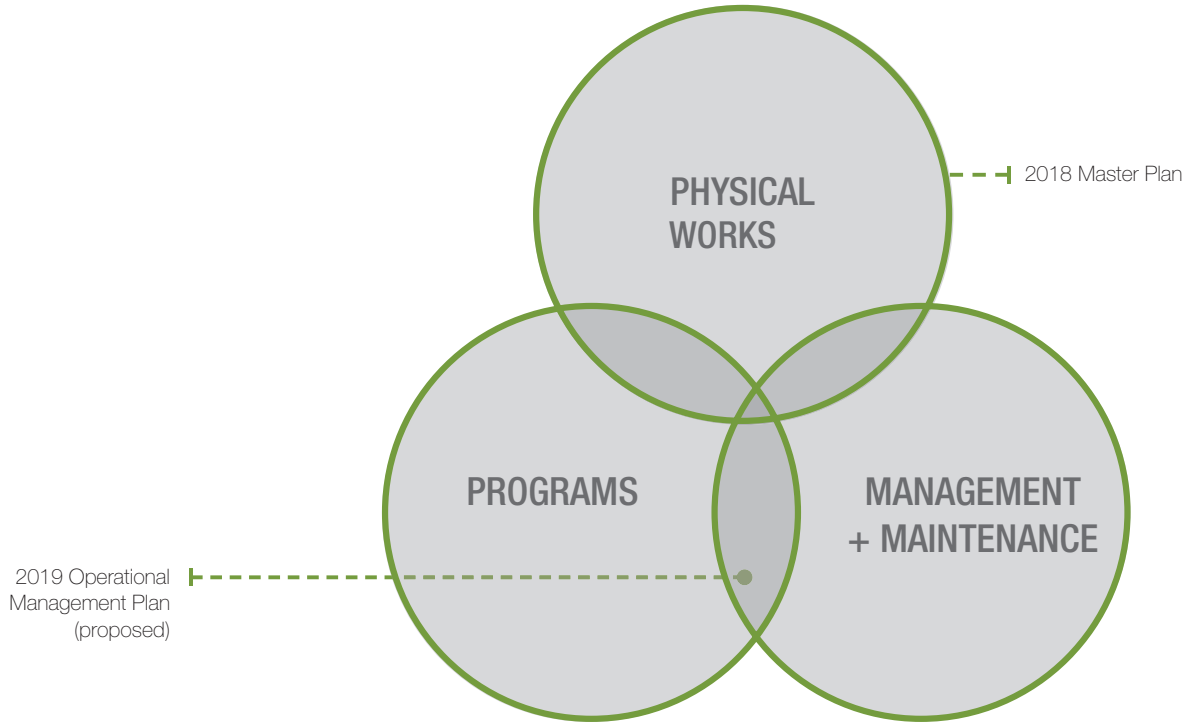


Diagram 1. Relationship between GreenWay elements

An operational management plan is to be developed for continued delivery of GreenWay programs, maintenance, and land management arrangements and agreements to ensure its success. This is a priority for new GreenWay areas delivered in the short term.

Objectives

The objectives of the GreenWay Master Plan are shown in Table 3. The objectives have been developed based on:

- A synthesis of the ideas in the 2009 GreenWay Master Plan and Implementation Strategy
- Review of the objectives set in the strategic documents developed since 2009, including the GreenWay Biodiversity Strategy (2012) and GreenWay Active Transport Strategy (2012)
- Review of the changing strategic context around the GreenWay since 2009, as discussed in Section 2.1.
- Discussion with Inner West Council and other stakeholders during development of this Master Plan

The 2009 GreenWay Master Plan and Co-ordination Strategy established the vision for the GreenWay, discussed opportunities for the GreenWay and proposed a set of actions.

It remains relevant as a foundational strategic plan for the GreenWay, but not as a master plan per se.

The GreenWay can be a benchmark of green infrastructure that supports habitats and important ecological processes in an urban setting, as well as addressing the local pressures on traffic and public transport, open space, demands for recreation, cultural experience, and greater diversity of recreation opportunities.

The GreenWay also has the potential to be an exemplar of the Green Grid due to its strategic location between the Cooks River and Iron Cove, location within urban renewal corridors, long history of community support and involvement, and its commitment to achieve multiple objectives including ecological, active transport, recreation and cultural objectives.

These four main thematic objectives return throughout this Master Plan and are illustrated with the following icons:

ecology; the GreenWay as biodiversity corridor

active transport; the GreenWay as active transport corridor

recreation; the GreenWay as a place that meets multiple recreational needs

culture; the GreenWay as a focul point for community and culture

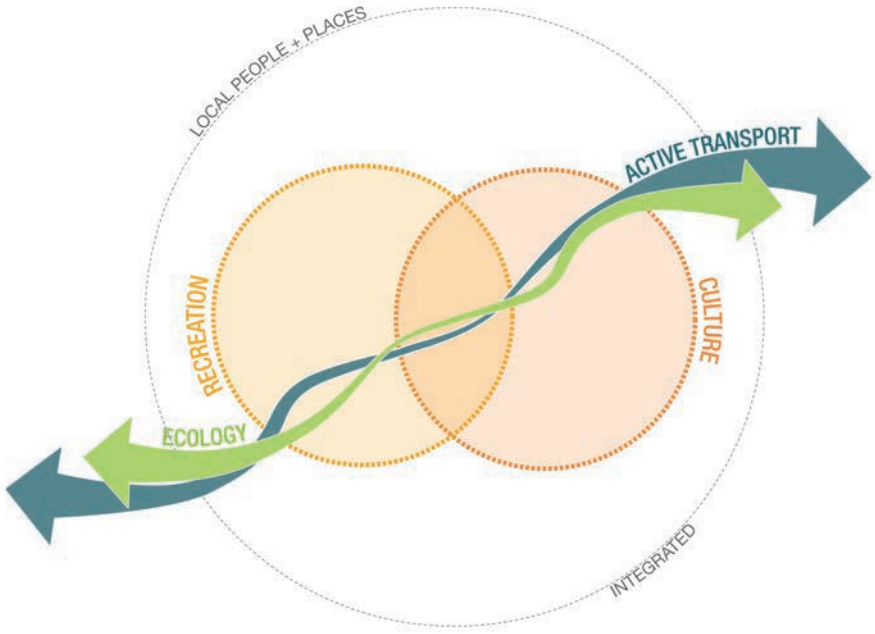


Diagram 2. The GreenWay objectives have been organised into six themes, and this diagram illustrates the relationship between these themes. Ecology and active transport are both ideas that need connectivity along the corridor and create the “spine” of the GreenWay; recreation and culture build on this spine, activating places along the corridor. Local people and places and integration are shown as key ideas underpinning the GreenWay, tying it together and completing the picture.

Table 3. GreenWay objectives

	GreenWay Elements Proposed in 2009	What's changed?	2018 Master Plan Objectives
Ecology	- Enhanced biodiversity corridor - Protection of remnant vegetation and endangered and/or threatened fauna populations - Expanded number and extent of revegetation sites - Expanded bushcare program - Naturalisation of Hawthorne Canal and Cooks River - Improved stormwater quality management - Control of exotic plants and animals	- Light rail construction and increased residential development has had a negative impact on habitat and biodiversity - There is increasing awareness of the value of urban biodiversity, and increasing knowledge about the conditions in which urban wildlife thrives	- Protect and enhance the role of the GreenWay as an important urban biodiversity corridor linking two of Sydney's most significant urban waterways
Active Transport	- A shared multi-user off-road trail as the "spine" - A "trellis" network of green, quiet, cycling and pedestrian friendly streets - Disability access along and across the corridor - Access to public transport	- Light rail construction has improved public transport access and created better east-west pedestrian connections across each stop, but has established a new use of the rail corridor itself, with associated infrastructure.	- Create a safe and permeable active transport corridor with easy and safe connections into the surrounding street network and open spaces to maximise access, permeability and circulation
Recreation	- A place for relaxation, a place to enjoy and reconnect with nature	- There is an opportunity to create new public spaces within former rail corridor lands - Local recreation needs research has shown that the most popular recreational activities in the Inner West align well with the opportunities the GreenWay provides	- Integrate a range of passive and active recreation opportunities - Deliver a series of interconnected, high quality, open spaces
Culture	- More involvement of the Aboriginal community - Interpretation and adaptive reuse of industrial and rail heritage items - Greater social engagement via development of key cultural nodes, creation of on-ground interest throughout the corridor, improved connectivity and events - Interpretation and environmental education	- Proposed Gadigal Wayfinding project will include art, interpreting Aboriginal culture & history - Several public art pieces were installed as part of the light rail construction; - GreenWay Place Management Program has established a strong program of cultural activities including art events and sustainability education	- Protect, enhance and interpret the unique environmental, industrial and cultural heritage of the corridor - Use the GreenWay for education purposes and to share local stories and information - Establish the GreenWay as a locale for quality public art
Local people + places	- Support and grow the GreenWay community - Enhance interactions between people - Encourage community ownership - Expanded volunteer program - Retain and recognise local "places"	- Community involvement has remained strong - Placemaking has become more of a focus since the establishment of the GreenWay Place Management Program	- Create and enhance community infrastructure along the GreenWay - Enhance amenity value, design quality, identity and a sense of place. Ensure that outcomes are authentic and sustainable - provide places that support programs and events
Integration	- Synergies between active and public transport, biodiversity, water quality, and culture	- With increasing urban development and more pressure on open space in the local area, integration of multiple uses and has taken on increasing importance - The Cooks to Cove GreenWay has been identified as the highest priority Green Grid project in the Eastern Sydney District Plan due to its alignment with Green Grid principles and ability to deliver multiple positive outcomes	- Create a high quality example of multifunctional "green grid" infrastructure, weaving together physical, natural and cultural elements into a coherent and integrated whole - Enhance the role of the corridor as a vital component of Sydney's Green Grid which can help manage and mitigate the impacts of climate change on urban ecology and people

Delivery

This Master Plan is a 10-15 year plan, which covers the whole GreenWay corridor including the streetscapes, parks, open spaces and bushland areas along the route.

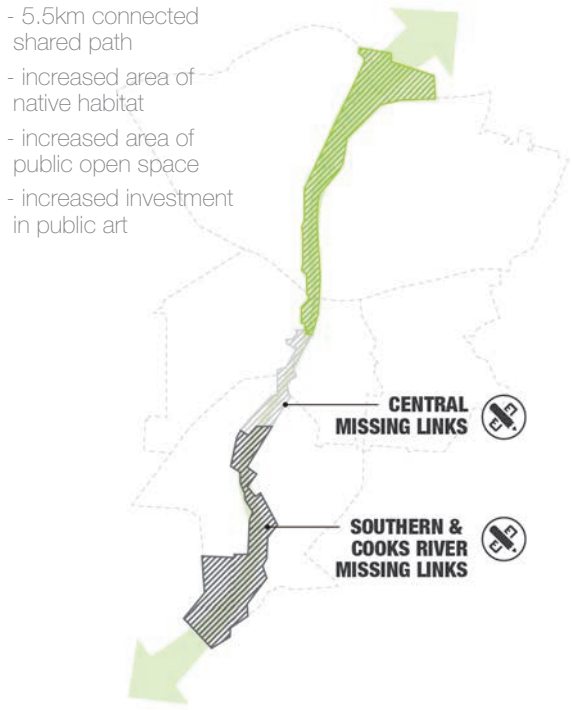
It includes plans for approximately $25.6 million of works which are currently funded and planned to be implemented by 2022, as well as a further approximately $31.7 million of works for which funding needs to be sought. The aspiration is that these works would be complete by 2030.

Current funding includes approximately $7.2 million in funding from Transport for NSW's active transport budget, and $8.8 million from the Greater Sydney Commission's Parramatta Road Urban Amenity Improvement Program (UAIP). A substantial portion of the current funding therefore has an active transport foucs. The UAIP funding is specifically allocated to a new pedestrian and cycle bridge under Parramatta Road and a new pedestrian and cycle tunnel under Longport Street.

Current funding is focused on completion of the 'missing links' along the main GreenWay path – the spine of the corridor. The highest priority section is the central area from Parramatta Road to Old Canterbury Road; the next priority is the southern section, from Old Canterbury Road to the Cooks River. Current funding will also contribute to natural and cultural infrastructure, where it is directly connected to the main shared path.

The Master Plan therefore proposes that by 2022:

- A connected shared path would be complete along the spine of the corridor (i.e. completion of the "Missing Links").
- New public open spaces would be created along the light rail corridor, including spaces at Lewisham West and Dulwich Hill (north of Jack Shanahan Reserve)
- These spaces would include native revegetation, public art and other activities for people to enjoy



2018 - 2022: COMPLETION OF FUNDED MISSING LINKS

A connected shared path would be complete along the spine of the corridor (i.e. completion of the "Missing Links").

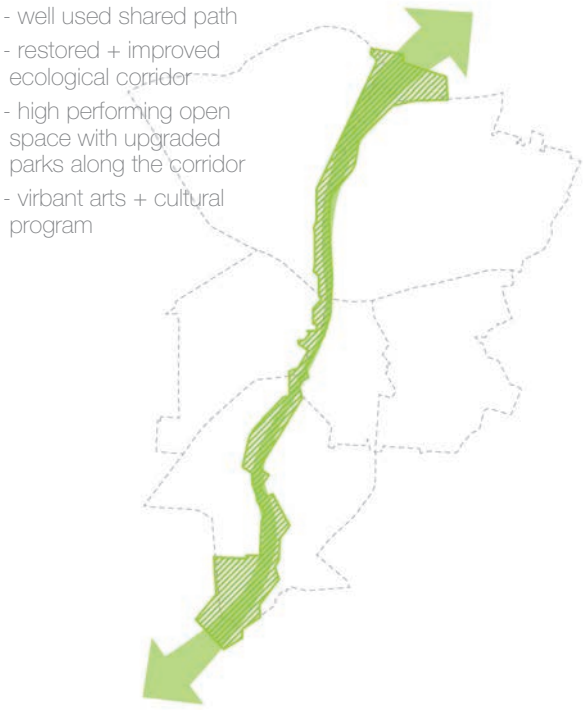
Diagram 3. Delivery of the GreenWay

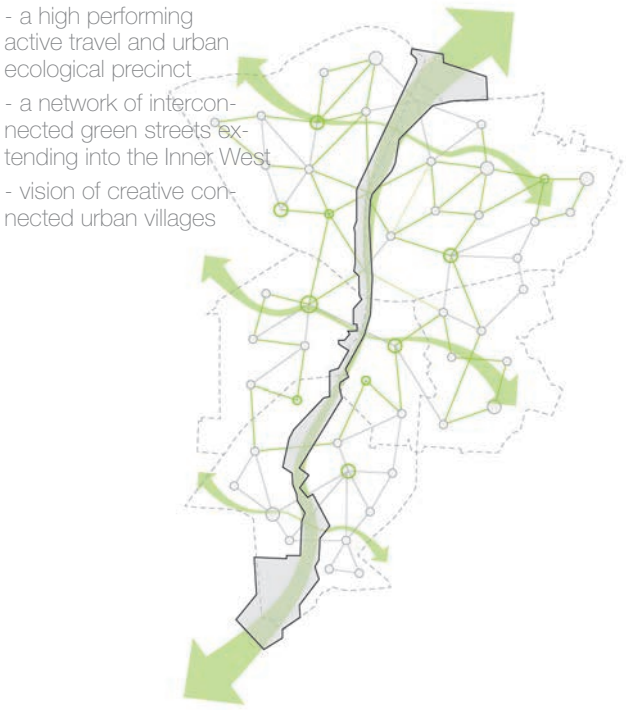
By 2030:

- The shared path will be well-used for both walking and riding
- The ecological corridor will be restored and improved with well-established vegetation and connected habitat
- Parks along the corridor will be upgraded and will function as high performing public open space in an increasingly dense part of the city
- The GreenWay will support an increasingly vibrant arts and cultural & education program

Despite this significant scope and long-term ambitions, it is expected that the GreenWay will continue to evolve beyond the life of this Master Plan. The Master Plan refers to the concept of a 'trellis', which was envisaged in the 2009 Master Plan as a network of easy and safe connections to a GreenWay 'spine', principally using quiet local streets.

The 'trellis' is beyond the scope of the current Master Plan, however the document does identify important (existing and proposed) east-west connections, which suggest where the trellis should be developed. It is recommended that these connections should be developed opportunistically – for example as part of infrastructure renewal or redevelopment of the surrounding area. In this way the trellis could be developed at low cost.





2022 - 2030: COMPLETE CORRIDOR

To complete the GreenWay, places along the GreenWay will be developed in stages. Beyond the main spine, the GreenWay will continue to provide built, ecological and cultural infrastructure to serve its multiple purposes.

ONGOING

The GreenWay will continue to evolve, as the people who use it and care for it contribute to its development. It aims to spread beyond its corridor as a trellis into the surrounding neighbourhoods. The Trellis will be delivered opportunistically and with infrastructure renewal in local streets.

2.0
CONTEXT

2.1 Strategic context

The Master Plan has been based on a range of strategic plans, documents and strategies, including the GreenWay vision established in 2009. While the community's established vision and set of ideas articulated in 2009 remains a relevant starting point for the current Master Plan, it is also important to look at what's changed since the time these plans were developed, including the opening of the light rail, significant residential development and changes to the planning context

Since 2009 there have also been changes in the city as a whole, including broader participation in active transport and evolving ideas about urban ecology, recreation and urban green space. These changes are discussed here and in the following sections.

Key reference documents strategic context

Parramatta Road Urban Transformation Strategy, 2016

Eastern City District Plan for Growing Sydney, 2017

Greener Places, 2018

The Bays Precinct Transformation Plan, 2015

Light rail

The extended light rail line between Lilyfield and Dulwich Hill was opened in 2014. This changed the GreenWay in at least three important ways:

- It put both tracks of the former goods line into active rail service. While there are some sections of the rail corridor which are wide enough to also accommodate a shared path, it effectively ruled out the idea (suggested in the 2009 Master Plan) to locate a shared path within the rail formation itself, utilising existing road underpasses
- It includes nine new stops, which have become important east-west connectors where it's possible to cross the rail corridor on foot, and which have been a focus of placemaking efforts as part of the GreenWay Place Management Program
- It triggered significant redevelopment and densification along the GreenWay - discussed further below

Urban development

The GreenWay corridor is located in an area of significant population growth and urban consolidation, which is resulting in increasing population density (Figure 4). It is located within and overlaps three important corridors:

- Inner West Light Rail. The implementation of the light rail line between Dulwich Hill and Rozelle has been accompanied by rezoning along the light rail corridor. Recent development includes medium and high density developments such as Leichhardt Green, Luna, Summer Hills Flour Mill and Arlington Grove.
- The Sydney Metro City & Southwest intersects with the southern end of the GreenWay. The Eastern City District Plan identifies urban renewal opportunities aligned with the Metro, including at Dulwich Hill and Hurlstone Park, both of which are adjacent to the GreenWay.
- The Parramatta Road Urban Transformation Corridor. This corridor intersects with the northern portion of the GreenWay at the Taverners Hill precinct located around Taverners Hill Light Rail Stop.

Overall, new development is expected to include 6,000 to 9,000 new homes along the GreenWay corridor over approximately 20 years.

The significant redevelopment increases pressure on open space. It also increases congestion on roads and transport services particularly at the local levels. The Inner West Light Rail, for example, has experienced significant increase in patronage over the last four years, particularly in peak hour.

Increasing density typically reduces the quantity of open space (including private open space) and formalises open spaces, reducing their habitat value. Mature trees, dense shrubs and deep soil areas are all likely to be lost to some extent, and remaining open spaces are more likely to be well-trafficked, lit at night and hard-surfaced, with smaller planted areas on shallower soils.

The increase in building heights, results in an increase in vertical surfaces which trap and capture heat. This has an overall impact of absorbing and trapping urban heat in the local environment.

High quality green space and the Green Grid

There is an increasing recognition that with urban renewal there needs to be a corresponding investment in local open space and local community green infrastructure so that there is a higher quality and more diverse open space network, as well as improved accessibility to open space and improved linkages between open space.

The NSW Government Architect has published a draft green infrastructure policy for NSW – 'Greener Places' (NSW Government Architect, 2018) which defines "high performing" green spaces as multifunctional spaces designed to produce concurrent ecological, social, environmental and economic benefits, and puts forward four principles for delivering green infrastructure:

1. **Integration:** combine green infrastructure with urban development and grey infrastructure
2. **Connectivity:** create an interconnected network of open space
3. **Multifunctionality:** deliver multiple ecosystem services simultaneously
4. **Participation:** involve stakeholders in development and implementation

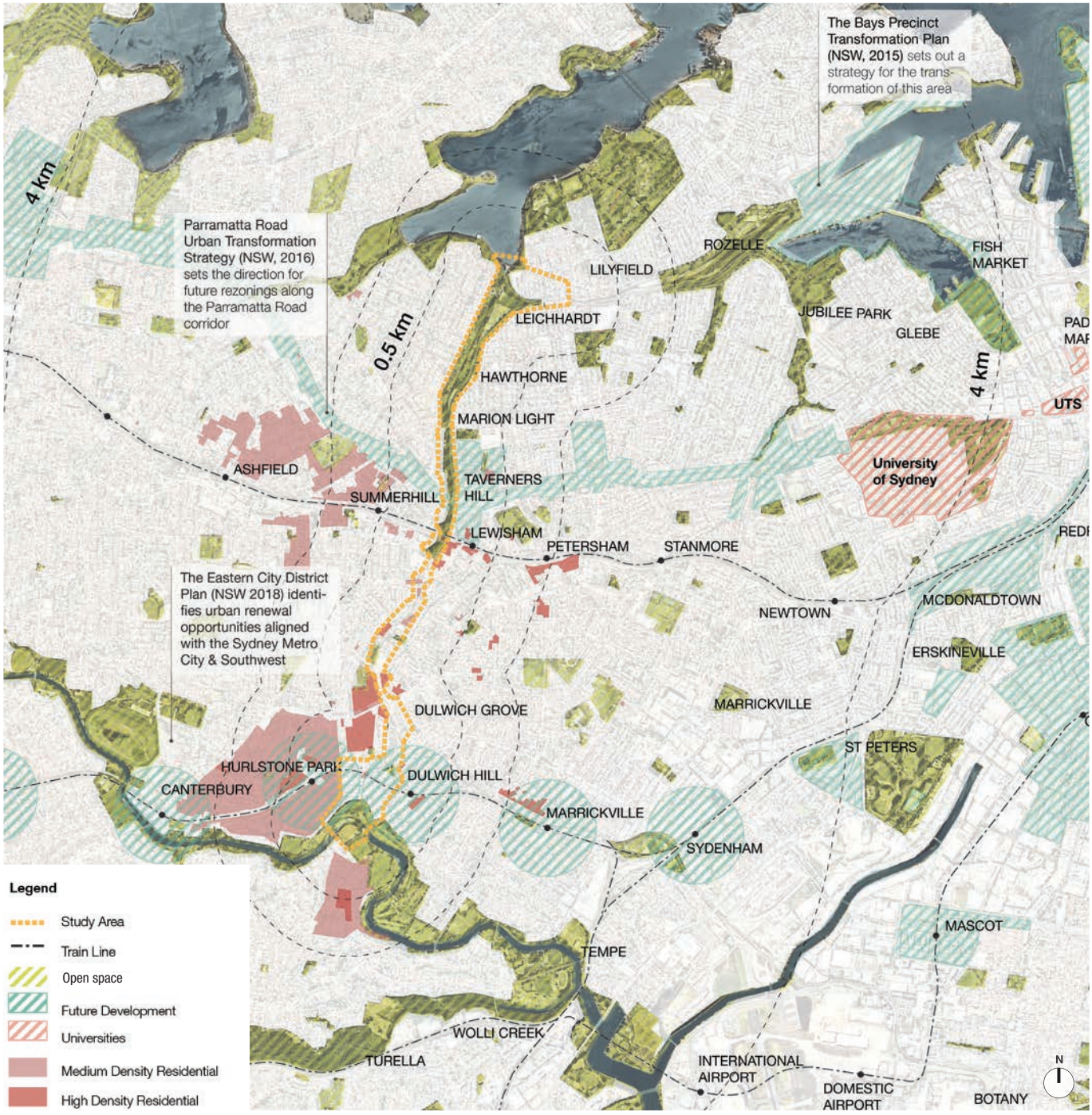


Figure 4. Urban development

'Greener Places' supports the 'Green Grid' infrastructure strategy (Tyrrell Studio and the NSW Government Architect, 2017), which proposes "the creation of a network of high quality open spaces that supports recreation, biodiversity and waterway health. The Green Grid will create a network that connects strategic, district and local centres, public transport hubs, and residential areas." The Green Grid is envisaged as an agricultural, recreational, ecological and hydrological grid.

This approach to open space is illustrated in the NSW Government's *A Plan for Growing Sydney*. This plan envisions Sydney's open spaces as an interconnected network of open spaces and parks, green streets, bushland reserves, walking tracks and regional parks through the delivery of the Green Grid. The integration of open space, combined with quality urban design outcomes and environmental resilience, are all urban design responses to consider during a period of considerable growth.

Completion of the Cooks to Cove GreenWay has been identified as the number one Green Grid priority project in the Eastern City District Plan for Sydney (Greater Sydney Commission 2017). (Figure 5)

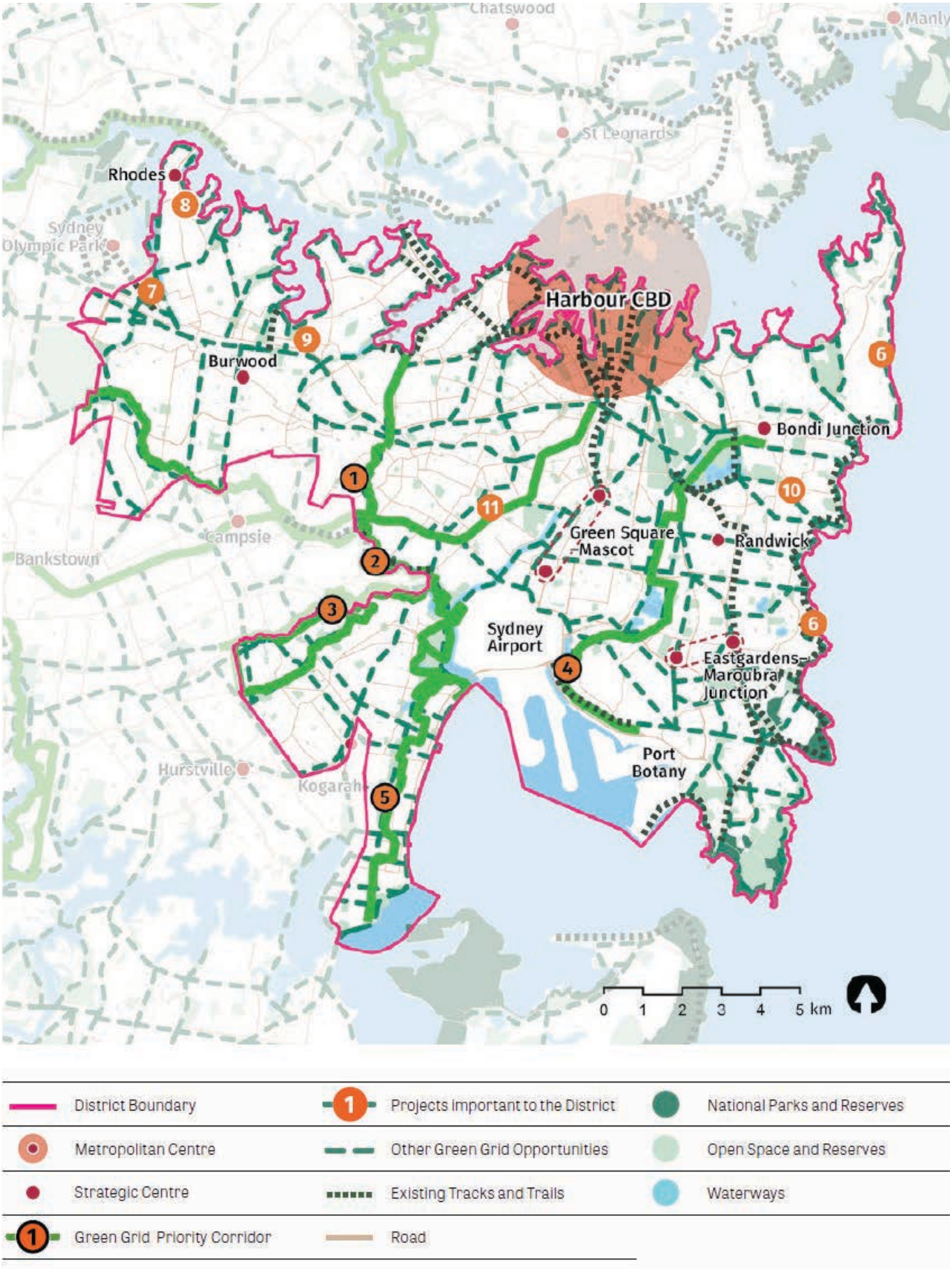


Figure 5. Eastern City Green Grid opportunities

Richard Murden Reserve bushcare site

2.2 Ecology

Urban areas support significant ecosystems, and biodiversity is found not only in protected areas but throughout urban landscapes. Research into urban ecology, including previous studies into the GreenWay's fauna, reveals how some species are able to survive and even thrive in urban areas. The studies also improve understanding of how to create effective habitat for a diverse range of native species in urban areas.

Key reference documents ecology

GreenWay Biodiversity Strategy, 2012

GreenWay Revegetation and Bushcare Plan, 2011

GreenWay Flora & Fauna Literature Review, 2010

Ecosystems

Urban ecosystems are important to the people who live in cities. Connection with the natural world plays an important role in human health, particularly in mental health and childhood development. City dwellers benefit from opportunities to connect with nature close to where they live and urban ecosystems also provide environmental services such as:

- mitigation of urban heat island effect
- reduction in stormwater runoff
- increased resilience to extreme events

The GreenWay's two waterways once supported rich ecosystems. Post-colonial development decimated the local bushland, of which only remnants remain. The waterways themselves have been piped and channelised. On the other hand, long-term access restrictions in the rail corridor have allowed a valuable vegetation corridor to re-establish along the GreenWay. Community bushcare has restored pockets of native vegetation and enhanced the ecological value of this corridor.

Threatened species

The GreenWay today supports regionally-significant ecosystems in an otherwise heavily urbanised area. Important locally native ecological communities and species which have been lost throughout much of the Inner West can still be found along the GreenWay corridor. The GreenWay Biodiversity Strategy (2012) identifies these, including:

- Modified remnant and/or recolonised fragments of Sydney Turpentine Ironbark Forest (STIF) Endangered Ecological Community
- An endangered population of the Long-nosed Bandicoot *(Perameles nasuta)*
- Grey headed flying foxes *(Pteropus poliocephalus)* and Eastern Bentwing Bats *(Miniopterus schriebersii oceanensis)* are also present within the GreenWay corridor, including an Eastern Bentwing Bats winter roost site. Both are threatened species.

There is a bandicoot protection area defined in the Marrickville Development Control Plan (2011) around the southern end of the GreenWay. This area requires actions for bandicoot habitat and adaptation within the urban environment, including undisturbed:

- Ability to access under buildings for nesting and shelter
- Grassy understorey for nesting and foraging
- Dense, weedy vegetation

Locally significant species

The GreenWay Flora and Fauna Literature Review (2010) also listed eight other species of local significance, previously recorded within 5 km of the GreenWay:

- Swift Parrot *(Lathamus discolour)*
- Turquoise Parrot *(Strigidae Neophema pulchella)*
- Powerful Owl *(Ninox strenua)*
- Masked Owl *(Tyto novaehollandiae)*
- Pied oyster catcher *(Haematopus longirostris)*
- Regent Honeyeater *(Xanthomyza Phrygia)*
- Superb Fruit-Dove *(Ptilinopus superbus)*
- Green and Golden Bell Frog *(Litoria aurea)*

In addition, the GreenWay corridor provides habitat to support other locally native species which are typically absent or uncommon across the rest of the Inner West, including small birds such as fairy wrens, finches, fantails and some species of honeyeaters. These small birds rely on dense understorey vegetation and adjacent native grassy patches, which occurs along the GreenWay in:

- Bushcare sites where community volunteers have established locally native species
- Other ecological restoration sites
- Patches of weedy vegetation including *Lantana camera* and *Cestrum pargini*

Waterways

The GreenWay follows two watercourses and links two significant waterways – the Cooks River and Iron Cove. From Dulwich Hill to the north, the GreenWay follows Hawthorne Canal, while from Dulwich Hill to the south, the GreenWay follows an unnamed tributary of the Cooks River. Both of these water courses have been piped or channelised for much of their length.

Biodiversity vision and objectives

The GreenWay Biodiversity Strategy (2012) defines a "biodiversity vision" for the GreenWay:

- an important wildlife corridor that is supported by a broader network of green streets and open space, linking habitat areas within and adjacent to the catchment.
- an urban refuge for a wide variety of native plants, animals and other organisms, where biodiversity can adapt and flourish in the face of current and emerging threats.
- supported by a community that feels connected to their local environment and has a sense of ownership of the GreenWay, actively protects the GreenWay and is educated about the importance of biodiversity.

It also defines six GreenWay biodiversity objectives:

1. Create a flora and fauna corridor which supports the original vegetation of the area, provides habitat, and facilitates movement and migration for a wide range of native plant and animal species throughout the GreenWay catchment;
2. Identify areas within and adjacent to the GreenWay catchment with high biodiversity values that require protection and improve the connectivity between these areas;
3. Protect and enhance the habitat and migration opportunities for locally significant or threatened native species, populations and communities (including the endangered population of Long-nosed Bandicoot), and allow for their continued evolution and survival in and beyond the GreenWay catchment;
4. Engage and educate residents and the broader community, including local businesses and visitors to the GreenWay, to encourage a sense of ownership and participation in protecting and restoring biodiversity in the GreenWay catchment;
5. Mitigate key threats to biodiversity to increase the survival and adaptive capacity of species, populations and ecological communities of plants and animals.
6. Provide strategic guidance to councils, private landowners and major stakeholders on how to coordinate biodiversity management across the four local government areas.

Bandicoot seen in Leichhardt

Eastern Bentwing Bat

Grey-headed flying fox

Existing features

The Greenway includes a mixture of remnant and restored native vegetation, and weedy (non-native and non-local) vegetation. It is important to note that all of these vegetation types have habitat value.

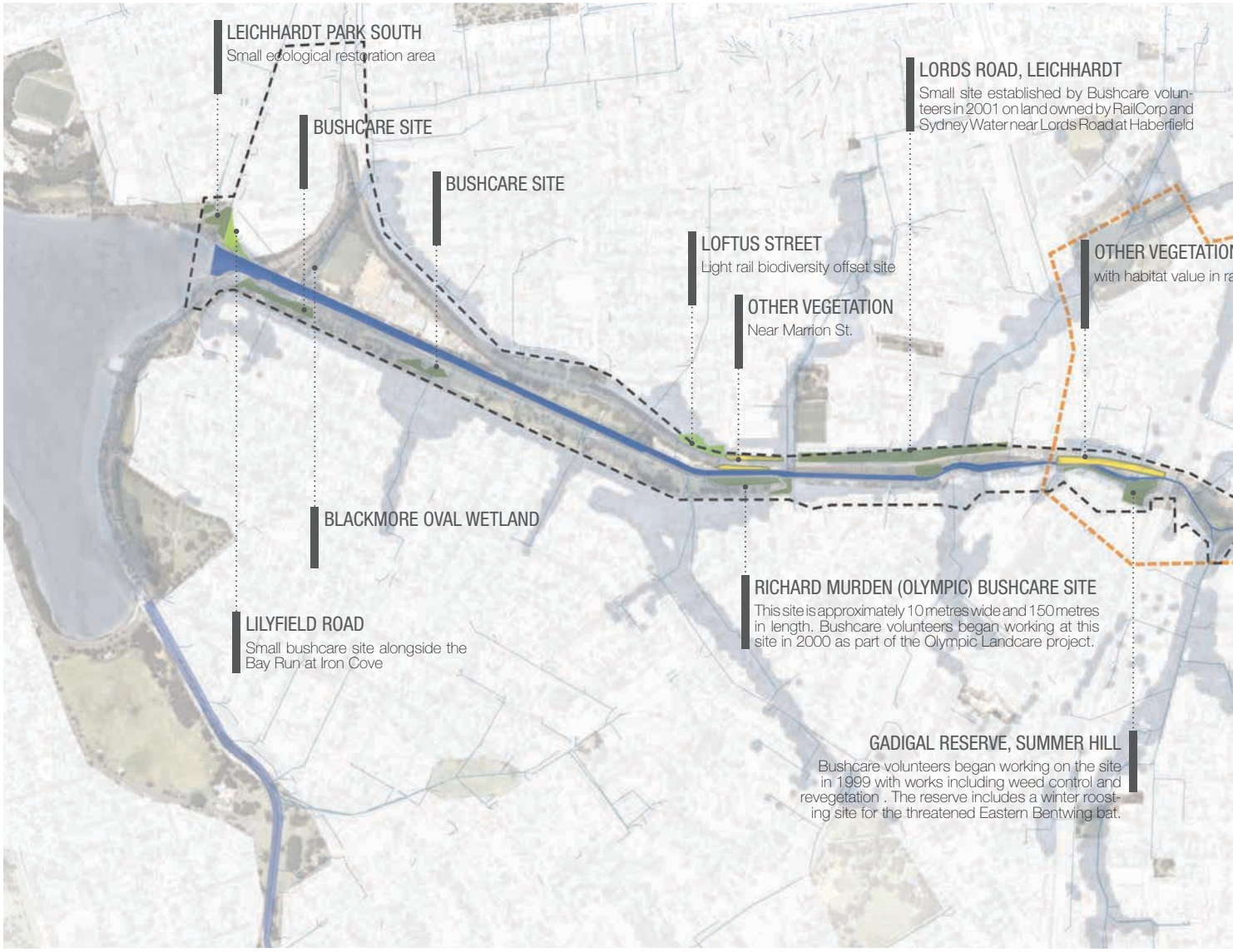
Ecological restoration sites

The Greenway includes a number of ecological restoration sites that are maintained by bushcare volunteers and/or by contractors managed by Council. Management of these sites is coordinated by council with active participation by communitiy volunteers at many sites. The area is to preserve and enhance their biodiversity values and the ecosystem services they provide.

A summary of ecological restoration sites is shown in the table on the next page.

These are not the only areas of native vegetation in the GreenWay corridor, but are significant in that:

- They have been deliberately established to protect and enhance locally native vegetation and associated fauna including bacteria, fungi, reptiles, amphibians, birds and mammals
- There is an ongoing effort to maintain the vegetation and ecological communities at these sites
- They are defined areas that can be clearly identified and measured as part of the ecological corridor
- They include biodiversity offset sites established as part of the conditions of approval for the light rail project



– The requirement to offset vegetation loss is part of the conditions of approval for the light rail project.

Negative impacts on all vegetation in the GreenWay corridor will be avoided and minimised as far as possible. Any unavoidable impacts on ecological restoration sites will be offset.

Other vegetation with habitat value

Along the GreenWay, particularly within the light rail corridor, there are areas of weedy vegetation that have important habitat value. Key areas are marked on the map in this section.

The GreenWay Revegetation and Bushcare Plan (2011) recommended that these areas "are not cleared prior to assessing their value, [nor] before additional native habitat can be fully established alongside or in a manner than provides an alternative for the fauna which utilise the "weedy" habitat."

