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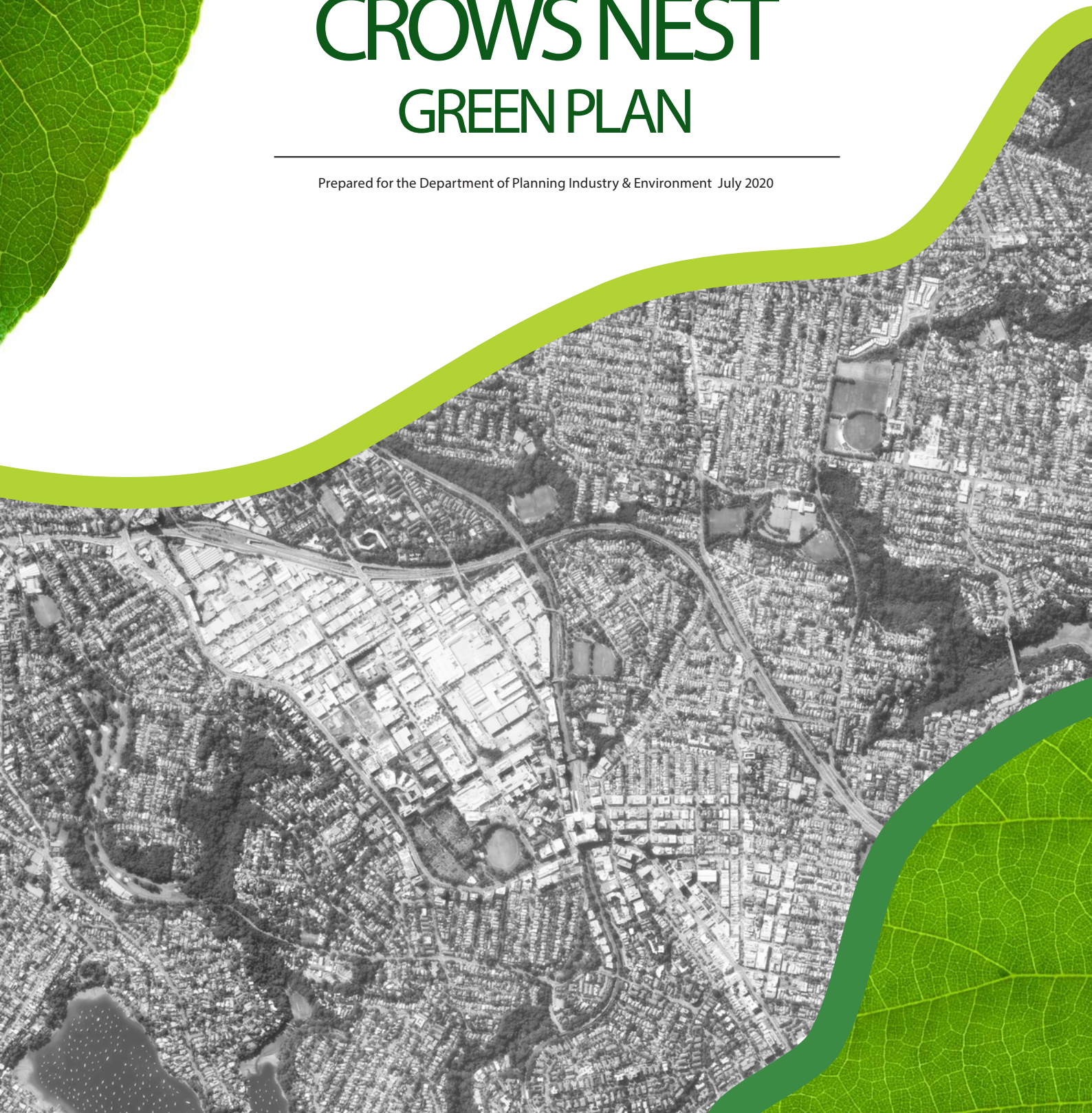
ST LEONARDS CROWS NEST

GREEN PLAN

Prepared for the Department of Planning Industry & Environment July 2020



Quality Information

Document Name	Reference	Revision	Prepared for	Prepared by	Date	Reviewed by
St Leonards Crows Nest Green Plan	60563041	Rev1	Department of Planning, Industry and Environment	AECOM	July 2020	Department of Planning, Industry and Environment

CONTENTS

1.0 EXECUTIVE SUMMARY

The expected population growth of St Leonards and Crows Nest provides the opportunity to address the demands for open space and recreational activities. The St Leonards Crows Nest Plan 2036 (2036 Plan) provides an opportunity for coordinated cross municipal boundary planning for open space and urban tree canopy cover.

The Green Plan provides a framework for the provision of new open space and open space infrastructure, together with an integrated urban tree canopy network and green links.

The open space infrastructure initiatives are identified in this Green Plan and classified into one of three categories:

- Committed Initiatives
- Initiatives for Investigation
- Visionary Initiatives

This Green Plan process includes:

- Background study of the current urban design context.
- Investigation of current open space and urban tree canopy provision.
- Data collection and analysis of the strategic planning context and existing statutory planning controls.
- Consideration of the proposed changes to zoning, new forecasted dwellings and subsequent population growth.

In assessing the background research, we have identified the following key elements for St Leonards and Crows Nest:

- The Green Plan and guiding principles are built upon and synthesise previous planning strategies with major community needs. Planning that relies on a spatial standard such as 2.83 ha / 1000 people is only effective in greenfield areas and does not take into account opportunities for multiple uses or innovative solutions. The performance-based approach undertaken by the Green Plan, encourages consideration of the range of recreation opportunities required and what strategies are available to achieve them. The aim of this approach is to allow for greater innovation, more efficient use of land for recreation, and a focus on the quality of the outcome rather than just the quantity.
- The overarching vision will focus on identifying new opportunities for an improved network of open space based on accessibility, quality and safety as key drivers. Moreover the vision will underline the importance of defining structured urban tree canopy coverage to enhance liveability, health and well-being.
- The Open Space Plan in this document proposes opportunities for improved accessibility, safety and quality of the existing open space. The proposal includes potential acquisition of private lands to improve accessibility to public open space. The definition of green and blue links that will provide water management, biodiversity, streetscape amenity and the enhancement of the 'Foreshore to Foreshore' link.
- The new open space provision will equate to 8.57ha of new open space for a future population estimate of 6800 additional dwellings. This is achieved through initiatives such as providing pedestrian focused streets that are comparable to linear park environments and quality laneway treatments that provide for passive recreation and high quality outdoor experiences.
- The Urban Tree Canopy Plan identifies a new urban tree canopy strategy focusing on public land and following a set of technical assumptions. It investigates the future provision of urban tree canopy coverage that could be achieved by planting new trees on road corridors and on existing and possible future open spaces. The Urban Tree Canopy Plan proposes a total of 2,038 new trees to be added to public areas within St Leonards & Crows Nest in order to achieve:
  - 16% tree canopy in the Industrial area
  - 25.7% tree canopy in the Urban area
  - 32.7% tree canopy in the Heritage Residential area

  This urban tree canopy is supported by the private urban tree canopy which plays an important role in contributing to the overall urban tree canopy cover.

2.0 SETTING THE SCENE

2.1 INTRODUCTION

This Green Plan has been prepared to guide the planning and design of open space and urban tree canopy for St Leonards and Crown Nest. The feedback received from the local community and from North Sydney, Lane Cove and Willoughby Councils during the development of the Local Character Statement underlines the high importance of the provision of open space and the expansion of the urban tree canopy for residents in this area.

This Green Plan will set the foundation for future decisions to be made, strengthening the open space network and providing for the recreation needs of the community now and into the future. The traditional provision of 2.83 ha of public open space per 1000 persons, is derived from the British 7 acres per 1000 standard from the early 1900's. Planning that relies on this spatial standard is only effective in greenfield areas and does not take into account opportunities for multifunctionality or innovative solutions.

It is recognised that a 'one size fits all' approach does not work for the planning and delivery of open space and there is a need to consider the existing and future demographics and associated need, recreational trends, the urban character of an area and connections to other open space opportunities. The performance-based approach undertaken by the Green Plan, encourages consideration of the range of recreation opportunities required and what strategies are available to achieve them. The aim of this approach is to allow for greater innovation, more efficient use of land for recreation, and a focus on the quality of the outcome rather than just the quantity.

The Green Plan also seeks to promote the expansion of the urban tree canopy throughout the precinct.

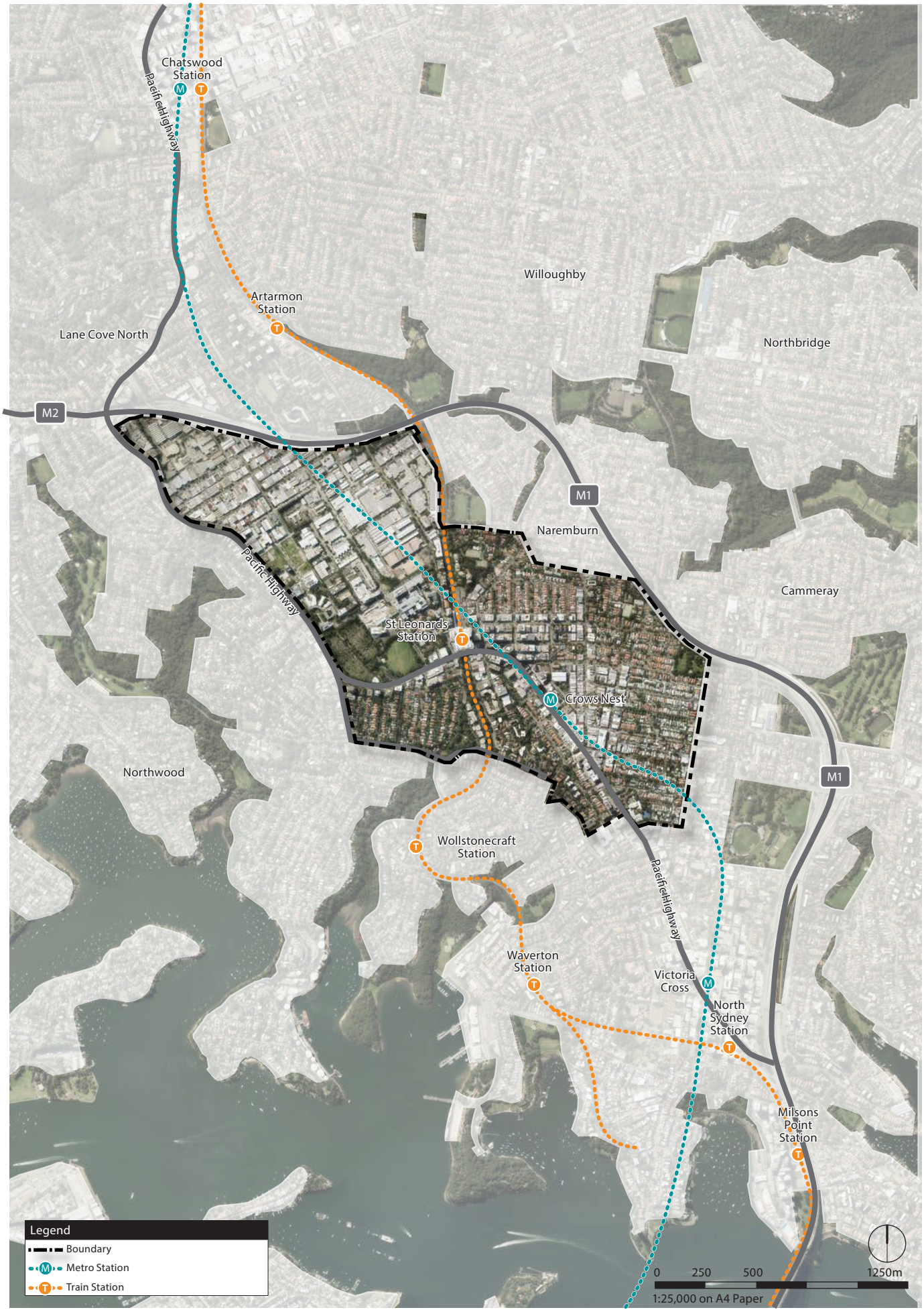


Figure 1: Aerial photo of St Leonards and Crows Nest (Source: AECOM, 2018)

2.2 THE EXISITNG LANDSCAPE

St Leonards and Crows Nest has a variety of land uses and characters. This includes industrial areas, a health and education locale, areas of high density living and heritage neighbourhoods. This built form is complemented with a landscape character defined by natural bushland, tree lined streets and open spaces enjoyed by the local community.