Bandicoot protection area

The GreenWay corridor and streets in the surrounding area south of Parramatta Road is a Bandicoot Protection Area for the endangered Inner West Eastern Long-nosed Bandicoot population. This population and all the threatened and locally significant species must be protected during work and operations by proper consideration in plans and designs.

Waterways

The northern half of the GreenWay follows Hawthorne Canal. The open space around the canal, including Richard Murden Reserve is subject to flooding. The GreenWay crosses a high point around New Canterbury Rd and follows an unnamed tributary to the Cooks River. There is also flood prone land near the Cooks River.

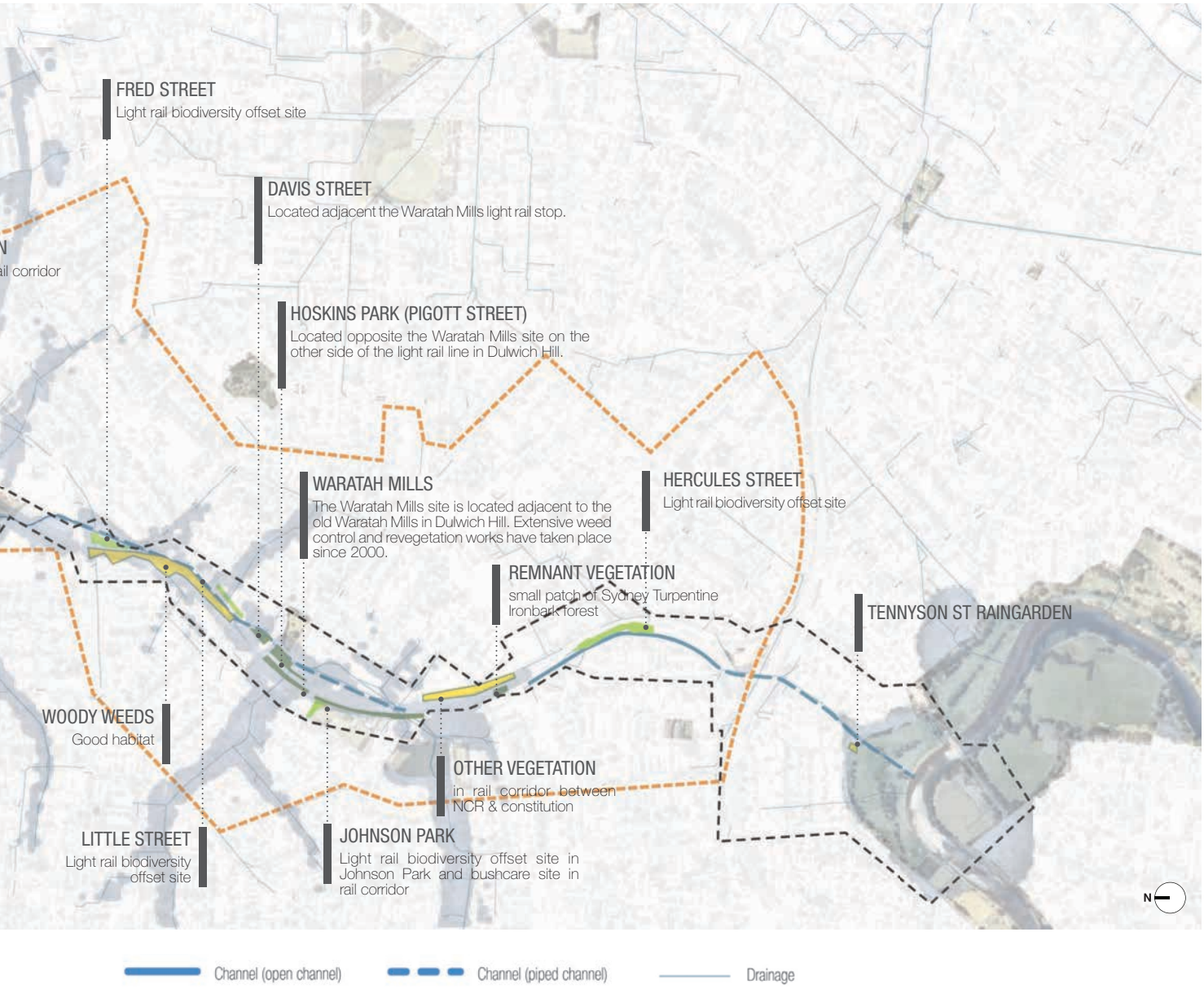


Table 4. Ecological restoration sites

Site name	Type	Year established	Area (m^2)
Leichhardt Park north*	Offset	2015	2,700
Leichhardt Park south/ Lilyfield Rd	Other	2007 + 2010	2,000
Blackmore wetland	Stormwater treatment	2013	520
Northern Richard Murden Reserve	Other	2011	2,800
Loftus Street	Offset	2015	1,436
Southern Richard Murden Reserve	Bushcare	2000	1,500
Lords Road	Bushcare	2001	1,700
Gadigal Reserve	Bushcare	1999	4,300
Fred Street	Offset	2015	1,509
Little Street	Offset	2015	476
Davis Street	Bushcare	2005	900
Waratah Mills	Bushcare	2000	1,400
Hoskins Park (Pigott Street)	Bushcare	2005	1,200
Johnson Park	Bushcare	2015	1,200
Johnson Park	Offset	2015	823
Hercules Street North	Offset	2015	2,292
Tennyson Street rain garden	Stormwater treatment	2011	150

*Not shown on the map – located north of the GreenWay

2.3 Active transport

Active transport, including walking, riding and other non-motorised transport, is gradually becoming more popular in higher density inner suburbs of Australian cities (e.g. Zander et al 2014). Some of the important factors driving an increase in active transport in inner city areas are:

- Increasing congestion, encouraging people to use alternative transport modes
- Increasing recognition of the roles of active transport in public health and environmental sustainability
- Improving provision of active transport infrastructure and end-of-trip facilities
- Availability of a wider range of bikes and scooters, including cargo bikes, e-bikes, folding bikes and share bikes, suitable to a broader range of people for a broader range of purposes

In response to this increasing popularity of active transport, the NSW State Government released "Sydney's Cycling Future" and "Sydney's Walking Future" (Transport for NSW 2013), which are strategic plans to guide State Government investment in active transport infrastructure, promotion and engagement. A significant proportion of the funding currently available for the Cooks to Cove GreenWay has come from the State Government's active transport funding programs.

The GreenWay will form a key north-south connector in a network of regional active transport routes. Several existing and proposed routes traverse the region east-west, including important routes to the city and the airport. The GreenWay will help transform these routes into a connected network. (Figure 7)

Key reference documents active transport

GreenWay Missing Links report, 2015

GreenWay Active Transport Strategy and Action Plan, 2012

Leichhardt Bike Plan, 2016

Marrickville Bicycle Strategy, 2007

Some of the drivers for increasing pedestrian and bike numbers on the GreenWay are:

- An improved, connected path will invite higher use
- Cycling is steadily growing in popularity in Sydney. Sydney's Cycling Future: Cycling for Everyday Transport (TfNSW 2013) indicates there was a 50% increase in the number of people cycling to work in metropolitan Sydney between 2006 and 2013
- Super Sunday counts also show increasing numbers on the GreenWay over time (with GreenWay data dating back to 2013)
- There is an increasing population in the vicinity of the GreenWay
- Other future projects will improve the connectivity of the GreenWay to regional destinations including the city centre.

Public transport connections:

In the context of the GreenWay, active transport is often paired with public transport, for example as a means to access a light rail stop or other public transport node.

Figure 7. Regional active transport link

The GreenWay has strong links with public transport, including heavy rail, light rail and the future metro:

- The GreenWay follows the Inner West light rail extension between Dulwich Hill and Leichhardt
- The main western railway line crosses the GreenWay at Gadigal Reserve. The closest stations are Lewisham and Summer Hill
- The Sydenham to Bankstown line (to be converted to a Metro system) crosses the GreenWay immediately south of Jack Shanahan Reserve. The closest station is Dulwich Hill.

These railway lines may serve as destinations for GreenWay users; for example, commuters could ride or walk to a station along the GreenWay. They may also serve as hopping off points for visitors to access the GreenWay; for example, recreational GreenWay visitors could use the light rail to get to the GreenWay or return to their starting point after a one-way walk or ride along the GreenWay. (Figure 8)

The light rail stations also serve as important east-west pedestrian links across the light rail corridor. The stations are therefore busy locations where pedestrian movement needs to be considered carefully.

Active transport strategy

The GreenWay Active Transport Strategy and Action Plan (AECOM 2012) states its intention "to make walking and bicycle riding an easy and convenient transport option".

It sets some objectives which are somewhat broader than active transport alone, emphasising the integrated nature of the GreenWay vision:

- More people walking and riding in the GreenWay catchment
- More community engagement with people and place
- Support the future light rail and existing public transport
- Create better connections between people and places

In terms of recommendations for physical infrastructure, the 2012 Active Transport Strategy discusses the ideas of GreenWay Hubs, trellis streets, and "green safe streets", which are relevant to the current Master Plan.

Active Transport Planning

There have been two significant previous pieces of work which included detailed route options analysis and planning for the GreenWay shared path, notably:

- In 2010, a report "Strategic Concepts for a Cooks River to Iron Cove Shared Path" was prepared for the NSW Roads and Traffic Authority (The Environment Works 2010). This looked at three options for the shared path: (1) within the rail formation itself; (2) within the rail corridor but away from the tracks themselves; and (3) outside the rail corridor, generally in parks and streetscapes. At this time, it was thought that the shared path might go ahead before the light rail

Figure 8. Public transport context

– In 2015, after the light rail opened, the "GreenWay Missing Links" report looked at how the GreenWay shared path could be implemented now that the light rail had been completed. It included route options in the rail corridor away from the tracks, as well as park and streetscape options. It was prepared at a time when funding was uncertain, but was a key step towards obtaining the funding available now.

The GreenWay is also part of the Inner Sydney Regional Bike Network, a plan included now in the District Plan, Future Transport 2056 and listed in the National Infrastructure Priority List.

Existing features

GreenWay links

The diagram below indicates the current status of the GreenWay route. It shows that:

– The northern half of the GreenWay, from Longport Street to Iron Cove, has an existing off-road shared path, but much of it is relatively narrow and winding
– The southern half of the GreenWay, from Longport Street to the Cooks River, mostly relies on on-road routes. The only exception is a short section of shared path in Johnson Park between New Canterbury Road and Hercules Street

Awkward and/or dangerous road crossings are a prominent feature of the GreenWay today (Table 5). Even the safest crossings are currently awkward to negotiate by bike, particularly for less confident riders or those on more cumbersome bikes.

The Wardell Road crossing on the Cooks River path (near where the GreenWay will join the Cooks River path) was also mentioned numerous times in community consultation as an awkward and dangerous crossing.

Destinations

Trip generators include schools, parks and town centres with their community centres, local shops, services and public transport connections.

Generally, the town centres of surrounding suburbs are evenly spaced along both sides of the GreenWay. It is generally one kilometre from one town centre to the next, and 500 metres from each town centre to the closest point on the GreenWay.

A range of schools at different levels are spread in the area, with some schools adjacent to or within 200 metres of the GreenWay.

Cycle routes

This diagram shows existing cycle routes around the GreenWay. Cycle routes are those routes generally used by bicyle riders, however current cycle infrastructure provision along these routes is minimal. The key exceptions are designated cycle lanes in Lilyfield Road in the north-east, and Mortley Avenue-Boomerang Street-Dalhousie Street in the north west.

There are a few important proposed routes shown in this diagram:

- "Regional Route 7", which generally follows the Main Western Railway line east-west, and crosses the GreenWay at Longport Street
- "GreenWay South West", which follows the Sydenham to Bankstown rail corridor

At both ends of the GreenWay, along the Bay Run and along the Cooks River cycleway, there are off-road shared paths.

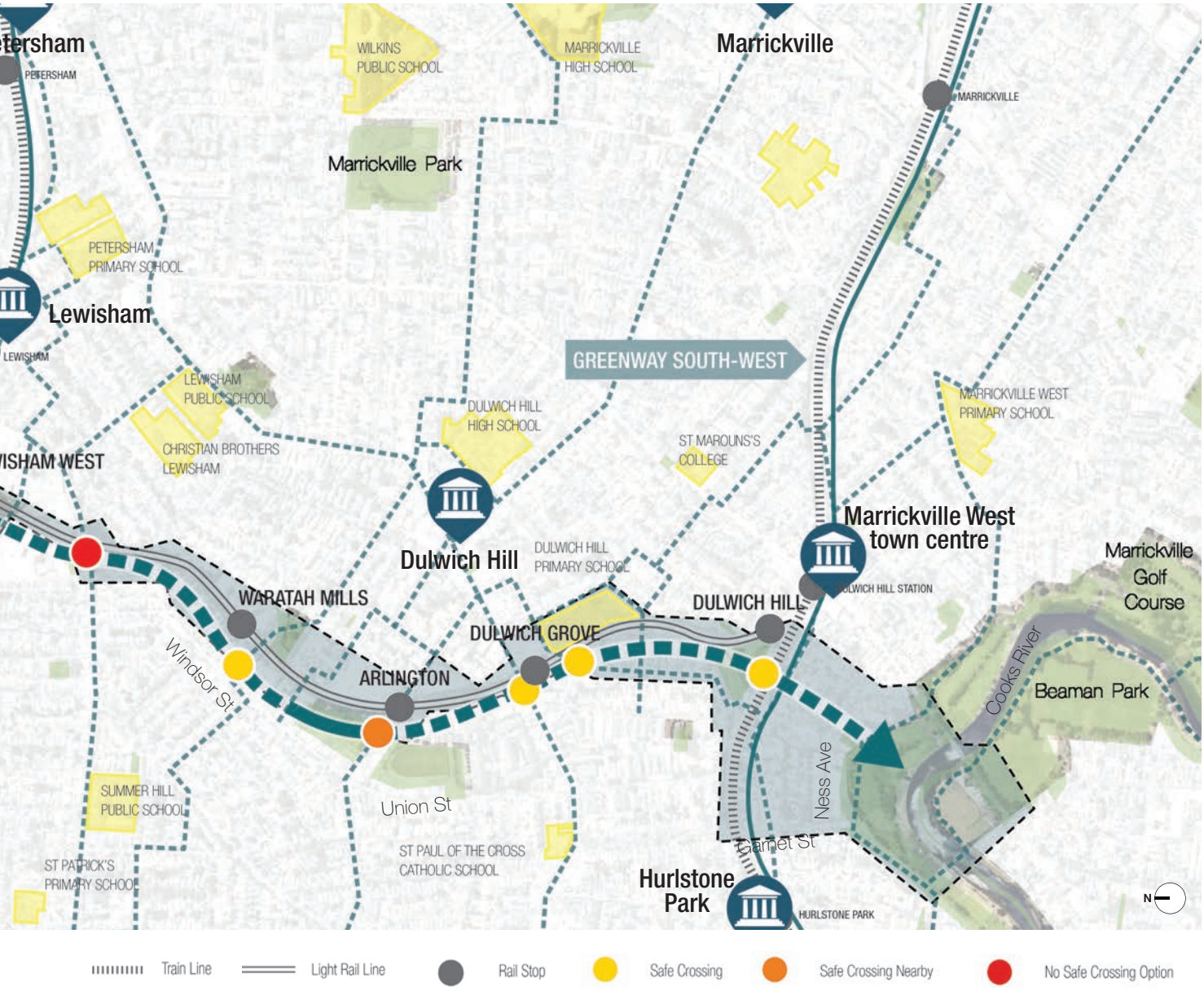


Table 5. Existing road crossings along the GreenWay

Street	Traffic volume	Crossing type	Existing crossing acceptable as interim option?	Upgrade priority recommended by Traffic Analysis Report (Appendix D)
City west Link	High	Underpass	Yes	-
Marion Street	High	Traffic signals	Yes	Medium
Parramatta Road	Very high	Overpass/ lift	No	High
xLongport Street	High	Pedestrian island via footpath	No	High
Old Canterbury Road	High	Pedestrian island via footpath*	Yes	Low
Davis Street	Low	Pedestrian crossing via footpath	No, link involves a connection through private property which is not preferred	Low
Constitution Road	Medium	Pedestrian islands at Williams Pde roundabout	Yes, with minor modifications	High
New Canterbury Road	High	Traffic signals	Yes, with minor modifications	Medium
Hercules Street	Low	Pedestrian crossing via footpath	Yes	High
Ewart Street	Medium	Pedestrian island at roundabout	Yes, with minor modifications	High

* The Old Canterbury Road/Weston Street intersection is to be signalised in 2019, and the proposed signals will cater specifically to bikes

User numbers

Current user numbers have been estimated based on two permanent bike traffic counters (at Gadigal Reserve and Richard Murden Reserve) and annual Super Sunday surveys, which involve a manual count of bike and pedestrian numbers (including walkers, runners, dog walkers and others) at various locations on a Sunday in November. The permanent counters show that weekend bike numbers are slightly higher than weekdays, and the Super Sunday survey is timed in November to attempt to capture a peak day in spring. Based on these data sources, current peak daily user numbers are estimated as follows:

Location	Bikes (per day)	Pedestrians (per day)
Richard Murden	300 to 350	600 to 700
Lords Road	200 to 250	400 to 450
Gadigal Reserve	100 to 150	150 to 200
Johnson Park	50 to 60	600 to 700
Hercules Street	40 to 50	200 to 300

The Super Sunday data reveals that user split (bikes/pedestrians) is highly dependent on location, ranging from around 40% bikes and 60% pedestrians at Gadigal Reserve and Lords Road, to 10% bikes and 90% pedestrians in Johnson Park.

As the GreenWay Master Plan is implemented, bike and pedestrian numbers are expected to increase, particularly in the southern sections. Weekend use is expected to remain higher than weekdays, as the main users of the GreenWay shared path are expected to be recreational walkers and riders, however active transport use may still dominate at peak commuting times.

For comparison, also based on Super Sunday data, the Cooks River Cycleway currently has cycle numbers in the order of 700 to 800 cyclists and 550 to 650 pedestrians per day. The Bay Run currently has cycle numbers in the order of 700 to 800 cyclists and 4000 to 4500 walkers/runners per day.

Based on the nature of the Greenway, existing data, and induced demand of a connected path, when the Greenway path is completed in 2021, user numbers are estimated to be in the order of 300 to 450 bikes and 300 to 450 pedestrians per day, with higher pedestrian numbers in parks. Estimated future daily user numbers are summarised in the table below.

Year	Bikes (per day)	Pedestrians (per day)
2021	300-450	300-450
2031	600-900	600-900
2041	1200-1800	1200-1800

Based on existing data, user peak hours in the morning and evening are around 10 to 12% of daily numbers. Based on the above future peak hour user numbers are summarised in the table below.

Year	Bikes (peak hour)	Pedestrians (peak hour)
2021	45	45
2031	90	90
2041	180	160

2.4 Recreation

Recreation is diverse and distributed throughout our urban environment. The recently completed Inner West Recreation Needs study (Cred Consulting 2018) shows that the ten most popular recreational activities in the Inner West include walking, walking for transport, playing in a playground/playing in a park/ taking children to play, personal fitness/outdoor fitness, walking the dog, cycling, running and relaxing in a park.

The GreenWay will play a significant role in contributing to a diverse recreational experience for the Inner West community, including those popular recreational activities identified in the Recreation Needs Study.

Key reference documents recreation

Inner West Council Recreation Needs Study: A Healthy Inner West, 2018

Richard Murden Reserve Plan of Management, in draft 2016

Dulwich Hill Parks Master Plan (currently underway)

Marrickville Golf Course Master Plan (currently underway)

Ewen Park Plan of Management, 2008

Shared path

The GreenWay shared path is intended for recreational use as well as active transport, and will help cater to demands for activities like walking, walking the dog, cycling and running.

The GreenWay also has a strategic position which allows it to connect two popular existing shared paths - the existing Cooks River shared path at its southern end and the Bay Run shared path at its northern end. Being connected will allow more people to access all three of these paths.

The GreenWay also forms a key link in two potential regional recreational cycling loops – one via Homebush Bay and the other via Botany Bay. (Figure 9)

Open space

The GreenWay Master Plan has the potential to improve opportunities for playing in playgrounds/parks, personal/outdoor fitness, and relaxing in parks. These are already activities commonly undertaken along the GreenWay in the parks along its route, and there is the potential to enhance these opportunities by:

- Improving access to existing parks: through linking open space the GreenWay provides opportunities for the community to more easily access a larger network and greater diversity of passive and active open space.
- Upgrading existing parks to improve recreation opportunities and cater to higher levels of use.
- Providing public access to spaces which are currently inaccessible (e.g. within the rail corridor), effectively increasing the area of public open space. Access changes would need to be accompanied by landscape works to make these areas appropriate for public access.

Figure 9. Regional recreation link

Recreation Needs Study

The 2018 recreation needs study found that the 11 most popular recreational activities in the Inner West are:

1. Walking
2. Walking for transport
3. Playing in a playground or park
4. Personal fitness/outdoor fitness
5. Walking the dog
6. Cycling
7. Swimming
8. Running
9. Relaxing in a park
10. Hockey
11. Soccer

The top six, and eight of the eleven, are all activities people already undertake along the GreenWay.

The recreation needs study also identified ten key needs in the Inner West, many of which are relevant to the GreenWay:

1. Improved footpath and active street network for walking
2. Connected cycling networks and facilities, and safer shared paths for pedestrians
3. Places to play for all ages and abilities
4. Addressing heat and providing shade
5. Information and promotion of recreation opportunities, and better communication
6. New facilities
7. Providing for and managing recreation with dogs
8. Improving park amenities for social and passive uses, and connection to nature
9. Increasing the capacity of existing sportsgrounds to optimise use
10. Safety

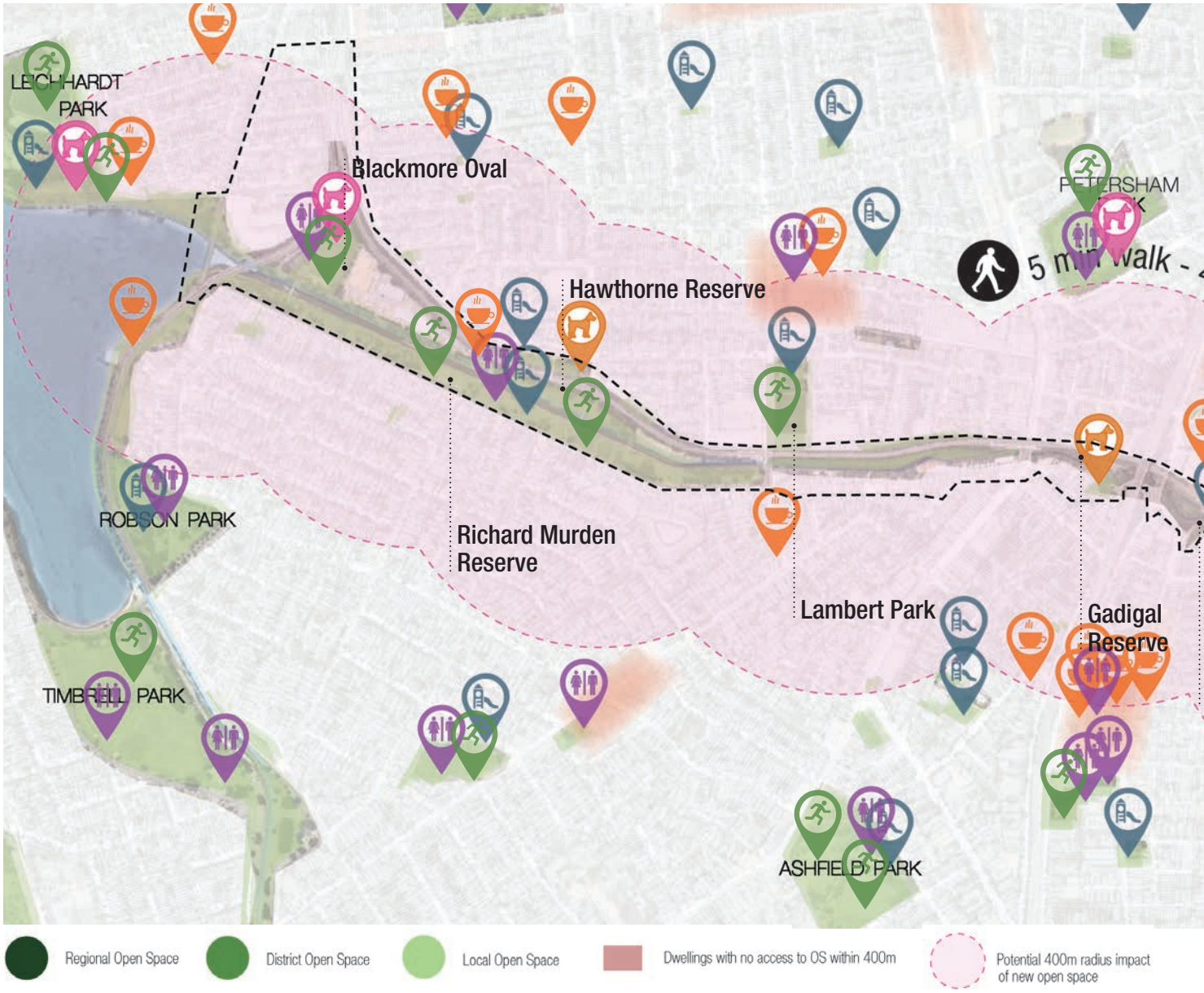
Hawthorne Canal/Richard Murden Reserve was identified as the 10th most popular specific facility/place for recreation in the Inner West. Reflecting its popularity, the study identified a number of specific ideas for Hawthorne Canal/Richard Murden Reserve:

- Improved waste management and maintenance
- Lighting and design to increase (feelings of) safety for pedestrians and cyclists particularly in the evening and at night.
- Improved car parking
- Improved court surfaces (netball/basketball)
- Managing flooding and storm events
- Clean waterways to reduce smell and rubbish, and to provide new recreation opportunities such as swimming and kayaking
- Access and storage for water sports at Iron Cove (eg canoeing)
- Play spaces for older children / young people, with new equipment and different types of playgrounds like water play.
- Play opportunities for other age groups and abilities, such as older people's play, sensory play, and play for adults with intellectual disability
- Dog water play at Hawthorne Canal.

Existing features

Important existing parks and open space along the GreenWay are:

- Blackmore Oval: a rugby league field in winter and cricket ground in summer, with canteen, player facilities and cricket nets; dogs are allowed off-leash when no sporting activities are being conducted
- Hawthorne Reserve: a linear park along the eastern side of Hawthorne Canal, featuring a popular dog off leash area and Café Bones
- Richard Murden Reserve: a linear park along the western side of Hawthorne Canal, featuring playground and BBQ facilities as well as sports courts, exercise equipment and bushcare
- Lambert Park: a purpose-built soccer stadium with artificial surface, stands and player facilities
- Gadigal Reserve: a park comprising bush care and an existing shared path on the western side and a dog off leash area on the western side seperated by the Hawthorne Canal which also features significant historical features
- Lewisham West open space including Hudson Street Park and Harvest Park. Between major new developments, much of this is still a blank canvas, which is yet to be developed into a park
- Hoskins Park: a neighbourhood park with a quiet character, popular for its playground and as a gathering place for the local community
- Johnson Park: a community hub popular for a range of activities including playground, BBQ facilities, kickabout area, basketball court, cricket nets, exercise equipment and bushcare

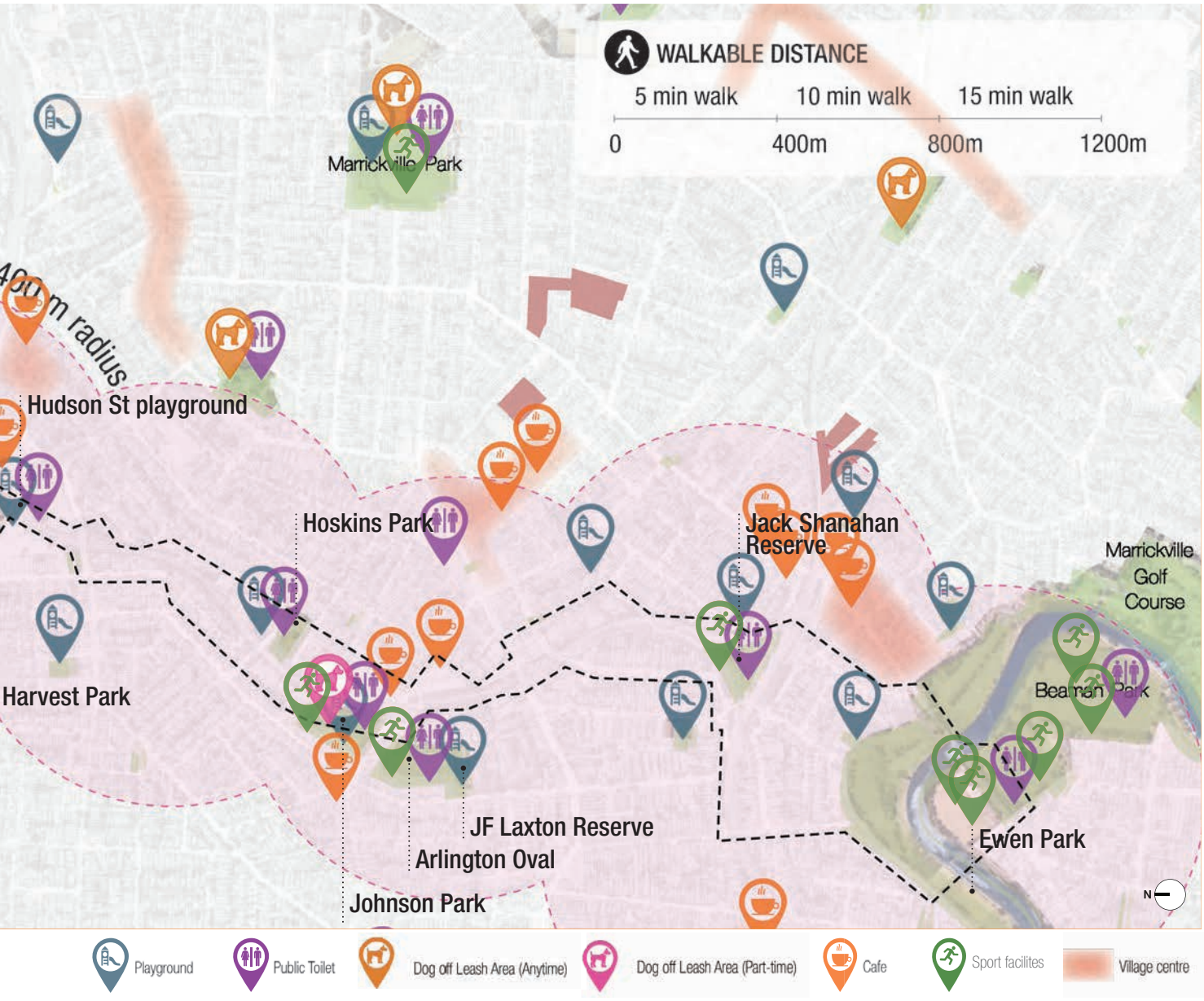


- Jack Shanahan Reserve: a popular skate park and a key destination for youth in the area
- Ewen Park: a park situated alongside the Cooks River, popular for its soccer field, playing cricket and small children's playground.

The diagram below shows important facilities that people currently seek along the GreenWay, including:

- Public toilets
- Cafés
- Playgrounds
- Dog parks

There is a good spread of playgrounds roughly every kilometre along the GreenWay. Public toilets are generally placed at closer intervals except for a gap between Richard Murden Reserve and Lewisham West. There are a number of cafes spread around the area; although not in the GreenWay they are generally within walking distance, with most are clustered in the nearby village centres. Dog off leash areas are well spread along the GreenWay and on its eastern side, while lacking on its western side. There are also fewer at the southern end compared to the northern. Demand for all of these facilities will rise with new development along the corridor, including significant lands currently within the rail corridor.



2.5 Culture

The GreenWay has a significant place in Sydney's cultural history as well as in contemporary culture.

Key reference documents culture

Gadigal wayfinding project (currently underway)

An Interim GreenWay Arts & Community Cultural Strategy (Draft – April 2011)

Hawthorne Canal - The History of Long Cove Creek, Ashfield and District historical Society, 2006

Historical significance

The GreenWay is a significant topographical and geological formation in the landscape. Following two watercourses, which plot a relatively direct route between the Cooks River and Iron Cove, this feature has probably been used by local Aboriginal people as a movement corridor for thousands of years.

Much of the following information is based on Sabolch's (2006) history of Long Cove Creek.

Aboriginal country

The cultural history of the GreenWay began tens of thousands of years ago, when Australian aboriginal clans began living in the area.

The GreenWay's waterways (along with the nearby harbour and Cooks River) would have been a source of water and food. The Long Cove estuary was said to be abundant with oysters. As a physical breach in the geography of the area, Long Cove also formed a natural boundary between the country of the Gadigal and Wangal clans.

As part of the IWC Gadigal Wayfinding project, a study of Aboriginal landscapes, landuse, culture and history in the Inner West is being prepared to help guide art installations and other programs and projects, including the GreenWay.

Colonisation

After colonisation, the area assumed importance as a key place along the overland route connecting the earliest settlement at Sydney Cove and the agricultural production land around Parramatta. Initially, and as depicted on the earliest colonial maps, Long Cove Creek was a cartographic feature, representing both a boundary crossing (a creek to be traversed when moving people and goods along the Parramatta route) and a highly sought-after resource (fresh water for agriculture and industry).

For these two reasons, many of the earliest land grants made by the colonial government to military officers and others working in service to the colony were established in and around the Cumberland Lowlands: proximity to the colony's major trade route, and the fresh water available in the Long Cove Creek and its tributaries.

In the Cooks River catchment at this time, the area around the GreenWay was established as makret gardens, relying on fresh water in the creek.

Industrialisation and its infrastructure

Manufacturing and processing operations established themselves in and around the network of pastoral and agricultural properties, continuing to take advantage of the location, and its ease of travel and shipment between Parramatta and Sydney. The diminished environmental state of the Creek and associated lands in the catchment invited more and diverse industrial uses, such as brickworks, tanneries and other equally impactful uses.

However, these industries and businesses also established several overlapping networks of industrial infrastructure and built fabric in support of these enterprises, as well as the growing population in the area.

The first was the creation of a centralised water supply network for the city which, along with a comprehensive sewer network and stormwater enhancements, offered significant improvements to public health and sanitation in and around the Long Cove Creek catchment. Remnants of this infrastructure still remain in the GreenWay, including remnants of the first water main from the Nepean, and the earliest transformations of the creek into a concrete stormwater channel. These improvements to stormwater management eventually led in the 1880's to the construction of what is now known as the Hawthorne Canal, a navigable channel running from the Harbour to as far south as Marion Street in Haberfield.

Concurrently, increased traffic (both goods and passengers) to and through the area led to more and larger bridges spanning the valley of the creek, for both rail and road traffic – these robust structures contribute to the character of the GreenWay, as it passes under them along its length.

Another major infrastructure development was the construction of the goods line alongside the creek, which commenced operation in 1914. This created the continuous rail corridor that runs from Iron Cove to Dulwich Hill, while also opening up the adjacent industrial and agricultural lands along the catchment of the corridor to increased industrial development. The Dulwich Hill Public School site was a timber mill in this period. Along the GreenWay, the construction of the myriad mills, silos and factories created a dense industrial fabric that is another one of the defining characteristics of both the Inner West and the GreenWay to this day.

Decline of industry & rise of community stewardship

Eventually, as freight traffic and industrial activity along the Goods Line and in the surrounding catchment declined, the now densely-populated neighbourhoods along the corridor were confronted with unused infrastructure and vacant buildings. Rather than turn their backs on this derelict area, individuals and organisations along the corridor instead increasingly started to view the

GreenWay as a community asset, for its industrial character, its heritage significance and its qualities of space and vegetation, both assets in short supply in the Inner West.

Community efforts in bush regeneration and landscape remediation established the corridor as both a genuine connector between various neighbourhoods along its length, as well as the location for active community participation in landscape improvements. Once again, the physical geography of the corridor has contributed to the formation and operation of the GreenWay, this time with the surrounding communities providing the energy and imagination.

Contemporary culture

The establishment of the Inner West Light Rail along the corridor has provided further impetus and opportunity for seeing the GreenWay as a cultural and social resource, bringing infrastructure improvements and open space and connectivity initiatives together in the one multi purpose corridor. Thousands of passengers now travel along the route daily.

Given this decades-long interest and attention by its surrounding communities, the GreenWay is already a noteworthy site for the formal and informal curation of art, cultural production and art events, both along with the length of its corridor, as well as within myriad organisations, institutions and businesses practicing along the corridor and in the catchment.

There is a proud tradition of active community participation in arts and cultural activities along the GreenWay, as evidenced by the annual GreenWay Art Exhibition (now in its 9th year), the award winning Hawthorne Canal Tunnel Community Mural and Art on the GreenWay (now in its 4th year).

The GreenWay has also become the subject and site for experiential learning and educational excursions, for community groups, students and outside organisations. The GreenWay Primary Schools Sustainability Program has been delivered to thousands of local primary school students along the GreenWay.

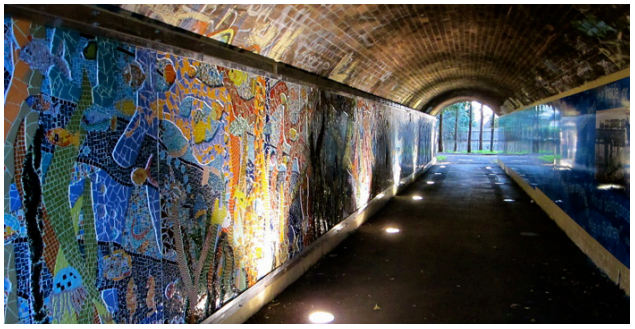
The community projects and arts advocacy which already exists along the GreenWay are testament to the creative drive and capability of its community. This includes local individuals as well as arts organisations and knowledge-based/creative industries located close to the GreenWay.

Artists have the ability and technical skills to translate ideas into realities that engage the broader community and transform how we collectively see our world and our place in it.

GreenWay bushcare volunteers

Present-day Gadigal Reserve

Art on the GreenWay



Lords Road Tunnel

Cultural vision for the GreenWay

The Interim GreenWay Arts & Community Cultural Strategy (Draft 2011) includes a cultural vision for the GreenWay as:

"A 'creative community' hub which compliments and reinforces the GreenWay vision. A place to celebrate and interpret the rich history of the GreenWay and its environment using local talent, stories and creative energy. A community place which people find enjoyable, easy to relate to, attractive, animated and safe." The Inner West area surrounding the GreenWay contains a vibrant community of local artists, arts organisations and an environmentally-engaged community.

The Leichhardt Community and Cultural Plan 2011-2021 identifies Hawthorne Reserve (along with Leichhardt Park, Callan Park and Cockatoo Island) as part of an emerging cultural precinct, designated as the "Iron Cove Recreation and Cultural Precinct". The precinct is a location for cultural and community activities, innovative programs, creative industries and incubators.

Existing features

This diagram shows key features of cultural significance around the GreenWay, including public art, arts organisations and heritage features.

There are several existing permanent pieces of public art along the GreenWay corridor, most of which have been created by local artists. The artworks include several pieces installed as part of the light rail project, but there are also some other pieces along the GreenWay. The mural in the Lords Road Tunnel is a significant piece, which commenced in 2006 and was completed in 2010 was a collaboration between community volunteers, Railcorp, Leichhardt Council, and local artists. Several local schools also participated in its creation.