A well-established urban tree canopy reinforces the leafy character of the area. This is attained through the distribution of evergreen natives and deciduous exotic trees. Plane (*Platanus sp*) trees are located throughout the area particularly along the Pacific Highway and within the heritage residential zone. Native species (*Eucalyptus sp., Callistemon sp.*) are predominantly in the industrial zone and adjacent to the area's parks and drainage corridors.

The topography of the area is undulating to the east with steeper valleys to the south. It is defined by the predominant ridge line along the Pacific Highway that continues to the northern suburbs of Sydney. While these undulations offer views across valleys to the north and south, the topography limits the accessibility and usability for the community due to steep terrain and open spaces that have significant ground level changes.

There are no Endangered Ecological Communities, while biodiversity corridors fragmented across the area mainly following the network of overland flow paths, drainage lines and nearby creeks including Gore Creek, Berry Creek and Flat Rock Creek. Regional cycle and pedestrian connections are provided through on-road and off-road networks. This framework creates the opportunity to establish a 'Foreshore to Foreshore' link that utilises principles of the green blue link approach.

There are seven distinctive landscape character zones. These include:

- Industrial (Infrastructure and Manufacturing)
- Health and Education
- Commercial
- Mixed Commercial and Residential
- Low Density Residential
- Low Density Heritage Residential
- Ridgeline

The Industrial (Infrastructure and Manufacturing) zone consists of large format service and industrial land uses with minimal pedestrian amenity. Blocks are long and buildings are bulky that isolate pedestrians and inhabit connectivity to adjacent streets. The streetscapes are generally wide, encouraging higher reliance on car mobility with minimal walkability. Urban Tree Canopy in the streets is patchy and disconnected with varied tree maturity.

The Health and Education zone consists of a range of building heights that vary in character. Pedestrian connectivity is limited due to the privatisation of the public domain. Open spaces in this zone include some semi-private plazas and a large multifunctional open space to the south (Gore Hill Oval). The Gore Hill Cemetery contributes to the existing urban tree canopy in this area.

The Commercial zone is characterised by tall buildings and undulating topography, consisting of a high density commercial core spreading along a portion of the Pacific Highway and bound by mixed use and residential on adjacent sides. The open spaces include civic plazas used by workers during lunch breaks however these spaces are dispersed and disconnected. The streetscape lacks urban tree canopy cover and the narrow verge widths result in low pedestrian amenity.

The Mixed Commercial and Residential zone provides a distinct character providing a pedestrian focused network of streets and public spaces. The tall heights of buildings cause undesirable wind corridors to areas of the public domain.

The Low Density Residential zone consists of smaller sized blocks and features narrow streets with wide verges on both sides of the carriageway providing high pedestrian amenity and walkability. These streets are complemented with street tree planting.

The Low Density Heritage Residential zone consists of primarily low rise detached houses within a heritage conservation boundary. While similar to the Low Density Residential area, the heritage residential zone has established smaller lots and a higher proportion of dwellings to land area, resulting in higher site coverage. This is an added challenge for delivery of additional private urban tree canopy.

The Ridgeline zone is defined by the Pacific Highway, providing a distinct landscape with a urban tree canopy that reflects the local character and view corridors. The highway's ridge location and curved alignment frames a series of landscape vistas and an array of land uses. Despite the open vistas to Gore Hill Oval and Cemetery, the overall highway has limited open space and recreation facilities. In addition, due to its arterial nature, the highway limits connectivity.

Figure 2: St Leonards & Crows Nest Existing Character Zones (Source: AECOM, 2018)

2.3 WHAT THE COMMUNITY TOLD US

The St Leonards and Crows Nest community expressed strong interest in the retention and improvement of existing open space and the provision of more high quality green space during the community engagement run by the Department of Planning, Industry and Environment (the Department) in March 2018. The feedback from this community consultation informed the objectives of both the Local Character Statement and this Green Plan.

Key recommendations that will influence the future planning and design of the open spaces and landscape include:

- More open spaces for community gathering such as: weekend markets, children's play areas and laneways with shops and cafés.
- Preservation of the "village atmosphere", retaining the human scale and family-oriented character of the neighbourhood.
- Improved existing open spaces with cafés, outdoor fitness equipment, more bench seats and playgrounds.
- Additional green spaces in St Leonards' higher density areas.
- Improved urban tree canopy to protect biodiversity, encourage walking
- Enhanced pedestrian & cycle accessibility to train station
- Improved quality & connection of cycle paths
- Improved amenity along Pacific Highway, including street tree planting.

These key recommendations are supported by the principles outlined in the Vision Statement to deliver green infrastructure that provides social, environmental and economic benefits for the people who live, work and visit St Leonards and Crows Nest.

The Local Character Statement Principle is...	How the Green Plan Responded…
Identify opportunities for more open space, particularly around Crows Nest and St Leonards station.	• Improving existing open space at Hume Street Park and Lithgow Street • Open space initiatives for Investigation in the next 10 – 20 years. • Aspirational open space options with time lines greater than 20 years
Improve tree canopy, particularly along busy streets to increase the sense of connection to the natural environment.	• Additional street tree planting on the majority of streets including Pacific Highway and along the sunny side of Oxley Street, Mitchell Street and Chandos Street
Design new development to fit in with the varied topography of the area.	• Proposing open space in locations that can utilise the existing topography to gain optimal usage • Drafting a green vision statement and principles that guide the future of the area by providing a place for people with high quality spaces at a human scale
Improve connections to surrounding green spaces to enable more choice and use of other open spaces.	Application of the green blue link approach to provide: • Better access to open space through identification of walkability gaps • Improved quality of journey for pedestrians along identified connections and existing links • Improved streetscape environments that support pedestrian movement, comfort and safety

2.4 PEDESTRIAN AND CYCLE NETWORK

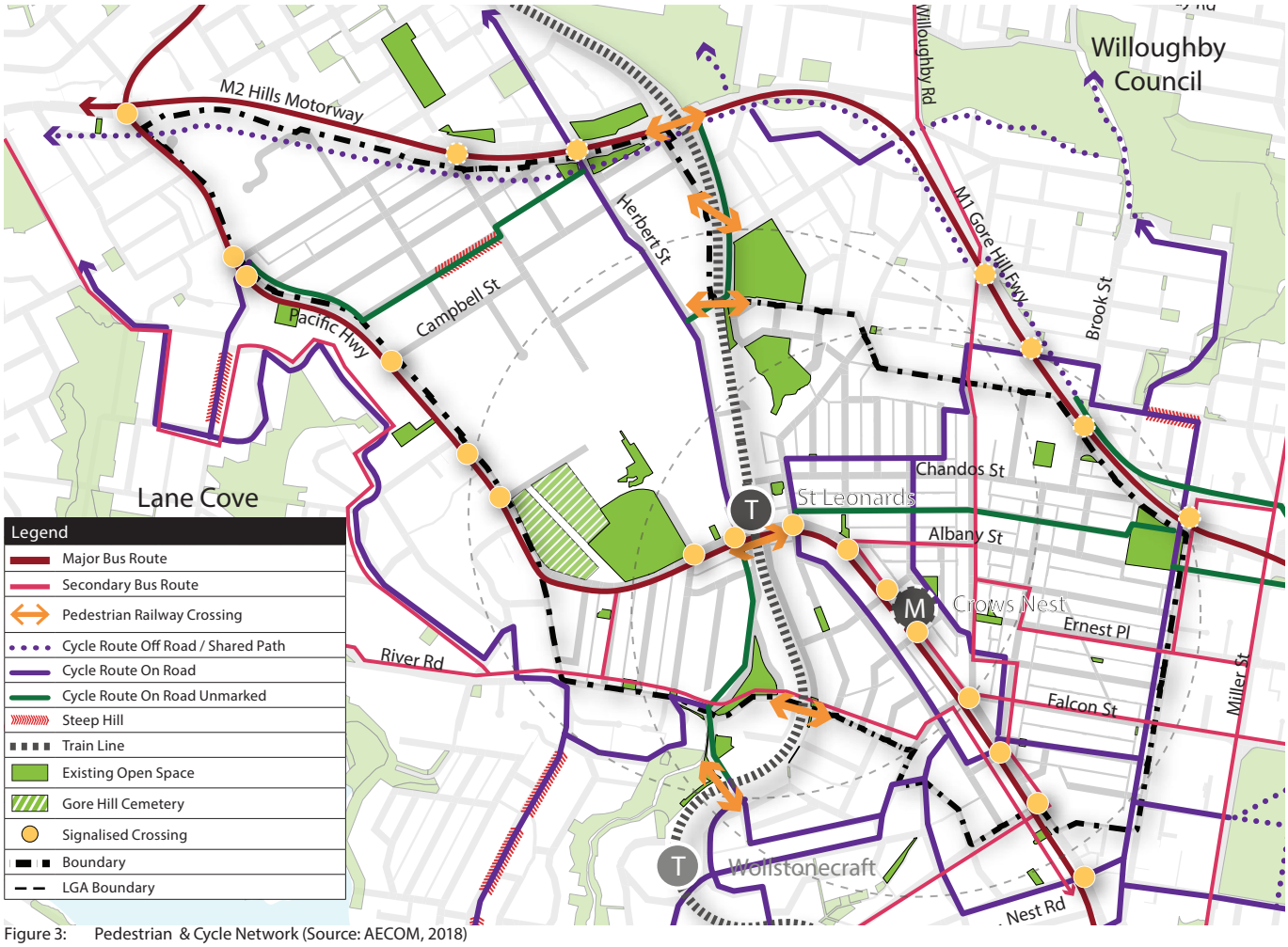


Figure 3: Pedestrian & Cycle Network (Source: AECOM, 2018)

Delivering continuous, user friendly local and regional cycleways along with quality footpaths promotes active and healthy living essential for the well being of the community.

Major roads are collectors for the major bus routes heading to the Sydney CBD and to Chatswood. More localised bus routes cross Crows Nest residential areas connecting to surrounding suburbs.

Off-road bicycle paths run along the M2 Hills Motorway - M1 Gore Hill Freeway. A network of on-road bicycle paths cross the site along the rail line and travels through Crows Nest residential area and toward the southern portion of the area. The majority of paths are situated on relatively flat topography, with the exception of short sections within the industrial zone. Steeper sections of the path network are located near the surrounding creek areas and the harbour edges.

There is good accessibility to local & regional public transportation and regional cycle infrastructure.

The rail corridor creates a barrier and affects internal circulation for bicycles and pedestrians. The few rail crossings do not form part of the arterial road network and are inadequate in providing a safe shared pedestrian, bike and vehicle experience.

2.5 NATURAL FEATURES

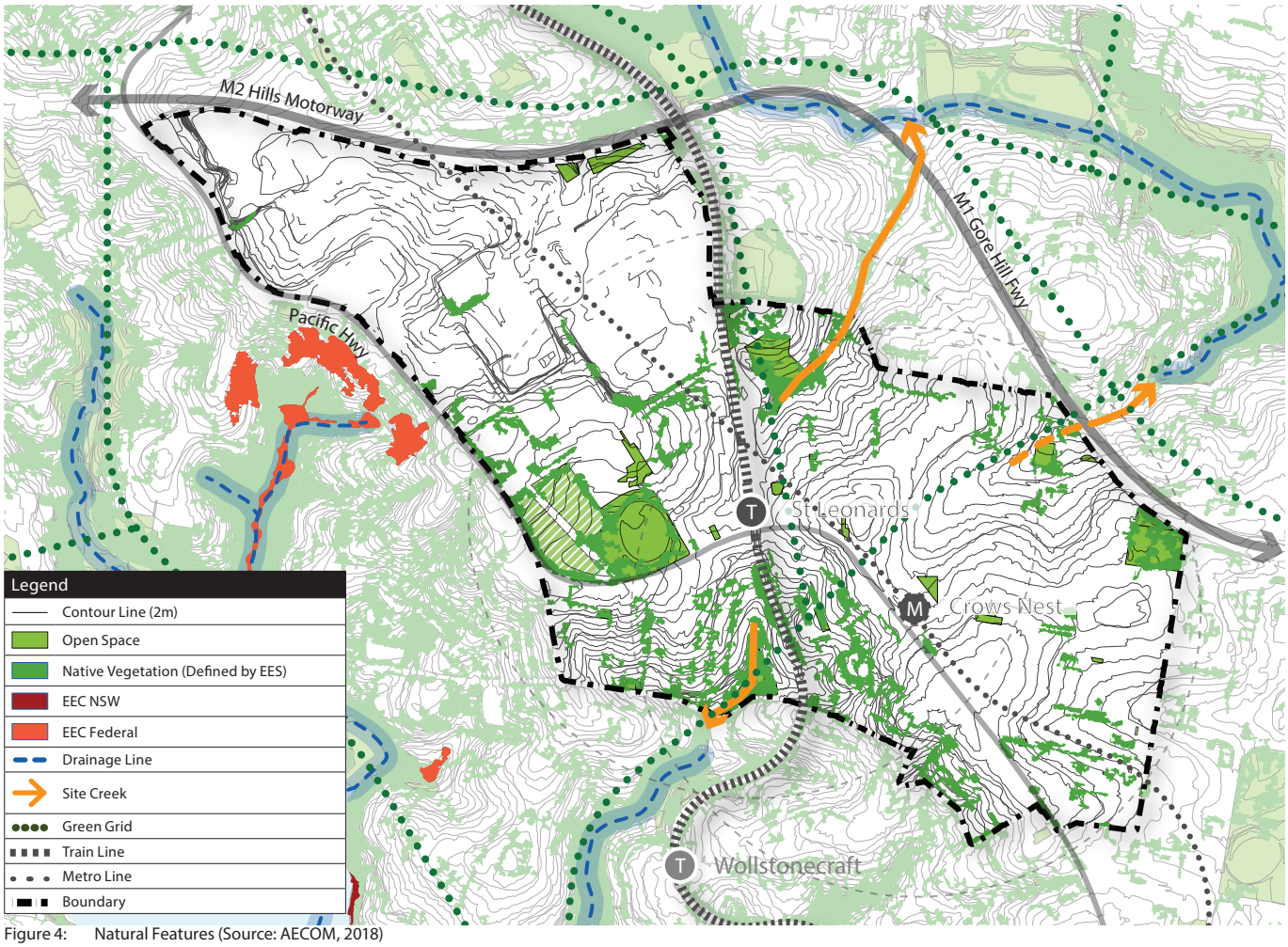


Figure 4: Natural Features (Source: AECOM, 2018)

The area is characterised by a combination of landforms:

- A prominent ridge line that extends along the North Shore areas of Sydney passes through the area. The Pacific Highway runs along this ridge.
- There are steep valleys heading south towards Sydney Harbour, with gentler slopes toward the east.
- The fairly flat area in the north west makes this portion of the area the most suitable for industrial developments.
- Flat Rock Creek in the north and Berry Creek in the south are fed by an open drainage channel.

This distinct natural structure sets the basis for a varied natural environment.

Moreover the area, located upon the ridge, will play a strategic role as regional green connector within two valleys and for the Endangered Ecological Communities (EEC) in proximity to the precinct. There is an opportunity to connect Sydney and Middle Harbours through the expansion of the existing corridors using the principles of the green blue links to create foreshore to foreshore connection.

Vegetation has been identified by Environment, Energy and Science (EES) as any of the following types of indigenous vegetation:

- Trees (including any sapling or shrub, or any scrub),
- Understorey plants,
- Groundcover (being any type of herbaceous vegetation),
- Plants occurring in a wetland

2.6 EXISTING OPEN SPACE NETWORK

Figure 5: Existing open space (Source: AECOM, 2018)

There are 21 hectares of open space and parklands available to residents and workers within a 200m walking distance of the investigation area. Of this, 12.7 hectares are within the boundary and 8.3 hectares are within 200m walking distance outside the boundary.

Larger open spaces are mostly localised on the periphery of the area (such as Naremburn Park and Saint Thomas' Rest Park), while parks in the centre of the area are highly utilised by the community (such as Gore Hill Park).

Parks aligned with drainage corridors (such as Talus Street Reserve and Newlands Park) are difficult to access due to steep landform and arterial roads, limiting recreational opportunities and placing greater pressure on parks with better accessibility.

	Existing Open Space	Size (ha)	Function
Within Boundary	01 Gore Hill Park	4.53	Active - Sports
	02 207 Pacific Hwy	0.06	Passive - Open Space
	03 The Forum Plaza	0.27	Passive - Recreation
	04 Christie Street Plaza	0.11	Passive - Open Space
	05 Plunkett Street	0.03	Passive - Open Space
	06 Talus Street Reserve	1.94	Active - Hard Court
	07 Herbert Street	0.17	Passive - Open Space
	08 Ella St - Dalleys Rd	0.07	Passive - Open Space
	09 Tennis court at Wheatleigh St	0.34	Active - Hard Court
	10 Brook Street	0.05	Passive - Open Space
	11 Saint Thomas' Rest Park	1.93	Passive - Recreation
	12 Mitchell / Albion Plaza	0.09	Passive - Open Space
	13 Hume Street Park	0.24	Passive - Open Space
	14 Ernest Place	0.19	Passive - Recreation
	15 Cahill Park	0.03	Passive - Playground
	16 Hayberry Street	0.03	Passive - Open Space
	17 Christie Street Reserve	0.14	Passive - Open Space
	18 Lithgow Street	0.05	Passive - Open Space
	19 Newlands Park	1.01	Passive - Playground
	20 Berry Road	0.04	Passive - Open Space
	21 Propsting Playground	0.09	Passive - Playground
	22 Portview Road Reserve	0.08	Passive - Open Space
	23 Reserve Road	0.54	Passive - Open Space
	24 Taylor Lane	0.22	Passive - Open Space
	25 Punch Street	0.44	Passive - Open Space
	Total within Boundary	12.70	
Within 200m walking distance from Boundary	26 Thompson Park	1.65	Active - Sports
	27 Parkes Road Reserve	0.32	Passive - Open Space
	28 Artarmon Park	1.01	Passive - Open Space
	29 Naremburn Park	3.42	Active - Sports
	30 Naremburn Community Garden	0.03	Passive - Recreation
	31 Mafeking Ave	0.06	Passive - Open Space
	32 Coronation View Point	0.37	Passive - Open Space
	33 Ronald Park	0.36	Passive - Open Space
	34 Smoothey Park	0.42	Passive - Open Space
	35 Wollstonecraft Recreation Club	0.25	Active - Sports
	36 Pacific Hwy / Lithgow St	0.02	Passive - Open Space
	37 Newlands Reserve	0.18	Passive - Open Space
	38 Hazelbank Rd	0.10	Passive - Open Space
	39 194 Pacific Hwy	0.13	Passive - Open Space
	Total outside Boundary	8.31	
Total Open Space		21.01	

2.7 EXISTING WALKING DISTANCE TO OPEN SPACE

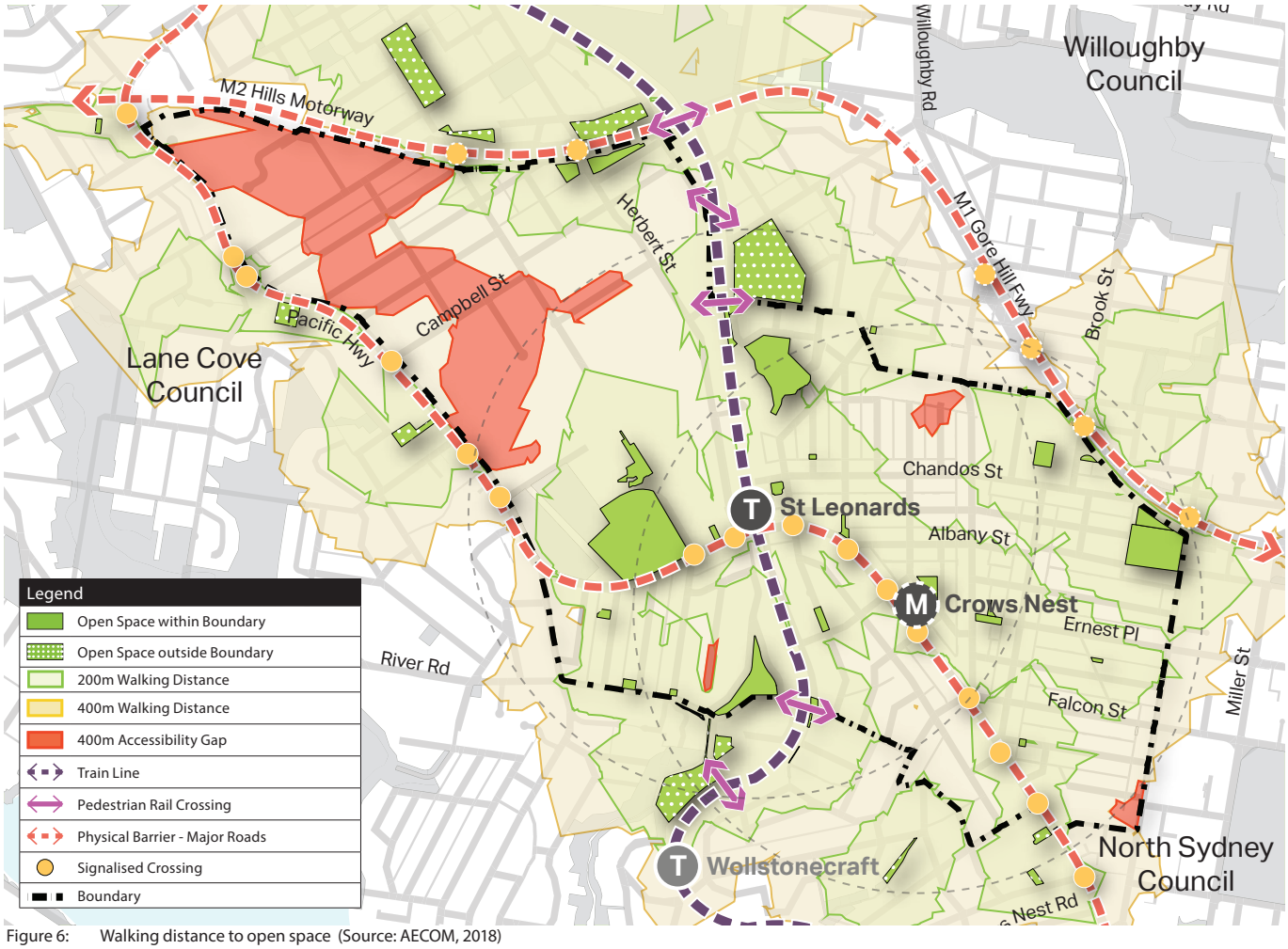


Figure 6: Walking distance to open space (Source: AECOM, 2018)

Good accessibility to open space is a key requirement to maximise the use of parks and ensure efficient utilisation by the neighbouring community.

Considering that open space has a walk-able catchment area of 400m and 200m:

- The distributed network of parks allows a good coverage for the southern residential area as well as for the commercial and core mixed uses area.
- Minor accessibility gaps are localised within the southern portion of the Pacific Highway.
- The northern residential area shows gaps of accessibility.
- The northern industrial area does not have good accessibility to open space of any kind.

Well established provision of open spaces, that can be further improved to reflect the neighbourhood urbanisation will provide better connectivity and additional capacity of green areas.

Open Space outside the boundary but within 200m walking distance from the boundaries have been considered to increase the actual open space accessibility (e.g. Naremburn Park in the north).

The southern portion of the area has good accessibility to open space due to a network of green pocket parks. However due to their small size and lack of recreational facilities, they will not be able to provide diverse range of recreational opportunities for this area.

Businesses and workers in the industrial area would benefit from the provision of open space during lunch times and after work. Green blue links in this area would improve options for workers and visitors to use active transport and connect to open space.