A number of older industrial buildings along the GreenWay have been repurposed and host vibrant creative industries and production spaces employing many artists and creatives.

There is a cluster of arts organisations at the northern end of the GreenWay, including the Canal Road film studios, which occupies a large site immediately adjacent to Hawthorne Reserve. No 1 Canal Road is the only NSW cultural infrastructure site in the inner west.

Three street libraries have been commissioned and are currently being installed along the GreenWay – one at Café Bones, one at Lewisham West, and one at Johnston Park.

There are several heritage-listed features along the GreenWay, including:

- The whipple truss bridge
- Some of the water infrastructure in Gadigal Reserve
- Battle Bridge over Parramatta Road
- Some of the former flour mill buildings
- Features within Hoskins Park

Summer Hill flour mills

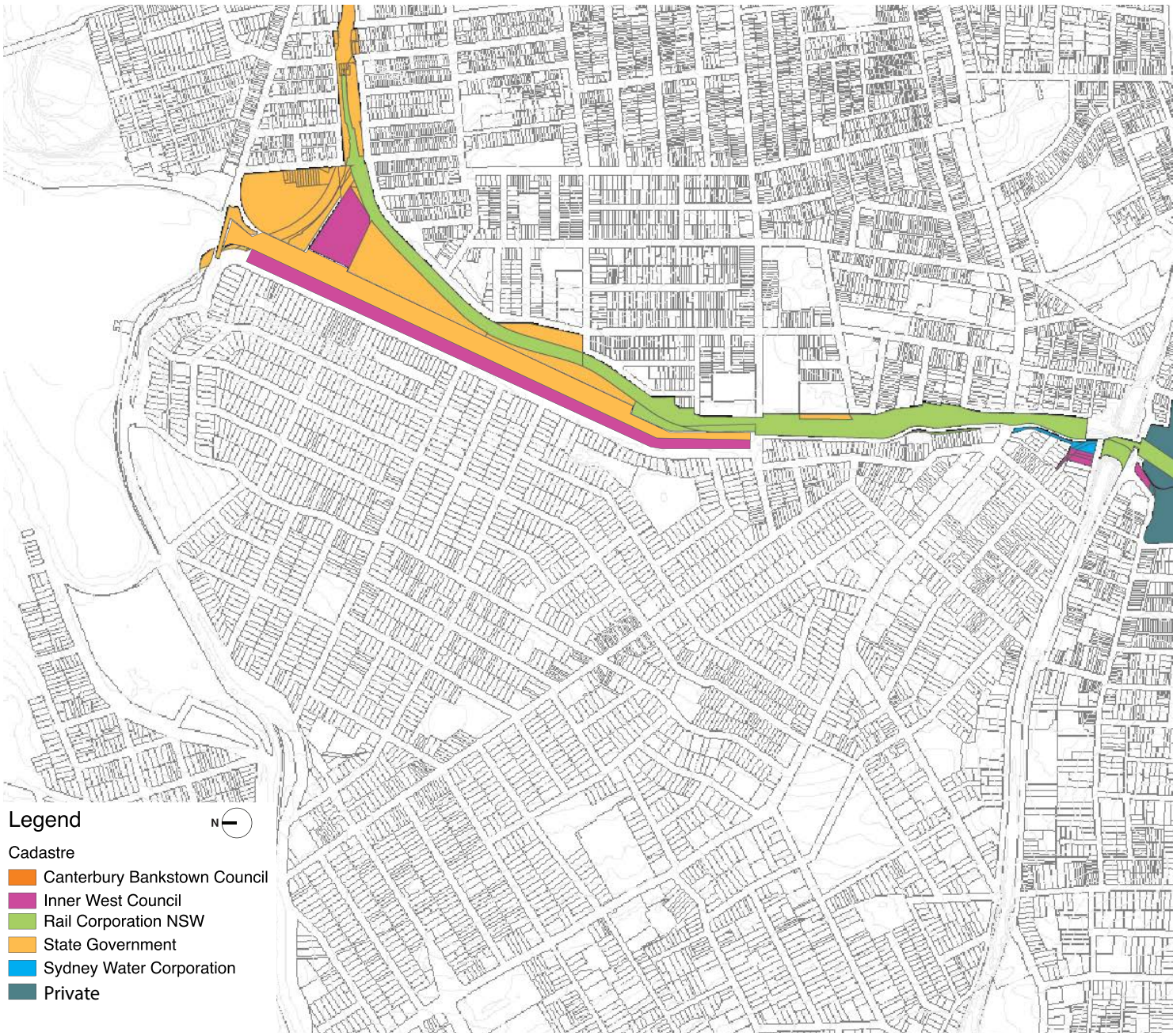
2.6 Land ownership

This plan shows land ownership along the GreenWay route. Major landowners include Rail Corporation NSW and other State Government entities. There is relatively little land owned by Inner West Council.

Where the GreenWay is proposed within the light rail corridor or the land of another State Government owner, it is not intended to purchase any land. Council will need to enter into licence agreements for land use.

The following specific uses of private land have been suggested in this Master Plan:

- 43 Hercules Street: partial or full acquisition as required to facilitate link from Hercules Street into Greenway
- 43 and 45 Hercules street: dedication as part of future redevelopment, to expand open space area
- Summer Hill Flour Mills: use of existing easement
- Canal Road Film Studios: potential lease of southern corner to expand open space area and western strip for container spaces
- Waratah Mills: use of existing easement
- Tennyson Street: dedication as part of a future redevelopment, to provide a link along the GreenWay desire line from Tennyson Street into the golf course.

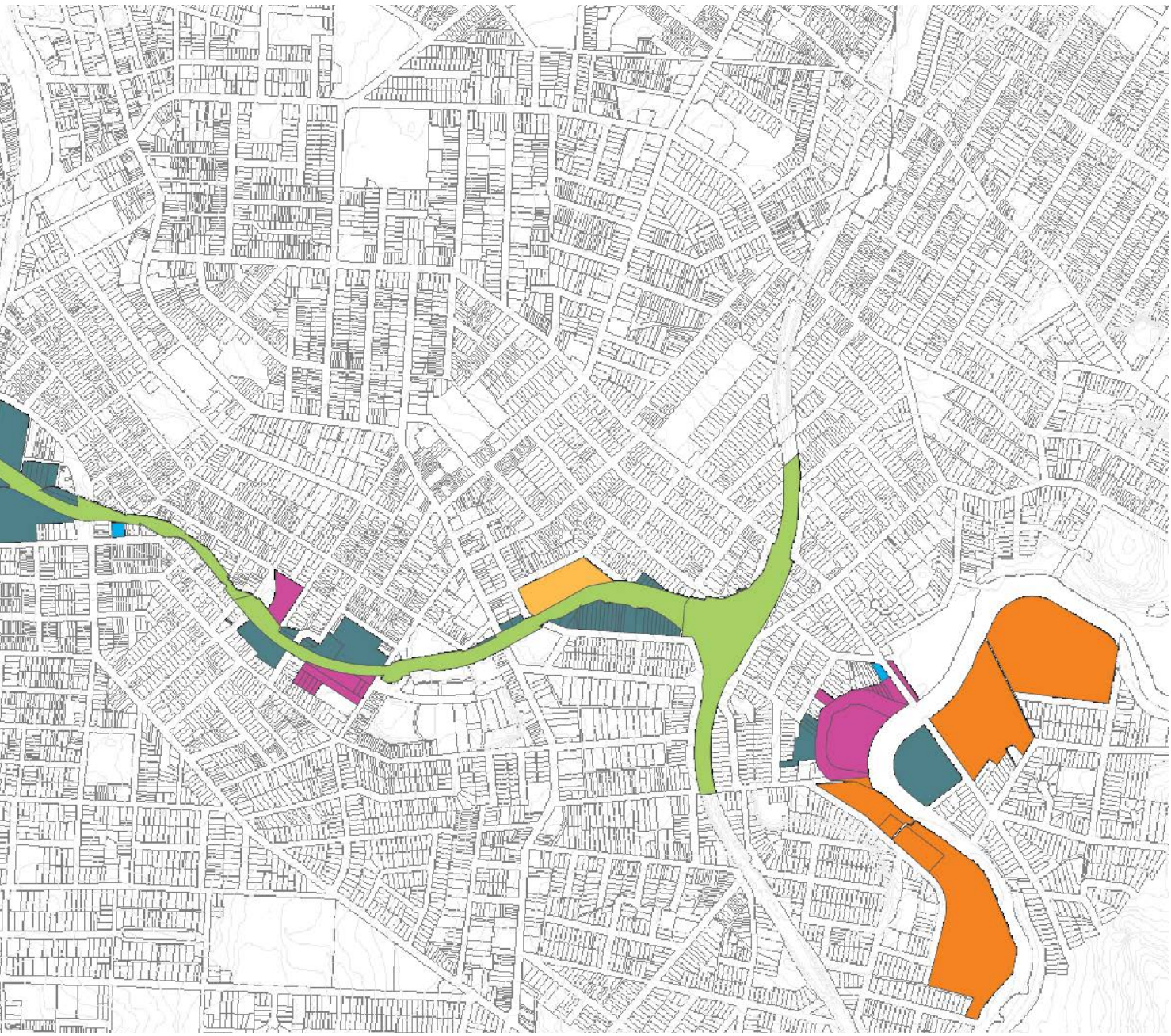


Management and maintenance

Management and maintenance of the GreenWay is not covered by this master plan. It is intended that an operational management plan be developed to detail continued delivery of GreenWay programs, maintenance, and land management.

It is envisaged that Council will enter into a licence with Sydney Trains and Transport for NSW for the maintenance and management of the part of the light rail corridor to be utilised for the GreenWay. Approval from Sydney Trains would be required for all proposals within the light rail and rail corridors.

Currently the light rail corridor is managed and maintained by Transdev who are contracted by Transport for NSW to operate the light rail on a 15 year lease. The maintenance and management of the dedicated light rail corridor would remain with Transdev. Licence agreements would need to ensure access for Transdev and other agencies, including Sydney Trains and Sydney Water, to enable them to perform their functions. To this end it is envisaged that parts of the GreenWay would have to be closed from time to time and alternative routes should be set out in the management and maintenance plan to facilitate this.



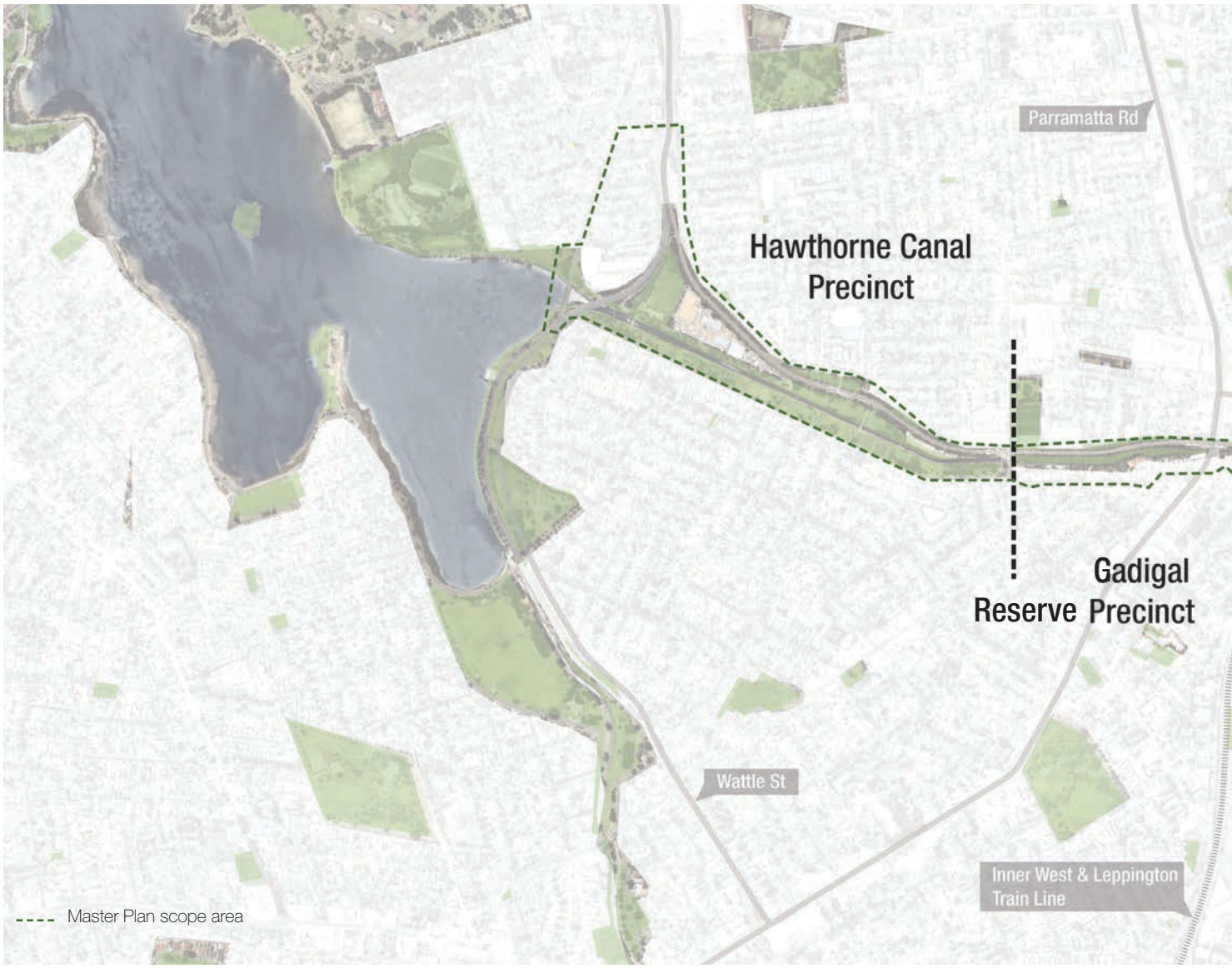

10
ADVISORY
SPEED
LIMIT

3.0
GREENWAY PRECINCTS

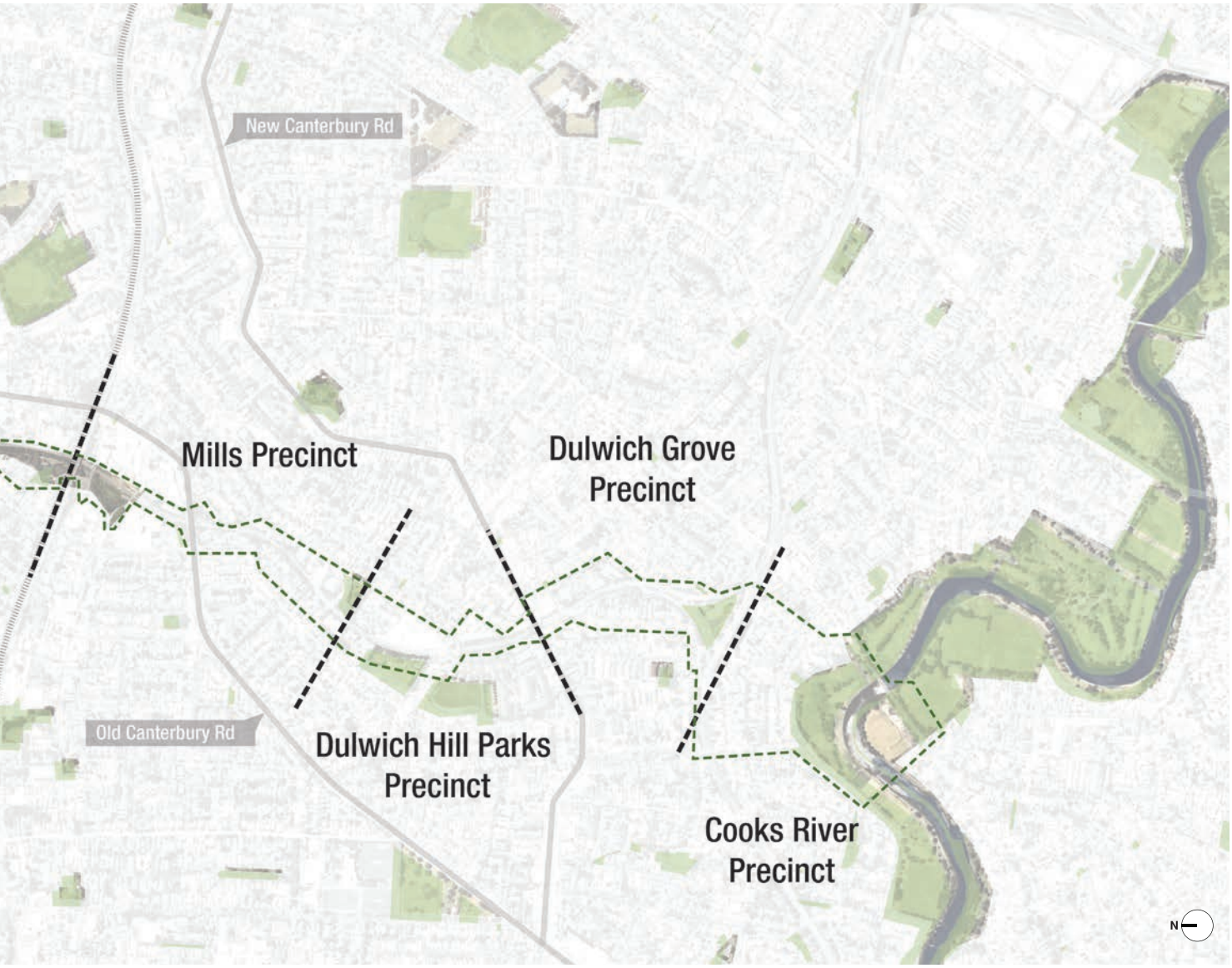
3.1 Overview

For the purposes of this Master Plan, the GreenWay has been divided into six precincts, which are difined by major road crossings:

- **Hawthorne Canal Precinct:** From Iron Cove to south of Marion Street, including the parklands around Hawthorne Canal including Richard Murden Reserve, Hawthorne Reserve and Blackmore Oval.
- **Gadigal Reserve Precinct:** From south of Marion Street to south of Longport Street, Including Gadigal Reserve itself as well as the section between Parramatta Road and Marion Street (including the distinctive avenue of figs).
- **Mills Precinct:** From south of Longport Street to Weston Street, including the area around the Lewisham West light rail station and the stretch along Weston Street.
- **Dulwich Hill Parks Precinct:** From Weston Street to south of New Canterbury Road, including Hoskins Park and Johnson Park immediately adjacent to the GreenWay corridor, and Arlington and Laxton Reserves nearby. Also including the deeply cut rail corridor between Constitution Road and New Canterbury Road.
- **Dulwich Grove Precinct:** From south of New Canterbury Road to north of Ewart Street, including the new linear park proposed in the light rail corridor east of Hercules Street and the existing Jack Shanahan Reserve.
- **Cooks River Precinct:** From north of Ewart Street to the Cooks River, including links on-road, past the golf course and across the Cooks River.



The following sections (3.2-3.7) introduce each precinct along the GreenWay, describing the existing features and uses, and key constraints.



3.2 Hawthorne Canal Precinct

The Hawthorne Canal Precinct is predominantly parkland, comprising Richard Murden Reserve on the west and Hawthorne Reserve on the east, split by the Hawthorne Canal. There is also an area of open space on the eastern side of the light rail adjacent to Darley Rd. The canal and light rail form significant boundaries restricting east west access to a few locations.

Ecology:

There are bushcare sites at the southern (Olympics site) and northern (Lilyfield Road) ends of this park, and a "biolinks" revegetation area at the northern end, however the area in between includes only scattered trees and small patches of shrubs. The dominance of grassed areas favours typical urban birds such as mynas and currawongs.

Hawthorne Canal can look stunning at high tide, but often appears unsightly and is malodorous at low tide. It has little habitat value given its highly modified bed and banks.

Runoff from surrounding areas enters the canal at a low level, and there is little opportunity within the park to treat stormwater before it reaches the canal. A small constructed wetland has recently been restored at Blackmore Oval.

Land along Hawthorne Canal, including Richard Murden Reserve and Hawthorne Parade, is low lying and subject to tidal inundation during king tides as well as occasional flooding. Marion Street is subject to occasional flooding at the GreenWay crossing.

Active Transport:

There is an existing shared path through Richard Murden Reserve, which is narrow and winding. There are a few points of conflict with other park users.

Many bicyle riders choose to ride along Hawthorne Parade instead, which is flat, and relatively quiet. However roundabouts and narrow points can be challenging to negotiate with vehicular traffic.

There are three places where you can cross the canal and light rail from east to west:

- tunnel under light rail south of Hawthorne light rail stop
- pedestrian bridge across canal near light rail stop
- shared pedestrian and bike bridge at northern end of canal

There is an existing connection to the Bay Run at the northern end of Richard Murden Reserve, and several on-road options to travel from this area towards the city.

The Marion Street crossing at the southern end of the precinct is awkward and not aligned with the GreenWay. Cyclists are currently required to dismount.

Recreation:

This is an important area for recreation, including:

- Popular dog off leash area at Hawthorne Reserve
- Sports courts distributed throughout the park
- Exercise equipment distributed along the shared path
- Playground, barbeques and picnic tables located centrally
- Active bushcare sites
- Boat launch at northern end
- Café Bones
- Mens Shed

Different areas have different characters. Given its location and scale, this park could play a role as a regional park. However at the moment, it reads as a confused collection of disparate elements and lacks coherency as a regional park. Many spaces are poorly utilised. The park offers a very different experience to the busy Bay Run.

Culture:

There is a cluster of arts and cultural organisations in proximity to the northern end of this park, including Canal Road Film Centre. However these places currently do not address the park.

The park has been the location of GreenWay festivals and of the Art on the GreenWay event.

Café Bones has a unique character and there are a couple of public art pieces in the park, but otherwise there are few placemaking elements that make this park feel special.

A distinct feature is the underpass under the City West Link Road, and the former Lilyfield Road bridge. These form interesting spaces which lend themselves to activation, but currently lack amenity. Noise levels are high on the Lilyfield Road bridge.

The Leichhardt Community and Cultural Plan 2011-2021 identifies Hawthorne Reserve (along with Leichhardt Park, Callan Park and Cockatoo Island) as part of an emerging cultural precinct, designated as the "Iron Cove Recreation and Cultural Precinct". The precinct is a location for cultural and community activities, innovative programs, creative industries and incubators.

Cafe Bones and dog off-leash area on eastern side of Hawthorne Canal

The park includes tennis courts, netball courts, basketball courts, exercise equipment and a playground, but is dominated by informal open turfed areas

The existing shared path

Hawthorne Parade

Hawthorne Canal is a significant feature of the northern GreenWay.

Bushcare in the park

Canal Road Film Centre

TreeCycle Sculpture by local artist Graham Chalcroft

3.3 Gadigal Reserve Precinct

The Gadigal Reserve Precinct is a narrow corridor dominated by the Hawthorne Canal, which contains an existing narrow shared path and vegetation. At its southern end it widens out into Gadigal Reserve, where the open space contains ecological restoration on the western and a dog off leash area on the eastern. The narrow corridor is bisected by Parramatta Rd and bordered by Marion St and Longport St.

Note that Gadigal Reserve is elsewhere referred to as "Cadigal Reserve", however Gadigal is also a common spelling of the same word, and Gadigal is the spelling normally adopted by Inner West Council. A formal change of the name will be explored with the Geographic Names Board.

Ecology:

This section of the GreenWay stands out as a high quality part of the ecological corridor. This whole section of the GreenWay has good canopy cover, and in Gadigal Reserve west of the stormwater channel, there is also a healthy native understorey. Gadigal Reserve is a popular long-running bushcare site.

Between Marion Street and Parramatta Road, fig trees dominate and there is little understorey. Within and to the east of the light rail corridor, there is dense but weedy vegetation.

Gadigal Reserve includes an Eastern Bentwing Bat roost. Ringtail possums, Grey-headed flying foxes, and eastern water dragons have also been sighted.

The Hawthorne Canal stormwater channel is a prominent feature through this section of the GreenWay – it is quite visible in the landscape.

There is a small ecological restoation site at Lords Road, which consist of native understorey.

Active Transport:

A key feature of this section are two busy road crossings at Longport Street and Parramatta Road. These crossings are awkward for pedestrians and cyclists, particularly Parramatta Road. During community consultation, bicyle riders frequently mentioned these crossings as problem spots.

From a cycling perspective, there are relatively few good opportunities to cross either Parramatta Road or the main western railway line, so even though it is awkward, this section of the GreenWay is still well used.

There is an east-west connection under the light rail line to Lords Road, which is well used.

Recreation:

There is an existing shared path from Marion Street to Grosvenor Crescent on the southern side of Gadigal Reserve, and this is already popular as a walking and riding route.

The existing shared path is approximately 3 m wide from Marion Street to Parramatta Road, which works well for the current level of use. Within Gadigal Reserve the path is typically 2.0 to 2.5 m wide and has some narrow points and blind spots.

There is a relatively quiet, isolated dog off leash area at Gadigal Reserve. While it appears well-worn, it is often quiet and can have an isolated feeling due to its limited access.

There are otherwise few opportunities for other types of recreational activities. Lambert Park is nearby along Marion Street, but is effectively disconnected from the GreenWay corridor.

Culture:

Gadigal Reserve stands out as a place to celebrate the area's history and ecology. It includes several pieces of heritage infrastructure:

- Battle Bridge across Parramatta Road
- The whipple truss bridge
- The sewer aquaduct which cuts diagonally across the reserve
- The water main near Longport Street

There are also other prominent pieces of infrastructure which shape the space, including the structure supporting the Main Western Railway Line, and Battle Bridge (Parramatta Road).

The Gadigal Reserve is named after the Gadigal people of the Eora Nation. The water course was traditionally viewed as the tribal boundary between the Gadigal and Wangal people.

The mural in the Lords Road tunnel is an important existing public art piece. The stormwater channel through Gadigal Reserve and in Lambert Park also have prominent graffiti walls.

The figs were planted in the late 1980's as part of the "greening the grey spots" program, and give this stretch of the GreenWay a distinct character.

Fig tree-shaded cycle path along the Hawthorne Canal north of Parramatta Rd

Existing dog off leash area in Gadigal Reserve

Parramatta Road at the GreenWay

Existing path in Gadigal Reserve is narrow and has some tight bends and blind spots

Hawthorne Canal stormwater channel

There is some good quality bushland and active bushcare within Gadigal Reserve

Heritage listed sewer aquaduct is a prominent and interesting feature

View up to the heritage listed whipple truss bridge and Main Western Rail Line

3.4 Mills Precinct

The Mills Precinct is comprised of two main areas, bisected by Old Canterbury Road: the area wihin the light rail corridor and the adjacent development sites; and Weston Street, where the GreenWay travels on-road.

Ecology:

At Lewisham West, there is effectively a gap in the ecological corridor, with few trees or shrubs between Longport Street and Old Canterbury Road, and significant recent disturbance due to construction activity.

South of Old Canterbury Road, there is a reasonable (though sometimes quite narrow) habitat corridor in the light rail land. This area does not have any public access so is protected from foot traffic. There is one spot where this corridor is wider and abuts Weston Street. This is a notable patch where bird calls stand out above other noises in the urban landscape.

The Davis Street bushcare site is located just east of the Waratah Mills light rail stop. There are biodiversity offset sites located near Fred Street in Lewisham and Little Street in Dulwich Hill. These offset sites were established to meet the requirement to offset native and weedy vegetation loss caused by the light rail project.

Hawthorne Canal passes through this section in an open concrete channel, but only glimpses of it are visible in the landscape.

Active Transport:

Currently this area is difficult to negotiate by bike or on foot. There are only a few sections of walking path through the Lewisham West development area, and otherwise pedestrians and bicycle riders need to use the surrounding street network, which are busy roads - not safe and pleasant for pedestrians and cyclists.

Old Canterbury Road is a significant barrier which is very difficult to cross. The nearest traffic signals are at Toothill Street. Otherwise there is a small traffic island at Windsor Road. Traffic signals are proposed to be installed on Old Canterbury Road at Weston Street, as part of the Summer Hill Flour Mills development.

Weston Street is a quiet street which is pleasant to walk or cycle, but doesn't attract significant active transport use, given that it is not currently well connected to other routes.

Recreation:

Lewisham West is changing rapidly, with several new apartment buildings recently built or under construction providing over 1000 new apartments. This will increase the demands on open space for recreation.

At Lewisham West, some new parks have been installed, including a play space, picnic and barbecue facilities, and informal gathering areas. There are spaces along the light rail corridor which are currently open and unused.

Between Old Canterbury Road and Davis Street, there is little public open space other than the streetscapes. The light rail corridor is inaccessible in this area.

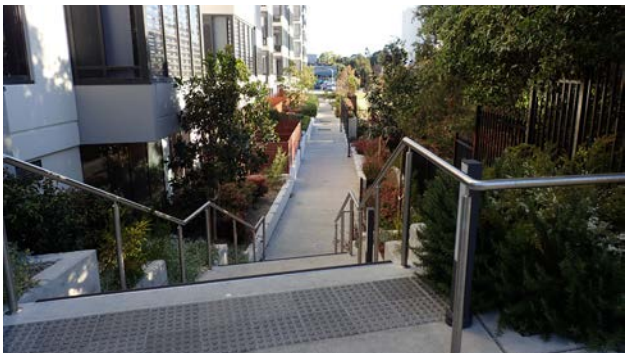
Culture:

The flour mill buildings are significant heritage items and also prominent features in the landscape. They recall the industrial history of the area and the former use of the light rail corridor as a goods line. Street art is disappearing with redevelopment, while the light rail project included public art installations.

Lewisham West is a place in transition, and its new character is only just beginning to emerge. In contrast, Weston Street is a long established residential street which is well loved by its residents. It is quiet, relatively well treed and well kept.

New development parks and open spaces at Lewisham West

There is space within the existing light rail corridor – this images shows the western side



Pedestrian connection alongside new development on eastern side of light rail corridor

Weston Street where the route is on-road

Fred Street biodiversity offset site located immediately south of Old Canterbury Road

Vegetation at the bend in Weston Street - great bird habitat and a good spot to stop and listen to the birds

Summer Hill flour mills

Bandicoot sculpture at Waratah Mills light rail stop

3.5 Dulwich Hill Parks Precinct

The Dulwich Hill Parks Precinct includes a well vegetated light rail corridor with adjacent neighbourhood parks. The corridor is broken up by Constitution Road and New Canterbury Road. There are few places to cross the light rail corridor in the precinct.

Ecology:

The Waratah Mills bushcare site is one of the oldest along the GreenWay. It is also connected to other ecological restoration sites:

- in the corner of Johnson Park – recently established as a light rail biodiversity offset site
- adjacent to Hoskins Park (Pigott Street bushcare site) in the light rail corridor

The Davis Street bushcare site is also immediately north of Davis Street. Together, these sites represent one of the more significant patches of native vegetation along the GreenWay corridor.

South of Constitution Road, the light rail is in a steep cutting. The embankments are currently inaccessible but well-vegetated. Although this vegetation is weedy, it has value as habitat, particularly for small birds. Remnant native vegetation is present in this part of the corridor.

The lower end of Pigott Street and Terry Road, near the light rail corridor, are subject to frequent localised flooding.

Active Transport:

Road crossings in this section include Davis Street, Constitution Road and New Canterbury Road. Davis Street has a pedestrian crossing and New Canterbury Road has traffic signals, however Constitution Road is difficult to cross. Works are proposed in 2018 to provide new pedestrian refuges at the Constitution Road/ Williams Parade roundabout, which will be the closest crossing to the GreenWay.

Currently, commuter bicyle riders use relatively busy roads in this area, such as Union Street, Windsor Road, Constitution Road and Denison Road. However these streets do not provide a welcoming or safe option for bicyle riders of all abilities.

The path through Johnson Park is connected to Constitution Road and Windsor Road and is therefore only accessible to those bicyle riders willing to negotiate these streets.

For pedestrians, there are also few alternatives to the street network. There are pedestrian paths through Hoskins Park, Arlington Reserve and Laxton Reserve.

Recreation:

This is an important recreational hub, with several parks in close proximity:

- Hoskins Park is a neighbourhood park with a popular play-ground and basic picnic facilities
- Johnson Park is a busy park which attracts visitors from a wider area. It has a playground, barbeque facilities, cricket nets and basketball courts, and is popular for parties. It has a part-time dog off leash area and also accommodates the Magic Yellow Bus, which visits once a week
- Arlington Reserve is a synthetic soccer pitch
- Laxton Reserve has another playground, picnic facilities and kickabout space

There is an existing 3.5 m path through Johnson Park which is not signposted as a shared path, but is marked as a cycle route on local cycle maps and is used by bikes.

Culture:

Each of the parks in this area has its own distinct character, and all are well used. The bushcare sites are highly valued by the volunteers who maintain them.

Specific notable features include the Waratah Mills building, heritage listed items in Hoskins Park, and existing public art pieces associated with the Waratah Mills and Arlington light rail stations.

Johnson Park playground

Hoskins Park Playground

Main path through Johnson Park

There is a narrow existing link between the north end of Johnson Park and Windsor Road

Waratah Mills bushcare site

Johnson Park bushcare site

Waratah Mills repurposed buildings

Johnson Park sometimes hosts cultural events such as this 2011 GreenWay day of action. Carols and movie nights are also held in the park

3.6 Dulwich Grove Precinct

The Dulwich Grove Precinct comprises two main areas: the light rail corridor, which is relatively wide here; and the existing Jack Shanahan Reserve.

Ecology:

The area within the rail corridor between Hercules Street and Jack Shanahan Reserve has few trees and only basic understorey cover; however, it does include an unformed drainage line, which is the only example in the GreenWay corridor of a significant stormwater drainage line that has not been piped or channelised. It is currently weedy but has existing habitat value.

The northern end of the light rail corridor between Hercules Street and Jack Shanahan Park is a biodiversity offset site.

Active Transport:

Key destinations in this area include:

- Dulwich Hill Public School
- Dulwich Hill light rail station
- Dulwich Hill Station
- Shops along Wardell Road

Currently, pedestrians and bicyle riders use streets such as Hercules Street and Beach Road to navigate this area. However these streets do not provide a welcoming or safe option for bicyle riders of all abilities.

Dulwich Hill Public School is a key node where people would like to improve active transport access. One of the main approaches to the school is Hercules Street, which has a wide roadway, narrow footpaths and has few safe crossing points.

Recreation:

Jack Shanahan Reserve is an important recreational hub, particularly for young people. It features skate bowls, a multi-purpose basketball/tennis court and basic picnic facilities. The park was upgraded relatively recently, when the light rail was constructed.

Jack Shanahan Reserve is very popular and serves part of the community who are often relatively poorly catered for in public spaces.

It has sometimes been noted that Jack Shanahan Reserve can feel enclosed and isolated due to its location between three railway lines. It previously had only one access point (off Terrace Road). Now, access to the Dulwich Hill light rail station has introduced more through traffic and improved passive surveillance in the park, reducing the feeling of isolation.

Culture:

In Jack Shanahan Reserve, there is some artwork celebrating youth culture, for example walls painted with street art. However, most of the cultural interest in the park is about the people who visit.

Basketball / tennis courts at Jack Shanahan Reserve

Skate park at Jack Shanahan Reserve

Dulwich Grove light rail

New Canterbury Road is very busy but there are existing traffic lights

Looking south from Hercules Street down the light rail corridor at existing vegetation within the corridor

Creek & vegetation within rail corridor

Youth culture at Jack Shanahan Reserve

Street art

3.7 Cooks River Precinct

The Cooks River Precinct comprises two distinct zones: the parklands and golf course along the Cooks River; and the streets north of these up to the Bankstown rail line, which are typically wide streets with federation houses.

Ecology:

In this area, the streetscapes include a mix of different vegetation styles. For example:

- The east-west section of Ness Avenue has large and well established trees
- The north-south section of Ness Avenue has relatively little vegetation

Private gardens contain a mix of vegetation typical of the area. The golf course includes some significant stands of trees and individual trees.

In this area, for the most part the Cooks River has engineered banks (sheet pile walls), however some sections of this have been removed and a more natural bank profile has been restored (e.g. near Lang Road and along the edge of Ewen Park).

There is a significant stand of mangroves on the southern side of the river near Wardell Road.

Land along the Cooks River is low lying along and Tennent Parade and Lang Road are subject to tidal inundation during king tides as well as occasional flooding. The Marrickville Golf Course is also subject to occasional flooding.

Active Transport:

In this area at the moment, pedestrians and bicyle riders need to negotiate the area on-road using the street network. Many of the streets between Garnet Street and Wardell Road are relatively quiet, but they do feature some fast-moving through traffic, particularly at peak hours, and slow points can be points of conflict between vehicles and bicyle riders. Apart from the slow points, most of these streets have a wide roadway.

Crossing Ewart Street is currently challenging, as it is a busy road. At the Ewart Street/Terrace Road roundabout there is only a small pedestrian island which provides limited space for bikes or other equipment.

There are two river crossings in this vicinity. The Lang Road footbridge is narrow and not rideable, however Canterbury Bankstown Council has plans to upgrade this bridge. Wardell Road is busy and the footpaths across the bridge are narrow and not protected from the traffic lanes, so Wardell Road bridge is a poor option for either pedestrians or bikes.

Recreation:

In this precinct the GreenWay will connect with the Cooks River shared path, which is an important recreational route running along the Cooks River. Also in this area is:

- The western end of Marrickville Golf Course, an important recreational facility for residents in the area
- The eastern end of Ewen Park, which includes sports fields and a playground
- The private Wills Ground on the south side of the Cooks River

Immediately adjacent to the Cooks River, in between the golf course and Ewen Park, there is the site of a former Sydney Olympic Sporting Club, which included tennis courts and a large carpark, and was used by the local Greek community. It closed in 2005 and was subsequently demolished in 2010.

Elsewhere along the Cooks River (e.g. Steel Park, Gough Whitlam Park), picnic spots are very popular, but this area lacks an attractive picnic area. The Ewen Park playground is usually quiet.

Culture:

The Cooks River is well loved in the community and is gradually being restored as a place of natural beauty and as a functioning ecosystem.

The River is a clear destination and end point for the GreenWay, however at the moment this area is more a place to pass through than a place to stop and take in.

There are stories to be told here about Aboriginal connections to the River, settlement history and recent community efforts to restore native vegetation.

Marrickville Golf Course on the Cooks River

Cooks River shared path

Ness Avenue (on road route)

The Lang Road footbridge is narrow and steep, requiring bicyle riders to dismount at either end of the bridge

Significant trees on the golf course

The Cooks River with riverbank vegetation

Disused tennis courts at Ewen Park between the river and Tennent Parade. This space could be renewed and activated.

Along the Cooks River the Mudcrabs community group are active in bushcare


CIVE
IVORY

4.0
STAKEHOLDER ENGAGEMENT

4.1 Engagement Method

This section summarises the method and results from community engagement, undertaken in 2017 to inform the Master Plan. *The GreenWay Master Plan: Community Engagement Report* (Appendix A) provides a full report of the Engagement process and results.

Aims

The engagement aimed to be as inclusive as possible with a variety of digital, postal and in-person forums for feedback. In addition to the general community, key GreenWay stakeholders, Council staff and local youth were invited to submit comments and ideas.

In-person Engagement Sessions

In-person engagement with stakeholders, the community, and Council staff for the Master Plan was completed in October and November 2017. The purpose was to set the strategic direction for the Master Plan, including big picture site analysis, key precedents and the vision and principles for the GreenWay. The sessions consisted of the following (dates, locations attendance numbers are listed in the map below):

- **Informal community drop-in sessions** at the Marrickville Festival and at the Norton Street Fiesta where Council and McGregor Coxall staff were available to listen to the community's ideas and concerns, gather input and respond to questions. These sessions were advertised as part of festival promotions.
- **Nine on-site community drop-in sessions** (1.5 hours each) at key points along the GreenWay. At least one representative each from Council and McGregor Coxall were available to facilitate activities and for further discussion regarding the Master Plan. The sessions were advertised by poster pin-up.
- **Three evening stakeholder workshops** with representatives from the Inner West Environment Group, Friends of the GreenWay, the GreenWay Steering Committee and the Inner West Bike Coalition. Attendees took part in activities and discussion. Attendance was by invitation.
- **Youth session at Summer Hill Public School** as part of a coursework module run by the school
- **Council staff workshop**; sought input from all disciplines within Council. Participants were asked to flag important existing features along the GreenWay, particularly the less obvious features that relied on their detailed knowledge, and to nominate ideas they would like to see implemented in the future. They also drew up some ideas on maps in the Mapping Exercise.

Online and Postal Engagement

A **newsletter** was distributed to the 12,000 properties within 400m of the GreenWay providing information on the project scope and timeline and directing the community to a **web-based survey** on Council's 'Your Say Inner West' website. The survey aimed to:

- confirm previous engagement on how stakeholders currently use the existing space;
- understand how the stakeholders want to use the newly unlocked space and existing space in the future;
- understand what infrastructure and open space improvements in the corridor and surrounding streets would improve the stakeholder's experience in the future.

The survey was open from 13 October to 15 November 2017. 1,100 people visited the website and 161 completed the survey.

Postal submissions to Inner West Council were also reviewed.

Concurrent with the GreenWay Master Plan engagement, Inner West Council undertook separate community engagement on proposed netball court development in the north end of Richard Murden Reserve, which indicated strong support for proposed additional netball courts.

Figure 10. Engagement Locations

Flagging Exercise

Each of the nine on-site community drop-in sessions and the three stakeholder workshops employed a Flagging Exercise where participants were asked the following four questions and to indicate on the map where each comment was applicable. The following questions were standardised across all consultation sessions to ensure consistent results:

- What is your favourite place and why?
- What is your least favourite place and why?
- What would you like to stay the same and why?
- What would you like to see changed and why?

This was the main tool used to map community issues and valued assets, and catalogue changes that the community would like to see in the Master Plan.

Mapping Exercise

Participants at the Stakeholder and Council Staff sessions were asked to illustrate specific ideas for specific places by drawing on a map.

4.2 Summary of Comments Received

General

From the general community:

The most popular places along the GreenWay were concentrated around key community hot spots that provided either a distinct character or community facility, such as the dog park and cafe at Hawthorne Reserve, or Gadigal Reserve (for its quiet character and natural setting). Least favourite places were spread across the GreenWay and were linked to access and connectivity issues such as difficult crossing conditions and missing links in pedestrian and cycle networks, and issues related to bicyle rider and pedestrian facilities.

From invited stakeholders:

The need to use the *2009 Master Plan* was reiterated and key focus areas were highlighted; related to existing urban renewal programs, missing links, biodiversity, stormwater. Other concerns related to delivering the whole GreenWay within budget, bicycle rider experience including catering to a range of skills, speeds and bicycle types, and recognition of local Aboriginal heritage.

From Council staff:

There was a focus on ecology in the form of protected habitat areas, native understorey planting and pest species control. WSUD and gross pollutant controls were another ecological focus. Arts and culture concerns focussed on local art and sculpture, as well as Aboriginal and other heritage stories. Bicycle rider, pedestrian and dog-walking conflicts can be ameliorated through protocol and signage.

Hawthorne Canal Precinct

Most users of this section of the GreenWay arrived by bike and utilised the area for bike riding, walking or running. Most agreed that the area has a nice character but, to improve on the experience, suggested a shared path, improved lighting, and emphasised the importance of trees, landscaping and Bushcare.

Iron Cove

- Create an identifiable arrival experience
- Improve connectivity to the GreenWay from the Bay Run and Lilyfield cycleway
- Activate the waterfront
- Incorporate heritage interpretation
- Improve intersections and crossings at Iron Cove
- Improve pedestrian safety and amenity with shared path

Richard Murden Reserve

- Avoid pedestrian-bicyle rider conflict at peak times by widening of the path and speed mitigation
- Maintain and expand Bushcare program
- Preserve and enhance community facilities with the addition of a fishing jetty, exercise area and bike loop

Hawthorne Reserve

- Maintain and improve the dog park
- Facilitate dog access to the canal
- Separate the dog off-leash area from Cafe Bones and bicyle riders
- Maintain Bushcare program
- Provide more community facilities such as children's water play and picnic areas
- Increase signage and wayfinding

At Marion Street

- Introduce signage and art at Marion Street intersection
- Provide a shared path along Marion Street

Gadigal Precinct

Visitors to this section of the GreenWay arrive mostly by bike, followed by walking and light rail. Facilities of most value to users include a shared path, trees and landscaping, path lighting and bushcare. The strong demand for improved lighting can be linked to repeated concerns about feeling unsafe in the area at night.

Figs

- Expressed love of the fig canopy and the sense of enclosure provided by the trees
- Maintain Bushcare program
- Improve lighting along the shared path
- Improve ease of access across Parramatta Road

Gadigal Reserve

- Improve links and accessibility to Gadigal Reserve (particularly Parramatta Road & Longport Street crossings)
- Improve the width and navigability of the pathways
- Maintain Bushcare program
- Improve lighting and safety throughout the area, which is generally considered to be poor. Areas of particular concern included the section from Paramatta Road to Longport Street, Brown Street and the Longport Street/Railway underpass.

Mills Precinct

Most users of this section arrive by bike or foot, with others coming by train and bus. Facilities of most interest to visitors include lighting, trees and landscaping, and a community garden, with a strong emphasis on the need for a shared path or shared zone. Most respondants regularly use Weston Street for access and were likely to use it more if either a new shared path or shared zone were installed. They also noted that more wayfinding, signage for slower traffic speeds and a safer crossing point are important for this area.

Lewisham West

- Expressed love for the historic flour mill context
- Road crossings and connections need improvement throughout the area for the safety of both pedestrians and bicyle riders. Crossings at Longport, Smith and Old Canterbury Rd were of particular concern, with an overall desire for better connectivity to Gadigal Reserve. It was also noted that a safe crossing is needed at Hudson Street, across Old Canterbury Road.

Weston Street

Residents valued the quiet nature of their street. They expressed concerns over the following:

- Potential impacts on residential amenity and parking
- Potential noise associated with GreenWay events
- That alternate route options should be considered

Concerns about the proposed signalisation of the Weston Street/ Old Canterbury Road intersection also emerged during the Master Plan process, with the major concerns being the potential for the traffic signals to induce traffic on Weston Street, and the access implications for properties along the service lane off the northern end of Weston Street.

Dulwich Hill Parks & Grove Precinct

Visitors to this section come mostly by bike, with some coming by foot, light rail and from the Cooks River. Like other sections of the GreenWay, the community would like to prioritise a shared path, lighting, trees and landscaping, and bushcare.

Dulwich Hill Parks

- Keep the bushcare sites at Hoskins Park
- Preserve and improve children's playground at Hoskins Park with additions such as active nature play areas
- Implement speed mitigation strategies to address conflict between bicyle riders and children
- Preserve the quiet nature of Hoskins Park
- Increase offering of amenity to support play facilities such as toilets and cafes.
- Provide safe link between Johnson and Hoskins Park

Dulwich Grove

- Love for existing skate facilities and a desire to expand on these with the addition of nature-based adventure play and provisions for older kids
- Increase vegetation and clean up the existing vegetation
- Improve linkages between the GreenWay to Union Street, under New Canterbury Road and to existing connections.

Cooks River Precinct

There was an overwhelming response that the community would walk and ride between Jack Shanahan Reserve and the Cooks River if it was safer and easier. People would like to see the streets of south Jack Shanahan Reserve have either an off road shared path adjacent to the Marrickville Golf Course or a dedicated seperated cycle way in the existing road alignment.

Cooks River Parklands

Comments for this area focussed on circulation through and around the golf course and a love of the existing community facilities.

- Improve circulation around the golf course
- Improve Wardell Road bridge and crossing and provide Links under Wardell Road
- Provide better lighting
- Love the playgrounds
- Provide better connection to Sydenham-Bankstown; i.e. more direct and avoiding streets where possible
- Provide additional shelters and amenities for family outings
- Provide cafe facilities
- Provide a greenhouse for a community garden
- Provide additional dog parks at southern end of the GreenWay

4.3 Public exhibition

Public exhibition process

The draft GreenWay Master Plan was presented to Council at its 22 May 2018 meeting. Council resolved to place the draft GreenWay Master Plan on public exhibition. The draft Master Plan was subsequently exhibited from 25 May 2018 to 25 June 2018.

The draft plan was exhibited on Council's consultation website, "Your Say Inner West". Hard copies of the draft master plan were also made available at Ashfield, Leichhardt and Petersham Service Centres and at Dulwich Hill, Haberfield and Marrickville Libraries

Exhibition of the draft plan was advertised on Council's consultation website, "Your Say Inner West", a newsletter was delivered to all properties within 400m of the Greenway, around 12,000 properties, and posters advertising the exhibition were also put up along the corridor in parks and at light rail stops. The draft plan exhibition was also promoted on social media through Council's Facebook and Twitter accounts.

Comments on the draft master plan were sought through the Your Say Inner West website and also through an interactive online map. Comments were anonymous but users were asked to provide their suburb. Email or written comments were also accepted.

The Your Say Inner West website contained a survey asking "Do you support the GreenWay Master Plan?" and users were asked to nominate either ,"Yes", "Yes in principle but with changes outline below", or "No". Users then had the option to leave written comments directly and/or attach submissions.

The social pinpoint site contained an interactive map of the master plan. Community members, stakeholders and anyone else with an interest in the project could add feedback on the draft master plan to the interactive map by zooming in to an area of interest and dropping a pin to make a comment. Users were able to use themed pins to make comments on specific aspects of the master plan. The pins were aligned with the four main themes of the draft master plan: walking and riding, ecology, recreation, and arts and culture. Users could also give "thumbs up" or "thumbs down" to other users comments.

Public exhibition response

The Your Say Inner West consultation website was visited over 4200 times during the exhibition period. This included:

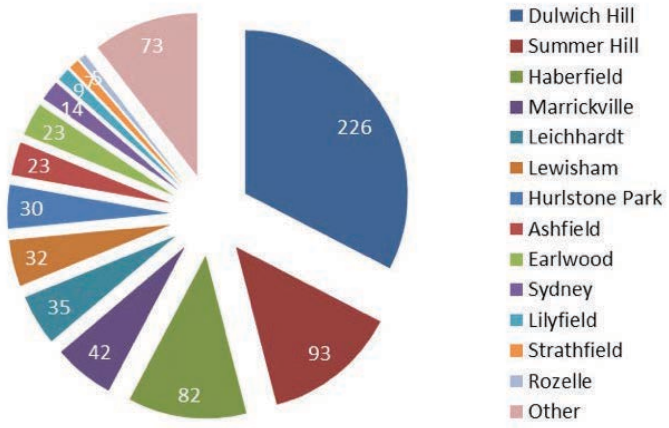
- 3269 Aware users who viewed the site
- 757 Informed users who downloaded a document or multiple pages
- 206 Engaged users who participated in the survey

The video prepared to promote the exhibition received over 3,000 views on Facebook and YouTube.

Around 700 responses were provided through all engagement platforms. Including:

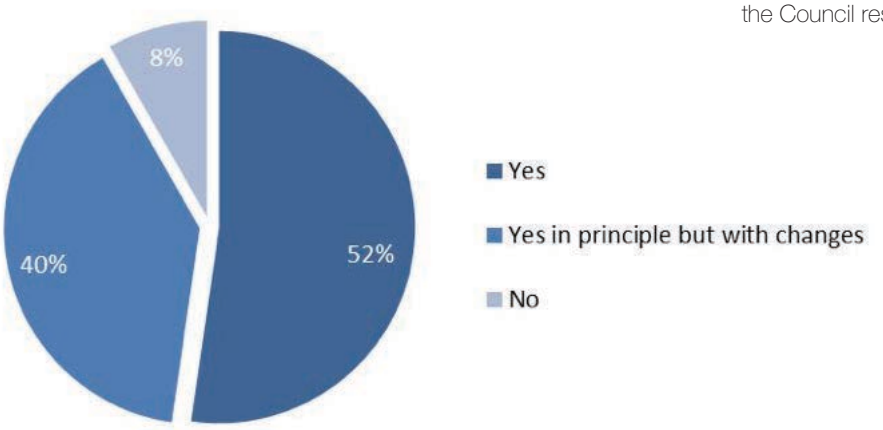
- 206 responses through your say inner west, of which 148 provided written responses
- 480 written responses through the social pinpoint interactive map
- 7 written responses received directly via email

Responses were overwhelmingly received from residents within the Inner West area and specifically along the GreenWay corridor. The most comments were received from residents in Dulwich Hill (33%), Summer Hill (13%), Haberfield (12%), Marrickville (6%), Leichhardt (5%), Lewisham (5%), Hurlstone Park (5%), Ashfield (4%) and Earlwood (4%).



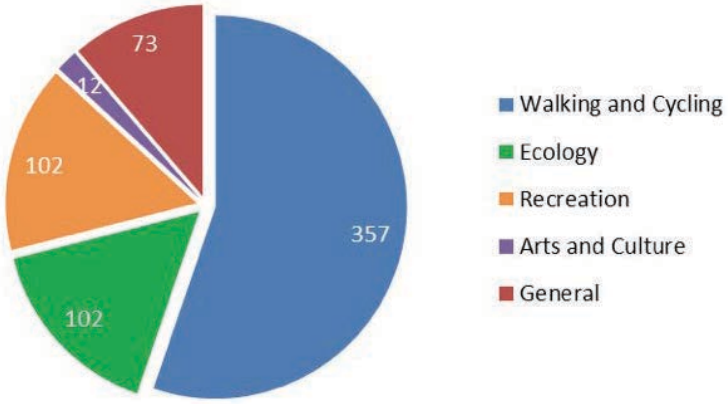
Public exhibition results

The results of the Your Say Inner West survey showed broad support for the draft plan with 92% of responses either supporting the draft plan or supporting the plan with changes. Only 8% of responses did not support the plan.



Of the 206 responses through your say inner west, 148 provided written responses. In addition to this 480 written responses were received through the social pinpoint interactive map and 7 written responses received directly via email.

The written responses overwhelming focused on the theme of walking and cycling (55% of written responses), followed by ecology and recreation (16% of written responses each) and arts and culture (2% of written responses). The remaining responses were general in nature or on multiple themes (11% of written responses).



Based on the feedback from the community, agencies and staff, minor amendments to the draft master plan were made.

Council Adoption

The GreenWay Master Plan was adopted by Inner West Council at its meeting held 14 August 2018.

Council voted unanimously in support of the Master Plan. Minor amendments to the final draft master plan were made based on the Council resolution

5.0
GREENWAYS AROUND THE WORLD

5.1 GreenWays around the world

Linear recreation open space corridors have existed for a long time in urban areas around the world - the majority of them located along physical assets such as waterways, harbours and coastlines. There is now an increasing trend in deliberate creation of linear open space corridors, often associated with and placed along disused infrastructure corridors (such as the High Line in New York).

The GreenWay Benchmark Report (Appendix B) presents built "benchmark" projects selected from relatively dense urban environments, similar to the Inner West. All of the examples have been selected based on the ways in which multiple key elements are integrated into a design, being Active Transport, Multi-purpose recreation, an Ecological corridor, in support of Arts and culture, and/or Sustainability education.

Common success factors which serve as useful lessons for the development of the Cooks to Cove GreenWay include:

High-performing public open space

As cities around the world face greater densities and increased pressures on open space, the concept of "high-performing" public spaces has emerged to describe spaces which generate multiple social, environmental and economic benefits to local communities.

International precedents from around the world, particularly in the United States, are promoting the integration of multiple objectives within a GreenWay.

Linear park as a destination in itself

A key message from international examples is that linear parks are seen as not just movement corridors but as open space which, done well, are significant attractions in their own right. The most popular recreational activities in urban areas are walking and riding, and attractive destinations that target these activities can encourage participation. Destination trails can also deliver strong economic benefits.

The Highline in New York is a clear example of this. The success of the implementation of the Highline has resulted in becoming a recognised international tourism destination and one of the key things to experience when visiting New York. The Highline in peak periods can attract 20,000 visitors a day.

The Atlanta BeltLine is another example of this with a stated objective to be "not simply a means of getting somewhere, but a destination unto itself ….. it offers a chance to be a community, to be a region, and to share all that it has to offer."

Similar to the BeltLine the aim of the Indianapolis Cultural Trail is "not just about the destination; it is about the journey" emphasising the linked nature of the movement corridor and the linear open space as a place to visit in its own right.

Staged Implementation

Linear open space infrastructure is typically large-scale with relatively long lengths of the corridor. They also cross other transport and infrastructure corridors (necessitating consideration of connectivity and accessibility) and a diverse range of adjacent land uses.

Development in multiple stages with a clear vision and objectives ensures a desired quality of the infrastructure, despite this complexity and scale.

High-quality outcomes have been achieved by projects delivered in multiple stages, where each stage, while being a short section of a longer trail, is a complete piece of infrastructure in itself integrating all the elements of the project. A short section delivered well can also attract further funding and publicity for the next section.

For example:

- the High Line in New York has been constructed over three stages to date, starting in 2009 and completed in 2016. The success of the initial stage of the High Line supported the continuing investment, development and extension of the High Line.
- the Indianapolis Cultural Trail has a clear commitment to "quality over quantity". The trail was split into eight sections and construction of the sections was staged and completed over a six year timeframe.
- the 30-kilometre Atlanta BeltLine has a 20-year strategic implementation plan and has been broken down into ten sub-areas. To date, four sections of the corridor have been constructed and two more are under construction

Community, culture and placemaking

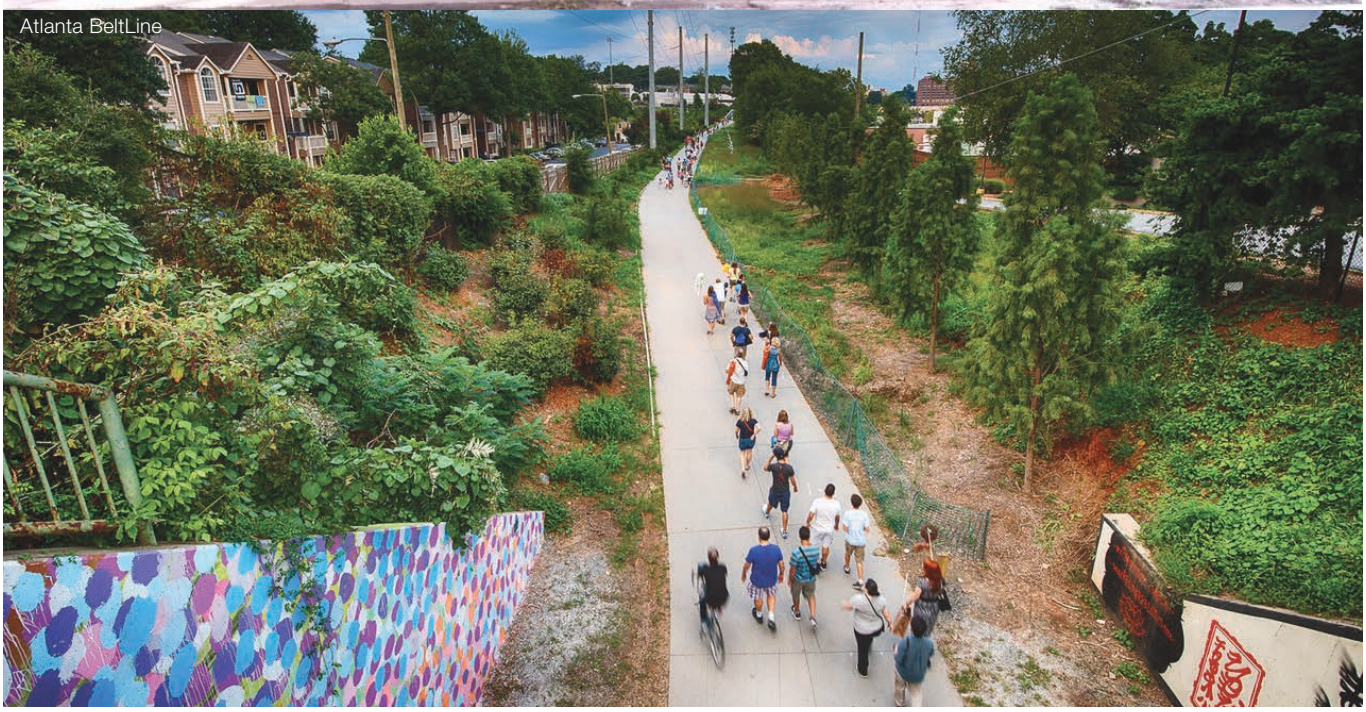
Strong community involvement, cultural activity and placemaking helps to create an outcome which works in the local context and delivers strongly on social benefits. Cultural activity and placemaking also encourage ongoing community participation, as seen at the Atlanta BeltLine, the Chicago 606 and the High Line.

Environmental sustainability principles

Public spaces have a role in both creating habitat in which urban ecosystems can flourish and in creating opportunities for people to connect with nature close to where they live. Where environmental sustainability principles underpin design, projects deliver strongly on environmental benefits, such as at the High Line, Singapore's Bishan Park and Sydney Park wetlands.

Indianapolis Cultural Trail

Atlanta BeltLine



Atlanta BeltLine

Case study: Atlanta BeltLine

First conceived as a 1999 Master's thesis by Georgia Tech student Ryan Gravel, the Atlanta BeltLine evolved from an idea to a grassroots campaign of local citizens and civic leaders. It is now a linear trail with similar urban context, development time frame, and conception, and incorporating many of the same concepts and elements as the GreenWay.

Guided by a Master Plan and Implementation Plan, it will open in phases through to anticipated completion in 2030. As of 2016, the Atlanta BeltLine has four open trails, with two trails under construction.

LOCATION
ATLANTA

YEAR
1999 - 2030

SIZE
35.4 KM

BUDGET
$246 MILLION USD

Lessons for the GreenWay

- It meets multiple objectives and is described as an "integrated approach to transportation, land use, greenspace, and sustainable growth."
- Being a "living, breathing part of our community", it is not simply a means of getting somewhere, but a "destination unto itself".
- Although there was a strong grassroots campaign and ongoing community involvement, as the project has scaled up, community voices have diminished, and the focus has shifted towards economic development. The project's founder Ryan Gravel is concerned that it's not doing enough to deliver its intended social outcomes
- Its completed stages and Master Plan and Implementation Plan, which sets outs plans for phased completion through to 2030, establish strong precedents.

Active & Sustainable Transport

The Atlanta BeltLine is both an active transport and transit corridor, including 33 miles of multi-use trails and 22 miles of "modern streetcar" in a loop around the city. Like the GreenWay, it uses old rail corridors.

Ecological Corridor

The project includes a linear arboretum, envisaged as "an elaborately curated, city-scale mix of existing and cultivated tree species that is at once an urban forest, an ecological connector, a corridor for scientific research, and a collection of remarkable public spaces."

Arts & Culture

A strong sense of art and culture is present throughout the BeltLine, contributed to by its street art. It boasts the largest temporary public art exhibition in the American south.

The arboretum has a focus on education for a range of ages, with a program run by Trees Atlanta.

Multi-Purpose Recreation

Part of the role of the Atlanta BeltLine project is to increase the area of parks and green space in Atlanta. Seven new parks are open so far including a range of recreational facilities.

Case study: Chicago 606

Similar in urban context and concepts as the GreenWay, the Chicago 606 trail is a former rail corridor which "brings together arts, history, design, trails for bikers, runners, and walkers, event spaces, alternative transportation avenues, and green, open space". One of the key drivers for its implementation was a lack of open space in this part of Chicago.

Community involvement has been strong, with the "Friends of the Bloomingdale Trail" championing the project over a decade. Ongoing input from the community has also led to a strong art program of installations both temporary and permanent, which define the visitor experience and make it a dynamic destination for all.

LOCATION
CHICAGO

YEAR
2003 - 2015

SIZE
4.3 KM

BUDGET
$95 MILLION USD

Lessons for the GreenWay

- The vision for The 606 balances local community needs with attracting visitors. The 606, while busy, achieves this. However, there are community concerns about gentrification in the vicinity of the trail.

Arts & Culture

Described as a "living work of art", the 606 also includes embedded artworks, event facilities, temporary artworks, and programs. The 606 has a strong theme of community-building using events designed to connect people to the trail, the parks along it and their neighbours. The strong arts program defines the trail as a destination.

Active & Sustainable Transport

The 606 includes a shared path which accommodates bicyle riders, walkers, runners and dogwalkers. "Sure, the trail can be busy — Bicyle riders, runners, dog walkers and others mostly coexist peacefully. There are no stop signs or traffic lights." (The Chicago Tribune)

Multi-Purpose Recreation

As part of the 606, a series of new parks are being developed. Park 567 is one of these.

Case study: Indianapolis Cultural Trail

In car-dominated Indianapolis, the city-wide cycle and pedestrian Cultural Trail is a strong move in a new direction. The trail connects emerging cultural districts to downtown and the Indianapolis Canal, featuring strong signage, pavement markings and furniture to give it the look and feel of a high-quality and safe space. Like the GreenWay and others, the project had a long incubation time before being fully funded, and the project was realised over a 14-year period.

Increasing numbers of apartment dwellers in the local area have created greater need for multi-use outdoor space and opportunities for walking and cycling.

The trail reflects Indianapolis' reputation as a leader in the arts, with public art an important feature of the trail. Approximately $4 million was invested in public art as part of the trail's construction, and there is an ongoing public art program. The canal also features strongly and was the subject of a separate $61 million investment.

LOCATION
INDIANAPOLIS

YEAR
1999 - 2013

SIZE
12.9 KM

BUDGET
$63 MILLION USD

Lessons for the GreenWay

- Indianapolis exemplifies the benefits of defining a clear civic vision and sticking to it across election cycles.
- Defining the trail as a clear destination and programming events along its length have been reported by the city to be challenges.

Active & Sustainable Transport

The trail is designed to accommodate a range of different active modes and features generously wide road crossings. Pavement markings indicate where to ride/walk and provide a unifying theme.

Ecological Corridor

Stormwater treatment is integrated into the design. Raingardens along the trail create greener streets and improve water quality.

Arts & Culture

Art and culture are a central theme, with the trail connecting six cultural districts around the city. There are artworks integrated into the design.

Case study: The High Line

An elevated freight rail line transformed into a public park on Manhattan's West Side, the High Line is owned by the City of New York, and maintained and operated by the non-profit and grassroots conservancy Friends of the High Line along with the New York City Department of Parks & Recreation. Founded in 1999 by community residents, Friends of the High Line fought for the High Line's preservation and transformation at a time when the historic structure was under the threat of demolition and saw it through a long incubation time.

After the trains stopped running, plants self-seeded on the High Line. Varied conditions of light, shade, exposure, wind, and soil depth on the High Line led to a variety of growing conditions - a landscape that became inspiration for plant selection in the design.

The High Line has become a prime example of a trail as destination, so much so that it has become a victim of its own success and its use as a thoroughfare and as a local community space might be diminished by the high number of tourists.

LOCATION
NEW YORK CITY

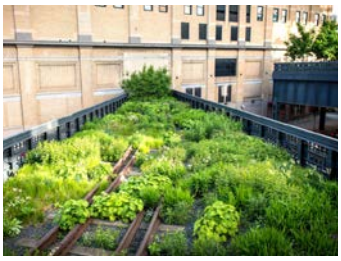
YEAR
2006 - 2014

SIZE
2.3 KM

BUDGET
$152 MILLION USD

Lessons for the GreenWay

- Nearby public housing tenants have been squeezed out of the neighbourhood financially and socially, by gentrification and the lack of welcoming spaces. Solutions include more meaningful input from local residents during planning and design and smarter financial models to capture and redistribute the value generated by similar projects.
- Its staged implementation has meant that latter stages benefit from increased publicity and increased funding.



Ecological Corridor

Whenever possible, plants have been sourced from within a 100-mile radius. Almost half of the High Line's plants are native species.

The High Line's ecosystem provides food and shelter for a variety of wildlife species, including native pollinators.

Arts & Culture

High Line Art presents a wide array of artwork including site-specific commissions, exhibitions, performances, video programs, and a series of billboard interventions. Artists have been encouraged to think of creative ways to engage with the uniqueness of the architecture, history, wildlife and design of the High Line.

Friends of the High Line run education programs serving 10,000 students annually through guided field trips, after-school programs, teaching artist residencies and school partnerships.

Multi-Purpose Recreation

The highline offers multipurpose space for community and cultural use. Pictured, a meditation group.

Case study: Highbury Aqueduct Reserve

Highbury Aqueduct Reserve is located on the eastern outskirts of Adelaide, along the River Torrens. It is a linear reserve approximately 14 km long. The land was formerly used by SA Water to accommodate an open channel that transferred water from the River Torrens to the Hope Valley Reservoir. When the land was no longer required for this purpose, the South Australian government purchased the land from SA Water in order to create a public reserve.

The project was launched in 2012 and public access has been opened progressively, guided by a Master Plan prepared in 2013.

LOCATION
ADELAIDE, SA

YEAR
2012 - 2033

SIZE
14KM

BUDGET
$12 MILLION AUD

Lessons for the GreenWay

- Accommodating a range of different recreational users on shared paths and in open spaces, including walkers, cyclists, people walking dogs on leads and people on scooters and skateboards
- Potential impacts of dogs on native fauna – the Master Plan recommends that dogs are permitted on leads
- Balancing access and biodiversity, including whether or not to include low-key paths through remnant vegetation, with seating for reflection to provide a "bush" experience in an otherwise urban environment

Ecological corridor

While much of the corridor has been planted with introduced Aleppo pines, it also includes small remnants of SA Blue Gum woodland and Red Gum woodland, as well as scattered patches of native grasslands. Fauna is dominated by species common in Adelaide's urban environments (e.g. Australian Magpie, Magpie Lark, Noisy Miner) but also includes Ringtail Possums, Brush-tailed Possums and Yellow-tailed Black Cockatoos (which feed on the Aleppo pines).

Multi-purpose recreation

The Master Plan for Highbury Aqueduct Reserve proposes a main shared path as well as fine grain walking trails, BMX and mountain bike tracks.

Spaces are also proposed for nature play and community gardening, and vegetation conservation is an important recreational activity in the reserve.

Case study comparison table

Example	Elements	Why is it a good example for the GreenWay?
Atlanta Beltline		Three classic examples of linear trails in similar urban contexts and incorporating many of the same concepts as proposed in the GreenWay
Chicago 606		
Indianapolis cultural trail		
The High Line		A high quality outcome integrating locally native ecology and strong public art and education programs
Superkilen		Creative integration of multiple recreational uses into a relatively small space
Bishan Park		The naturalised stream is a good precedent for the Hawthorne Canal precinct
Rose Fitzgerald Kennedy Greenway		An example where a strong public art program has played a key activation role
LA River Revitalization		A fledgling example attempting to create an ecological corridor around a restored waterway
Playa Vista parks		A high quality example of a series of parks which integrate a variety of uses into relatively small areas
Prince Alfred Park		A local example of a highly active park with a busy shared path running through it
Plan del Verde de la Biodiversidad de Barcelona		An high quality example of an urban biodiversity strategy which is driving the redesign of city streets
Glenorchy Art and Sculpture Park (GASP!)		A high quality example of a linear park with a strong arts and cultural theme
La Promenade Plantée		La Promenade Plantée features high quality design, which creates a varied, interesting experience
City of Adelaide bike art trail		An example of public art which highlights and celebrates bicycle facilities as well as local culture
Windsor Street linear reserve		A small-scale example of urban habitat restoration in a streetscape context
Highbury Aqueduct Reserve		Highbury Aqueduct Reserve is located on the eastern outskirts of Adelaide, along the River Torrens. It is a linear reserve approximately 14 km long, along a former open channel.

6.0
MASTER PLAN STRATEGIES

6.0 Strategies

Based on the objectives, site and precinct analysis, stakeholder consultation and review of benchmark examples, many ideas have emerged about what the Cooks to Cove GreenWay should be, what it should include and how it should be delivered. These ideas have been distilled into a set of Master Plan strategies, design and program elements, which should guide the Master Plan as well as future design and implementation.

These strategies, and design and program elements, are shown in the diagram on the right and are organised into the four main functions of the GreenWay – ecology, active transport, recreation and culture. The objectives relating to local people and places and to integration float above these four functions and inform all of the strategies and elements.

Each of the Master Plan strategies are described in detail on the following pages in Section 6. Design strategies are described in detail in Section 9. Key program elements show options for future use or program for the GreenWay.

2018 Master Plan Objectives

Ecology

– Protect and enhance the role of the GreenWay as an important urban biodiversity corridor linking two of Sydney's most significant urban waterways

Active Transport

– Create a safe and permeable active transport corridor linking the Cooks River to Iron Cove, which suits a wide range of users
– Create easy and safe connections into the surrounding street network and open spaces to maximise access, permeability and circulation

Recreation

– Deliver a series of interconnected, high quality, open spaces
– Integrate a range of passive and active recreation opportunities

Culture

– Establish the GreenWay as a locale for quality public art
– Protect, enhance and interpret the unique environmental, aboriginal, industrial and cultural heritage of the corridor
– Use the GreenWay for education purposes and to share local stories and information

Master Plan Strategies (S. 6)	Design Strategies (S. 9.1)	Key Program Elements*
Protect existing habitat **Connect** habitat in the corridor	- Complete flora and fauna study - Plan for staged revegetation - Protect ecological restoration sites - Design fauna friendly infrastructure - Include targeted local habitat interventions	Provide ongoing support for bushcare program, co-ordination with environmental groups Encourage private domain habitat improvement
Complete the spine **Create** GreenWay Streets **Connect** to surrounding routes	- Design a connected, well-lit path that suits pedestrians and bicycle riders - Design GreenWay streets - Develop wayfinding and signage strategy	Monitor use and respond to change, in consultation with bike and other community groups Spread GreenWay street concepts into the trellis Encourage people to use active transport
Establish new and diverse recreation opportunities **Accomodate** all users	- Design high performing landscapes - Design to minimise conflict	Activate hubs and gateways Consult with user groups
Establish quality public art **Interpret** GreenWay stories **Create places** for local community	-Integrate art and interpretation within design	Continue to program exhibitions and other ephemeral installations Encourage participation in active learning (e.g. citizen science), tours, workshops, etc Curate cultural events and involve local audiences

Local people + places

– Create and enhance community infrastructure along the GreenWay
– Enhance amenity value, design quality, identity and a sense of place. Ensure that outcomes are authentic and sustainable

Integration

– Create a high quality example of multifunctional "green grid" infrastructure, weaving together physical, natural and cultural elements into a coherent and integrated whole
– Enhance the role of the corridor as a vital component of Sydney's Green Grid which can help manage and mitigate the impacts of climate change on urban ecology and people

*for consideration in future Operational Management Plan

6.1 Ecology

Two strategies have guided the Master Plan in terms of how it should protect and enhance the role of the GreenWay as an important urban biodiversity corridor:

1. Protect existing habitat, including ecological restoration sites and other areas with habitat value
2. Connect habitat in the corridor, including canopy, understorey and waterways

During design development, it is also recommended that targeted local habitat interventions should be considered to suit particular species at specific sites. These could include features such as nest boxes, perch poles, or bat roosts.

Protect existing habitat

During stakeholder consultation, stakeholders mentioned the existing bushcare sites as places they valued along the GreenWay. They also mentioned important habitat patches beyond these bushcare sites – for example good small bird habitat in the light rail corridor adjacent to Weston Street.

Bushcare sites and other sites with habitat value were indicated on the plan in Section 2.2. The Master Plan proposes to protect these areas by:

- Locating built infrastructure to minimise impacts
- Where built infrastructure is located in areas with habitat value, employing ecologically sensitive design strategies
- Offsetting any impacts
- Where revegetation is proposed, a staged approach is recommended so that at any point in time the total disturbed area is minimised

Connect habitat in the corridor

The existing GreenWay Biodiversity Strategy (2012) included objectives to create a flora and fauna corridor, improve connectivity between areas with high biodiversity value, and enhance habitat and migration opportunities.

The GreenWay Master Plan will support these objectives with three main moves to improve habitat connectivity:

- Connecting the canopy
- Connecting the understorey (shrub and grassland)
- Connecting waterways with their riparian zones

This strategy is also supported by community and stakeholder input – along the whole GreenWay, comments called for more "green", more trees, bushcare sites, and locally native vegetation. Many of these comments had an ecological perspective and some specifically called for canopy and understorey vegetation. There were also comments calling for improved water quality, particularly in Hawthorne Canal, and either restoration or naturalisation of the canal banks.

Connecting the canopy and understorey

All fauna would benefit from a better-connected vegetation corridor. A better-connected canopy would benefit species which forage in the canopy, such as Eastern Bentwing Bats, Powerful Owls, and Tawny Frogmouths. A better-connected understorey would benefit small birds such as fairy wrens, finches, fantails and some species of honeyeaters. It may also assist the endangered population of Long Nosed Bandicoots, who use the cover of dense vegetation to move between nesting and foraging sites.

To work towards a continuous corridor of linked canopy and linked understorey vegetation, plantings could be in the rail corridor, parks, streetscapes and private gardens. New development along the GreenWay is already encouraged to provide a ten-metre vegetated buffer between buildings and the light rail corridor. All of these areas can contribute to the habitat value of the corridor.

The diagram on the following page identifies areas to target to improve both canopy and understorey layer connectivity, focusing on areas where vegetation is absent or patchy.