2.8 EXISTING URBAN TREE CANOPY - PUBLIC & PRIVATE

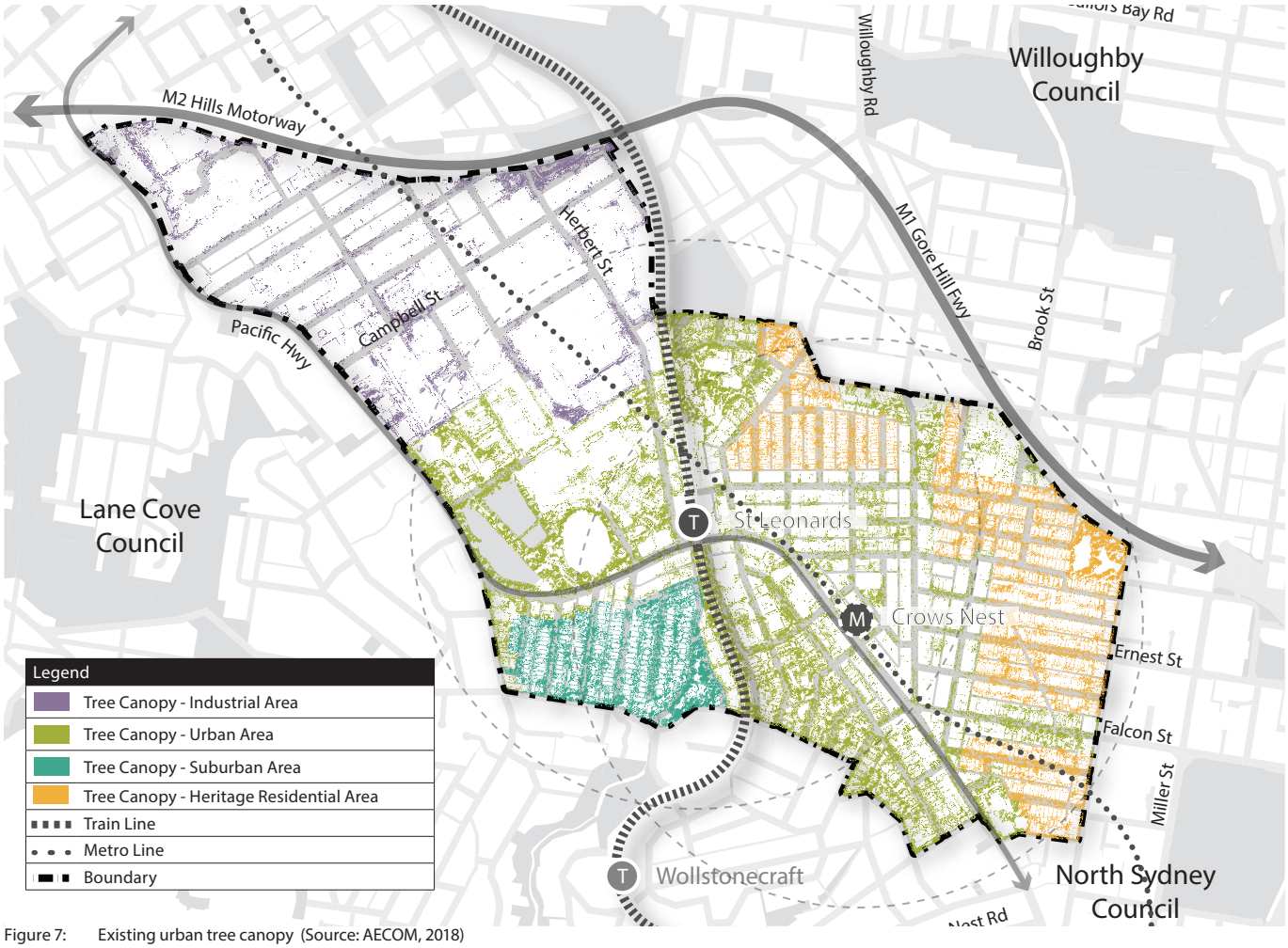


Figure 7: Existing urban tree canopy (Source: AECOM, 2018)

The urban tree canopy is varied with areas of mature canopy along residential streets to areas with little canopy in the industrial area. The existing urban tree canopy in St Leonards Crows Nest has been measured and compared against the proposed targets of 15% for Industrial areas, 25% for Urban areas, 40% for Suburban areas and 25% for Heritage Residential areas as identified by the NSW Government Architects Office, *Greener Places: an urban green infrastructure design framework.*

Enhancing the urban tree canopy is supported by the community. Any decision on the built form and road design must ensure space is provided for tree planting along streets to align with the principles of the green blue links. This will complement tree planting on private land and open space to reach the relevant urban tree canopy targets. The established heritage residential area of St Leonards Crows Nest has a higher proportion of dwellings to land area which reduces the opportunity to establish a significant private urban tree canopy.

Urban Tree Canopy	INDUSTRIAL	URBAN	SUBURBAN	HERITAGE
Land Area (ha)	84.72 ha	126.57 ha	16.46 ha	44.14 ha
Public and Private Land (%)	6.92%	21.4%	40%	27%
Target (%)	15%	25%	40%	25%
Shortfall (%)	8.1%	3.6%	none	none

2.9 EXISTING URBAN TREE CANOPY - PUBLIC

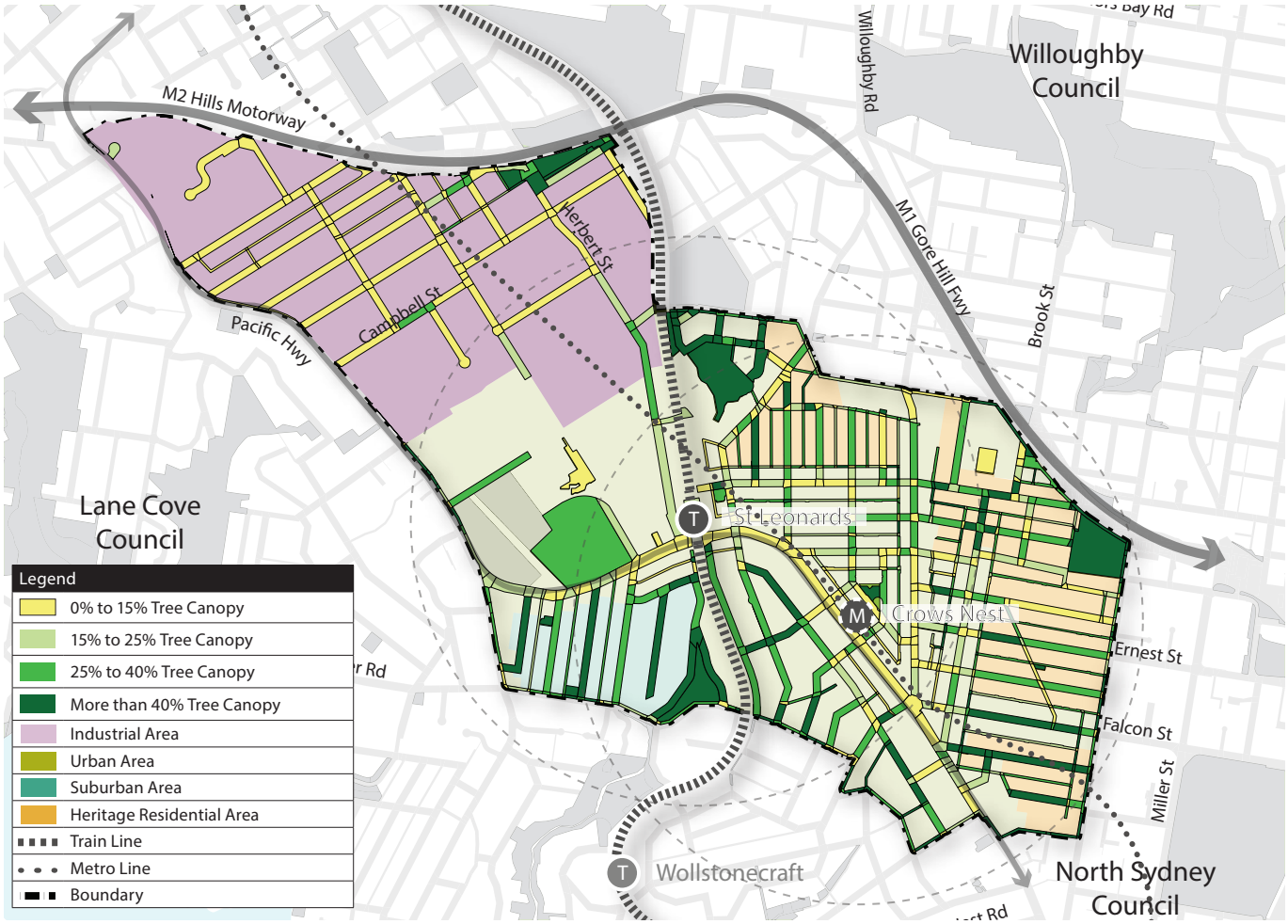


Figure 8: Existing tree canopy (Source: AECOM, 2018)

We have also highlighted the amount of tree canopy currently achieved on public land only, noting that the public domain is where the Department and Councils have the greatest ability to influence the tree canopy.

If we take in account only the existing tree canopy within public lands, the existing percentage of canopy coverage achieves lower values and defines a larger shortfall to achieve the target tree canopy cover.

What this highlights is the amount of key areas that are below 15% coverage and how crucial it is for these areas to be well provisioned in order to achieve good canopy cover.

Urban Tree Canopy Cover - Public Land	INDUSTRIAL	URBAN	SUBURBAN	HERITAGE
Land Area (ha)	84.72 ha	126.57 ha	16.46 ha	44.14 ha
Public Land (%)	2.4%	8.1%	19.2%	10.9%
Target (%)	15%	25%	40%	25%
Shortfall (%)	12.6%	16.9%	20.8%	14.1%

EXISTING DWELLINGS
10, 200

PROPOSED DWELLINGS
17, 618

EXISTING NON-RESIDENTIAL
736, 000SQM

PROPOSED NON-RESIDENTIAL
821, 188SQM

Existing Residential Dwellings (2018)	10,200
Net Dwelling Capacity	7,418
Proposed Residential Dwellings (2036)	17,618

Existing Non-residential GFA (2018)	736,000 sqm
Net Non-residential GFA	85,188 sqm
Proposed Non-residential GFA (2036)	821,188 sqm

3.0 CHANGE SUMMARY

The purpose of this change summary is to capture the likely changes occurring in St Leonards and Crows Nest over the long term.

The Department of Planning, Industry and Environment's proposed changes to the land zoning, height of buildings and Floor to Space Ratio (FSR) are underpinned by forecast growth for additional residential dwellings and non-residential Gross Floor Area (GFA).

It is recognised that the existing open space provision does not meet the traditional metric of 2.83 ha of public open space per 1000 persons.

The 'one size fits all' approach does not work for the planning and delivery of open space in infill areas. A more suitable approach is to consider the existing and future demographics and related community needs, societal trends, the urban character of an area and connections to other open space opportunities.

The following changes are proposed for St Leonards and Crows Nest.

CHANGE TABLE	
Area	271.9 ha
Existing Open Space	21 ha
Existing Dwellings	10,200 dwellings
Existing Population	15,591 people
Estimated Future Dwellings	17,618 dwellings

4.0 BUILDING THE STRUCTURE

4.1 VISION STATEMENT

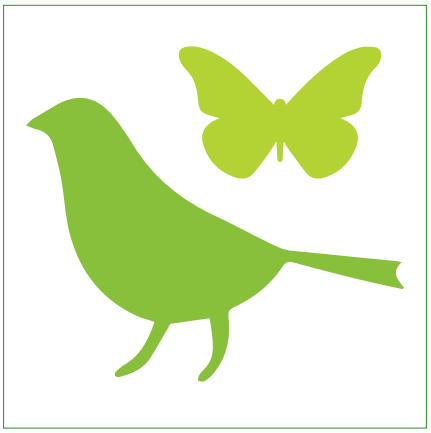
The overarching vision for open space and landscape is to:

"Deliver green infrastructure that provides social, environmental and economic benefits for the people who live, work and visit St Leonards and Crows Nest."

Open space connected by green blue links

OPEN SPACE FOR RECREATION

Establish an interconnected network of open spaces that are flexible, diverse, safe and equitable to meet the community's needs for recreation space and foster the community's values for healthy, vibrant and active living.



OPEN SPACE FOR BIODIVERSITY

Enhance the natural identity of the landscape and harbour-to-harbour biodiversity corridors to provide a range of environmental and social benefits.

URBAN TREE CANOPY

Reinforce urban tree canopy in the public domain to maximise comfort and enhance the liveability, health and well-being of both the community and the environment.

4.2 GUIDING PRINCIPLES

PEOPLE

PRINCIPLE 1
COMMUNITY NEED

Deliver a high quality public domain aligned with the community's needs

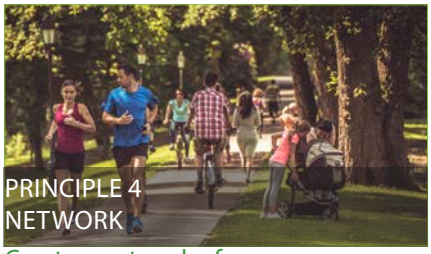
PRINCIPLE 2
HUMAN SCALE

Plan for people-oriented spaces and streets to prioritise pedestrians

PRINCIPLE 3
LOCAL IDENTITY

Enhance the local character and identity to create a strong sense of place

NATURE



PRINCIPLE 4
NETWORK

Create a network of open space to enhance biodiversity and connectivity

PRINCIPLE 5
QUALITY AND QUANTITY

Maintain and improve the quality and quantity of future open space

PRINCIPLE 6
HIERARCHY

Clarify the open space hierarchy and establish clear focal points

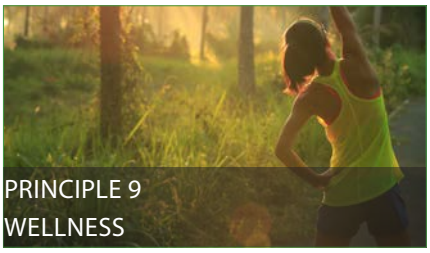
HEALTH

PRINCIPLE 7
EQUITY

Ensure equitable access to open space to increase its usage and functionality

PRINCIPLE 8
SAFETY

Provide a safe, comfortable environment to encourage activation and vibrancy



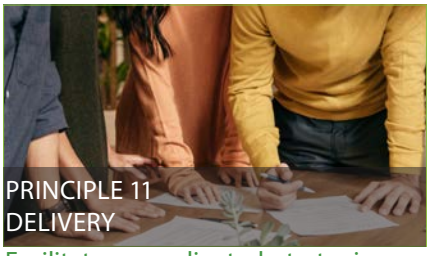
PRINCIPLE 9
WELLNESS

Promote active and healthy living to contribute to the well-being of the community

ECONOMY

PRINCIPLE 10
FLEXIBILITY

Design for flexibility and adaptability to cater for the future population



PRINCIPLE 11
DELIVERY

Facilitate a coordinated, strategic delivery and provision of open space

PRINCIPLE 12
FUNDING

Optimise funding of open space through innovative financing models

5.0 DEFINING THE PLACE

The Open Space Plan responds to the vision and guiding principles articulated in the previous section of the Green Plan. The traditional approach to providing 2.83 ha of public open space per 1000 persons is no longer a suitable as a benchmark for established areas of Sydney. Instead, a performance based approach is required to consider the existing and future demographics and associated needs, societal trends, the urban character of an area and connections to other open space opportunities.