Connecting the waterways

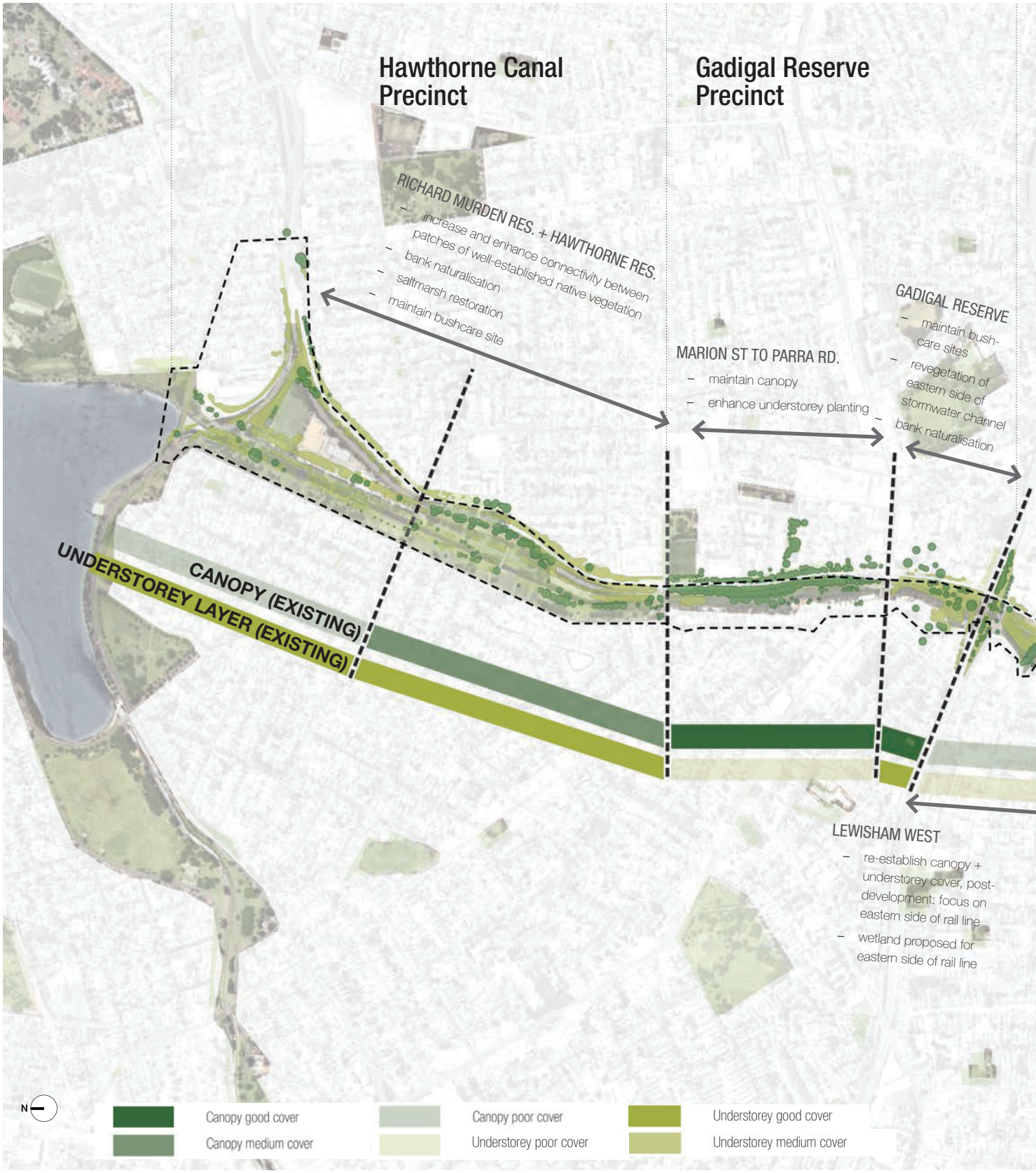
Currently most of the waterways along the GreenWay are piped or channelised. The only exception is a drainage line within the light rail corridor between Hercules Street and Jack Shanahan Reserve. This has been modified but has little habitat value.

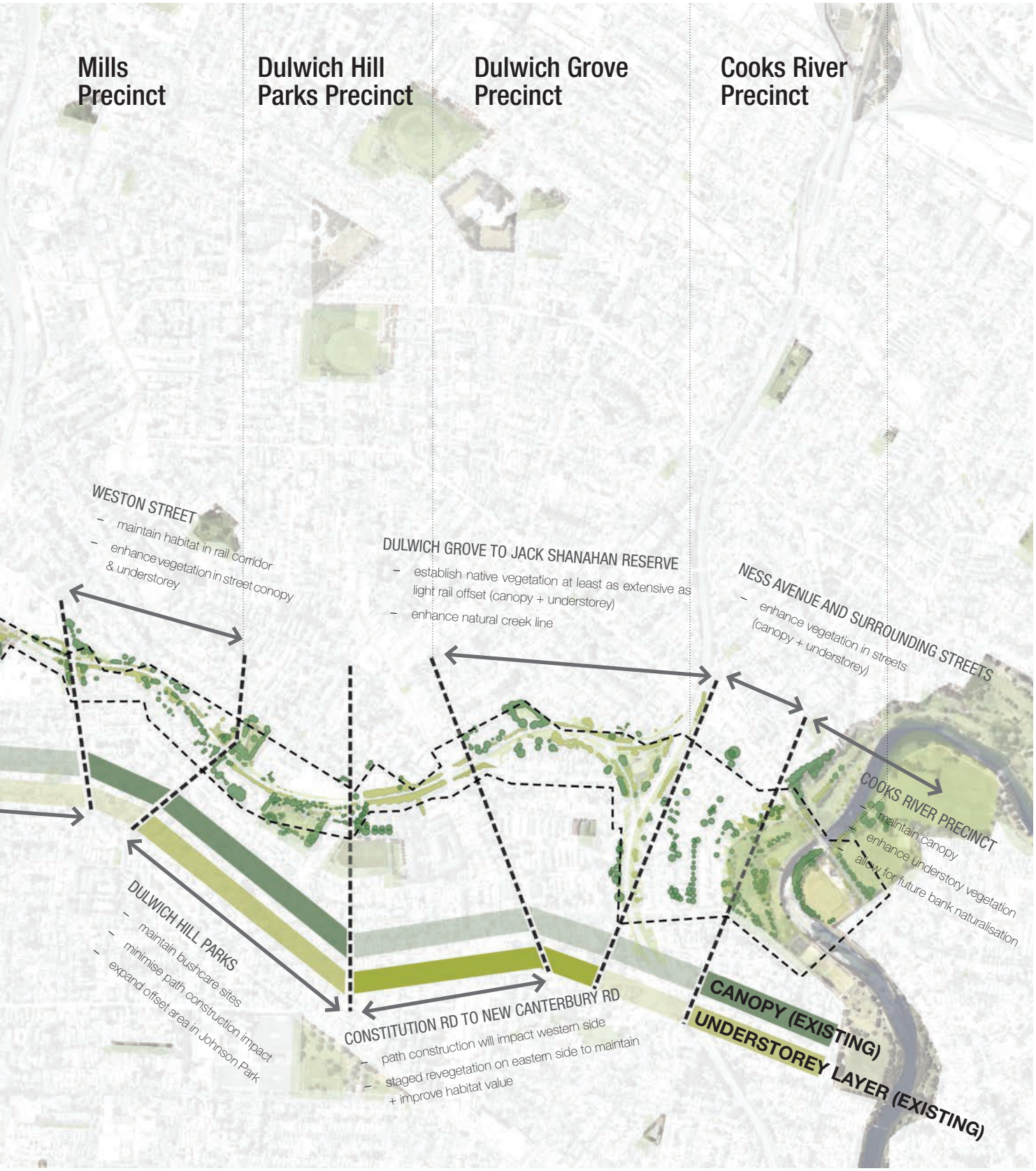
Connecting waterways with their riparian zones would benefit any species which needs sheltered access to water. Species which normally inhabit waterways and riparian zones, such as Eastern Water Dragons and various frogs, could particularly benefit. Connected waterways would also be more accessible to species which might use pipes and culverts to move up and down the GreenWay corridor.

The waterways could be reconnected with their riparian zone by:

- Naturalising drainage systems to create riparian habitat and better fauna linkages between water and land
- Creating offline wetlands and ponds for both habitat (sheltered water sources) and water treatment (clean water sources)

Key actions ecology




Mills Precinct
Dulwich Hill Parks Precinct
Dulwich Grove Precinct
Cooks River Precinct
WESTON STREET
– maintain habitat in rail corridor
– enhance vegetation in street conopy & understorey
DULWICH GROVE TO JACK SHANAHAN RESERVE
– establish native vegetation at least as extensive as light rail offset (canopy + understorey)
– enhance natural creek line
NESS AVENUE AND SURROUNDING STREETS
– enhance vegetation in streets (canopy + understorey)
COOKS RIVER PRECINCT
– maintain canopy
– enhance understory vegetation
– allow for future bank naturalisation
DULWICH HILL PARKS
– maintain bushcare sites
– minimise path construction impact
– expand offset area in Johnson Park
CONSTITUTION RD TO NEW CANTERBURY RD
– path construction will impact western side
– staged revegetation on eastern side to maintain + improve habitat value
CANOPY (EXISTING)
UNDERSTOREY LAYER (EXISTING)

6.2 Active transport

The 2009 GreenWay Master Plan and Co-ordination Strategy articulated the concept of a "spine" and a "trellis", and the GreenWay Active Transport Strategy and Action Plan (AECOM 2012) also discusses the ideas of trellis streets and "green safe streets".

There was extensive stakeholder input on active transport, including many comments about specific problem spots for bike riders. Beyond this site-specific input, the major broad themes which emerged were:

- Improving connectivity, including connectivity to other routes, as well as to local destinations such as schools
- Improving accessibility along the GreenWay itself, e.g. taking out tight corners, adding tunnels or bridges to avoid problematic road crossings

Among the ten key needs identified from Recreation Needs Research (Cred Consulting, 2018) two needs relevant to active transport on the GreenWay were:

- Improved footpath and active street network for walking
- Connected cycling networks and facilities, and safer shared paths for pedestrians

The GreenWay Master Plan has picked up these ideas in three key strategies related to active transport:

1. Complete the spine – a safe, accessible and enjoyable route for walking and cycling between the Cooks River and Iron Cove, located off-road as much as possible
2. Create GreenWay streets – where the main GreenWay route needs to follow the street network (e.g. on Weston Street and between Jack Shanahan Reserve and the Cooks River), create streets which function as part of the GreenWay
3. Connect to surrounding routes – considering both existing and proposed routes

These strategies are described further below.

Complete the spine

As a spine, the key strategies recommended in this Master Plan to complete the spine are:

- Where possible (e.g. where there is space within the light rail corridor or through parks), creating an off-road shared path as the main GreenWay route
- At road crossings, aim for grade separation along the GreenWay, this will generally mean underpasses or tunnels. Grade-separated road crossings will provide a more pleasant experience, reduce stress, and also have the potential to reduce speeds and aggressive behaviour. Prioritise grade separation based on safety and accessibility issues
- Where there are existing paths in poor condition, upgrade them to accommodate higher use

The diagram on the following page summarises where off-road links can be achieved and where on-road routes are recommended. The following tables outline the preferred route proposed in each section. More information is available in the Route Options Assessment (Appendix C), including the full range of options which were investigated and their evaluation. The Traffic Analysis Report (Appendix D) also contains design recommendations for on-road sections and road crossings.

A 3.5m shared path is recommended as a minimum width for the GreenWay, to accommodate expected user numbers of different types.

Guidance on path widths is available in AustRoads guidelines (2017), which recommend that "regional" shared paths should be 2.5-4.0 m wide with a desirable minimum width of 3.0 m; while "recreational" shared paths should be 3.0-4.0 m wide with a desirable minimum width of 3.5 m.

A wider GreenWay path would provide a high level of service to users, particularly those who want to travel faster. However open space is constrained along the GreenWay corridor and if more space is dedicated to the path, there will be less available for parks, green space, bushland and biodiversity. It has already been established that the GreenWay is multi-purpose and needs to accommodate more than just a high quality path.

3.5 m width is recommended as a minimum width for the GreenWay. Where possible, it is recommended that a wider path should be considered, particularly where there are few alternative routes and likely to be significant GreenWay traffic. Where the Greenway path travels through active parks, specifically Johnson Park and Richard Murden Reserve, consideration needs to be given to higher pedestrian volumes, and wider shared paths and/or parallel routes provided accordingly. A minimum 4.0m wide shared path is recommended through parks, which allows pairs of pedestrians/bike riders travelling two abreast to pass each other comfortably.

Create GreenWay streets

Where an off-road route is not possible (e.g. between Old Canterbury Road and Davis Street, and between Jack Shanahan Reserve and the Marrickville Golf Course), the Master Plan proposes using quiet streets wherever possible, and further calming traffic to create bike-friendly streets. The intention is that these streets will be shared by bikes and vehicles, in an environment that feels safe even to less confident riders. Streets like this are sometimes called "bike boulevards", or in the Netherlands the term "woonerf" is used, meaning "living street".

The proposed interventions include:

- Restrictions to vehicle movements to reduce through traffic
- Threshold treatments to signal the entry into a different type of street
- Coloured pavement with symbols to highlight the special character of the street
- A lower speed limit (30 km/hr is suggested in the Traffic Report)
- Increased vegetation, in keeping with the other facets of the GreenWay

Connect to surrounding routes

The GreenWay needs connectivity to a range of destinations and routes, from the regional scale down to local connections to stations, parks, shops, schools and community facilities. Planning the GreenWay trellis is beyond the scope of this Master Plan, but consideration has been given to the locations of key east-west connections, and these are shown on the detailed precinct plans.

Inner West Council plans to develop the trellis around the GreenWay as opportunities arise associated with new development and/or infrastructure renewals. This way it can be developed at low marginal cost.

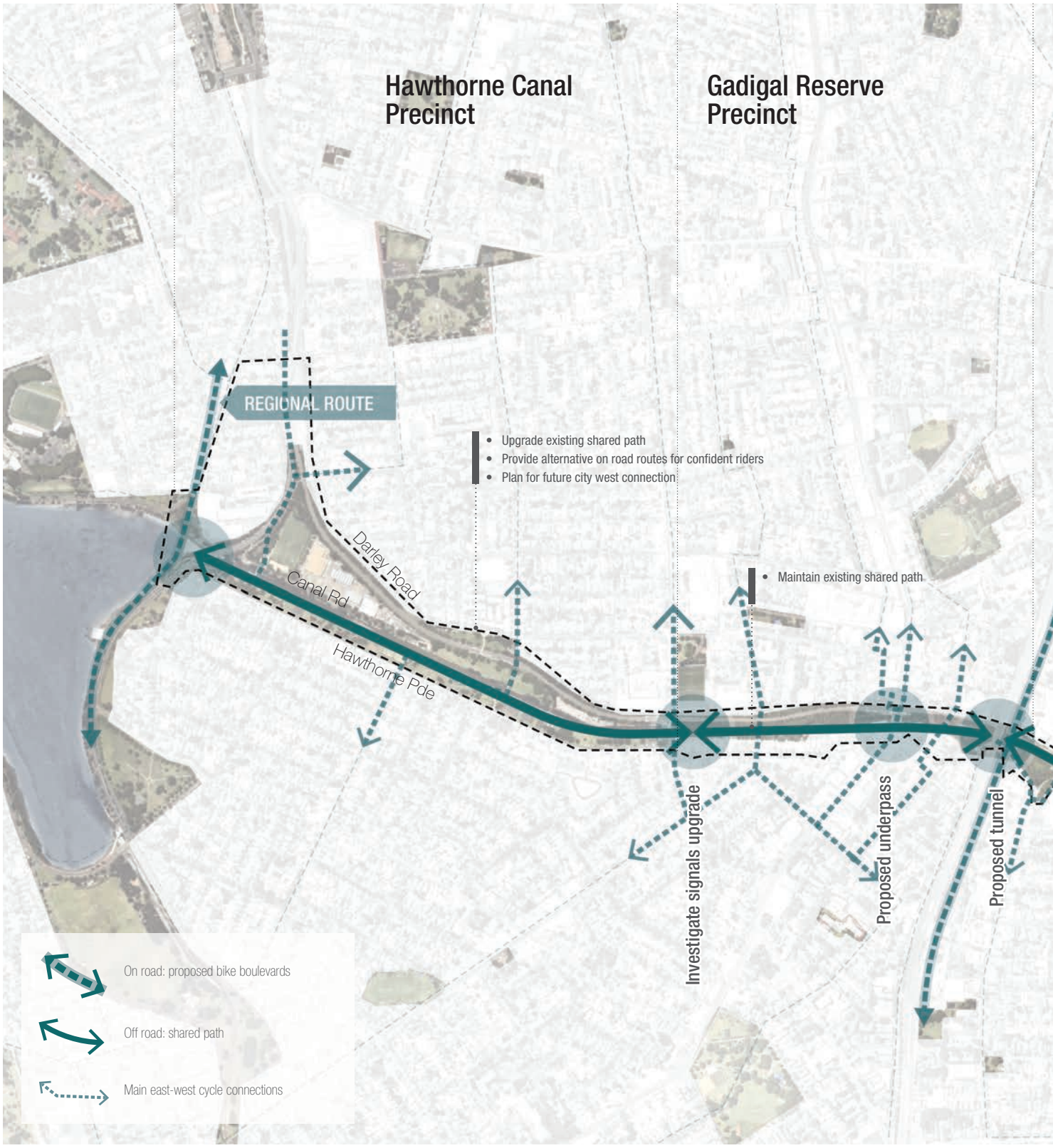
Table 6. Summary of road crossing recommendations

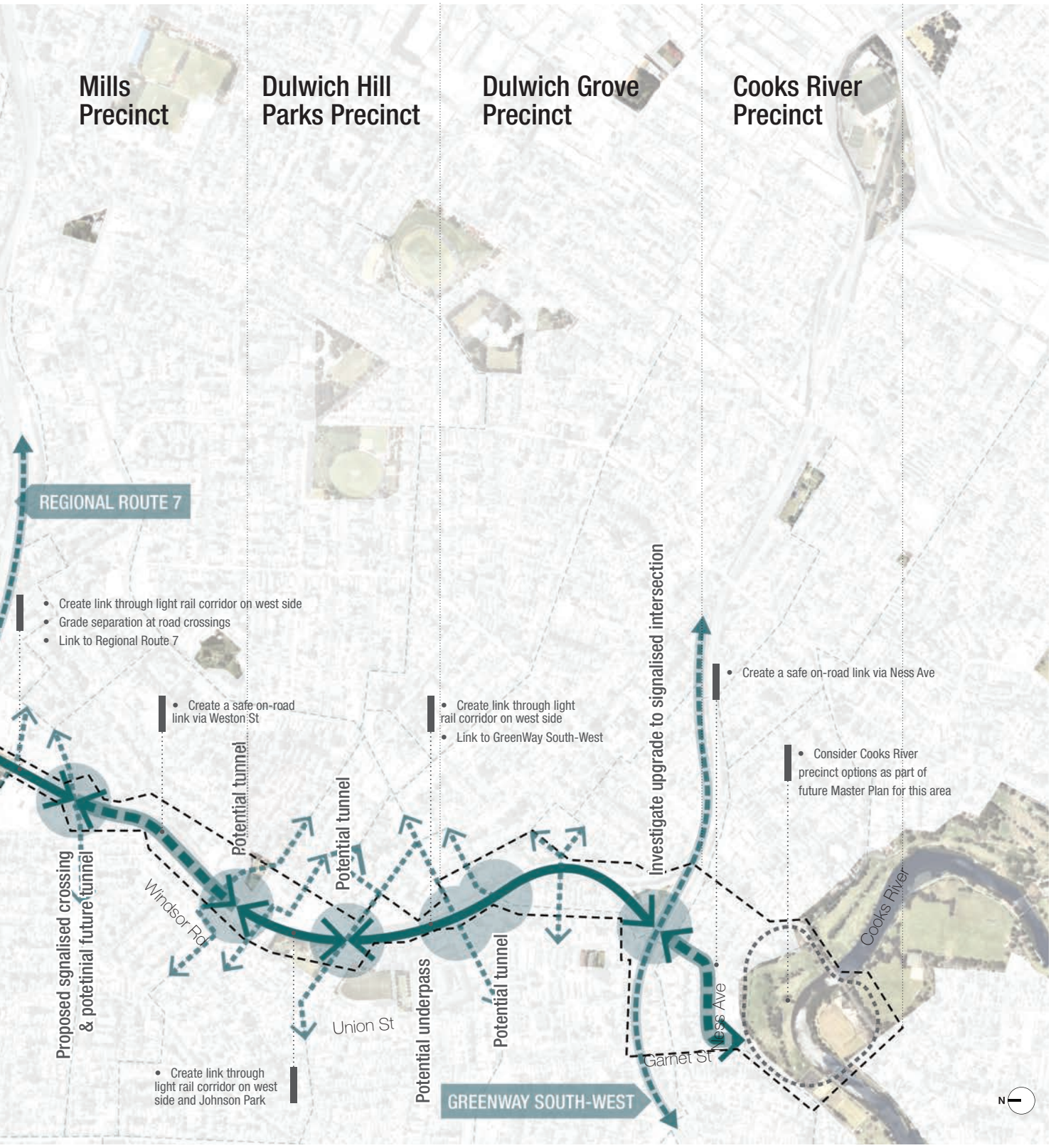
Street	Proposed crossing (when funding available)	Interim option (if needed)
Marion St	Modified signals	Existing signals
Parramatta Rd	Underpass	NA
Longport St	Jacked tunnel	NA
Old Canterbury Rd	Jacked tunnel	Proposed signals to be installed 2019
Davis St	Jacked tunnel	Existing pedestrian crossing
Constitution Rd	Jacked tunnel	Use proposed pedestrian refuge
New Canterbury Rd	Underpass	Use existing signals
Hercules St	Jacked tunnel	Upgraded pedestrian crossing
Ewart St	Traffic signals	Upgrade pedestrian refuge for bike use

Table 7. Summary of recommended main spine route

Section	Master Plan recommendations
Iron Cove to Marion Street	Upgrade existing routes. A quiet, meandering route through Richard Murden Reserve could largely follow the existing shared path alignment, while an on-road route along Hawthorne Parade could provide for faster utilitarian rides. An upgrade of the link through Blackmore Park is proposed, and there is the potential for a second commuter route along Darley Road, which links to various routes to the east.
Marion St to Parramatta Rd	Retain existing path (upgraded 2016)
Parramatta Rd to Old Canterbury	Construct new shared path generally along existing alignment through Gadigal Reserve and along the western side of the light rail corridor through Lewisham West.
Old Canterbury Rd to David St	There is insufficient space in the light rail corridor for a shared path. The main route should follow Weston St.
Davis St to Constitution Rd	In this section, an alignment on the western side of the light rail corridor, past Waratah Mills and through Johnson Park, is an important recommendation of the Master Plan. This route: – Will have an impact on the bushcare site at Waratah Mills (but avoids impact on Pigott Street bush-care site). An additional offset revegetation area is proposed in Johnson Park – Will have an impact on residents in Waratah Mills apartments (however similar impacts would also occur with an eastern alignment and residents in Arlington Grove) – Links more effectively with preferred options on the western side of the light rail corridor to the north and south, making it possible to achieve grade separation at each of the road crossings – Focuses activity in Johnson Park, which is already a busy hub (rather than impacting on the quieter Hoskins Park) – Avoids a particularly tight spot at the south-western corner of the Arlington Grove apartments
Constitution Rd to New Canterbury Rd	Construct an elevated path on the western embankment above the level of light rail tracks but below street level.
New Carterbury Rd to Hercules St	Construct an elevated path on the western embankment above the level of light rail tracks but below street level (below existing pedestrian path).
Hercules St to Ewart St	Construct a new path through the light rail corridor on the western side of the tracks (within proposed new public open space), then along the southern end of Hercules Street. Upgrade the pedestrian path along eastern side of Terrace Road, under the rail bridges, to a shared path. Provide a secondary link along the “disused fork” between Jack Shanahan Reserve and The Parade.
Ewart St to Cooks River	In this section, there are multiple route options, important issues to discuss with other stakeholders, and decisions to be made based on: – How to make effective links with the Cooks River shared path – Where to cross the Cooks River (Inner West Council and Canterbury-Bankstown Council) – Getting across the golf course while minimising impacts – Creating effective links along local streets between the Cooks River and Jack Shanahan Reserve. – Connecting to the proposed GreenWay south-west Ness Avenue is proposed as the main GreenWay route, with a short section on Garnet Street at its southern end. A secondary route is also proposed along The Parade and Garnet Street, which will provide a faster option more suitable to experienced riders.

Key actions active transport





OLD CANTERBURY ROAD TO HERCULES STREET

HERCULES STREET TO THE COOKS RIVER

6.3 Recreation

Strategies for recreation involve catering to different users with minimal conflict, and providing high quality spaces that accommodate a diverse range of recreational activities.

Along the GreenWay there are two major opportunities to create new open spaces, at Lewisham West and north of Jack Shanahan Reserve. The Master Plan also proposes park upgrades to improve the performance of existing open spaces.

Accommodate all users

In the stakeholder consultation, many of the comments related to recreation were about managing conflict between different users of shared paths. People called for:

- Making the GreenWay friendly to walkers, children, prams, and bike riders of all ages and abilities
- Managing conflict between different GreenWay users, particularly pedestrians and bike riders

In some places along the GreenWay, there is scope to create multiple routes for different users (e.g. Richard Murden Reserve and Hawthorne Parade). However along much of the GreenWay, there is limited space to create separate pedestrian and bike paths. Therefore, these concerns will be addressed by designing a shared path which minimises bike speeds and encourages shared use. Design strategies are further discussed in Section 9.

Establish new and diverse recreation opportunities

Another goal for the GreenWay is to provide for both active and passive uses within a relatively narrow open space corridor. A shared path will naturally attract uses such as walking, running and riding. There are also some more active destinations along the GreenWay today, such as sports courts at Richard Murden Reserve, popular dog off leash area at Hawthorne Reserve, a busy playground and picnic area at Johnson Park, and the skate park at Jack Shanahan Reserve.

However, there is also the potential for the GreenWay to provide a unique opportunity to escape into nature within the Inner West. Recreational activities such as bushcare and bird watching are already important along the GreenWay. Gadigal Reserve was frequently nominated as a favourite place along the GreenWay.

At the same time as the consultation was underway for the GreenWay, Inner West Council was also consulting about recreation needs in the community. The Recreation Needs Study (2018) has identified that there is a need to improve the diversity of recreational opportunities on offer in the Inner West, with the following specific needs identified that are relevant to the GreenWay:

- Places for passive recreation including relaxing, reading, studying and socialising
- Play spaces for older children
- Nature play or wild play
- Connection to nature
- Improved spaces for recreation with dogs

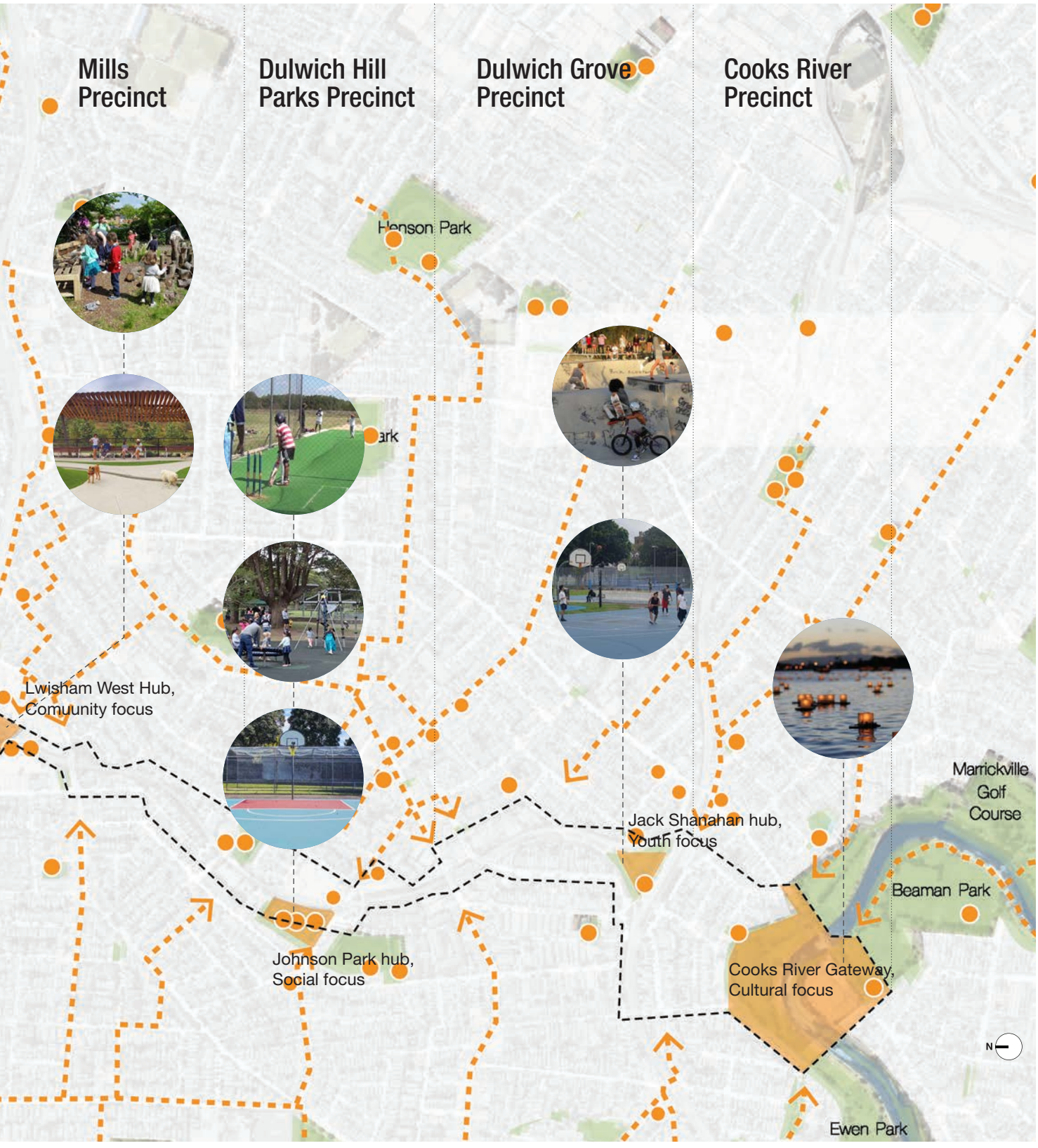
One of the most important ways the Master Plan can accommodate these needs and minimise conflict between them is to identify those areas where different activities should be focused. The idea of 'hubs' has been suggested for the GreenWay before (GreenWay Active Transport Strategy 2012). This plan shows where hubs are proposed along the GreenWay:

- The Iron Cove gateway, where the GreenWay meets the Bay Run. The cultural focus of this hub is discussed further in Section 6.4
- The central part of the Hawthorne Canal precinct has an active recreation focus. This area currently hosts activity in its green open space along the Hawthorne Canal. With its playground, tennis and netball courts and fitness equipment on the western side of the canal, as well as the dog off leash area and café on the eastern side of the canal, this area already attracts visitors for a leisure and recreation purpose.
- Gadigal Reserve has an ecology/biodiversity focus. Minimal intervention is suggested to enhance a space which already serves as an escape into nature
- Lewisham West has a community focus, with a proposed community art space, market square and an existing community room
- Johnson Park, with its kickabout area, playground, location next to Arlington light rail stop as well as picnic and BBQ facilities, is currently a well-maintained and popular community/social hub
- Jack Shanahan Reserve takes its character from the skate park and basketball court in the Reserve. It already functions as a recreation hub with a youth focus.
- The Cooks River gateway, where the GreenWay meets the Cooks River shared path

This strategy is about enhancing and adding to existing recreation opportunities, rather than removing or displacing established activities. Stakeholder consultation included many comments about maintaining well-used assets such as playgrounds, barbeque facilities and dog off leash areas. The Hawthorne Reserve dog off leash area was the most frequently nominated favourite place along the GreenWay.

Separate Masterp Plans currently being prepared for the Dulwich Hill Parks, the Marrickville Golf Course and Ewen Park (Canterbury Bankstown Council) will also contribute to this strategy along the GreenWay corridor.

Key actions recreation



Bicycle network

Hub / gateway

Facilities (dog off leash area / cafe / playground / public toilet)

6.4 Culture

The GreenWay is a significant cultural landscape and has the potential to reveal little known stories of Sydney's natural, indigenous, settlement and industrial history. The story of the GreenWay itself also reveals much about the Inner West area's recent history and grassroots initiatives.

Establish quality public art

Stakeholders called for more public art, including sculpture, along the GreenWay. Therefore, one of the strategies for this Master Plan is to identify locations for public art. The diagram here suggests specific locations for public art focused on different aspects of the GreenWay.

Locations have been selected to:

- Define different places along the GreenWay
- Highlight interesting features
- Celebrate the character of each place
- Make places feel safer – particularly proposed tunnels
- Encourage exploration

Table 8 and Table 9 summarise the major public artworks proposed for the GreenWay. These have been classified as "signature", "modest" or "tunnel" artworks. For each of these, a specific location has been nominated and a theme has been suggested.

The Master Plan budget also makes allowance for "intimate" scale public artworks in every precinct. Locations have not been nominated for these pieces. Some suggested themes and ideas include:

- Art within dog off leash areas
- Heritage and environmental interpretation
- Creation of the GreenWay/Green Grid

Interpret GreenWay stories

Stakeholders also called for the GreenWay to do more to tell historical and local stories. Public art and interpretation panels (related to e.g. aboriginal, settlement, transport, utility infrastructure, industrial, ecological values and histories) can help highlight the GreenWay's history and express these stories in meaningful ways. The table at right suggests scales, themes and ideas for public art along the GreenWay, which are also illustrated in the figure on the next page. These suggestions will be refined as the public art program evolves.

The GreenWay has a history of fusing art and ecology with local art competitions calling for environmentally themed artworks for a decade making this a strong thematic for the GreenWay.

The GreenWay should continue as a locale for this particular curatorial framework, and location for environmental artists to assist in developing destinations that promote ecological features, and encourage discovery of micro environments, flora and fauna.

Stakeholders made some comments about recognising Aboriginal culture along the GreenWay, and the Gadigal Wayfinding Project is currently underway to help tell Aboriginal stories. Therefore this Master Plan suggests some locations for art celebrating Aboriginal culture, but these suggestions should ultimately be informed by the Gadigal Wayfinding Project.

Create places for local community (flexible gathering and event spaces)

Beyond permanent public art and interpretation, ephemeral exhibitions and cultural events (e.g. Art on the GreenWay, Open studio trails, Artcycle and sustainability tours) are also an important part of the GreenWay today. The Master Plan can facilitate these activities by providing appropriate spaces and places. Flexible event and gathering spaces are required, which are appropriately scaled and provisioned.

The following main spaces have been proposed in the Master Plan:

- Lilyfield Road bridge: it is aimed to give the northern end of the GreenWay a defined sense of "arrival and expansion to align it with the opening out of the landscape – from the long linear pathway of the Hawthorne Canal to the wide open vista presented by the cove at this location. This aims to elevate the site as a destination zone, and flexible events space on, and around the Lilyfield Road Bridge
- Iron Cove: a small gathering place is proposed on the shore of Iron Cove
- Canal Road: a container frontage is proposed to activate the area between the film studios and the canal
- Lewisham West: a community room, market square, art space and community garden are existing or proposed
- Johnson Park already functions as a place for community events including outdoor cinema and carols in the park
- Dulwich Grove: a gathering place is proposed between Jack Shanahan Reserve and the new park
- Cooks River: an events space is also recommended at the Cooks River, which could facilitate community gatherings similar to the "Candles on the River" event usually held at Steel Park. Public art and place making can define this as the gateway to the GreenWay at an important location on the Cooks River cycleway

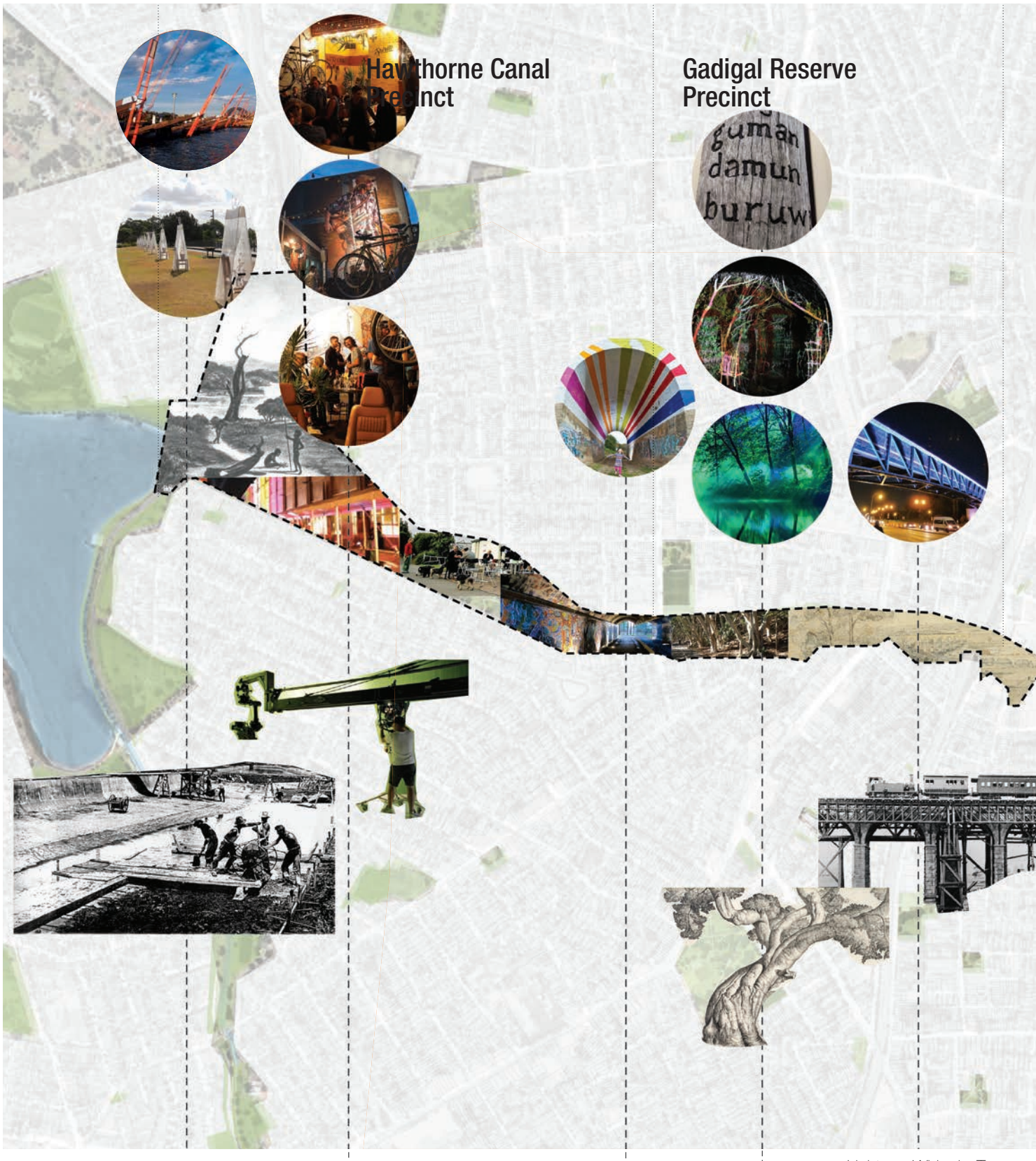
Table 8. Proposed locations for permanent public art of different scales

Signature works	Modest works	Tunnels
Iron Cove	City West Link underpass	Longport Street
Gadigal Reserve	Canal Road (Film Centre)	Old Canterbury Road
Johnson Park	Marion Street light rail stop	Davis Street
Cooks River	Southern side of Constitution Road	Constitution Road
	New open space between Jack Shanahan Park and Hercules Street	Hercules Street
	Jack Shanahan Park (near light rail stop)	

Table 9. Proposed locations and suggested themes for public art

Location	Scale	Suggested themes
Iron Cove Gateway	Signature	Water as natural element, how humans interface with and work with water
City West Link underpass	Modest	Working within the overly engineered structure
Canal Road (Film Centre)	Modest	Fence line – static showreel of its multiple histories
Marion Street light rail stop	Modest	Meeting point of urban infrastructure with natural systems
Gadigal Reserve below main western rail line	Signature	Lighting, soundscape or subtle hanging sculpture to highlight the heritage infrastructure
Longport Street tunnel	Tunnel	Contemporary work by Aboriginal artists.
Old Canterbury Road tunnel	Tunnel	Heritage
Constitution Road tunnel	Tunnel	Active transport, potential to use the rocket structrure for art & play
Davis Street tunnel	Tunnel	Environmental technology
Johnson Park	Signature	Revealing underground watercourses
Constitution Road - entry to new open space area	Modest	Seed work for environmental art/nature trail – reveal hidden flora and fauna of the GreenWay
Hercules Street	Tunnel	New urban environments – geometry and repetition
Hercules Street new open space	Modest	Engage with Dulwich Hill Primary School – thematic to be developed in partnership with students
Hercules Street new open space	Modest	Seed work for environmental art/nature trail – reveal hidden flora and fauna of the GreenWay
Cooks River	Signature	Aboriginal culture. Reveal Aboriginal stories of place
Cooks River	Modest	Environmental – waterways, boating, fishing

Proposed public art locations and suggested themes



Environmental artwork at Iron Cove gateway

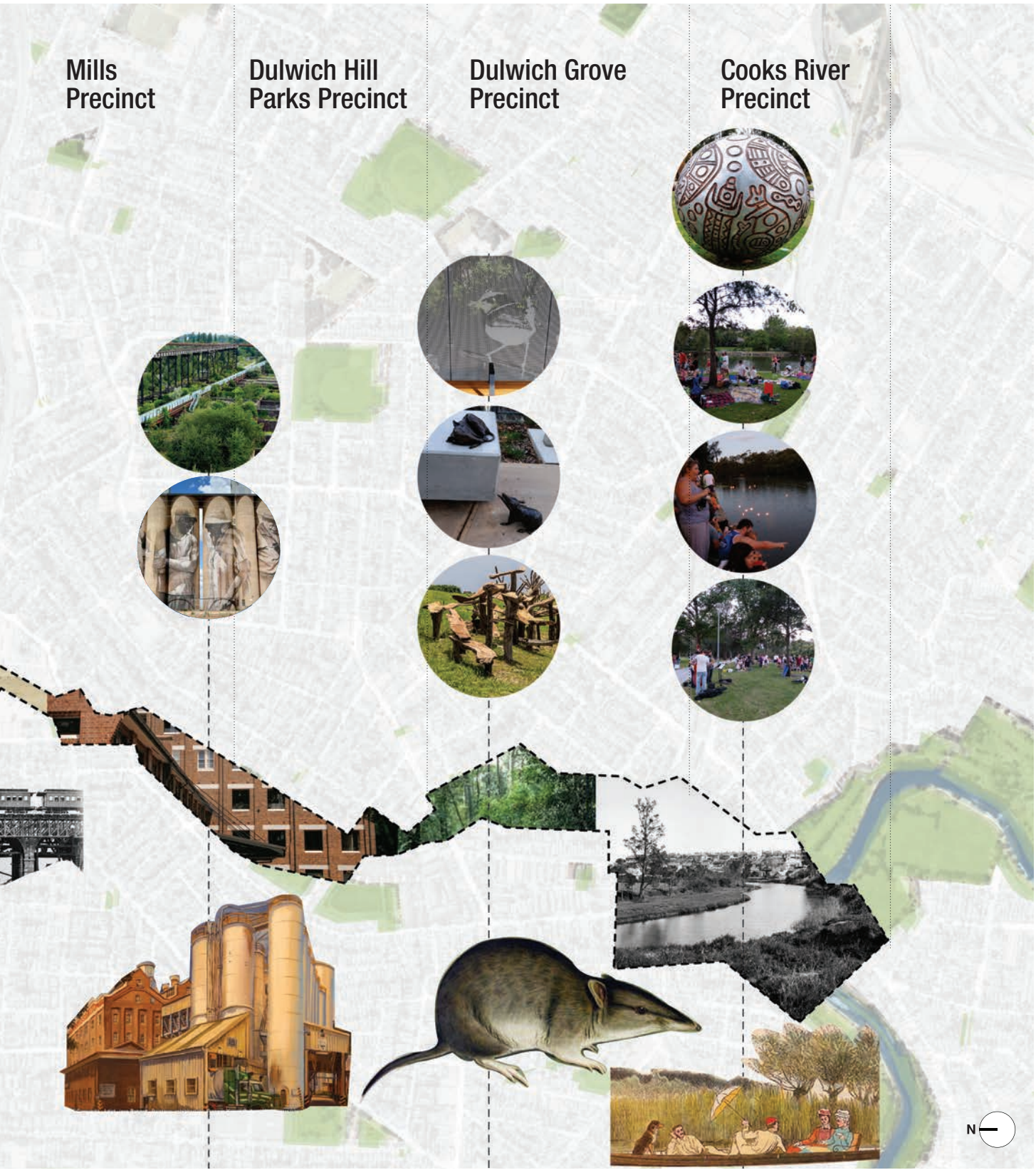
Activating the area around Canal Road studios and the cluster of businesses and organisations around the area

Tunnel artwork

Gadigal visual projections

Gadigal soundscape sensitive to resident fauna

Light on Whipple Truss bridge



Waratah Mills heritage art

Hercules St
hidden habitat art

Cooks River boat art
Cooks River light over the water
Cooks River wayfinding/time art

7.0
MASTER PLAN

7.1 Precinct plans

Precinct plans for the GreenWay are shown on the following pages, describing each proposed element of the plan.