The Open Space Plan responds to open space provision by considering proposed growth and change in the community. In addition to the committed initiatives for open space, it includes additional open spaces and identifies green infrastructure initiatives. The Open Space Plan classifies these items into one of three categories:

ID	Category	Time frame (years)
●	Committed Initiative	0-10
●	Initiatives for Investigation	0-10 or 10-20
●	Visionary Initiatives	20+

Committed Initiatives have been identified as having a path of funding and delivery.

Initiatives for Investigation have been identified as having potential funding mechanisms but the delivery method may be uncertain. These initiatives require further investigation to resolve.

Visionary Initiatives have no identified funding or delivery mechanisms and require further investigation as to their feasibility.

5.1 INITIATIVES

Committed Initiatives

There are a number of projects in the area that are either already being undertaken, or that they have been committed to by the three Councils. These include the following:

- Gore Hill Oval upgrade works and regional playground – Gore Hill Oval is being upgraded by Willoughby Council to meet identified recreational needs and increase capacity of oval. A regional playground is also proposed as part of these upgrade works.
- Hume St Park – North Sydney Council plans to close part of Hume Street to expand Hume Street Park. A later stage of these plans includes relocating both the indoor sports facility and car parking underground to increase the area of passive open space.
- Friedlander Place – Friedlander Place and surrounds are being upgraded as part of developments that have been approved by Lane Cove Council and are currently proceeding.
- 101-111 Willoughby Road – A publicly accessible plaza is being delivered as part of the new mixed use development at Nos.101-111 Willoughby Rd.
- Royal North Shore Hospital Campus - Open space areas are proposed throughout the hospital campus in accordance with the site's masterplan.
- St Leonards Plaza (over railway line between Lithgow St and Canberra Ave) - Lane Cove Council is proposing a 5,000m^2 plaza and public transport interchange over the railway line south of the Pacific Highway. This would create new open space in the centre of St Leonards and improve links to additional community facilities.
- Oxley St and Mitchell St Linear Parks - North Sydney Council is proposing widening footpaths, additional tree planting and public domain improvements along both Oxley St and Mitchell St. This would be facilitated by increasing building setbacks along these streets and upgrades may be delivered as part of adjacent development proposals.

Initiatives for Investigation

There are several initiatives proposed by each of the Councils and the Department that should be investigated to deliver additional open space in the area. These include:

- Northern Linear Park between Chandos Street and Talus Reserve - Provide northern linear park from Herbert Street bridge to Chandos Street. This would form part of the 'Foreshore to Foreshore' green blue link (funding mechanisms to be investigated).
- Southern Linear Park on Lithgow Street adjacent to rail corridor – It is proposed to investigate Lithgow St and the land adjacent to the railway line as an opportunity to provide a linear park forming part of a larger walking and cycling network. It might include exercise equipment, dog area, drinking fountains and other furniture. This would also form part of the 'Foreshore to Foreshore' green blue link (funding mechanisms to be investigated).
- Christie St Reserve – North Sydney Council are proposing upgrades to Christie St Reserve. This is likely to be undertaken as part of an adjoining development and is being investigated by Council.
- Embellishment of Talus St Reserve and St Thomas Rest Park – Opportunities should be investigated by Willoughby and North Sydney Councils to embellish existing open space areas within Talus St Reserve and St Thomas Rest Park.
- St Leonards South - Lane Cove Council have identified indicative new open space areas within South St Leonards however, the location of the open space is subject to the finalisation of an existing planning proposal.
- Willoughby Road Plaza – North Sydney Council have a concept proposal to close Willoughby Road (south of Burlington St) and create a pedestrian plaza between Burlington St and Falcon St.
- Artarmon Industrial Area Tree Plantings - Opportunities for additional tree plantings should be investigated along Herbert St, Westbourne St, Clarendon St and Hotham St.

Initiatives for Investigation (cont.)

- Embellishment of land on Taylor Lane and Punch Street along the M2 – Existing parcels of land on Taylor Lane and Punch St that are zoned RE1 Public Recreation should be investigated by Willoughby Council for open space embellishments.
- Assist Councils to support green infrastructure initiatives in their DCPs – Investigate what assistance could be given to Willoughby, Lane Cove and North Sydney Councils to include provisions for publicly accessible green infrastructure (e.g. green roofs) in their strategic planning controls.
- Engage with Councils to develop methodology to deliver enhanced Urban Link between St Leonards Station and Crows Nest Metro.
- Engage with Councils to develop methodology to deliver major Green Blue Links - New major blue and green links at Falcon Street, portion of the Pacific Highway and to Oxley Street, along the railway and adjacent to the M1-M2 Motorway.
- Engage with Councils to develop methodology to deliver secondary Green Blue Links - Some of these links include Reserve Road through the industrial zone, Nicholson Street through proposed mixed use zone, and Chandos Street and Alexander Street connecting the heritage zone.

Visionary Initiatives

This Green Plan has also investigated potential 'visionary' options which are potential long term open space solutions which are unfunded and that are subject to future investigation. These include:

- Open Space Area north of St Leonards Station – Investigate an open space area over the railway line to the north of St Leonards station connecting to Talus Reserve and Herbert St and including community facilities.
- Working with government agencies to explore the opportunity to provide Green Rooftops at facilities such as 2-4 Herbert St.

The Open Space Plan balances the upcoming developments and responds to the current demand for recreational spaces and green pockets. Adding approximately 8.57 hectares of open space.

Note: All additional new open spaces proposed are subject to future investigation and feasibility testing with stakeholders.

Existing Open Space		Ha	C.I.V
1	Gore Hill Park	4.52	
2	Pacific Hwy	0.06	
3	The Forum Plaza	0.27	
4	Christie St Plaza	0.11	
5	Plunkett St	0.03	
6	Talus St Reserve	1.94	
7	Herbert St	0.17	
8	Ella St - Dalleys Rd	0.07	
9	Tennis court at Wheatleigh St	0.34	
10	Brook St	0.05	
11	St Thomas Rest Park	1.93	
12	Mitchell / Albany St Plaza	0.13	
13	Hume St Park Embellishment	0.24	
14	Ernst Place	0.34	
15	Cahill Park	0.03	
16	Hayberry St	0.04	
17	Christie St Reserve	0.14	
18	Lithgow St	0.05	
19	Newlands Park	1.01	
20	Berry Rd	0.04	
21	Propsting Playground	0.09	
22	Portview Road Reserve	0.08	
23	Reserve Road (RNSH)	0.54	
24	Taylor Ln	0.22	
25	Punch St	0.44	
Total Existing within the boundary		12.70	
26	Thompson Park	1.65	
27	Parkes Road Reserve	0.32	
28	Artarmon Park	1.01	
29	Naremburn Park	3.42	
30	Naremburn Community Garden	0.03	
31	Mafeking Ave	0.06	
32	Coronation View Point	0.37	
33	Ronald Park	0.36	
34	Smoothey Park	0.42	
35	Wollstonecraft Recreation Club	0.25	
37	Newlands Reserve	0.18	
38	Hazelbank Rd	0.10	
39	Pacific Hwy	0.13	
Total Existing 200m walking from Bdy		8.31	
Previously Proposed Open Space		Ha	
40	16-24, Park Rd (LCC)	0.17	
41	19-25, Berry Rd (LCC)	0.17	
42	13 Holdsworth Ave (LCC)	0.11	
43	18 Holdsworth Ave (LCC)	0.12	
44	10-12, Marshall Ave (LCC)	0.15	
45	2-8, Marshall Ave (LCC)	0.44	
46	30-32, Berry road (LCC)	0.07	
47	29-31, HoldsworthAve (LCC)	0.06	
48	27 Holdsworth Ave (LCC)	0.05	
49	33 Canberra Ave (LCC)	0.04	
51	Mitchell St Linear Park (NSC)	0.20	
52	Oxley St Linear Park (NSC)	0.07	
53	Oxley St Linear Park (NSC)	0.04	
54	Oxley St Linear Park (NSC)	0.07	
55	St Leonards Plaza - West (LCC)	0.30	
56	101-111, Willoughby Rd	0.05	
57	Hume St Park (NSC)	0.79	
58	Ernest St / Alexander St	0.07	
59	Holtermann St / Hospital Ln (NSC)	0.16	
60	Willoughby Rd South (NSC)	0.17	
61	Friedlander Place (LCC)	0.15	
Total already proposed		3.53	
Newly Proposed Open Space		Ha	
50	St Leonards Central (DPIE)	0.38	
64	Platform Park	0.91	
Total Proposed Open Space		0.96	
Linear Parks		Ha	
65	Hotham Parade 20-96	0.48	
66	Clarendon St	0.45	
67	Herbert St	1.04	
68	Westbourne St	0.26	
69	Lithgow St	0.44	
Total Linear Parks		2.68	
Green Rooftop		Ha	
70	2-4 Herbert St	1.40	
Total Green Rooftop		1.40	
Total Newly Proposed		5.04	
Total Proposed		8.57	
TOTAL OPEN SPACE		29.58	

Committed Initiative	
Initiatives for Investigation	
Visionary Initiatives	

Figure 9: Open Space Plan (Source: AECOM, 2018)


Willoughby Council
Chandos St
Atchison St
West St
Falcon St
North Sydney Council
T
M
T
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5.3 WALKABILITY TO OPEN SPACE

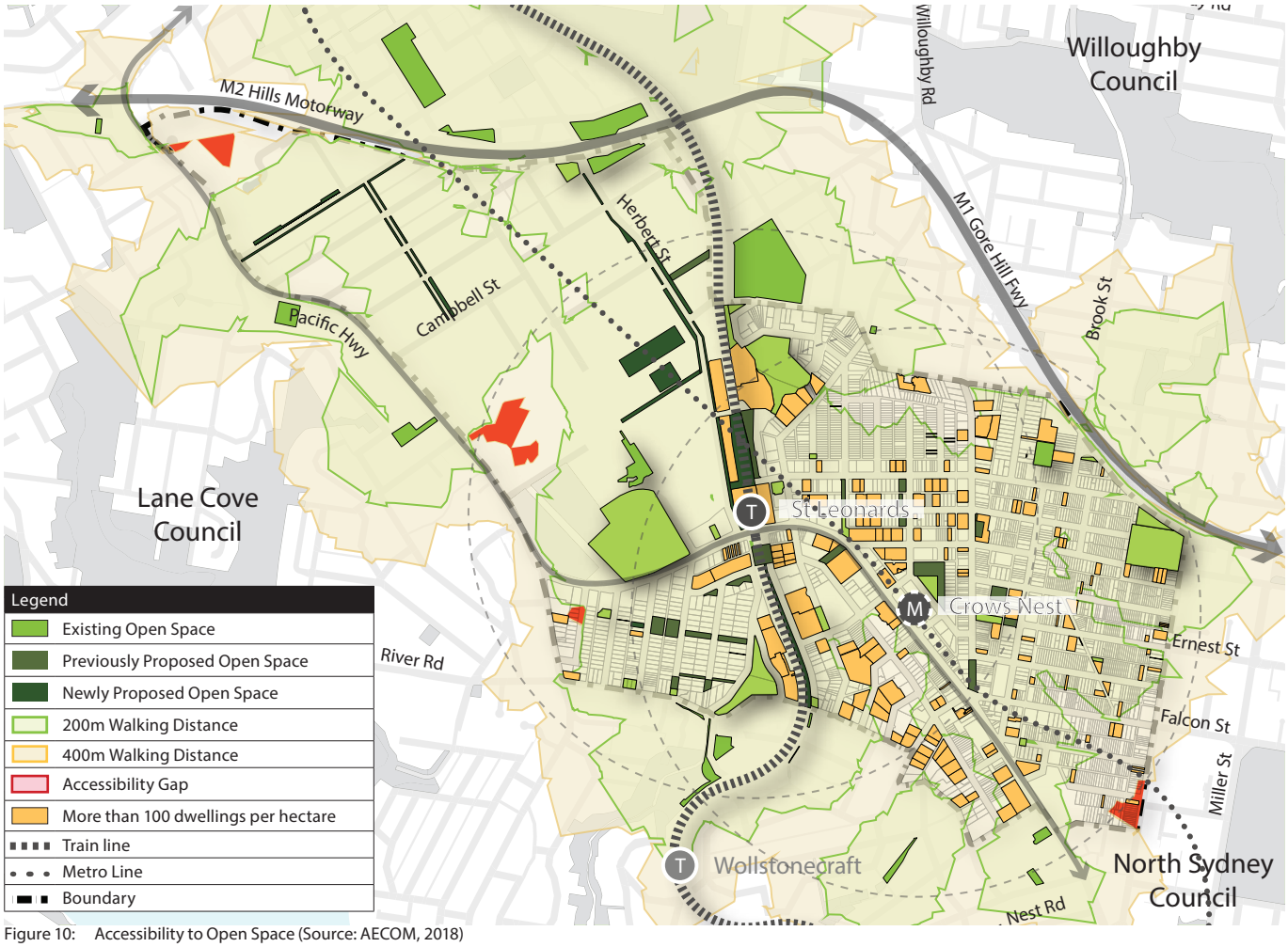


Figure 10: Accessibility to Open Space (Source: AECOM, 2018)

Good accessibility to open space is a key requirement to maximise the use of parks and efficient utilisation by the neighbouring community. The proposed Open Space Plan proposes improved accessibility to open space.

The southern portion of the area already had good accessibility to open space due to a network of green pocket areas.

The improved access to open space in the northern industrial area will provide workers opportunities to use open space during lunch time and after work.

5.4 URBAN TREE CANOPY PLAN - PUBLIC DOMAIN

The Urban Tree Canopy Plan responds to the shortfall of urban tree canopy cover in the study area. While the Urban Tree Canopy Plan focuses on urban tree canopy in the public domain, it must be noted that the private domain also plays a significant role in contributing to the overall urban tree canopy targets of 15% for Industrial areas, 25% for Urban areas, 40% for Suburban areas and 25% for Heritage Residential areas. .

The Urban Tree Canopy Plan takes into account the proposed changes to land uses and development controls. In any new open spaces, the Urban Tree Canopy Plan applies the average of urban tree canopy of existing open spaces.

In order to identify the number of additional new trees required to meet the proposed targets, the Urban Tree Canopy Plan makes the following assumptions:

- All new rows of trees assume a 5 metre radius tree canopy, resulting in a canopy cover of 78.5 sqm per tree and a planting distance of 12 metres between one tree and the next.
- No additional trees within roads with a Right of Way less than 5.5 metres.
- One row of trees within all the roads with a Right of Way included between 5.5 and 8.5 metres.
- Two rows of trees within all the roads with a Right of Way greater than 8.5 metres.
- Three rows of trees within the proposed major green blue links to achieve an outcome that provides green infrastructure and responds to the principles of the vision statement.
- The urban tree canopy coverage over all the existing open space will be implemented to achieve a minimum 45% of the site as per the existing average.
- All proposed new open spaces will be counted with an average urban tree canopy site coverage of 45%, as per the average urban tree canopy coverage over previous case studies.
- 12 metre planting distance will not necessary reflect the actual planting distance. This number has been adopted as a conservative average distance able to accommodate possible site-specific issues such as private lot driveway entrance, bus stop, facilities box and others factors.

Using these assumptions, the Urban Tree Canopy Plan achieves:

- 16% canopy coverage within the industrial area, adding a total of 1,083 trees.
- 25.7% canopy coverage within the urban area adding a total of 640 trees.
- 32.7% canopy coverage within the Heritage Residential area, adding a total of 315 trees.
- A total amount of 2,038 additional trees

	INDUSTRIAL	URBAN	HERITAGE	TOTAL
Land Area (ha)	84.71 ha	143.03 ha	44.13 ha	271.9 ha
Existing Tree Canopy over Private Land (ha)	3.30 ha	18.47 ha	7.11 ha	28.9 ha
Existing Tree Canopy on Roads (ha)	1.74 ha	8.76 ha	3.89 ha	14.4 ha
Maximum Tree Canopy on Roads (ha)	9.10 ha	11.99 ha	6.36 ha	27.5 ha
Additional Tree Canopy on Roads (ha)	7.35 ha	3.23 ha	2.47 ha	13.1 ha
Trees added on Roads	936 trees	411 trees	315 trees	1662 trees
Tree Canopy on Existing Open Spaces (ha)	0.14 ha	4.60 ha	0.94 ha	5.7 ha
Tree Canopy on New Open Space (ha)	1.16 ha	1.80 ha	none	2.96 ha
Trees added on New Open Spaces	147 trees	229 trees	none	476 trees
Total Additional Tree Canopy (ha)	8.51 ha	5.03 ha	2.47 ha	16.01 ha
Total Trees added	1,083 trees	640 trees	315 trees	2,038 trees
Overall Tree Canopy (ha)	13.69 ha	36.86 ha	14.41 ha	64.96 ha
Overall Tree Canopy (%)	16%	25.7%	32.7%	23.8%
Tree Canopy Target (%)	15%	25%	25%	n/a

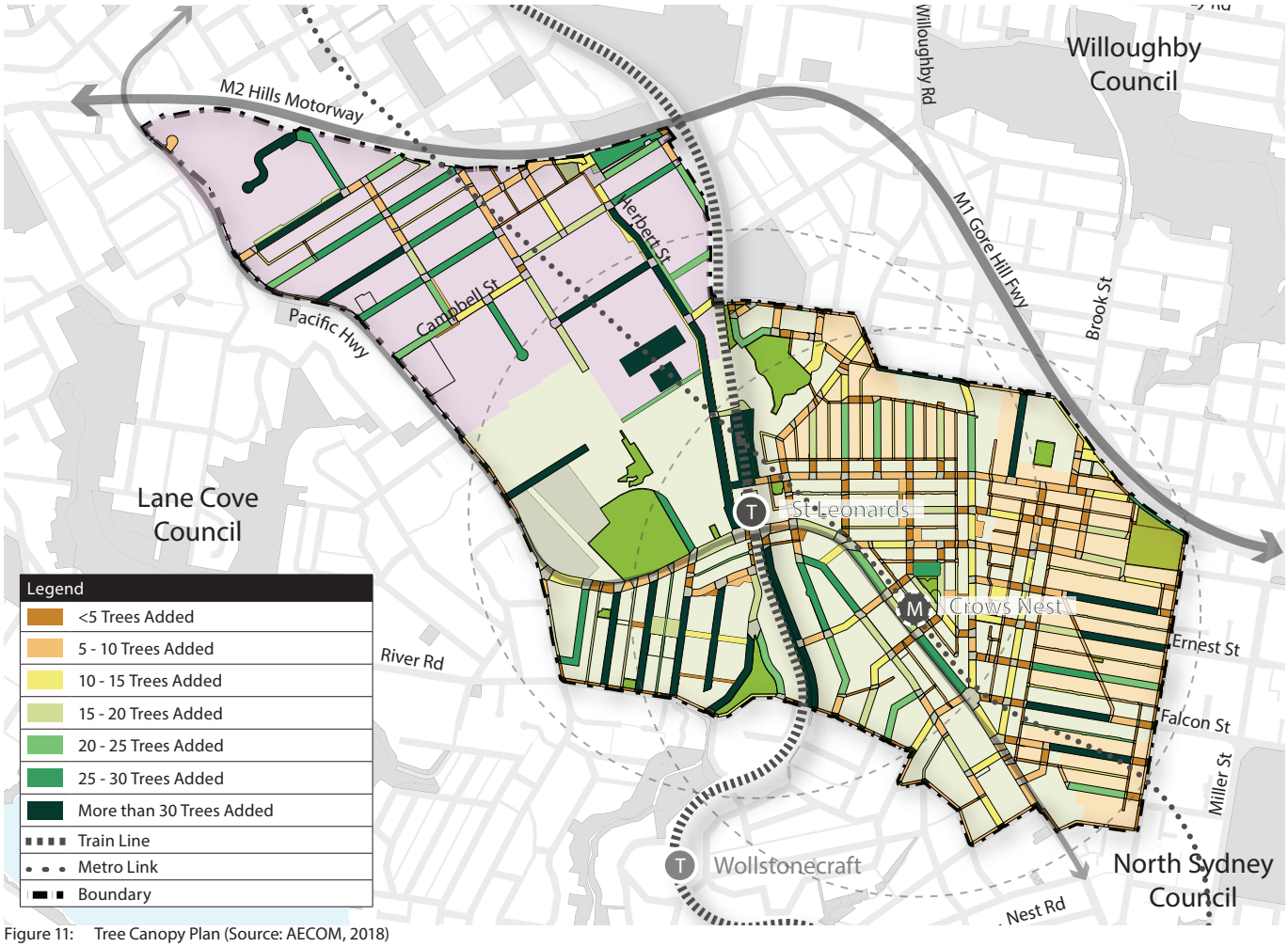
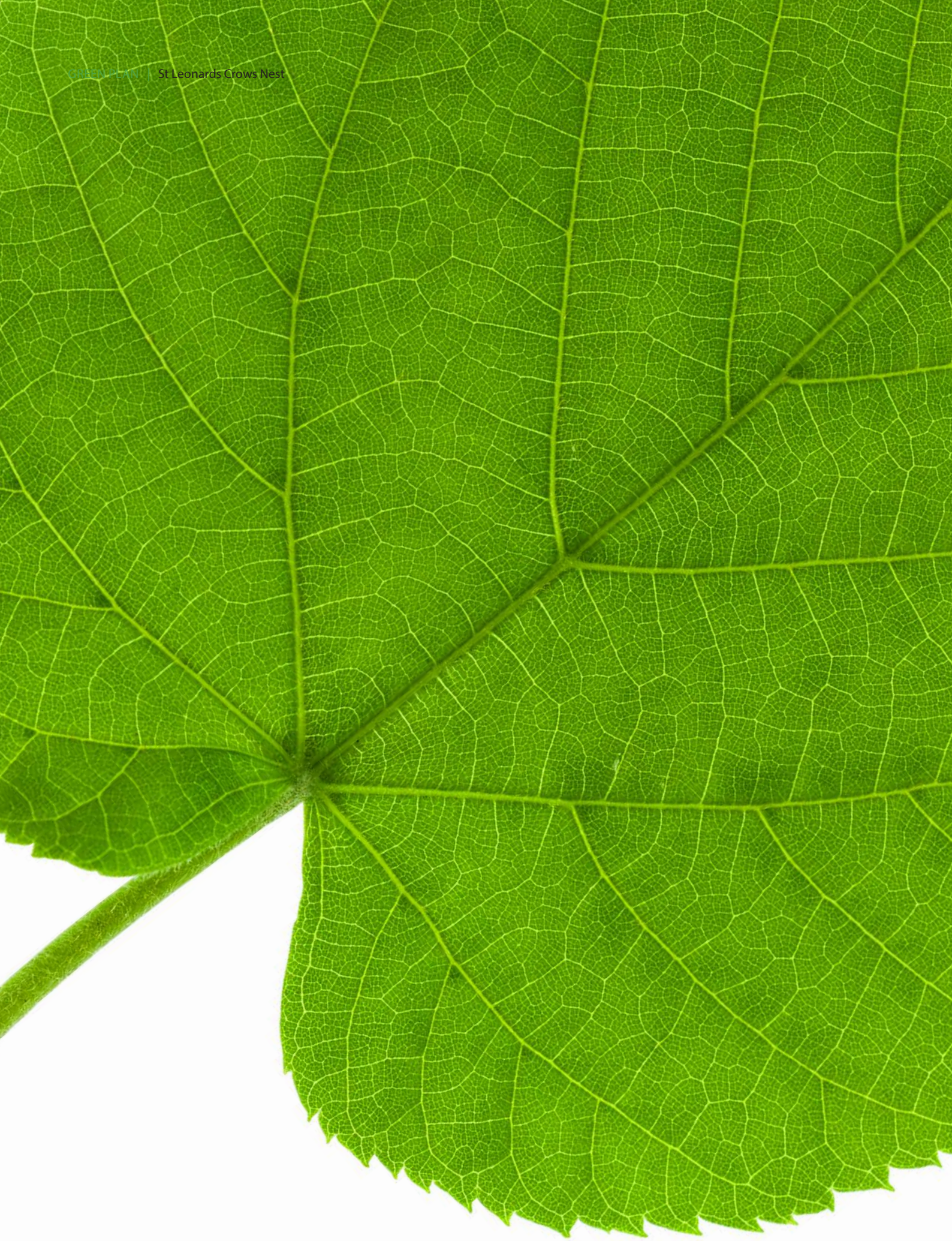
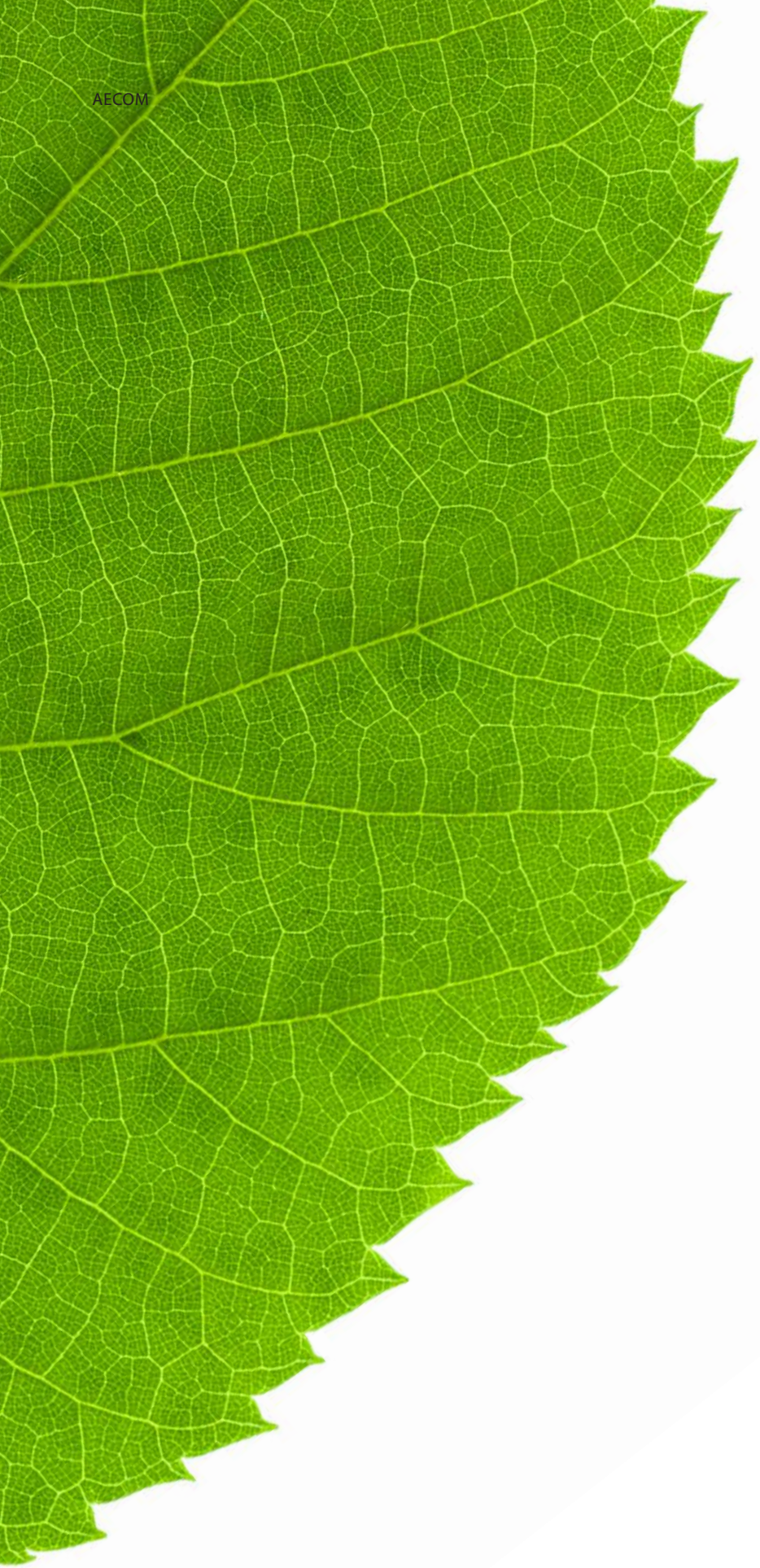