The precinct plans have been informed by all of the information and analysis presented in earlier sections of this document, including:

- The site analysis and objectives presented in Section 2
- The character analysis of existing precincts presented in Section 3
- The stakeholder consultation presented in Section 4
- Lessons from benchmark examples presented in Section 5
- The proposed strategies presented in Section 6

Each precinct is introduced below with a brief written description of the major moves proposed in the Master Plan. More details are included in the precinct plans.

Master Plan strategies	How is this achieved in the Master Plan?
Protect existing habitat	Section 2 identifies valuable sites. The precinct plans (Section 7) have been prepared to: – Avoid impacts where possible – Minimise impacts where necessary – Offset any unavoidable impacts
Connect habitat in the corridor	Section 6 identifies gaps in the canopy and understorey. The precinct plans (Section 7) identify – Areas for native revegetation, aiming to maximise connectivity – Locations for bank naturalisation
Complete the spine	Section 2 identifies "missing links" in the spine and existing barriers. The precinct plans (Section 7) include: – An off-road spine (shared path) wherever possible – On-road connections where necessary (see below) – Grade separated options where possible – Improved at-grade crossings where necessary (or as an interim option before grade separation can be completed) Two documents support these proposed works: – GreenWay Route Options Assessment Report (Appendix C) – GreenWay Traffic Analysis Report (Appendix D)
Create GreenWay Streets	Section 6 identifies locations where the GreenWay spine needs to be on road. The precinct plans (Section 7) show traffic calming measures to create the safest possible on-road environment Supporting information is provided in the GreenWay Traffic Analysis Report (Appendix D)
Connect to surrounding routes	Section 2 shows the locations of existing cycle routes and places of interest/importance around the GreenWay. The precinct plans (Section 7) show: – Connections with existing paths and surrounding streets – Proposed secondary links within the GreenWay corridor
Establish new and diverse recreation opportunities	Section 6 identifies proposed hub and gateway locations, and identifies the type of activities recommended at each of them. The precinct plans (Section 7) identify the works proposed at each hub and gateway, which would support the recommended activities.
Accomodate all users	Section 2 identifies locations where it will be possible to create multiple routes for different GreenWay users. The precinct plans (Section 7) show proposed works (e.g. additional connections, traffic calming) which will make these multiple routes work effectively.
Establish quality public art	Section 6 identifies proposed locations for public art, and suggests themes/ideas for each location. The precinct plans (Section 7) show these locations in more detail.
Interpret GreenWay stories	Section 6 identifies the important themes of GreenWay stories.
Create places local community	The precinct plans (Section 7) identify proposed locations for gathering and event spaces.

7.2 Hawthorne Canal Precinct

A major upgrade of Hawthorne Reserve and Richard Murden Reserve is proposed in the Master Plan, building on the existing infrastructure within these reserves.

Ecology

In this precinct there are significant opportunities for ecological restoration. The Master Plan proposes naturalisation of substantial sections of Hawthorne Canal, mainly on the western bank. Where this is proposed, the Master Plan shows:

- The canal and bank extending into the current park area, so that the cross-section of the channel is increased and the bank slope can be made gentler
- Areas of salt marsh as well as some mangroves

The Master Plan also includes:

- Protection of existing revegetated areas in this precinct
- Additional vegetation (native vegetation including canopy and understorey plantings) to better link existing habitat patches
- A bioretention rain garden on the eastern side of Hawthorne light rail stop
- Investigating the potential to relocate the Council depot and use this space for ecological restoration and passive recreation

Active transport

This is a precinct where it is possible to provide multiple route options for different GreenWay users.

The Master Plan proposes to upgrade the existing meandering shared path through Richard Murden Reserve, with only minor changes to its alignment. This is intended as the main GreenWay path through this precinct.

The Master Plan also acknowledges that Hawthorne Parade is currently used by faster bicyle riders, and this route should be improved to encourage a slow speed environment within the park. Hawthorne Parade could be made more cycle friendly with traffic calming measures and improvements at existing roundabouts.

The Master Plan also indicates a separated cycleway along Darley Road, which would connect with a potential future city west cycle link between the GreenWay and Anzac Bridge cycleway. An upgrade of the Blackmore Park shared path is also proposed, and this could connect with a potential future city west cycle link.

The Master Plan proposes to improve east-west links by renewing an existing bridge over Hawthorne Canal in the southern end of the precinct, and improving the link between Darley Road and the main path in Richard Murden Reserve. Other east-west links would be maintained.

The Master Plan proposes that Canal Road is redesigned as a pedestrian and bike-friendly street in the section alongside the canal.

It is also proposed to improve the Marion Street signalised crossing, by relocating the signals closer to the GreenWay desire line. This will result in a wider crossing and wider footpaths (and designating them as shared paths) on either side of the crossing.

Recreation

The intention in this precinct is to organise activities into clearer zones, reinforcing current patterns of use.

The Master Plan proposes to focus active recreation activities around a hub in the centre of Richard Murden Reserve, including the tennis courts, netball courts and playground (all proposed for upgrade). There are also three new netball courts proposed for Richard Murden Reserve in 2018 and these have been included in the Master Plan. The Master Plan shows these three new courts at the northern end of the reserve. Fitness equipment is relocated to near the tennis courts. A new building is proposed centrally, combining amenities, kiosk/café and outdoor seating area. The building could also house equipment for community groups.

The Master Plan also proposes upgrading the existing dog-off-leash area and Café Bones in Hawthorne Reserve and investigating the potential to expand the dog-off-leash area into the southern corner of the Canal Road Film Centre

Culture

This precinct is already home to Art on the GreenWay and there are several cultural organisations in the surrounding area.

The Master Plan proposes to create a stronger “gateway” to the GreenWay at Iron Cove, focusing on the Lilyfield Road bridge, where a landscape upgrade is proposed to improve the space for gatherings, installations and events.

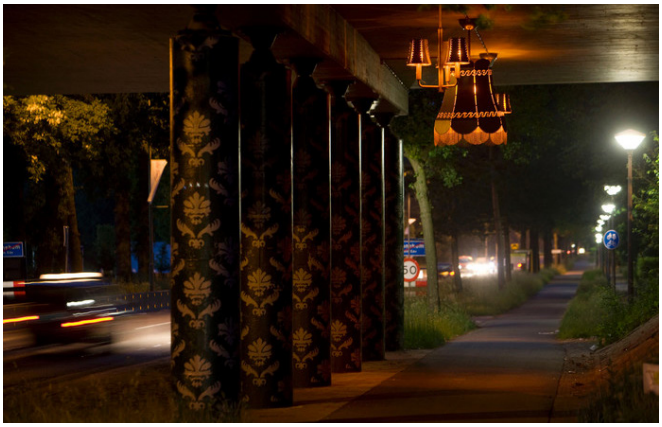
It also proposes to investigate the potential to activate the edge of the Canal Road Film Centre with container spaces able to house exhibitions, galleries, workshop spaces, performance spaces, markets, or similar, which could involve local cultural organisations and artists. The Master Plan proposes environmental artwork at Lilyfield Road bridge, and suggests art for in the wetland area. This is also a likely location for Aboriginal interpretation.

Property implications

There are two major property/land use changes which are proposed in this precinct, but which require further investigation and consultation:

- Plans to utilise parts of the Canal Road Film Centre’s land for the container spaces and expanded dog-off-leash area
- Plans to relocate Council’s depot

Canal naturalisation would also require further investigation regarding ownership and management responsibilities.



Underpass Activation under bridge

Artwork incorporating tides & bridge space. Flexible for events and art exhibitions

Kayak rental

'Learn to ride' basketball court

Tidal salt marsh wetland and habitat platform

Decking & Play net

Improved dog park with recycled rock playground & water access

Waterside boardwalk

Hawthorne Canal Precinct


1.04
Upgraded shared path to Leichhardt North light rail stop
CITY WEST CYCLE LINK
1.08
Explore opportunity for shipping container frontage to activate park edge (subject to support from Canal Road film centre). Opportunity for local creative industry to form relationship with locals and users of the GreenWay, and for integrated public art.
Maintain Blackmore Oval in its current form as significant open space with link to the GreenWay
Potential future separated cycleway
FALLS STREET
1.05
Re-arranged carpark
1.10
Explore opportunity to extend dog off leash area (subject to support from Canal Rd film centre)
FLAT STREET
1.06
Upgrade path from gate to Cafe Bones
DARLEY ROAD
Maintain maintenance access (otherwise pedestrian only)
WILLOW STREET
1.07
Decking
1.07
Decking
1.11
Upgrade Café Bones
1.09
Repair Canal Wall
HAWTHORNE PARADE
Proposed netball and basketball courts
1.22
New Amenities
1.25
Make Hawthorne Parade more bicycle friendly with new roundabout and slow point treatments
1.27
Relocate fitness equipment into one area
1.24
Naturalised edge with mangroves & salt marsh planting
1.23
Picnic and kick-about areas with shelters
1.26
Tidal stair
1.28
Renew existing tennis courts

Hawthorne Canal Precinct


Retain and enhance existing biodiversity offset site
1.37
Explore opportunity to reclaim Council depot site to be reclaimed for tidal salt marsh (subject to council operational requirements)
1.39
Informal path linking Marion, Walter and Loftus Streets
Potential for public art amongst salt marsh
1.40
upgraded shared path and lighting follows existing alignment to minimise impact
1.41
Existing traffic signals to be relocated and Marion street narrowed to three lanes
1.42
Explore potential for public toilets in Lambert Park
LOFTUS STREET
WALTER STREET
MARION STREET
FOSTER LANE
MARION ST LINK
MARION ST LINK
1.53
Investigate feasibility of isolated island to promote ecology & habitat
Retain and enhance existing bushcare site
1.54
Artwork at Marion street Light Rail stop
General
Structure Below
Existing Building
Existing item to be relocated/demolished
Private property
Development Site
Walls + Edges
Retaining Wall
Community Garden
Pavements
Main Path
Secondary Path
Informal Path / Bush track
Pedestrian Footpath
Asphaltic Concrete Vehicular
Lightrail Corridor
Timber Decking / Boardwalk
Steel Grating
Clay Brick
Fine Aggregate
Soft Fall Sand
Skateable Edge - Precast Concrete
Shared Cycle Lane
Bike Boulevard
Water Elements
Water
WSUD / Wetland
Furniture + Fittings
Timber Seating
Planting
Bush care / Lightrail offset Site
Existing Salt Marsh areas
Proposed planting to assist Salt Marsh
Lawn
Existing vegetation to be retained
Grassed Mounding
Native Vegetation
Estuarine Vegetation
Trees
Existing Tree to be Retained
Existing Tree to be Removed/transplanted
Proposed Tree - Habitat and Bushland
Proposed Tree - Streets and Urban Areas

7.3 Gadigal Reserve Precinct

The major works proposed within this precinct are focused on improving the connectivity of the shared path with grade-separated road crossings. Otherwise, the Master Plan proposes to enhance the existing character of this precinct.

Ecology

This precinct is already an important part of the ecological corridor, with good canopy cover, well-established native vegetation, and site for Eastern Bentwing Bats, currently listed as a vulnerable species in NSW. There are also active bushcare groups maintaining the bushcare area, including a school group. The intention here is to minimise impacts and improve habitat by:

- Relocating the existing dog-off-leash area (see below) and restoring native vegetation on the eastern side of the stormwater channel
- Investigating the potential to naturalise section/s of the channel on this eastern side, and incorporate stormwater treatment
- Staged understorey revegetation under the established fig trees and casuarinas between Marion Street and Parramatta Road

Active transport

Within this precinct, the major moves proposed are to:

- Build an underpass under Parramatta Road
- Build a tunnel under Longport Street

Between Parramatta Road and Longport Street, upgrade to increase the width of the existing path to 3.5 m and provide ecologically sensitive lighting. Between Marion Street and Parramatta Road, the shared path, including lighting, has recently been upgraded and no change is proposed. The Lords Road tunnel is to be maintained as an important pedestrian link.

The Master Plan acknowledges a potential future east-west active transport connection in this precinct, associated with the Parramatta Road corridor, however its exact location is unknown. A suggested location is shown between Haig Avenue and St John Street. An upgrade of the paths either side of the Lords Road tunnel is also proposed.

Recreation

The Master Plan proposes to reinforce this precinct as an ecological hub – a place to escape into nature.

One key move associated with this strategy is to relocate the existing dog-off-leash area (to Lewisham West) and revegetate this area. A nature play is proposed through the area to improve opportunities to spend time in nature, as well as a new crossing of the stormwater channel, so that this area feels safer and less isolated. The existing shared path west of the channel will be made into a secondary informal connection.

Culture

Prominent heritage structures stand out in Gadigal Reserve, including the whipple truss bridge and overhead cast iron sewer pipeline. The Master Plan proposes public art which interacts with these features. A sound and light installation has been suggested, providing it can be designed to avoid and minimise disturbance to the native fauna in this area. It could be a dynamic installation with a changing nature depending on the seasons and fauna movements in the Reserve.

Gadigal Reserve is also a place to tell other stories:

- The story of the GreenWay as an ecological corridor, from the “greening the grey spots” plantings in the early 1990s to important habitat today, with diverse flora and fauna.
- Aboriginal stories – with the content depending on the findings of the Gadigal Wayfinding Project currently underway

Property implications

Heritage items require consultation with their owners.

In the Master Plan it is proposed opening public access to lands currently within the rail corridor and light rail corridor with management transferred to Council.

Indigeneous heritage reinterpretation artwork

Heritage interpretation

Naturalised channel edge

Tunnel art

Sound and light art (sensitive to ecology)

Informal nature play

Gadigal Reserve Precinct


2.02
Construct suspended path under Parramatta Rd
2.03
Extend vegetation restoration to Parramatta road
2.04
Create informal path over existing path alignment
2.06
Explore opportunity to naturalise channel edge and incorporate stormwater treatment
Explore future tunnel under light rail to link Taverners Hill precinct to GreenWay (by developers)
2.07
Utilise existing heritage bridge as a platform for an integrated artwork experienced through light/ movement
2.15
Tunnel artwork
2.16
Upgrade existing crossing
PARRAMATTA ROAD
ST JOHN LANE
BROWN STREET
POTENTIAL FUTURE EAST-WEST LINK
LONGPORT STREET
REGIONAL ROUTE 7
HAIG AVE
FRENCHS LANE
GROSVENOR RESERVE LINK
DOVER STREET
2.05
Create east/west channel crossing
2.14
Relocate existing dog park to Lewisham West and restore vegetation
2.18
Consolidate parking and install picnic area
2.13
Longport Street Tunnel
2.09
Shared path and lighting. Retain and restore vegetation adjoining path including understorey planting.
2.10
Include a small nature play and picnic area in eastern side of Reserve
Retain and enhance Gadigal Reserve Bushcare areas
2.11
Elevated boardwalk connection to new tunnel under Longport St
TARWAN STREET

7.4 Mills Precinct

Within the Mills Precinct it is proposed to open the ligh rail corridor to public access, with the main GreenWay path in the western side and focus on ecology on the eastern side. This will link to on-road section along Weston Street.

Ecology

In the Lewisham West area, recent redevelopment has removed vegetation and effectively left a gap in the ecological corridor. The Master Plan addresses this by proposing ecological restoration in this area, focused on the eastern side of the light rail.

In the area south-east of the light rail stop, a habitat wetland is proposed along with native vegetation and path linking to Old Canterbury Road

Between Old Canterbury Road and Davis Street, there are no works proposed within the light rail corridor and therefore this will remain an important link in the ecological corridor.

Active Transport

A new shared path is proposed between Longport Street and Old Canterbury Road, including a tunnel under Longport Street.

At Old Canterbury Road, a new signalised intersection will be installed to meet the needs of new development. It is proposed that the GreenWay would use this signalised crossing in the short-term, but a future option is also proposed (subject to funding) to tunnel under Old Canterbury Road.

Between Old Canterbury Road and Davis Street, the light rail corridor is too narrow to accommodate a shared path, and so it is proposed that the GreenWay will use Weston Street. Traffic calming and road design measures are proposed to create a low-traffic, slow-speed environment where bikes share the road with vehicles.

The major east-west links to connect to the GreenWay in this precinct are Regional Route 7, which follows Longport Street towards Lewisham, towards Summer Hill town centre.

Recreation

A feature of the GreenWay in this precinct is that it will open access to a significant area of new public open space within the rail corridor at Lewisham West. This will help meet the needs of increasingly dense residential development at Lewisham West, as well as GreenWay users from further afield.

A significant element proposed at Lewisham West is a new dog-off-leash area, to replace the area relocated from Gadigal Reserve. Lewisham West is considered a more appropriate location for this use, as:

- With the proposed tunnel under Longport Street, it will only be a short walk from Gadigal Reserve
- There are few opportunities to create dog-off-leash areas in the vicinity – a new open space is a good opportunity as it doesn't compete with an established use
- Apartment residents at Lewisham West are likely to be a major user group for a dog-off-leash area, given that they lack private open space
- The site at Lewisham West can be designed as a high quality dedicated dog exercise area, to minimise conflict with other uses and enable improved turf maintenance compared to Gadigal Reserve

Culture

This precinct is a place to tell the story of the GreenWay as a goods line – the flour mills are still a prominent feature in the landscape. The adjacent developments present a range of existing or proposed community users, including a community room and art space on the east side and a market square on the west side.

Also in this precinct, at the bend in Weston Street (between 25 and 29 Weston Street) there is a patch of vegetation which stands out as high quality small bird habitat, where the Master Plan proposes a rest area, to encourage people to pause, listen and observe the birds, and learn about the ecology of the GreenWay.

Property implications

The following land use/management and ownership changes are proposed in the Master Plan:

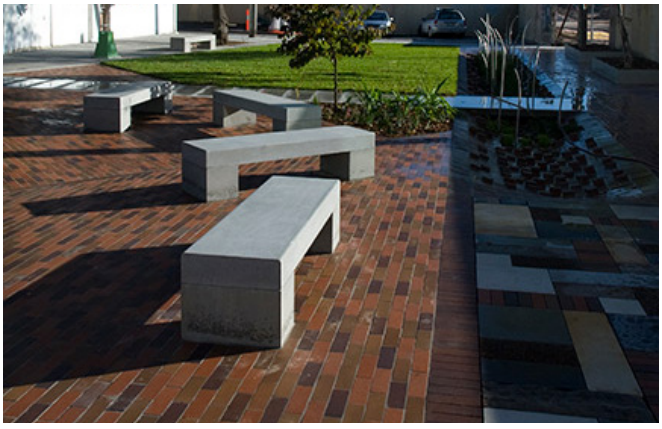
- Opening public access to lands currently within the rail corridor at Lewisham West, with management transferred to Council
- Revegetation within a Sydney Water site at 9 Weston Street, with access remaining restricted

Dog Park relocated from Gadigal Reserve with owner friendly infrastructure

Community Garden

Bike boulevard

Shared path through green corridor



Neighbourhood hub

Wetlands

Mills Precinct


3.05
Provide raised threshold at bend in Weston Street with tree planting to extend canopy and rest area with views into corridor
Increase habitat on Sydney Water site while maintaining operational access requirements
Retain and enhance Little street biodiversity offset site
Retain and enhance Davis street ecological restoration site
3.10
Redesign Weston Street as a bike boulevard - emphasise that shared streets are integral sections of the GreenWay
3.11
Threshold treatments at each entrance to Weston street
FRED STREET
ELTHAM STREET
VICTORIA ST
CHANNEL ST
WESTON STREET
WINDSOR ROAD
DULWICH HILL PARKS PRECINCT
General
Structure Below
Existing Building
Existing item to be relocated/demolished
Private property
Development Site
Walls + Edges
Retaining Wall
Community Garden
Pavements
Main Path
Secondary Path
Informal Path / Bush track
Pedestrian Footpath
Asphaltic Concrete Vehicular
Lightrail Corridor
Timber Decking / Boardwalk
Steel Grating
Clay Brick
Fine Aggregate
Soft Fall Sand
Skateable Edge - Precast Concrete
Shared Cycle Lane
Bike Boulevard
Water Elements
Water
WSUD / Wetland
Furniture + Fittings
Timber Seating
Planting
Bush care / Lightrail offset Site
Existing Salt Marsh areas
Proposed planting to assist Salt Marsh
Lawn
Existing vegetation to be retained
Grassed Mounding
Native Vegetation
Estuarine Vegetation
Trees
Existing Tree to be Retained
Existing Tree to be Removed/transplanted
Proposed Tree - Habitat and Bushland
Proposed Tree - Streets and Urban Areas

7.5 Dulwich Hill Parks Precinct

A separate Master Plan is being prepared for the Dulwich Hill Parks – Hoskins Park, Johnson Park, Arlington Reserve and Laxton Reserve – however the GreenWay Master Plan covers the shared path through Johnson Park, and works directly associated with this shared path.

Ecology

In this section, it is proposed that the shared path will pass through the existing bushcare site at Waratah Mills. This option was only selected after weighing up all the alternatives, as it will have an impact on the bushcare site. It is proposed that this should be managed by:

- Minimising impacts within the bushcare site, by selecting an alignment with the least possible impact on established vegetation, and constructing the shared path as an elevated boardwalk through bushcare site
- Offsetting impacts by expanding the existing revegetation area within Johnson Park

Between Constitution Road and New Canterbury Road, construction of the shared path will have an impact on established vegetation on the western side of the rail corridor. This section is weedy, but has habitat value and does include a patch of Sydney Turpentine Ironbark Forest species. In this area, it is proposed that the impact should be managed by retaining the vegetation on the eastern side of the rail corridor.

Throughout the GreenWay, a flora and fauna assessment is recommended as part of the design process, as explained in Section 9.

Active transport

The Master Plan proposes that the main shared path should follow an alignment on the western side of the rail corridor, including:

- A link through the Waratah Mills bushcare site between Davis Street and Johnson Park
- An upgraded path through Johnson Park, including modifications to the playground to minimise conflict
- An elevated path within the rail corridor between Constitution Road and New Canterbury Road

This western alignment allows for grade separation at the major road crossings. However, there aren't sufficient funds to grade-separate all the road crossings within the next four years. The following recommendations are made for each crossing:

- Davis Street has an existing safe at-grade pedestrian crossing, however the only access between the light rail corridor to the pedestrian crossing is via the private driveway at Waratah Mills apartments, and this option is not preferred
- Therefore a tunnel is proposed under Davis Street as a high priority. This will link to the end of Weston Street near Waratah Mills light rail stop
- Constitution Road is currently difficult to cross near the GreenWay, but a new bike and pedestrian island is proposed at the Williams Parade roundabout, which will improve safety. A tunnel here is a high priority
- New Canterbury Road has an existing safe signalised crossing at-grade, however this crossing can be grade-separated without a tunnel, as there is an existing void space under the road either side of the light rail tracks. Therefore grade separation here will be relatively low cost and is recommended as a high priority

Council supports the alignment on the western side of the rail corridor, including a tunnel under Davis Street, through the Waratah Mills bushcare site adjacent to the light rail, and through Johnson Park.

Recreation

A western path alignment will help to reinforce the existing character of the Dulwich Hill Parks:

- Johnson Park as a social hub – a gathering place for picnics, parties, informal sport, children's play
- Hoskins Park as a quiet place for smaller groups and more local use

The Master Plan also proposes investigation of a pedestrian crossing over the light rail lines between Johnson and Hoskins Parks, between Terry Road and Hill Street, to increase access to the GreenWay path from the eastern side of the light rail corridor.

Culture

Johnson Park is already used for cultural gatherings and events such as outdoor cinema, carols by candlelight and the Magic Yellow Bus. It has been used in the past to stage a GreenWay "day of action". The cluster of bushcare sites are also important places for community involvement in ecological restoration.

This suggests a place to tell the story of the GreenWay itself and to highlight the contemporary culture of the area through art and interpretive elements.

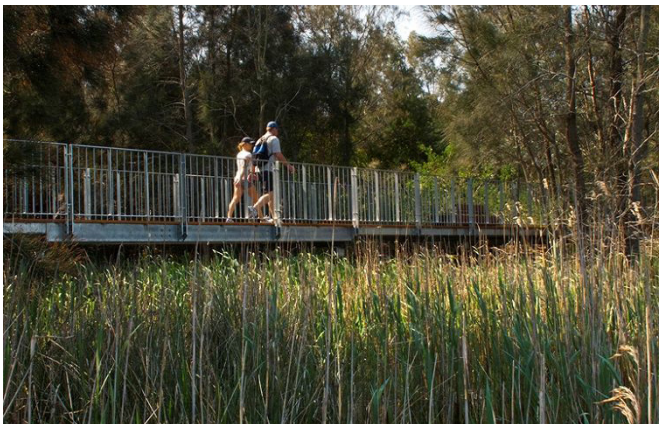
Property implications

Where the shared path passes through the Waratah Mills bushcare site, two options are being considered:

- An alignment within the private property on the western side of the bushcare site
- An alignment within the rail corridor on the eastern side of the bushcare site

At the northern end of Waratah Mills, there is an existing agreement in place which allows the GreenWay to share the driveway up to Davis Street.

Between Constitution Road and New Canterbury road, the proposed shared path is within the light rail corridor. In the Master Plan it is proposed opening public access to lands currently within the light rail corridor with management transferred to Council.



Elevated path

Small rest spaces on elevated path

Signage integrated in elevated path

Shared path through sensitive vegetation

Off-road shared path

Busy park and playground

Dulwich Hill Parks Precinct


Future upgrade of east-west link to Dulwich Hill Centre
4.04
Construct tunnel under Constitution Rd with tunnel art
4.17
Staged revegetation on eastern side of light rail and informal path linking Constitution Road and Denison Road
Maintain existing signals
4.18
Artwork at entry to new open space area
4.16
Underground HV power lines between Constitution Road and New Canterbury Road (subject to detailed investigations)
4.14
Construct shared path under New Canterbury Road (utilising existing void area under bridge deck) and stair to New Canterbury Road
4.13
Small rest spaces on elevated path
4.15
Shared path connection to street level path
4.12
Construct new elevated shared path
4.11
Restore vegetation adjoining path with locally native species and retention of existing vegetation where possible
A separate Masterplan is being prepared for Arlington Reserve
A separate Masterplan is being prepared for Laxton Reserve
WILLIAMS PARADE
NEW CANTERBURY ROAD
HERCULES ST LINK
DULWICH GROVE
Dulwich Grove
LAXTON RESERVE
CONSTITUTION RD
MAY STREET
General
Structure Below
Existing Building
Existing item to be relocated/demolished
Private property
Development Site
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Pedestrian Footpath
Asphaltic Concrete Vehicular
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Skateable Edge - Precast Concrete
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Native Vegetation
Estuarine Vegetation
Trees
Existing Tree to be Retained
Existing Tree to be Removed/transplanted
Proposed Tree - Habitat and Bushland
Proposed Tree - Streets and Urban Areas

7.6 Dulwich Grove Precinct

Within this precint it is proposed to open the light rail to public access with a shared path and lighting through an ecological corridor on the western side of the light rail.

Ecology

A 2,292m^2 light rail biodiverstiy offset is located in the light rail corridor between Hercules Street and Jack Shanahan Reserve. The Master Plan proposes a further 3,000m^2 to be allocated for ecological restoration in this area.

The Master Plan recommends retaining and improving the existing natural creekline, including adding two wetland areas for habitat and water treatment.

Active transport

The Master Plan proposes the main shared path alignment within the light rail corridor (western side) between Hercules Street and Jack Shanahan Reserve, including the potential for a grade separated crossing under Hercules Street when funding is available. However Hercules Street should still be linked to the GreenWay, as it is an important connection to Dulwich Hill Town Centre.

Near Jack Shanahan Reserve, it is proposed that the main route should link to the northern end of Ness Avenue via:

- An off-road shared path along the edge of Hercules Street and Terrace Road
- Widened crossings under the two rail lines

However two secondary links are also proposed:

- A new link into Jack Shanahan Reserve at its northern end, joining the existing path around the eastern and southern edge of the park
- A new link via the “disused fork” of the former goods line, across Terrace Road and onto The Parade. This facilitates more confident bicyle riders to take a more direct route down to the Cooks River via Garnet Street, or to link to Hurlstone Park Town Centre via Hampden Street

The Master Plan also proposes to investigate a potential pedestrian connection across the light rail tracks between Blackwood Avenue and in line with Hercules Lane, assuming that Hercules Lane is extended through new development on the eastern side of Hercules Street. This would be an important active travel connection to Dulwich Hill Public School.

Recreation

The Master Plan proposes a significant new public open space; the area within the light rail corridor north of Jack Shanahan Reserve is approximately 11,000 m^2. Within this space, the Master Plan proposes a gradual transition between the hard urban nature of Jack Shanahan Reserve and a natural character towards Hercules Street, and a corresponding transition between active recreation and passive recreation activities. This is suggested with:

- Adaptive use of the roof space over the existing toilet block in Jack Shanahan Reserve
- Activation of the disused fork with skateable elements
- A flexible open space with stepped seating edge, looking over Jack Shanahan Reserve from the northern end

Culture

Jack Shanahan Reserve is already an important active hub with a youth focus. It already includes street art, is sometimes used for youth-focused events, and this theme should be reinforced.

In the northern end of this precinct, the Master Plan suggests art and interpretive elements that highlight native vegetation and habitat, and invite a sense of discovery. This would help reinforce the existing use of the GreenWay as a place for sustainability education.

Property implications

At the northern end of the precinct, partial or full acquisition of 43 Hercules Street is required to facilitate a link between Hercules Street, the park and the proposed tunnel.

43 and 45 Hercules Street are also proposed to be converted to public open space, which would improve access at the northern end. This outcome would be subject to any future development of this precinct.

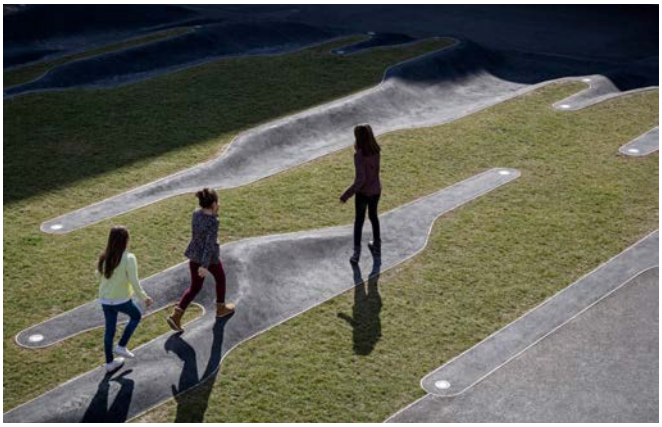
In the Master Plan it is proposed opening public access to lands currently within the light rail corridor and rail corridor with management transferred to Council.

Incorporating WSUD and water play

Usable space under connected canopy

Stepping stones through creek area

Informal skate and physical play elements along GreenWay route



Art and play as public open space

Shared path through ecological area

Wetland

Multipurpose amphitheatre

Dulwich Grove Precinct


5.07
Secondary shared path utilising alignment of existing rail and features a skateable edge
5.08
Refurbish Jack Shanahan Park toilets in line with toilet strategy and consider a shaded area or cafe on the roof of the toilets fronting disused fork and overlooking the park
Retain existing skate park, multipurpose court and picnic area
5.10
Public Art
Extend east west link and upgrade as per Dulwich Hill Station Centre Master Plan
Explore proposal for a Greenway South-West, including improvements to walking and cycling routes along Ewart Street and Ewart Lane
5.17
Stairs connection to Jack Shanahan Park
5.16
Construct shared path and lighting along Hercules Street between Terrace Road and park access point
5.09
Widen footpath and design as a shared path under railway bridges
5.18
Secondary path along disused fork linking to The Parade
WARDELL ROAD
DUDLEY STREET
BEDFORD CRESCENT
KEITH STREET
KEITH LANE
EWART LANE
EWART STREET
GREENWAY SOUTH-WEST LINK
BALFOUR STREET
TENNYSON STREET
RIVERSIDE CRE
Dulwich Hill
General
Structure Below
Existing Building
Existing item to be relocated/demolished
Private property
Development Site
Walls + Edges
Retaining Wall
Community Garden
Pavements
Main Path
Secondary Path
Informal Path / Bush track
Pedestrian Footpath
Asphaltic Concrete Vehicular
Lightrail Corridor
Timber Decking / Boardwalk
Steel Grating
Clay Brick
Fine Aggregate
Soft Fall Sand
Skateable Edge - Precast Concrete
Shared Cycle Lane
Bike Boulevard
Water Elements
Water
WSUD / Wetland
Furniture + Fittings
Timber Seating
Planting
Bush care / Lightrail offset Site
Existing Salt Marsh areas
Proposed planting to assist Salt Marsh
Lawn
Existing vegetation to be retained
Grassed Mounding
Native Vegetation
Estuarine Vegetation
Trees
Existing Tree to be Retained
Existing Tree to be Removed/transplanted
Proposed Tree - Habitat and Bushland
Proposed Tree - Streets and Urban Areas

7.7 Cooks River Precinct

In this area, there are other important plans which need to be co-ordinated with the GreenWay:

- Inner West Council is preparing a new Master Plan for Marrickville Golf Course
- Canterbury-Bankstown Council is undertaking planning for an upgraded bridge across the Cooks River, to replace the Lang Road footbridge on the Cooks River shared path
- Canterbury-Bankstown Council is also undertaking planning for upgrade works within Ewen Park, on the site of the former tennis courts/bowling greens

This precinct needs to be planned as a whole, considering the GreenWay, the Golf Course, the Cooks River shared path and Ewen Park all together. Inner West Council and Canterbury-Bankstown Council will collaborate on this.

Therefore the GreenWay Master Plan provides only indicative suggestions of proposed works within this area. These ideas will feed into the broader planning process for this precinct.

What the Master Plan does propose are the links through the local street network between Ewart Street and the Golf Course.

Ecology

From an ecology perspective, the major move proposed is to green the streets between Ewart Street and the Golf Course, and improve canopy and understorey connectivity to the Cooks River.