Figure 11: Tree Canopy Plan (Source: AECOM, 2018)





6.0 CONCEPT PLANS

The Open Space Plan proposes an enhanced, interlinked network of green infrastructure by identifying embellishments to existing open space and suggesting where additional open space could be located. It addresses anticipated future needs and demands and enhances the quality of living for the community.

The Open Space Plan comprises a series of new medium to large parks and linear parks. They provide an opportunity for multifunctional, passive and active recreation that caters for a diverse range of community needs. The linear parks reinforce important green and blue links that connect open spaces and community destinations, providing enhanced amenity for the people living and working in the area.

For the purpose of this report we have illustrated four future typologies of the possible function of proposed open spaces. The four Concept Plans are:

- Concept Plan 1 Linear Park (Urban)
  The Linear Park is located towards the southern side of the precinct and is adjacent to the train carriageway to the west and Lithgow Street to the east. The primary purpose of the proposed design is to enhance the pedestrian and cyclist experience through the existing link by providing additional amenities.
- Concept Plan 2 Streetscape Canopy (Industrial)
  Located along Clarendon Street. The street canopy open space reinforces the green and blue connections for pedestrians and cyclists. The primary purpose of the linear park is to provide workers with the opportunity to access open space facilities that would be conclusive to a healthy work/life balance i.e.. eating lunch, staff BBQs, collaboration etc.
- Concept Plan 3 Platform Park
  Located towards the northern side of the St Leonards train station in between Chandos Street and Herbert Street. The park is bounded by residential development on one side and future mixed use on the other side. The primary purpose of the park is to provide multifunctional open space to the surrounding community and wider community.

Note: All additional open spaces proposed are subject to future investigation and feasibility testing with stakeholders. All Concept Plans are indicative only and are subject to community and stakeholder feedback and detailed design.

6.1 REFERENCE PLAN

Figure 12: Concept plans reference plan (Source: AECOM, 2018)

6.2 CONCEPT PLAN 1 - LINEAR PARK, LITHGOW ST (URBAN)

INITIATIVE FOR INVESTIGATION

The Open Space Plan highlights the importance of providing green and blue links that enhance the community's needs for active lifestyle. The Linear Park serves primarily as a cycle and pedestrian link adjacent to the train line. With the projected increase in population in the adjacent areas, the park serves for a wide range of ages.

Due to the existing topography, the park celebrates the level changes and proposes an amphitheatre to the south that wraps around the existing tree canopies. The main ramp winds around the site to take cyclists and visitors on a journey of active and passive landscape nooks. These nooks include a coffee shop to the north, passive seating areas and active exercise equipment. Consequently this maximises the use of the open space and promotes healthy living for the adjacent and wider community.

The Linear Park is consists of the following main components:

- Two amphitheatre spaces
- Active landscape nooks
- Passive landscape nooks

Figure 13: Linear Park Concept Plan (Source: North Sydney Council and AECOM, 2018)

6.3 CONCEPT PLAN 2 - STREETSCAPE CANOPY

VISIONARY INITIATIVE

The Open Space Plan has identified streets to be selected on the basis of enhancing the safety and comfort of workers and visitors to the area. The Street Canopy Concept Plan focuses on providing thermal comfort through the integration of canopy cover and WSUD elements. In addition, the widening of the footpath allows for safer cycling and walking by providing a better quality of journey. The concept reflects the character and accommodates the functionality and needs of the industrial zone.

The Industrial streetscape canopy corridor is characterised with narrow footpaths, wide setbacks, inconsistent verges, sparse urban tree canopy and wide carriageway. The concept design recommends consistent planting and maximum urban tree canopy to provide passive recreation space for workers and connectivity by widening footpath and reducing private setbacks.

It is recommended that the streetscape canopy evolves over time to provide minimal disruption and allowance for funding to be achieved. The short term plan introduces general pedestrian amenity and the long term optimises canopy cover by primarily grounding overhead services.

The streetscape canopy is crucial to enable the industrial area to improve its worker environment, provide a walkable link to transport and to aid in the reduction of the heat island effect. It is important for the industrial area to play its part in providing quality urban tree canopy.

For the purpose of this Concept Plan we have illustrated the change over time.

EXISTING CONDITION - FUTURE INDUSTRIAL STREETSCAPE CANOPY

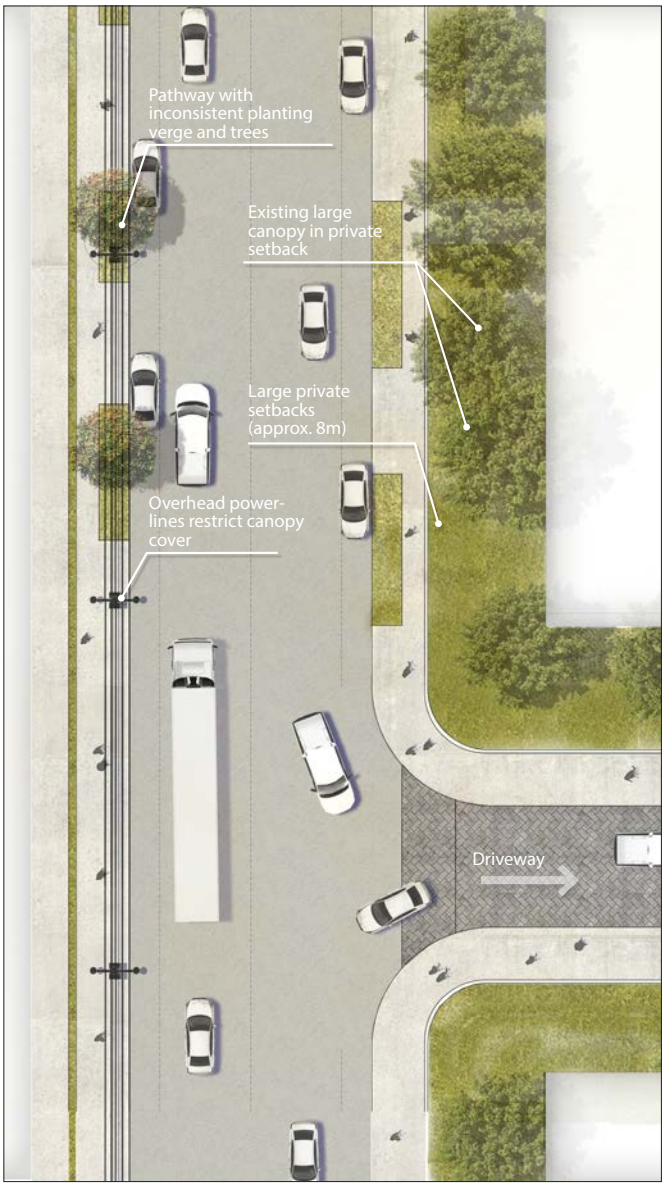


Figure 14: Existing Conditions Concept Plan (Source: AECOM, 2018)

Figure 15: Existing Conditions Indicative Section (Source: AECOM, 2018)

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PROPOSED - INDUSTRIAL STREETSCAPE CANOPY (SHORT TERM)