Active transport

From an active transport perspective, the Master Plan proposes the main GreenWay link should follow Ness Ave, Garnet Street and Tennent Parade. It is proposed that this involves:

- An upgrade of the Ewart Street/Terrace Road intersection to a signalised intersection with more space for pedestrians and bicycle riders
- A calmed, cycle-friendly mixed traffic environment on Ness Avenue
- A separated cycleway on Garnet Street, for approximately 85 m. This would result in loss of approximatly 12 parking spaces, but no other option is considered feasible here.
- A shared path along the Golf Course edge beside Tennent Parade

The Master Plan proposes to complement this with:

- A ban on traffic entering Riverside Crescent from Wardell Road (north bound), to minimise rat running through the precinct
- A secondary on-road route, more appropriate to confident bicyle riders, down Garnet Street between The Parade and Tennent Parade. This recognises an existing route used particularly by south-bound bicyle riders, as it is a fast option with right-of-way over Ewart Street

Options to be investigated as part of an integrated plan for the area include:

- Potential links through the golf course
- An upgraded or relocated Cooks River crossing
- Improvements to Wardell Road bridge to improve pedestrian safety
- A link around the foreshore at Wills Ground
- A link under Wardell Road on the southern side of the River

An important east-west connection in this area is the proposed "GreenWay South West" along the Sydenham to Bankstown rail line. The two GreenWays would connect at the Ewart Street/ Terrace Road intersection.

Recreation

Recreation opportunities in this area are dependent on integrated planning for the precinct. In principle, the GreenWay Master Plan proposes to create a gateway at the junction between the Cooks River cycleway and the GreenWay.

Culture

Cultural opportunities are also dependent on integrated planning for the precinct. In principle, the opportunities include:

- Highlighting the Cooks River
- Interpreting Aboriginal history of the area
- Interpreting the ecological aspects of the GreenWay including the presence of bandicoots
- Gateway signature art work

Property implications

The Master Plan suggests a potential link between the Golf Course and Tennyson Street through either the existing playground or a private property, however either of these options would only be explored further as part of an integrated plan for the precinct.

The foreshore link or connection under Wardell Road would likely involve a small property acquisition from Wills Ground, to create enough space for the works.

Parklet

Pedestrian and bike friendly street

Safe Bike rider crossing

New bridge over the Cooks River

Candles on the river on Earthday as example of opportunities to connect to and interact with the Cooks River.

Separated cycleway along Garnet Street

Cooks River Precinct

6.01
Parklet at north end of Ness Ave

6.02
Redesign Ewart Street intersection as a signalised intersection (subject to Traffic Engineer's study)

6.03
Swale along the Parade between road and informal path

6.04
Improve the walking and cycling route along the southern side of The Parade by restricting informal parking and constructing a pathway under trees

6.05
Improve Garnet Street as a cycling link by improving safety for cyclists at intersections


RIVERSIDE CRES
WARDELL RD
BALFOUR STREET
TENNYSON STREET
NESS AVENUE
TENNENT PARADE
6.14
Modify intersection to prevent left turn into Riverside Cres from Wardell Road (maintain access out from Riverside Cres to Wardell Rd)
6.13
Explore Wardell Road underpass - potential property acquisition required
Explore options to utilise Sydney Water SPS site
6.12
Explore opportunities for shared path links through and along the edge of golf course as a part of golf course masterplan
Explore opportunities for property dedication to allow for through link to Ness Avenue
Note: This area (comprising the golf course and Ewen Park) is the subject of ongoing planning, and is to be considered in conjunction with the GreenWay. Current options to be explored are indicated here.
6.11
Add barriers between pedestrian paths and traffic lanes to improve pedestrian safety on Wardell Road bridge
6.10
Explore boardwalk around Wills Ground foreshore
6.08
Construct bidirectional separated cycleway along Garnet St between Ness Ave and golf course(loss of 12 parking spaces)
6.09
Explore options for new bridge across Cooks River
6.07
Redesign Ness Avenue as a bike boulevard - to emphasise that shared streets are integral sections of the main Cooks River to Iron Cove GreenWay
6.15
Explore options for Public Art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8.0
IMPLEMENTATION PLAN

8.1 Introduction

The implementation plan is to guide the preferred implementation and staging of upgrades for the Cooks to Cove GreenWay. The implementation plan has two roles:

- A short-term role to recommend how current GreenWay funding should be allocated
- A long term role to recommend the next priorities for implementation, and to influence Council's Long Term Financial Plan and sourcing of other funding

The current funding is substantial, but does not cover all of the works proposed in this Master Plan. The Master Plan is envisaged with a 10-15 year implementation time frame. Given that priorities will change as the GreenWay is implemented, it is recommended that this implementation plan should be reviewed within 5 years.

Current funding

Inner West Council currently has a budget of $24.3 million committed to the GreenWay, including $7.0 million of Council's funds, $7.0 million from NSW RMS' active transport infrastructure funding, and $8.9 million from the Parramatta Road Urban Amenity Improvement Program (UAIP), and $1.5 million from NSW government Stronger Communities Fund (SCF).

Note that Canterbury Bankstown Council also currently has $1.4 million funding allocated towards the Lang Road bridge upgrade, which is located at the junction between the GreenWay and the Cooks River shared path.

The focus of the current funding is on completing the "missing links" in the shared path and on improvements in the Parramatta Road corridor. The UAIP funding specifically relates to the links under Parramatta Road and Longport Street.

Short-term implementation priorities need to reflect the goals of the organisations and programs which have contributed funds to the GreenWay's delivery.

Future funding sources

Beyond this funding, Council will need to seek funding for other elements of the Master Plan. Potential funding sources include:

- Capital works allocation – e.g. as part of planned renewals and upgrades
- Developer contributions, where major development projects are proposed
- Grant or partnership funding – potential funding partners include NSW RMS (active transport funding), Sydney Water (waterway health improvement funding), Greater Sydney Commission (Metropolitan Greenspace funding), Canterbury-Bankstown Council (for works in their LGA), NSW Environmental Trust (several of their funding programs could be relevant to the Greenway), and philanthropic foundations (such as the Ian Potter Foundation)

Priorities

Implementation priorities were developed in consultation with Council's Greenway Master Plan Project Control Group. Implementation goals are listed in Table 10, which also explains the context behind each goal, and strategies used to prioritise proposed works.

As part of the cost estimates, each element in each precinct has been given a priority of A to C based on these principles, which means:

A. Highest priority for current funding, target 2022 completion.

B. Seek funding for these elements as the next priority, target 2026 completion

C. Timing for these elements will depend on funding available and may be opportunistic, target 2030 completion

Costs

The GreenWay has been divided into six precincts. Itemised works and cost estimates for each precinct are shown in Table 11, organised by precinct.

Costs have also been totalled by priority within each precinct and for the GreenWay as a whole.

Based on the prioritisation principles outlined above, it is proposed that the Priority A works (i.e. utilising the $24.3 million of current funding available to Inner West Council and $1.4 million of current funding available to Canterbury Bankstown Council) should include the items as listed in the summary table opposite.

Inclusions and exclusions

Note that the Dulwich Hill Parks are the subject of a separate Master Plan, and most works within these parks are excluded from the cost estimates here. However works considered essential to the GreenWay delivery are included.

A similar approach has been followed for the area near the Cooks River, between the golf course and Ewen Park – works considered essential to the GreenWay are included in the cost estimates.

Other exclusions are noted in the tables.

Precinct	Priority A	Priority B	Priority C
Hawthorne Canal Precinct	• Blackmore oval shared path **$302,000**	• Upgraded shared path within the park • Modified traffic signals at Marion - Street crossing • Canal Road redesigned as a GreenWay street • Gateway works including Lilyfield • Road bridge upgrade, environmental artwork, floating wetlands • Wayfinding **$4,301,500**	• Hawthorne Parade works • Park upgrade works including works associated with playground, sports courts, dog-off leash area and passive recreation areas • Ecological restoration works including channel naturalisation, wetlands and rain gardens, remaining revegetation • Public art throughout the precinct A portion of proposed revegetation **$14,612,500**
Gadigal Reserve Precinct	• Upgraded shared path between Parramatta Road and Longport Street • Grade separated crossings under Parramatta Road and Longport Street • Ecological restoration in area east of stormwater channel • Wayfinding • Gadigal wayfinding art* **$6,084,000**	• Secondary paths • Channel naturalisation and stormwater treatment • Revegetation throughout remainder of precinct • Public art **$1,527,000**	
Mills Precinct	• New shared path from Longport Street to Old Canterbury Road • Works within Lewisham West including habitat wetland, dog park, secondary paths, vegetation and public art • Wayfinding • Public art **$3,537,6000**	• Potential community garden • Weston Street modifications including threshold and surface treatments, works at bend, vegetation, public art **$724,000**	• Tunnel under Old Canterbury Road **$1,948,000**
Dulwich Hill Parks Precinct	• New shared path between Davis Street and Johnson Park • New shared path between Johnson Park and Hercules Street • Underpass under New Canterbury Road • Tunnel under Constitution Road including public art • Works within Johnson Park to offset bushcare impacts and modify playground near path* • A portion of the proposed revegetation • Public art throughout the precinct • Wayfinding • Tunnel under Davis Street, including public art **$9,742,000**	• Remaining portion of revegetation **$513,000**	• Potential pedestrian crossing over light rail between Johnson Park and Hoskins Park **$429,000**
Dulwich Grove Precinct	• Shared path between Hercules Street and Ewart Street • Secondary route onto The Parade • Ecological restoration works • Park elements including skateable edge, grass terrace, boardwalk • Public art throughout precinct • Wayfinding **$4,025,000**	• Jack Shanahan Reserve upgrades including stair connection and public toilet refurbishment • Tunnel under Hercules Street, including public art **$2,534,000**	• Pedestrian crossing at-grade over light rail at Blackwood Avenue **$429,000**
Cooks River Precinct	• Cooks River bridge • Ewart Street signalised intersection **$1,717,000**	• Works to improve main on-road route along Ness Avenue and the southern end of Garnet Street (traffic calming, road treatments, vegetation) • Precinct-wide shared path connections including Wardell Road underpass • Wayfinding **$4,869,000**	• Works to improve secondary link along The Parade and Garnet Street **$562,000**
	$25,407,600	**$14,468,900**	**$17,980,500**

* pending community engagement

Table 10. Prioritisation principles & recommendations

Goal	Context
1. Meet specific outcomes set by funding agreements	This includes funding from the UAIP and SCF, as discussed above
2. Complete "missing links" in the shared path	NSW RMS funding is not linked to specific projects, but does come from an active transport budget was obtained with the purpose of completing the GreenWay missing links (as described in the 2015 Missing Links report)
3. Design new shared paths as complete places	New shared paths along the main GreenWay route should be designed with all the features they need to function effectively as part of the GreenWay. New works identified above have the potential to define the GreenWay experience. Delivered outcomes will help set the standard for future works and attract future funding. This is one of the lessons from the benchmark projects presented in Section 5.
4. Deliver new open spaces along the GreenWay	The Master Plan proposes to convert some rail corridor lands to public open space. These places also have the potential to define the GreenWay experience and set a standard for future open space upgrades along the GreenWay. Negotiations are underway with rail corridor land owners and managers
5. Upgrade remaining on-road links and road crossings to improve safety and accessibility	On-road links and road crossings are significant barriers along the existing GreenWay route. Safety and accessibility issues are discussed in the Traffic Analysis Report (Appendix D)
6. Stage revegetation works, as vegetation and habitat take time to establish	New vegetation and functioning habitat takes time to establish. Removal and replacement of existing vegetation (which may be weedy, but has habitat value) should be staged to minimise impact on GreenWay fauna
7. Keep long-term staging flexible and allow the GreenWay to evolve	The GreenWay is more than a piece of urban infrastructure – it's a "living" place, driven by the GreenWay program. This should continue in the future, so the GreenWay will never be complete, but will continue to respond to changing conditions in the community who uses it

Strategies	Recommendations
Honour agreements with funding partners to deliver specific projects	Elements tied to existing funding need to be implemented as part of "Priority A" works. This applies to: – Shared path upgrade through Blackmore Oval – Parramatta Road underpass – Gadigal Reserve shared path upgrade – Longport Street tunnel – New shared path from Longport Street to Old Canterbury Road – Cooks River bridge
Use the 2015 Missing Links Report as a guide to priorities	After completing the links noted above, the remaining "Missing Links" identified in the 2015 Missing Links Report as High and Medium priorities are: – B: Cooks River to Jack Shanahan Park – C: Jack Shanahan North (Jack Shanahan Park to Hercules Street) – D: Arlington (New Canterbury Road to Constitution Road) – E: Johnson Park (Constitution Road to Davis Street) – F: Old Canterbury Road signalised crossing
Include lighting, rest stops, water bubblers, revegetation of disturbed areas, wayfinding and integrated public art in all shared path links	Lighting, rest stops, water bubblers, revegetation of disturbed areas, ecology offsets, wayfinding and integrated public art should be designed in conjunction with all of the links listed above.
Deliver new open spaces as complete packages, which deliver integrated outcomes meeting multiple objectives including ecology, active transport, recreation and culture objectives. Negotiating construction approvals and new land management arrangements is also likely to be simpler for complete packages of work, rather than revisiting these negotiations over several stages Complete packages also have the potential for greater efficiency in delivery - avoid multiple stages of work within each place	Deliver works proposed within the following new open spaces: – Lewisham West (both sides of the rail corridor) – North of Jack Shanahan Park
Prioritise upgrades on the basis of safety and accessibility issues In most cases, these works can be staged to complete a basic safety upgrade in the first instance, then a complete upgrade when funding is available. Where the proposed works are street upgrades on Council lands, there are potentially opportunities to stage works in line with other planned renewals (e.g. road resurfacing).	Complete basic safety upgrades at all of the on-road links and road crossings on the main GreenWay route as a high priority (unless a full upgrade is completed as part of Priority A works, then the basic safety upgrade is not required). Recommended long-term priorities (in approximate order) are: – New Canterbury Road underpass (Priority A) – Davis Street tunnel (Priority A) – Constitution Road tunnel (Priority A) – Hercules Street tunnel (Priority B) – Ewart Street signalisation (Priority B) – Weston Street redesign (Priority B) – Ness Avenue redesign (Priority B) – Marion Street signals upgrade (Priority B) – Old Canterbury Road tunnel (Priority C) Note that wherever a tunnel is installed, it should include lighting and public art, not only to help it feel "complete" but also to minimise safety (CPTED) concerns associated with tunnels
Construction works will have an impact on the corridor; offset impacts before they occur to maintain as much habitat as possible The Master Plan identifies where planting should take place, and where it could be undertaken with low risk of conflict with future works	Revegetation should be undertaken at the same time as other works as discussed above, but could be staged over a longer time frame to facilitate effective establishment. There is potential to bring forward some of the planting proposed elsewhere, so that it has more time to establish. This is subject to availability of resources for both planting and establishment.
The Master Plan proposes works beyond the current available budget and envisages delivery over a 10-15 year time frame Even if funding was available now, some elements will take longer to negotiate with other stakeholders Flexible staging will allow Council to take advantage of funding opportunities	Propose a plan for Priority B and C, but be flexible about the timing of these elements, as their priority could change depending on funding available and stakeholder input.

Artist impression of the Hawthorne Canal Precinct

Table 11. Prioritisation per precinct

Hawthorne Canal Precinct				
Nr.	Description	Priority: A	B	C
1.01	Waterfront rest point/gathering place		X	
1.02	Canal Road bike friendly upgrade		X	
1.03	Modest artwork under City West Link	X		
1.03	Bouldering wall under City West Link		X	
1.04	Shared path through Blackmore Oval*	X		
1.05	Canal Road car park upgrade			X
1.06	Upgrade path from gate to Café Bones			X
1.07	Decking - over Hawthorne Canal at proposed containers and Café Bones			X
1.08	Shipping container frontage reconfiguration			X
1.08	Modest artwork at Canal Road Film Studios (fenceline story)			X
1.09	Repair Canal Wall - 360 m long			X
1.10	Extended dog off leash area (excluding property acquisition)			X
1.11	Upgrade Café Bones			X
1.12, 1.17, 1.40	Upgraded shared path through Richard Murden Reserve - including Lilyfield Road bridge connection		X	
1.13	Signature tidal artwork		X	
1.14	Lilyfield Road bridge landscape upgrade		X	
1.15	Ecological islands - floating wetlands (northern end of canal)		X	
1.16	Kayak launching deck		X	
1.18, 1.24, 1.44	Canal bank naturalisation and revegetation			X
1.20	Hawthorne Parade angle parking			X
1.21, 1.23	Allowance for picnic tables and shelters x 15 sets			X
1.22	New amenities at northern netball courts			X
1.25	Hawthorne Parade cycle friendly upgrade			X
1.26	Tidal stair			X
1.27	Fitness equipment (existing fitness equipment to be relocated)			X
1.28, 1.50	Sport court renewal (6 netball courts + 4 tennis courts) including incorporation of learner bike circuit on court surface			X
1.29	Improve existing dog off leash area including grass mounds			X
1.30, 1.32	Bioretention rain garden inlcuding planting and boardwalks			X
1.31	Naturalised edge with access to the water			X
1.33	On road cycle route between Foster St and Loftus St (redo linemarking)			X
1.34	Bridge over canal renewal			X
1.35	Nature play area			X
1.36	Informal path around salt marsh area			X
1.37	Tidal salt marsh wetland (Council depot site)			X
1.39	Informal path linking Marion, Walter and Loftus Streets			X
1.41	Existing traffic signals to be relocated and Marion street narrowed to three lanes		X	
1.42	Explore potential for public toilets in Lambert Park		X	
1.43	Existing toliet to be demolished			X

1.45	Upgraded BBQs and new shelter			X
1.46	Refurbish existing playground			X
1.47	Decking with playnet			X
1.48	Tidal stair			X
1.49	New kiosk/café and amenities building			X
1.51	Lookout deck with seats and suspended lounge nets			X
1.52	Demolish existing buildings			X
1.53	Ecological island (southern end)			X
1.54	Modest artwork at Marion Street light rail stop			X
Costs total		**$302,000**	**$4,301,500**	**$14,612,500**

Gadigal Reserve Precinct				
Nr.	**Description**	**Priority: A**	**B**	**C**
2.01	Informal path between Hathern and Marion St + stairs to light rail		X	
2.03	Extend vegetation restoration to Parramatta road		X	
2.04	Informal path on eastern side		X	
2.05	New channel crossing near Haig Ave		X	
2.06	Channel naturalisation + stormwater treatment		X	
2.07	Signature artwork: light/movement artwork at heritage bridge	X		
2.08	Retention of existing vegetation and staged understorey planting to maintain habitat value**	X	X	
2.09	Gadigal Reserve Shared Path upgrade*	X		
2.10	Informal nature play		X	
2.11	Elevated boardwalk connection to new tunnel under Longport St	X		
2.13	Longport Street Tunnel*	X		
2.14	Ecological restoration**	X	X	
2.15	Artwork in tunnel*	X		
2.16	Upgrade and raise existing pedestrian bridge over channel		X	
2.17	Improve Lords Road bridge and connections at either end: widen and upgrade paths		X	
Costs total		**$6,084,000**	**$1,527,000**	

** funded from dedicated funding source (SCF and/or UAIP)*

*** staged over priority A + B*

Mills Precinct				
Nr.	Description	Priority: A	B	C
3.01	Construct habitat wetland in existing low point, including planting	X		
3.02	Community garden		X	
3.03	Informal walking path	X		
3.04	Tunnel under Old Canterbury Road			X
3.04	Artwork in tunnel			X
3.05	Raised threshold at bend in Weston Street, with trees, art and space to rest		X	
3.07	Connection to Regional Route 7 cycleway*	X		
3.08	Dog off leash area including stair access from Longport Street	X		
3.09	New shared path from Longport Street to Old Canterbury Road*	X		
3.10	Weston Street redesign as a bike boulevard		X	
3.11	Weston Street road closure and threshold treatments	X		
Costs total		**$3,537,6000**	**$724,000**	**$1,948,000**

** funded from dedicated funding source (SCF and/or UAIP)*

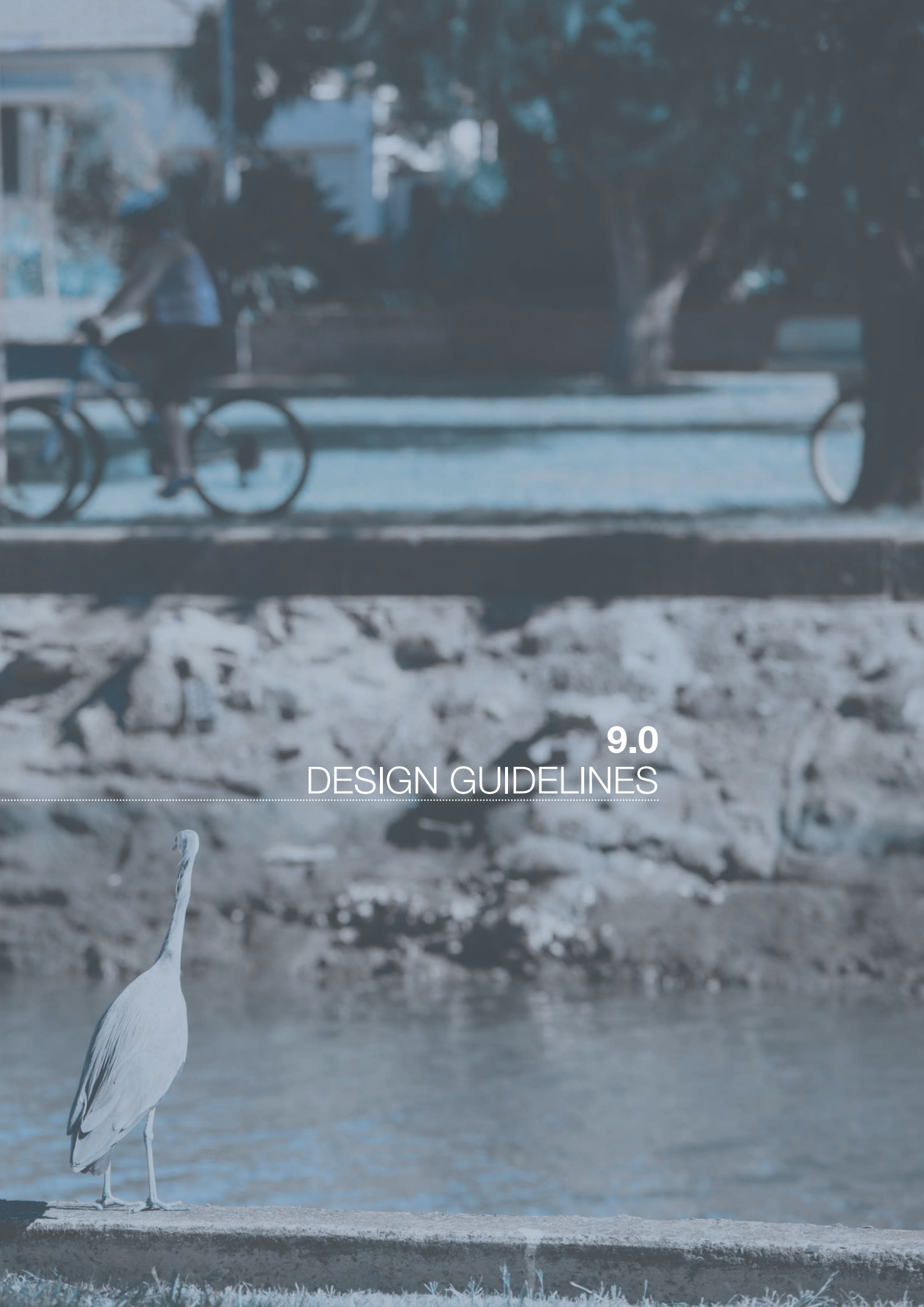
Dulwich Hills Parks Precinct				
Nr.	Description	Priority: A	B	C
4.01	Pedestrian crossing at-grade over light rail from Hill St to Terry Rd			X
4.02	Shared path from Davis Street to Johnson Park	X		
4.04	Constitution Road tunnel	X		
4.04	Artwork in tunnel			X
4.05	Signature artwork: revealing underground watercourses	X		
4.06	Tunnel under Davis Street including signal box relocation and link to Weston Street	X		
4.06	Artwork in tunnel			X
4.07	Terry Road drainage improvements	X		
4.08	Renewed shared path in Johnson Park		X	
4.09	Johnson Park playground modifications to reduce conflict with shared path	X		
4.10	Create additional biodiversity offset area to compensate for impact on Warratah Mill Bushcare Site	X		
4.11	Restore vegetation adjoining path with locally native species and retention of existing vegetation where possible**	X	X	
4.12	Shared path between New Canterbury Road and Constitution Road (elevated structure)	X		
4.13	Elevated deck rest stops	X		
4.14	New Canterbury Road underpass	X		
4.15	Shared path from Hercules Street to New Canterbury Road	X		
4.15	Connection between boardwalk and street level path, inlcuding stair and seating	X		
4.16	Underground HV power lines between Constitution Road and New Canterbury Road	X		
4.18	Modest artwork at entry to new open space area	X		
Costs total		**$9,742,000**	**$513,000**	**$429,000**

*** staged over priority A + B*

Dulwich Grove Precinct				
Nr.	**Description**	**Priority: A**	**B**	**C**
5.01	Allowance for part property acquisition to facilitate Hercules St crossing (either tunnel or at grade)	X		
5.02	Naturalised creek	X		
5.03	Wetlands, including planting	X		
5.04	Pedestrian crossing at-grade over light rail at Blackwood Ave			X
5.05	Timber boardwalk with bench seating	X		
5.06	Grass terrace	X		
5.07	Linear skateable edge	X		
5.08	Refurbish Jack Shanahan Reserve toilets		X	
5.09	Widened shared path under rail bridges	X		
5.10	Modest artwork at southern end of Jack Shanahan Park (near light rail stop)	X		
5.11	Hercules Street at-grade crossing upgrade	X		
5.12	Hercules Street tunnel		X	
5.12	Artwork in tunnel			X
5.14	Shared path between Jack Shanahan Reserve to Hercules St	X		
5.15	Underground HV power lines between Hercules Street and Jack Shanahan (subject to detailed investigations)	X		
5.16	Shared path along Hercules Street between Terrace Road and park access point	X		
5.17	Stairs connection to Jack Shanahan Reserve		X	
5.18	Secondary path along disused fork		X	
5.19	Modest artwork at southern end of new open space area, north of Jack Shanahan Park	X		
Costs total		**$4,025,000**	**$2,534,000**	**$429,000**

Cooks River Precinct				
Nr.	**Description**	**Priority: A**	**B**	**C**
6.01	Ness Avenue parklet		X	
6.02	Ewart Street signalised intersection	X		
6.03	The Parade swale			X
6.04	The Parade landscape treatment			X
6.05, 6.06	Garnet and Parade link - on-road			X
6.07, 6.08	On-road route from Cooks River to Ewart Street via Tennent, Garnet and Ness		X	
6.09	Cooks River bridge*	X		
6.10	Link around Wills Ground foreshore (Lang Road to Wardell Road)		X	
6.11	Wardell Road bridge pedestrian safety upgrade		X	
6.13	Wardell Road underpass including part property acquisition		X	
6.14	Riverside Crescent part road closure		X	
6.15	Public art - signature/modest scale		X	
Costs total		**$1,717,000**	**$4,869,000**	**$562,000**

** funded from dedicated funding source (SCF and/or UAIP)*



9.0
DESIGN GUIDELINES

9.1 Design Strategies

The following set of design strategies has been developed to guide the integrated design of Greenway infrastructure. Design strategies support the Master Plan strategies presented in Section 6, and are also linked to the Master Plan objectives. During the design process the design team should be multi-disciplinary and key stakeholders should be included.

Ecology

Complete flora and fauna study

During the design process a flora and fauna study should be prepared, including:

- Survey of existing flora and fauna
- Assessment of vegetation condition, habitat quality and conservation value
- Assessment of impacts of proposed works
- Recommendations on potential mitigation measures
- An assessment of the significance of potential impacts on threatened species if required
- Consideration of requirements within the bandicoot protection area defined in the Marrickville DCP 2011

This study should inform the design of site-specific strategies to minimise impacts.

Plan for staged revegetation

During the design stage, a staged revegetation plan should be developed for each precinct, considering the following:

- Use locally indigenous species for revegetation along the GreenWay
- The Master Plan helps identify where vegetation could be planted without causing future conflict with other proposed works, however the plans don't show all the details (e.g. where construction access may be required)
- Vegetation takes time to establish, and its full benefits (e.g. including habitat value and amenity as green infrastructure) are not realised until it is established
- Weed removal and revegetation has a short-term impact on habitat. While there is a long-term aim to replace weedy vegetation with locally native communities along the GreenWay, this needs to be managed carefully to minimise habitat impacts through the transition.
- There is a significant cost involved in vegetation establishment (i.e. beyond initial planting) therefore ensure that the establishment phase can be supported before undertaking planting

Protect ecological restoration sites

From an ecological perspective, the quality of habitat depends on several factors including the type and structure of vegetation, the size and connectivity of the patch, and the degree of protection from disturbance (including disturbance from light, noise, people, dogs, cats and other predators). Ecological restoration sites should be protected from negative disturbances.

To date, several of the bushcare sites and other vegetation along the GreenWay have been well protected within the rail corridor. For the ecological restoration sites which are currently fenced within the rail corridor, this Master Plan proposes the following changes to access arrangements:

- At the Waratah Mills bushcare site, the main shared path is proposed through this site (to be offset within Johnson Park)
- At the Hercules Street light rail biodiversity offset site, the main shared path is proposed through this site (to be offset within the same section of the corridor)

No changes are proposed at the Fred Street, Little Street, Pigott Street, or Davis Street sites .

Ecological restoration sites located within parks currently have no formal protection. This applies to sites within Richard Murden Reserve, Gadigal Reserve and Johnson Park. These accessible sites encourage learning and involvement, therefore this Master Plan proposes no changes to access arrangements in these sites.

The Master Plan also proposes a number of new and expanded ecological restoration sites. The following strategies are proposed to protect existing and proposed ecological restoration sites along the GreenWay:

- Identify appropriate level of access at each site with consideration of all uses
- Use temporary fences to restrict access during establishment
- Use permanent fencing in strategic locations to protect particularly sensitive or high value habitat
- Keep fences low and visually unobtrusive
- Provide interpretive signage to inform users of ecological site and permitted access
- Keep any paths within ecological restoration sites informal and only allow access after establishment

Details of access and protection of new and existing sites will be determined during the design process.

Design fauna friendly infrastructure

Several design strategies can help minimise the impact of proposed works on GreenWay fauna. Fauna-friendly infrastructure should:

- Minimise construction stage impacts
- Use elevated structures where there is sensitive understorey vegetation
- Allow for fauna movement (e.g. fauna crossings)
- Target lighting where it is really needed and avoid spill-over lighting in habitat areas (lighting details)
- Minimise noise in habitat areas and time any works to prevent disturbance
- Permable surfaces for paths
- Integrate habitat features with infrastructure.

Lighting for the GreenWay needs to be sensitive to local fauna, which can be disturbed by too much light at night. Lighting has a negative impact on wildlife such as threatened Eastern Bentwing Bats. Specific recommendations for fauna-friendly lighting, particularly for sensitive areas, are to:

- Consider timed lighting to turn off after last light rail service
- Use lighting that is directed onto paths with minimal spill into surrounding vegetation
- Use the lowest possible level of light to achieve other objectives
- Use long wavelength colours (reds and oranges)
- Consider lighting that is activated by approaching pedestrians/bikes and is dimmed when there is no GreenWay traffic
- Use no lighting on informal paths

Include targeted local habitat interventions

While a better connected canopy, understorey and waterway will provide significant habitat benefits along the GreenWay corridor as a whole, other more targeted local interventions should also be considered to provide higher quality habitat. Ideas for the GreenWay include:

- Nest boxes
- Bat roosts
- Irrigated areas (where Bandicoots like to forage)
- Wetlands and frog ponds
- Environmentally friendly seawall design
- Logs (including piles of branches/logs)
- Rock piles

Active Transport

Design a connected, well-lit path that suits pedestrians and bicycle riders

In Section 6.2, the general recommendation was made that the main GreenWay path should generally be a 3.5 m wide shared path. This will accommodate expected pedestrian and bike traffic, while minimising impacts on open space and natural areas along the route.

There are some sections of the GreenWay where an alternative path design is proposed:

- In parks, where higher levels of activity warrant a wider path or the provision of multiple paths
- Along streets, which are discussed below

To encourage active use of the GreenWay by a wide range of people of different abilities, it is important that it is well lit at night and that it includes well spaced rest stops with appropriate facilities.

Lighting for the GreenWay should enable night time wayfinding, personal safety and activity as well as enhancing appeal and cohesion to help create a positive urban character in a place. Also important along the GreenWay is that lighting needs to be sensitive to local fauna, which can be disturbed by too much light at night.

The key objectives for GreenWay lighting are to:

- enhance wayfinding, safety and amenity through effective lighting of footpaths and cycleways;
- design lighting to minimise impacts on GreenWay fauna;
- use light fittings that are appropriately scaled for pedestrians and bicycle riders;
- minimise visual clutter along the GreenWay, for example by undergrounding of cables and consistent placement;
- minimise greenhouse gas emissions through use of best practice, energy efficient light fittings; and
- comply with Australian Standards for footpath lighting.

Recommendations:

1. Provide continuous and consistent pedestrian lighting (pole and lumnaire) along the main GreenWay path, also matching (or complimenting) the height, materials, character and style of existing lighting along the GreenWay and/or in the vicinity of the light rail stops.
2. Coordinate lighting with other street elements such as street trees, landscaping, utilities and street furniture, while maintaining appropriate clearances (refer to Marrickville Public Domain Design Guide).
3. Use a light source that has a colour rendering index of greater than 80 and a correlated colour temperature between 2700 and 3500K.
4. Use a light fitting that emits no light above the horizontal plane.

Rest stops are recommended at 200-400 m intervals, as recommended for active streets in Marrickville Council's Public Domain Design Guide. A 200 m spacing is preferable where it can be achieved. Rest stops should provide enough space for a few people to stop and should include bike racks, seats, bubblers/water refill stations, bins and bike repair/pump facilities.

Design GreenWay streets

Where the GreenWay needs to be on road, this Master Plan has recommended that where possible, the aim should be to create a bike-friendly street or "bike boulevard". These have been implemented in a few places in Australia. Typical design features include:

- Traffic calming measures to reduce vehicle numbers and slow speeds
- A lower speed limit
- Surface treatment (e.g. coloured pavement) to clearly indicate the nature of the street

Along the GreenWay, it is also recommended that GreenWay streets should feature:

- Reduced space for vehicle movement and increased space for pedestrians
- Additional vegetation, WSUD and/or public art
- Features that local residents can use (e.g. parklets)

Develop wayfinding and signage strategy

There is existing wayfinding along the GreenWay, including a mixture of standard cycle network signage and GreenWay-specific signage. Updated wayfinding should reflect established conventions, as well as considering best practice wayfinding design strategies:

- Use mapping as a key element, helping people create a mental map
- Progressive disclosure of information, focusing on essential information and key features nearby
- Consistency of naming
- Signage design to be visible and robust, minimise clutter
- Graphic language which reflects local identity

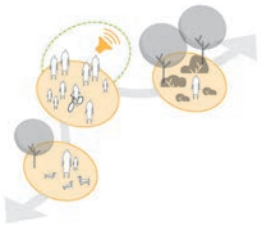
A wayfinding strategy should be developed at the concept design stage. Regular rest stops with seating, bubblers, bike repair/pump facilities, bike racks, bins, etc.

Recreation

Design high performing landscapes

In order to get the best value out of limited open space, "high performing" spaces are needed, which provide a diversity of recreation opportunities, as well as meeting other objectives, including enhancing biodiversity and creating habitat.

Design strategies recommended for the GreenWay (adapted from New York City High Performance Landscape Guidelines 2010) are:



- Integrate uses so they benefit each other rather than causing conflict
- Address the preferences of users of all ages and cultural backgrounds
- Design for all abilities
- Create delight in built or natural beauty, sense of discovery
- Reveal a range of landscape and ecosystem types
- Offer a diversity of ways to engage with the natural environment
- Understand the natural and historic importance of the site and interpret it
- Design cooler places to combat the effects of urban heat
- Follow "Safer by Design" principles

Design to minimise conflict

One of the concerns that has come up in consultation with local residents is that the GreenWay will bring more (bike and foot) traffic through their local streets and parks, and shared pedestrian and bike paths are perceived by some as places where conflict occurs between different users.

Conflict is often cited as an issue on shared paths, however a 2010 study for NSW RMS (Taverner Research 2010) observed shared paths in ten different locations for a total of almost 700 hours, observing more than 50,000 pedestrians and more than 12,000 bike riders. They observed only five incidents of actual conflict, none of which involved physical contact (four of the five involved urgent evasive action and one was verbal). The report concludes that "the perception of danger is much greater than the actual risks of bicyclists and pedestrians on shared paths." City of Sydney surveys have also shown that more than 80% of people using shared paths feel safe.

There are always some issues when different transport modes mix, and therefore some guidelines recommend segregation of pedestrians and bike riders to reduce conflict and improve safety. However separate pedestrian and bike paths are not necessarily appropriate for the GreenWay. Segregation requires more space and is less flexible. Victoria Walks (2015) point out that segregation generally improves the level of service for bike riders, but doesn't necessarily provide the best outcome for pedestrians. Sustrans (2014) (a UK charity focused on active travel) points out significant advantages with unsegregated paths where the width is shared by all users, particularly on traffic free routes away from the road. These include:

- Maximising usable width
- Allowing flexible use (e.g. the mix of pedestrians/bike riders may change significantly at different times of day or days of the week)
- Minimising sign/line clutter
- Minimising maintenance requirements

Design plays a role in minimising conflict and encouraging safe and comfortable use. The design of the Greenway shared path will need to consider a range of factors including path type, width and user volumes; path gradient, alignment and sightlines; lighting; and path surface, pavement markings and signage.

While a 3.5 m wide shared path is a general recommendation along the length of the route, consideration of local factors will be essential. For instance in active parks, a wider path with pavement markings and signage may be considered. In other areas local constraints may necessitate a narrower width in short sections. On-road sections require a different approach, however for user safety and legibility changing between separated and shared paths should be minimised.

The following design strategies will also help to reduce potential conflict:

- Design the shared path to read as a recreational route with a bike speed around 20 km/hr (acknowledging that it will also be used by commuters)
- Where possible, provide multiple routes to serve different needs
- Where possible, provide a buffer between different uses with very different needs
- Provide more space at busy nodes and links
- Adopt shared path linemarking styles and symbology being utilised in the City of Sydney

Culture

Integrate art and interpretation within design

A public art and cultural engagement strategy has the potential to integrate and highlight different elements of the GreenWay, give it a sense of place and celebrate its local character. The GreenWay Arts and Culture Program will:

- Clearly differentiate the GreenWay as something of higher quality and amenity than other shared paths
- Curate the GreenWay as a destination rather than simply a linkage within a larger movement network
- Encourage people to slow down and engage with the ecology and culture the GreenWay possesses rather than simply passing through
- Have an emphasis on envirmonmental art and raise awareness of urban ecology and locally significant species such as the bandicoot. Refer to the 2012 GreenWay Sustainability Project Interpretive Signage Strategy
- Offer opportunities for artist to work in public space and with community stakeholders
- Have a clearer focus on creative led placemaking, which develops processes for genuine community engagement; integrates key master plan objectives (culture, ecology, recreation, active transport); and generates original, place based and authentic outcomes

To do this effectively, art and cultural elements need to be planned, designed, and integrated into the physical infrastructure of the GreenWay rather than being considered after the GreenWay's structure has been designed and built.

The design stage should therefore include:

- Design briefs which encourage integration
- Local artists working with the design team
- Art built into the infrastructure of the GreenWay
- Design and construction methodologies that protect existing European and Aboriginal heritage values

9.2 Materials pallette

In this section a range of recommended treatments, materials and finishes along the GreenWay is discussed, including street furniture, paving, lighting, walls and fencing, wayfinding and planting. Some materials and finishes as recommended in the Lewisham West Public Domain Design Guidelines (2017) have been adopted in this GreenWay Master Plan.

The key objective is to achieve a consistent and integrated suite of public domain elements which 'bind together' the different precincts, leading to a consistency and clarity of the GreenWay.

Some specific sites may be amenable to added public art elements known as integrated art. These elements of integrated art may see a proportion of infrastructure budgets invested in the bespoke or site specific design of paving, fencing, seating, signage, and lighting features. Where an infrastructure component or project has identified integrated art potential, design briefs should be developed which encourage integration and invite the input and expertise of local artists in delivering infrastructure which generate original, place-based and authentic outcomes.

Paving / paths

Along the GreenWay, three different types of path are proposed:

- The "main" path – generally a 3.5 m minimum width shared path (at grade or elevated)
- Secondary paths – width dependent on use; min 1.5 m pedestrian path (at grade or elevated)
- On road bike routes – separated cycleways, bike boulevards, mixed traffic streets or shared zones
- Informal paths – 1 m wide permeable surface pedestrian path

Signage

Signage and wayfinding along the GreenWay should include different styles for different purposes, including:

- Wayfinding (including mapping and directional signage)
- Instructive (e.g. where to walk, ride, give way)
- Interpretive

These types are described below with precedent examples.

Wayfinding signage

Wayfinding signage can either be simple, designed to be read quickly while moving, or more detailed, typically including a map, designed for route planning.

General recommendations for wayfinding signage are:

- Use a distinct style with GreenWay branding to clearly identify the GreenWay from other routes
- Limit signage to locations where it is necessary, or where it adds valuable information
- Locate signage where it is visible and easily readable

Instructive signage

Instructive signage helps indicate where people should walk or ride and how they should behave. Over recent years the City of Sydney has developed a template of shared path signage which is clear and easily understood, and it is recommended that this language be continued along the GreenWay.

Interprative signage

There is already a set of interpretive signs along the GreenWay, and this style can be continued. However existing signage is informative rather than inspiring, and it is recommended that GreenWay public art projects should introduce more abstract, evocative and inspiring interpretive elements. Examples are shown below.

Lighting

Along the main GreenWay path, pole-mounted lighting is recommended. Along secondary paths, where these are lit, bollard-mounted lighting may be more appropriate, particularly adjacent to sensitive habitat zones or where poles would be obtrusive. Informal paths are intended to be unlit.

Furniture

Selected furniture is robust and requires minimum maintenance. The materiality is a combination of in situ concrete, steel and wood, which suits the urban park character of the GreenWay. All elements are minimalist and non-intrusive, not distracting from the park landscape.

Walls and fencing

Retaining and seating walls within GreenWay are proposed to be concrete. Use of fencing is limited to the areas where it is strictly required.

Main path – at grade

Where the main path can be constructed at-grade, a minimum 3.5 m wide concrete path is recommended. It should function as a shared path, indicated with signage and pavement marking (see below). It should include lighting (see below). The surface needs to be adequately smooth and non-slip, to suit all users.

Material: insitu / full width format lightly exposed aggregate concrete with grey oxide.

Main path - at grade (Prince Alfred Park - note that this path is 5 m wide)

Main path – elevated <0.4 m

Where the main path passes through sensitive environments, it should be elevated up to 0.4 m above ground level. Handrails are not required at <0.4 m above ground level. It should function as a shared path, indicated with signage and pavement marking (see below). It should include lighting (see below). Its minimum width is recommended as 3.5 m.

Material: Fibre Reinforced Plastic (FRP) decking.

Main path - elevated <0.4m (Narrabeen lagoon)

Main path – elevated >0.4 m

Where the main path passes over steep ground, it may need to be elevated more than 0.4 m above ground level. Handrails are required at >0.4 m above ground level. It should function as a shared path, indicated with signage and pavement marking (see below). It should include lighting (see below). Its minimum width is recommended as 3.5 m.

Material: Fibre Reinforced Plastic (FRP) decking with galvanised steel handrails.

Main path - elevated >0.4m (Parramatta River cycleway)

On-road – separated cycleway

On some streets a separated cycleway is recommended. This is a bike-only path, located between the pedestrian footpath and the road.

Minimum width (bidirectional cycleway) = 2.4 m + 0.4 m kerb

Material: asphalt road pavement with a green surface.

Typical City of Sydney separated cycleway

On-road – bike boulevard

Where the main GreenWay route is along a quiet street, it is recommended that the street be designed as a “bike boulevard”, designed for shared bike and vehicle use.

Material: asphalt road pavement with a coloured surface.

A 30 km/hr speed limit is recommended in these streets.

On road bike boulevard

Bicycle symbols – mixed traffic environment

On-road – mixed traffic

Where secondary on-road routes have been identified, a mixed traffic environment has been recommended for most of these.

A mixed traffic street should include pavement markings to highlight the likely presence of bikes. These should be located centrally in each lane to indicate the safest place to ride.

Bunda Street, ACT

On road – shared zones

Shared zones accommodate mixed pedestrian, bike and vehicle traffic at low speeds.

Only applicable where RMS guidelines warrant their use.

Shared zones are typically designed with a distinct paved surface (e.g. concrete or asphaltic unit pavers) more typical of a footpath than a road.

Redfern secondary shared path

Secondary paths

Secondary paths may be 1.5-3.5 m wide, depending on their expected use. A pedestrian only path can be as little as 1.5 m wide. For a shared path, 2.0 m is recommended as a minimum width. Secondary paths may also be either at-grade or elevated, with materials recommended as above for the main path.

Secondary paths may or may not include lighting.

Parramatta Park unpaved path

Informal paths

Where paths are proposed through natural areas (e.g. ecological restoration sites), informal paths have been recommended. A suggested width is 1.0 m.

A natural, permeable surface is recommended, e.g. crushed sandstone. No lighting is recommended.

Existing GreenWay rest area

Brick paving

Existing GreenWay rest areas are paved with brick, which is a material widely used in the local area. This style should be continued for rest areas and other similar places.

Directional signage

There are existing directional signs along the GreenWay, which indicate the main route. These signs provide a stylistic template for future signage.

Directional signage (existing GreenWay wayfinding sign)

Simple wayfinding – vertically mounted

Where there are existing poles or vertical elements where wayfinding signs can be mounted, signs should be located at eye level for pedestrians/bike riders, be easy to read and include brief, essential information.

The wayfinding information in these signs should be local – e.g. street names and local destinations.

Vertically mounted signage (Frome bikeway, Adelaide SA)

Simple wayfinding – integrated in pavement

To avoid a proliferation of poles and signposts, simple wayfinding signage can also be integrated in pavements.

This example on the kerb is printed in a location where wear will be minimal.

Signage integrated in pavement
(Frome bikeway, Adelaide SA)

Detailed wayfinding – map based

Map-based wayfinding signs should be provided at regular intervals to assist with navigation. Maps should show important local and regional destinations and should help people navigate between the GreenWay and other places within walking and riding distance.

Detailed map based wayfinding (Sydney)

Regional bike route signage

In NSW there is an established style for signage of regional bike routes, shown here. This style of signage would be appropriate where the GreenWay connects to other regional or local routes, as it is recognisable.

However this signage style is considered inappropriate as a template for the GreenWay itself – it tends to denote distant rather than local destinations and is typically installed too high to be easily visible while walking or riding.

Typical NSW regional bike route signage

Shared path graphics (City of Sydney)

Shared paths

Shared paths are typically indicated in the City of Sydney with:

- Blue shared path symbols
- Blue text
- Blue edges and sometimes, scattered spots

It is recommended that this style should be adopted along the GreenWay, as it is well understood in Sydney.

Separated cycleways are typically indicated with bike signs and arrows. (City of Sydney)

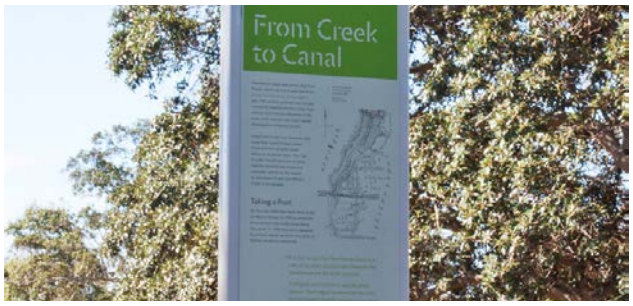
Seperated cycleways

Separated cycleways are typically indicated with bike signs and arrows.

Custom pavement detail

Custom graphics

Custom graphics can stand out and help to encourage positive behaviours.



Existing GreenWay interpretive sign

Informative

The existing GreenWay interpretive signage is:

- Recognisable
- Distinctly branded
- Informative, with a good amount of information

This style of signage is designed to be visible to those who are looking for this type of information.

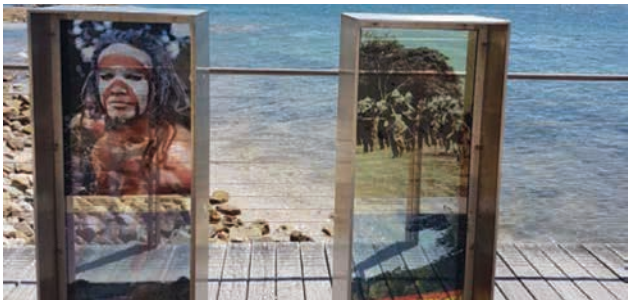
Shorebirds interpretive sign at Penrhyn Estuary

Mixture of evocative and informative elements

Interpretive signage can include a mixture of evocative and informative elements. This style of signage is designed both to attract interest and share information.

Evocative

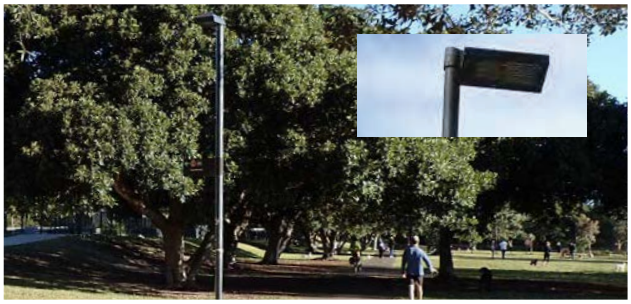
Some interpretive signage is light on text but uses materials, imagery and other artistic elements to evoke information about a place. This style of signage is designed as a prominent feature to attract attention and inspire interest.



Interpretive signage at Botany Bay

Pole mounted lights

For the GreenWay path pole-mounted lights are likely to be appropriate for the main GreenWay path.



Pole-mounted lighting

Bollard-mounted lights

Adjacent to sensitive habitat zones or where poles would be obtrusive, bollards may be a more appropriate option, which emit light closer to ground level for secondary paths.

Bollard lighting

Tunnels

Lighting is particularly important in tunnels to improve safety at night. Utilise safer-by-design approaches, with a focus on place-based, integrated outcomes.

Tunnel lighting

Bike racks

Steel U shaped bike racks have been installed near light rail stops along the GreenWay and the same style is recommended elsewhere along the route.

Existing steel bike racks at Lewisham West

Street furniture; powdercoated steel frame with oiled hardwood timber slats

Seating

Typical seats used already along the GreenWay have black powder coated steel frames with oiled hardwood timber slats.

Existing bubbler between Marion Street and Parramatta Road

Bubblers

Existing bubblers used on the GreenWay combine a bubbler, water refill spout and dog bowl. The same style should be used along the route.

Street bin enclosure with hardwood timber slats

Bins

Bins should include paired litter and recycling bins.

Black fencing

Fencing of ecological restoration sites

Where fencing is required the preferred option is recommended to be as unobtrusive as possible. Black chainwire fencing, with no top rail and a maximum height of 1.0 m, is recommended.

Around these fences, native vegetation should be planted either side to minimise visibility of the fence and to enhance ecological values.

Lift chainwire 100mm to allow small fauna to get under.

1.8m high black chainwire fence

Fencing of light rail corridor boundary

Along the light rail boundary a 1.8 m high black chainwire fence is required by standards.

Lift chainwire 100mm to allow small fauna to get under.

9.3 Planting

The original vegetation communities along the GreenWay are described in the GreenWay Revegetation Plan (2011) and would have included:

- Sydney Turpentine-Ironbark Forest would have been the dominant vegetation community along most of the GreenWay
- Sandstone Forest and Heath – there would have been pockets of these communities, particularly near the Cooks River
- Salt marsh – would have been located around the Long Cove estuary, in the zone of the highest tides

In general, it is recommended that vegetation along the GreenWay should be selected from these original vegetation communities. Wetland and bioretention species are also recommended below for places where these water treatment systems are proposed. The wetland and bioretention species are also locally native and there is some overlap with the vegetation communities above.

When specifying plants for GreenWay revegetation:

- Consider what is available from local nurseries including Council's nursery
- Prioritise local provenance plant stock
- Create a range of habitat
- Include a diverse vertical structure including groundcovers, grasses, climbers, shrubs and trees

Sydney Turpentine Ironbark Forest, Sandstone Forest and Sandstone Heath communities

The following pages include the complete species list for these communities from the GreenWay Revegetation Plan (2011). These species should be used along the GreenWay. Not all of these species are easily cultivated or readily available from nurseries - species availability should be considered at detailed design stage.

Coastal Saltmarsh

Salt marsh planting is proposed where channel banks are naturalised along Hawthorne Canal.

The Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner Bioregions, is listed as an endangered ecological community. Coastal Saltmarsh is the name given to the ecological community occurring in the intertidal zone on the shores of estuaries and lagoons including when they are intermittently closed along the NSW coast. Characteristic vascular plant species of Coastal Saltmarsh are:

- *Baumea juncea* (Bare Twigrush)
- *Isolepis nodosa* (Knobby Club Rush)
- *Juncus kraussii* (Sea Rush)
- *Samolus repens (*Creeping Brookweed)
- *Sarcocornia quinqueflora (*Beaded Glasswort)
- *Selliera radicans (*Swampweed)
- *Sporobolus virginicus*
- *Suaeda australis*
- *Triglochin striata*
- *Zoysia macrantha*

Freshwater wetlands

Freshwater wetlands for both habitat and stormwater treatment purposes are proposed at several locations along the GreenWay. Wetland plants are classified according to the water depth. Most wetlands should include a range of depths and high species diversity.

Ephemeral zone
- *Carex apressa* (Tall Sedge)
- *Cyperus polystachyos* (Umbrella Grass)
- *Eleocharis gracilis* (Spike Rush)
- *Ficinia nodosa* (Knobbly Club-rush)
- *Isolepis inundata* (Swamp Club-sedge)
- *Juncus usitatus* (Common Rush)
- *Lepidosperma laterale* (Variable Sword Sedge)

Shallow marsh
- *Carex fascicularis* (Tassel Sedge)
- *Eleocharis acuta* (Rush)
- *Ficnia nodosa* (Knobbly Club-rush)
- *Isolepis inundata* (Swamp Club-sedge)
- *Juncus usitatus* (Common Rush)
- *Persicaria spp.*
- *Triglochin striatum* (Streaked Arrowgrass)

Marsh
- *Bolboschoenus caldwellii* (Sea Club Rush)
- *Bolboschoenus fluviatalis* (Rush)
- *Myriophyllum crispatum*
- *Schoenoplectus mucronatus* (Star Club Rush)
- *Schoenoplectus validus* (River Club Rush)

Deep marsh
- *Baumea articulate* (Jointed Twig Rush)
- *Bolboschoenus fluviatalis* (Rush)
- *Eleocharis sphacelata* (Giant Spike Rush)
- *Schoenoplectus littoralis*
- *Schoenoplectus validus* (River Club Rush)

Pools
- *Chara spp.* (Muskgrass)
- *Myriophyllum caput-medusae*
- *Myriophyllum verrucosm*
- *Potamogeton crispatum* (Floating Pondweed)
- *Potamogeton ochreatus* (Blunt Pondweed)
- *Potamogeton pectinatus* (Fennel-leaved Pondweed)
- *Potamogeton tricarinatus* (Floating-leafed Pondweed)
- *Vallisneria spiralis* (Tape Grass)

Bioretention systems

Bioretention systems for stormwater treatment are proposed at some locations along the GreenWay. Typical species recommended for bioretention systems include:

- *Imperata cylindrica* (Blady Grass),
- *Ficinia nodosa (Syn. Isolepis nodosa)* (Knobby Club Rush),
- *Juncus usitatus* (Common Rush),
- *Lomandra longifolia* (Spiny Matrush),
- *Poa sieberiana* (Grey Tussock grass),
- *Themeda australis* (Kangaroo Grass)
- *Dianella caerulea* (Blue flax-lily)

Most species from Sandstone Forest and Heath communities are also likely to be appropriate in bioretention systems.

Key

Tl = Sydney Turpentine Ironbark Forest

Sf = Sandstone Forest and Woodland

Sh = Sandstone Heath

t = tree

s = shrub

g = groundcovers, grasses and low shrubs (<0.5m)

f = fern

v =vine

[ ] = a previously used name

Table 12. Plant species to be used in the revegetation of the GreenWay (Source: GreenWay Revegetation Plan 2011)

Species Name	Common Name	Growth Form	Plant community		
Acacia binervia [Acacia glaucescens]	Coast Myall	t	Tl	Sf	
Acacia bynoeana					Sh
Acacia decurrens	Sydney Green Wattle	t	Tl		
Acacia falcata	Sickle Wattle	s/t	Tl	Sf	
Acacia floribunda	Sally Wattle	s/t		Sf	
Acacia hispidula		s		Sf	
Acacia implexa	Hickory	s/t	Tl		
Acacia linifolia	Flax-leafed Wattle	s		Sf	
Acacia longifolia	Sydney Golden Wattle	s	Tl		Sh
Acacia longissima		s	Tl		
Acacia myrtifolia	Myrtle Wattle	s	Tl		Sh
Acacia parramattensis	Parramatta Green Wattle	s/t	Tl	Sf	
Acacia pubescens	Downy Wattle	s	Tl		
Acacia stricta		s	Tl		
Acacia suaveolens	Sweet-scented Wattle	s			Sh
Acacia terminalis	Sunshine Wattle	s		Sf	Sh

Species Name	Common Name	Growth Form	Plant community		
Acacia ulicifolia	Prickly Moses	s		Sf	Sh
Acianthus exsertus	Gnat Orchid	g			Sh
Acmena smithii	Lillypilly	t		Sf	
Actinotus helianthi	Flannel Flower	g			Sh
Actinotus minor		g			Sh
Adiantum aethiopicum	Maidenhair Fern	f	Tl	Sf	
Agrostis avenacea	Blown Grass	g	Tl		
Allocasuarina littoralis	Black She-oak	s/t		Sf	Sh
Alphitonia excelsa	Red Ash	t		Sf	
Amyema congener spp. Congener	Mistletoe	s		Sf	Sh
Amyema pendulum		s		Sf	
Angophora costata	Smooth-barked Apple	t		Sf	
Angophora floribunda	Rough-barked Apple	t	Tl	Sf	
Angophora hispida	Dwarf Apple	s			Sh
Anisopogon avenaceus	Oat Speargrass	g			Sh
Aotus ericoides		s		Sf	
Aristida ramosa	Three-awn Speargrass	g	Tl		Sh
Aristida vagans	Three-awn Speargrass	g	Tl	Sf	Sh
Aristida warburgii		g		Sf	
Asplenium australasicum	Bird's Nest Fern	f		Sf	
Asplenium flabellifolium	Necklace Fern	f		Sf	
Astroloma humifusum	Native Cranberry	g	Tl		Sh
Astroloma pinifolium		g			Sh
Baeckea linifolia	Heath-myrtle	s		Sf	
Banksia integrifolia	Coastal Banksia	t		Sf	
Banksia oblongifolia		s			Sh
Banksia serrata	Old Man Banksia	s/t		Sf	Sh
Banksia spinulosa	Hair-pin Banksia	s			Sh
Bauera rubioides	Dog Rose	s		Sf	
Billardiera scandens	Apple Berry	v	Tl	Sf	Sh

Species Name	Common Name	Growth Form	Plant community		
Blandfordia nobilis	Christmas Bells	g			Sh
Blechnum cartilagineum	Gristle Fern	f		Sf	
Blechnum indicum	Bungwall Fern	f			Sh
Bossiaea heterophylla		s		Sf	Sh
Bothriochloa macra		g	Tl		
Brachyloma daphnoides	Daphne Heath	s			Sh
Breynia oblongifolia	Breynia	s	Tl	Sf	
Burchardia umbellata	Milkmaids	g			Sh
Bursaria spinosa	Blackthorn	s	Tl	Sf	
Caesia parviflora	Grass-lily	g			Sh
Callicoma serratifolia	Black Wattle	s/t		Sf	
Callistemon citrinus	Crimson Bottlebrush	s			Sh
Callistemon linearis	Narrow-leaved Bottlebrush	s			Sh
Calochilus campestris	Copper Beard Orchid	g			Sh
Calochlaena dubia [Culcita dubia]	False Bracken Fern	f		Sf	
Calotis cuneifolia	Blue Burr-daisy	g	Tl		
Cassinia aculeata		s	Tl		
Cassinia arcuata		s	Tl		
Cassinia aureonitens		s		Sf	
Cassinia longifolia		s	Tl		
Cassinia quinquefaria		s	Tl		
Cassinia uncata		s	Tl		
Cassytha pubescens	Devil's Twine	v	Tl		Sh
Cayratia clematidea		v	Tl		
Centella asiatica		g	Tl		
Centrolepis fascicularis		g			Sh
Ceratopetalum apetalum	Coachwood	t		Sf	
Ceratopetalum gummiferum	Christmas Bush	s/t		Sf	Sh
Cheilanthes sieberi	Mulga Fern	f	Tl		Sh
Chiloglottis reflexa	Ant Orchid	g			Sh

Species Name	Common Name	Growth Form	Plant community		
Chloanthes stoechadis		g			Sh
Christella dentata		f		Sf	
Cissus hypoglauca	Native Grape	v		Sf	
Clematis glycinoides	Old Man's Beard	v	Tl	Sf	
Clerodendrum tomentosum		s	Tl	Sf	
Commelina cyanea		g	Tl	Sf	
Conospermum longifolium subsp. Angustifolium	Cone-seed	s			Sh
Correa reflexa		s	Tl		Sh
Corybas aconitiflorus	Cradle Orchid	g			Sh
Crassula sieberana		g			Sh
Cryptandra amara var. amara		s			Sh
Cyathea australis	Rough Treefern	f		Sf	
Cymbopogon refractus	Barbed-wire Grass	g	Tl	Sf	
Cyperus enervis		g		Sf	
Cyperus imbecillis		g		Sf	
Dampiera stricta		g			Sh
Danthonia setacea	Wallaby Grass	g	Tl		
Danthonia tenuior	Wallaby Grass	g	Tl	Sf	Sh
Daviesia ulicifolia		s	Tl		
Dendrophthoe vitellina	Mistletoe	s	Tl	Sf	
Dianella caerulea	Flax Lily	g	Tl	Sf	Sh
Dianella longifolia var. longifolia [Dianella laevis]	Flax Lily	g	Tl		
Dianella revoluta	Flax Lily	g	Tl		
Dichelachne crinita	Plume Grass	g	Tl		Sh
Dichelachne inaequiglumis	Plume Grass	g	Tl		
Dichelachne micrantha	Plume Grass	g	Tl	Sf	Sh
Dichelachne rara	Plume Grass	g	Tl	Sf	
Dichondra repens	Kidney Weed	g	Tl		Sh
Digitaria diffusa	Fingergrass	g			Sh
Digitaria parviflora	Fingergrass	g			Sh

Species Name	Common Name	Growth Form	Plant community		
Dillwynia parviflora		s	Tl		
Dillwynia retorta [includes ssp. A]	Parrot Pea	s	Sh		
Dillwynia sieberi		s	Tl		
Dipodium punctatum		g		Sf	
Dodonaea triquetra	Hop Bush	s	Tl	Sf	
Dodonaea viscosa		s	Tl		
Drosera auriculata	Sundew	g			Sh
Drosera peltata	Sundew	g			Sh
Drosera spathulata	Sundew	g			Sh
Echinopogon caespitosus var. caespitosus	Hedgehog Grass	g	Tl		
Echinopogon ovatus	Hedgehog Grass	g			Sh
Einadia hastata [Rhagodia hastata]	Berry Saltbush	g	Tl		
Einada trigonos ssp. trigonos	Fishweed	g	Tl		
Elaeocarpus reticulatus	Blueberry Ash	t	Tl	Sf	
Entolasia marginata		g	Tl	Sf	
Entolasia stricta	Wiry Panic	g	Tl	Sf	
Epacris longiflora	Native Fuchsia	s		Sf	Sh
Epacris microphylla	Coral Heath	s			Sh
Epachris pulchella	Coral Heath	s			Sh
Epilobium billardieranum]		g	Tl	Sf	
Eragrostis brownii	Brown's Love Grass	g	Tl	Sf	Sh
Eragrostis leptostachya	Love Grass	g			Sh
Eriostemon australasius	Pink Wax Flowwer	s			Sh
Eriostemon scaber ssp. Scaber	Wax Flower	s			Sh
Eucalyptus botryoides	Bangalay	t		Sf	
Eucalyptus fibrosa ssp. fibrosa	Broad-leaved Ironbark	t	Tl		
Eucalyptus globoidea	White Stringybark	t	Tl		
Eucalyptus haemastoma	Scribbly Gum	t		Sf	Sh
Eucalyptus longifolia	Woollybutt	t	Tl		
Eucalyptus moluccana	Grey Box	t	Tl		

Species Name	Common Name	Growth Form	Plant community		
Eucalyptus obstans		s/t			Sh
Eucalyptus paniculata	Grey Ironbark	t	Tl		
Eucalyptus pilularis	Blackbutt	t	Tl	Sf	
Eucalyptus piperita	Sydney Peppermint	t		Sf	
Eucalyptus punctata	Grey Gum	t	Tl	Sf	
Eucalyptus resinifera	Red Mahogany	t	Tl		
Eucalyptus robusta x tereticornis		t		Sf	
Eucalyptus saligna	Sydney Blue Gum	t	Tl	Sf	
Eustrephus latifolius	Wombat Berry	v	Tl	Sf	Sh
Exocarpos cupressiformis	Native Cherry	t	Tl	Sf	
Ficus rubiginosa	Port Jackson Fig	t	Tl	Sf	
Fimbristylis dichotoma		g			Sh
Gahnia clarkei	Sword Grass	g			Sh
Gleichenia dicarpa	Coral Fern	f		Sf	
Gleichenia microphylla	Coral Fern	f		Sf	
Glochidion ferdinandi	Cheese Tree	t	Tl	Sf	
Glycine clandestina	Love Creeper	v	Tl	Sf	Sh
Glycine microphylla	Love Creeper	v			Sh
Glycine tabacina	Love Creeper	v	Tl		Sh
Gonocarpus micranthus		g			Sh
Gonocarpus teucrioides	Raspwort	g	Tl		Sh
Goodenia bellidifolia		g	Tl		
Goodenia hederacea		g	Tl		Sh
Goodenia ovata		s	Tl		
Grevillea buxifolia	Grey Spider Flower	s			Sh
Grevillea mucronulata		s			Sh
Grevillea sericea	Pink Spider Flower	s			Sh
Grevillea sphacelata		s			Sh
Hakea dactyloides		s	Sf		Sh
Hakea sericea		s			Sh

Species Name	Common Name	Growth Form	Plant community		
Hardenbergia violacea		v	Tl	Sf	Sh
Hemarthria uncinata		g			Sh
Hibbertia aspera		s	Tl	Sf	Sh
Hibbertia bracteata		s		Sf	
Hibbertia dentata		v		Sf	
Hibbertia diffusa		g	Tl	Sf	
Hibbertia empetrifolia		g			Sh
Hibbertia pedunculata		g	Tl		
Hibbertia scandens	Snake Vine	v	Tl	Sf	Sh
Hibbertia serpyllifolia		g			Sh
Histiopteris incisa	Batswing Fern	f		Sf	
Hovea linearis		s		Sf	
Hybanthus monopetalus		g		Sf	
Hydrocotyle peduncularis	Pennywort	g		Sf	
Hypericum gramineum		g			Sh
Hypolepis muelleri	Harsh Ground Fern	f		Sf	
Imperata cylindrica var. major	Blady Grass	g	Tl	Sf	
Indigofera australis	Native Indigo	s	Tl		
Isopogon anemonifolius	Drumsticks	s			Sh
Jacksonia scoparia		s			Sh
Juncus planifolius		g			Sh
Kennedia rubicunda	Dusky Coral Pea	v	Tl	Sf	Sh
Kunzea ambigua	Tick Bush	s	Tl		Sh
Kunzea capitata		s			Sh
Lagenifera stipitata		g		Sf	
Lambertia formosa	Mountain Devil	s			Sh
Lasiopetalum ferrugineum var. ferrugineum	Rusty petals	s			Sh
Laxmannia gracilis	Slender Wire-lily	g			Sh
Lepidosperma laterale	Sword-sedge	g	Tl		Sh
Leptomeria acida	Native Currant	s			Sh

Species Name	Common Name	Growth Form	Plant community		
Leptospermum arachnoides		s			Sh
Leptospermum juniperinum		s			Sh
Leptospermum polygalifolium	Yellow Tea-Tree	s		Sf	Sh
Leptospermum trinervium		s		Sf	Sh
Lepyrodia scariosa		g			Sh
Leucopogon amplexicaulis		s		Sf	
Leucopogon ericoides	Beard-heath	s			Sh
Leucopogon juniperinus	Beard-heath	s	Tl		Sh
Leucopogon lanceolatus	Beard-heath	s		Sf	
Leucopogon microphyllus		s			Sh
Lindsaea linearis	Screw Fern	f			Sh
Lindsea microphylla	Lacy Wedge Fern	f			Sh
Lissanthe strigosa	Native Cranberry	s	Tl		Sh
Livistonia australis	Cabbage Palm	t		Sf?	
Lobelia dentata		g		Sf	
Lobelia gracilis		g		Sf	
Logania albiflora		s		Sf	
Lomandra cylindrica	Mat-rush	g	Tl		
Lomandra filiformis	Mat-rush	g	Tl		Sh
Lomandra glauca	Mat-rush	g	Tl		Sh
Lomandra longifolia	Mat-rush	g	Tl	Sf	Sh
Lomandra multiflora [inlcudes ssp. Multiflora]	Mat-rush	g			Sh
Lomandra obliqua	Mat-rush	g			Sh
Lomatia silaifolia	Crinkle Bush	s		Sf	Sh
Macrozamia communis	Burrawang	s		Sf	
Marsdenia suaveolens		v		Sf	
Maytenus silvestrus	Orangebark	s	Tl		
Melaleuca deanei		s			Sh
Melaleuca decora		t	Tl		
Melaleuca linariifolia	Snow-in-summer	t			Sh

Species Name	Common Name	Growth Form	Plant community		
Melaleuca nodosa		s	Tl		Sh
Melaleuca styphelioides	Prickly-leaved Paperbark	t		Sf	
Melaleuca thymifolia		s			Sh
Micrantheum ericoides		s			Sh
Microlaena stipoides	Weeping Meadow Grass	g	Tl	Sf	
Monotoca elliptica	Tree Broom-Heath	s			Sh
Monotoca scoparia		s			Sh
Muellerina celastroides	Coast Mistletoe	s		Sf	
Notelaea longifolia	Mock Olive	s	Tl	Sf	
Notelaea ovata	Mock Olive	s		Sf	
Olearia microphylla	Bridal Daisy Bush	s	Tl	Sf	
Omalanthus nutans	Bleeding Heart	s/t	Tl	Sf	
Omphacomeria acerba		s			Sh
Opercularia aspera	Stink Weed	s			Sh
Opercularia varia		g	Tl		
Oplismenus aemulus	Basket Grass	g	Tl	Sf	Sh
Oplismenus imbecillis	Basket Grass	g			Sh
Oxalis exilis		g	Tl		
Ozothamnus diosmifolius	Everlasting	s	Tl	Sf	Sh
Pandorea pandorana	Wonga-wonga Vine	v	Tl	Sf	Sh
Panicum simile	Panic	g	Tl	Sf	
Paspalidium distans		g	Tl		
Patersonia fragilis		g			Sh
Patersonia glabrata		g			Sh
Pelargonium inodorum		g		Sf	
Pellaea falcata var. falcata	Sickle Fern	f		Sf	
Persoonia lanceolata	Geebung	s			Sh
Persoonia laurina	Geebung	s		Sf	Sh
Persoonia levis	Geebung	s		Sf	Sh
Persoonia linearis	Geebung	s	Tl	Sf	

Species Name	Common Name	Growth Form	Plant community		
Petrophile pulchella	Cone-sticks	s			Sh
Philydrum lanuginosum	Woolly Frogmouth	g		Sf	
Phyllanthus gasstroemii	Blunt Spurge	s	Tl		
Phyllanthus hirtellus [Phyllanthus thymoides]		g	Tl		Sh
Pimelea linifolia	Rice Flower	s		Sf	Sh
Pittosporum revolutum		s	Tl	Sf	
Pittosporum undulatum	Sweet Pittosporum	t	Tl	Sf	
Platylobium formosum	Flat-Pea	s		Sf	
Platysace lanceolata	Native Parsnip	s			Sh
Platysace linearifolia	Carrot Tops	s		Sf	Sh
Poa affinis	Tussock Grass	g	Tl	Sf	Sh
Podocarpus spinulosus	Plum Pine	s			Sh
Podolobium ilicifolium [Oxylobium ilicifolium]	Native Holly	s	Tl		
Polyscias sambucifolia	Elderberry Panax	s	Tl	Sf	
Pomaderris discolor		s		Sf	
Pomaderris ferruginea		s		Sf	
Pomaderris intermedia [Pomaderris sieberana]		s		Sf	Sh
Pomax umbellata		g	c	Sf	Sh
Poranthera corymbosa		s		Sf	
Poranthera microphylla		g	Tl	Sf	Sh
Pratia purpurascens		g	Tl	Sf	
Pseuderanthemum variabile		g	Tl	Sf	
Psilotum nudum	Skeleton Fork-fern	f		Sf	
Pteridium esculentum	Bracken Fern	f	Tl	Sf	Sh
Pterostylis concinna	Greenhood Orchid	g			Sh
Pterostylis grandiflora	Greenhood Orchid	g			Sh
Pterostylis nutans	Greenhood Orchid	g			Sh
Pultenaea daphnoides	Bush Pea	s		Sf	
Pultenaea linophylla	Bush Pea	s		Sf	
Pultenaea stipularis	Bush Pea	s		Sf	

Species Name	Common Name	Growth Form	Plant community		
Pultenaea villosa	Bush Pea	s	Tl		
Ranunculus lappaceus	Buttercup	g	Tl		
Rapanea variabilis	Mutton Wood	s	Tl	Sf	
Rubus parvifolius	Native Rasberry	v	Tl		
Rumex brownii		g	Tl		
Sarcopetalum harveyanum	Pearl Vine	v		Sf	
Scaevola ramosissima	Fan Flower	g			Sh
Schoenus apogon		g	Tl		
Schoenus melanostachys		g		Sf	
Senecio hispidulus var. hispilulus	Rough Groundsel	g	Tl	Sf	
Smilax glyciphylla	Smilax	v	Tl	Sf	
Sporobolus diander		g	Tl		
Stackhousia monogyna		g		Sf	
Stackhousia viminea		g	Tl		
Stipa pubescens	Speargrass	g	Tl		
Stipa rudis ssp. Nervosa	Speargrass	g	Tl		
Stylidium graminifolium	Trigger Plant	g		Sf	Sh
Styphelia triflora	Five-corners	s			Sh
Styphelia tubiflora		s			Sh
Syncarpia glomulifera	Turpentine	t	Tl	Sf	
Syzygium paniculatum	Magenta Lillypilly	t		Sf	
Tetratheca juncea		g			Sh
Themeda australis	Kangaroo Grass	g	Tl	Sf	Sh
Todea barbara	King Fern	f		Sf	
Trachymene incisa ssp. Incisa		g			Sh
Trema aspera	Native Peach	s/t		Sf	
Tristaniopsis laurina	Water Gum	t		Sf	
Tylophora barbata		v	Tl	Sf	
Velleia lyrata		g			Sh
Veronica calycina	Speedwell	g		Sf	

Species Name	Common Name	Growth Form	Plant community		
Veronica plebeia	Speedwell	g	Tl	Sf	
Viminaria juncea	Golden Spray	s			Sh
Wahlenbergia gracilis	Native Bluebell	g	Tl	Sf	Sh
Xanthorrhoea arborea	Grass-tree	g		Sf	
Xanthorrhoea media	Grass-tree	g			Sh
Xanthosia pilosa		g		Sf	Sh
Xanthosia tridentata		g		Sf	Sh
Xylomelum pyriforme	Woody Pear	s/t		Sf	
Zieria pilosa		s			Sh
Zieria smithii		s	Tl		

9.4 Development adjacent to the GreenWay

The GreenWay is located in an area of significant population growth and urban consolidation. To ensure the continued amenity of the GreenWay, adjacent development should be designed sympathetically with the GreenWay to enhance its functions. This section sets out suggested measures in relation to:

- Building design
- Access and permeability
- Landscaping and ecology

Building design

New developments should address the GreenWay recognising the space as an active frontage with substantial visual and environmental benefits, as well as an active transport corridor. It is essential to conserve and enhance heritage aspects of the GreenWay itself and the built areas adjacent to it.

Developments should use materials and colours that enhance the visual amenity of the GreenWay. All new developments should be designed to minimise the impact of noise, vibration, lighting and privacy issues associated with the light rail.

A maximum of four stories for buildings adjacent to the GreenWay is suggested to ensure that a 'human scale' is maintained adjacent to the GreenWay. It is essential that developments are planned in consideration of the development on the opposite side of the GreenWay to avoid the creation of a canyon between two multi storey developments. Overshadowing of the GreenWay should be avoided, particularly during the winter months.

A typical setback of 10 metres is suggested for the GreenWay, to minimise overshadowing, enhance the functions of the Greenway and provide adequate open space buffers from residences to public open space. It is suggested the 5 metres directly adjacent to the GreenWay within the setback should be a vegetation or publically accessible open space.

Access and permeability

Developments should provide ready access to the GreenWay where possible. New developments should provide internal, publically accessible bicycle and pedestrian networks which link the GreenWay to the development and surrounding street network.

New developments should be designed to create new, and existing, view corridors both to and through the GreenWay. Overlooking of the GreenWay and light rail is to be encouraged to increase passive surveillance, however care should be taken in the detailed design of residential properties to minimise their impact on the privacy of neighbouring residential properties

Landscaping and ecology

Developements' landscape plans should include areas of open space designed to provide sympathetically linkage to, or integration with, the GreenWay; physically, visually and environmentally.

Developments' landscape plans should ensure that they use locally indigenous native species in areas adjacent to the GreenWay. Such landscaping should be designed to provide opportunities for compatible and appropriately varied habitats.

Developments should provide landscaping which reflects and complements the flora of adjacent portions of the GreenWay including both duplication of existing vegetation and companion planting.

Developments should be designed to ensure that they are sensitive to the needs of the fanua of the GreenWay, including:

- Provision of lighting which minimises lighting impacts on nocturnal fauna and the GreenWay generally
- Reinforcement of permeability between the GreenWay and the built environment for local fauna, wherever practical
- Provision of a native vegetation buffer between the GreenWay and the development.

Any furniture/structures adjoining the GreenWay should be designed to complement the GreenWay.

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Appendices

A. Community Engagement Report

B. Benchmark Report

C. Route Options Assessment

D. Traffic Analysis Report


MACE