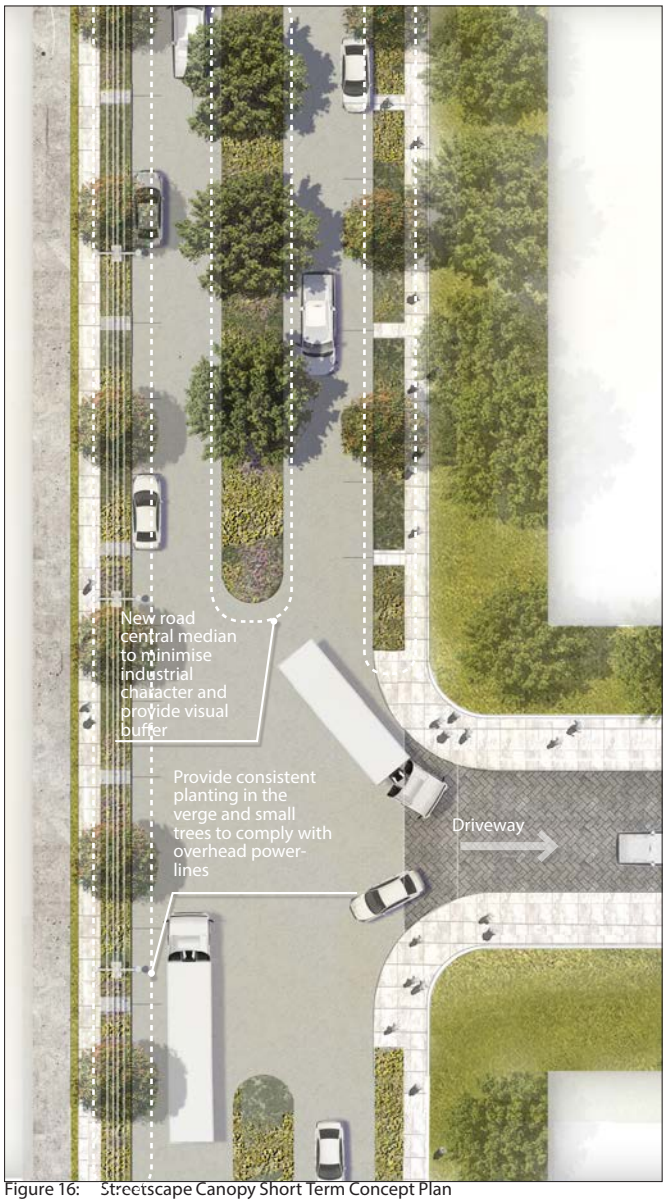

Figure 16: Streetscape Canopy Short Term Concept Plan
(Source: AECOM, 2018)

Figure 17: Streetscape Canopy Short Term Indicative Section
(Source: AECOM, 2018)

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PROPOSED - INDUSTRIAL STREETSCAPE CANOPY (LONG TERM)

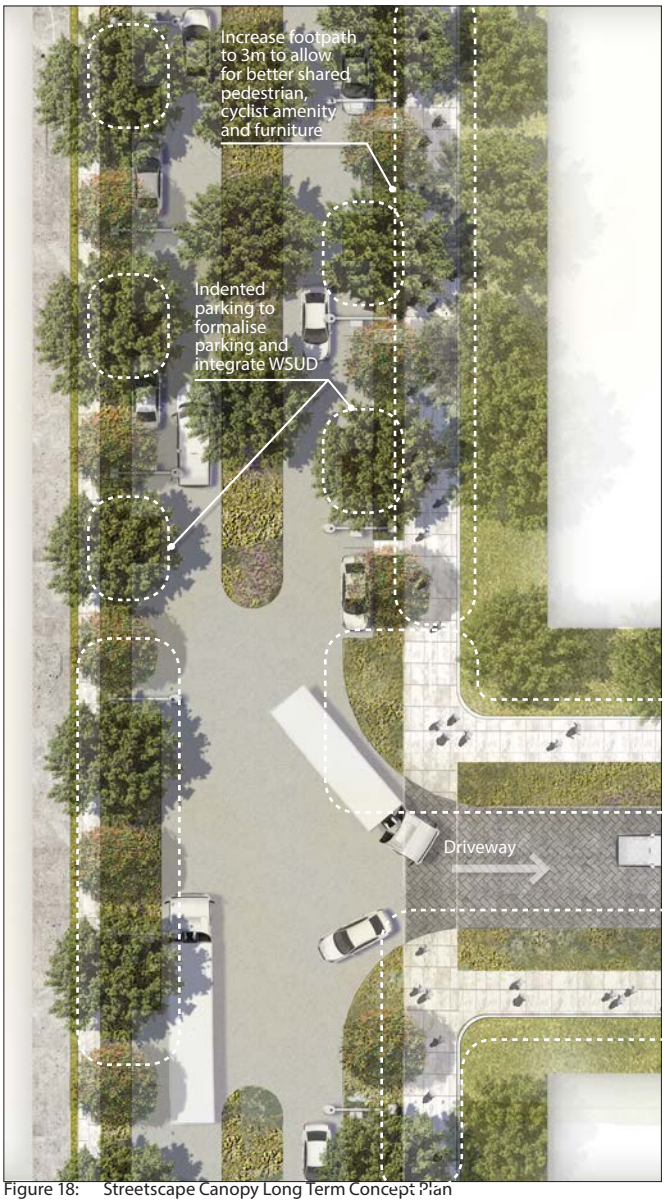

Figure 18: Streetscape Canopy Long Term Concept Plan
(Source: AECOM, 2018)

Figure 19: Streetscape Canopy Long Term Indicative Section
(Source: AECOM, 2018)

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6.4 CONCEPT PLAN 3 - PLATFORM PARK

VISIONARY INITIATIVE

The Open Space Plan highlights the importance of providing open space that is multifunctional and addresses a wide range of uses and users. Previous social infrastructure studies identifies a lack of facilities within the area for the ageing community. The Platform Park focuses on providing an open space that is adaptable and comfortable. This is achieved by providing two kick about spaces; one space enables sporting activities and the other becomes a space for different demographics such as elderly and/or children for active use.

In addition, the Platform Park plays an important role in connecting the two disjointed parks; Gore Hill Oval to the south west of the park and Naremburn Park to the north east.

The Platform Park is composed of the following main components:

- Extension of the St Leonards Plaza.
- Terraced green steps.
- Sheltered barbecue area.
- Two large flexible open spaces.

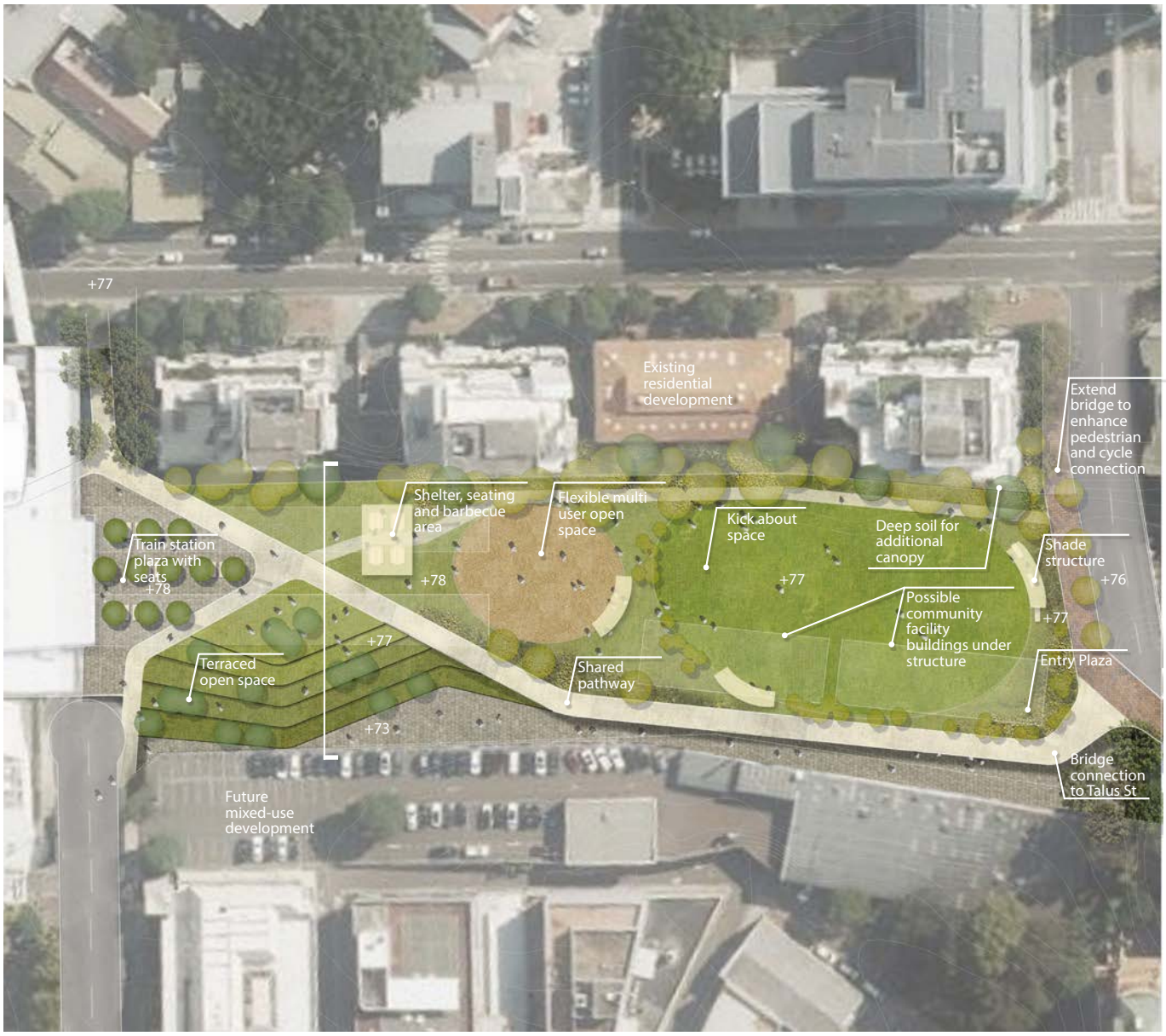

Figure 20: Platform Park Concept Plan (Source: AECOM, 2018)

Figure 21: Platform Park Indicative Section (Source: AECOM, 2018)

7.0 CONCLUSION

OPEN SPACE

The Green Plan has determined that the existing public open space provision needs to be increased however there is limited available space to achieve this. Open space planning that relies on a spatial standard such as 2.8 ha / 1000 people is only effective in greenfield areas and does not take into account opportunities for multiple uses or innovative solutions. The performance-based approach undertaken by the Green Plan, encourages consideration of the range of recreation opportunities required and what strategies are available to achieve them. The aim of this approach is to allow for greater innovation, more efficient use of land for recreation, and a focus on the quality of the outcome rather than just the quantity.

The Open Space Plan responds to open space provision by considering proposed growth and the changing needs of the community.

The Green Plan proposes a total of 8.57 hectares of new open spaces to be added to the 21 hectares of existing open space, achieving 29.58 hectares of overall open space within St Leonards and Crows Nest. Approximately half of this new open space needs to come from the utilisation of road reserves and air space over the rail corridor. This requires innovative approaches to creating urban green spaces to maximise the available opportunities.

This recommendation is to be used by local government as a guide for how the future provision of open space may be achieved over time. This may include acquisitions by negotiations, funding opportunities and through the SIC plan, integration of capital works programs and planning agreements with developers.

URBAN TREE CANOPY

The following assumptions have been considered to develop the Urban Tree Canopy Plan:

- The area has been subdivided within three future areas: industrial, urban and heritage residential. Within each area, a minimum urban tree canopy has been targeted of 15, 25 and 25% respectively.
- The Urban Tree Canopy Plan suggests possible interventions on public land only under the control of public agencies while also measuring urban tree canopy in the private domain.

The current urban tree canopy covers:

- 6.92% of the industrial area.
- 21.4% of the urban area.
- 40% of the suburban area.
- 27% of the heritage residential area

The Urban Tree Canopy Plan takes into account the proposed changes to land uses and development controls and therefore it shows an updated zoning between the industrial, urban, suburban areas and heritage residential areas.

Considering the new zoning, the Urban Tree Canopy Plan proposes a total of 2,038 new trees to be added to public areas within St Leonards and Crows Nest in order to achieve:

- 16% tree canopy in public and private areas in the industrial area
- 25.7% tree canopy in public and private areas in the urban area
- 32.7% tree canopy in public and private areas in the heritage residential area.

7.1 NEXT STEPS

Suggested next steps to be taken by the Department are:

- Support local government in the detailed analysis for the areas selected as future parks and Green Blue Links including acquisition, public ownership and right of ways/access, costing, detailed planning and design and method for delivery.
- Ensure public agency engagement for whole of Government problem-solving to facilitate delivery.
- Support long term strategic planning by agencies - e.g. services to enable tree canopy delivery or to open up public land for open space and access.
- Work with local government to review street tree policies and enable expansion of the urban canopy.
- The Department to work with local government to review the planning controls (LEP), Development Control Plans (DCP), civil works standards, development contributions (Section 94 plans) and voluntary planning agreement (VPA) policies to investigate ways to encourage creation of public open space and tree canopy within the study area.

8.0 GLOSSARY

A

Accessibility: ease of access is critical to the community to enjoy and use public open and recreation facilities.

B

Biodiversity: is the foundation of ecosystem services to which human well-being is intimately linked.

Biodiversity corridors: are areas of vegetation that allow animals to travel from one patch of native forest to another.

Built Environment: comprises the extent of our human-made environment, as distinguished from the natural environment. It includes all aspects of our surroundings made by people that provide the place for human activity. The built environment can be understood to include cities and towns, neighbourhoods, parks, roads, buildings and even utilities like water and electricity.

C

Canopy: the layer of leaves, branches, and stems of trees that cover the ground when viewed from above.

Connectivity: creating an interconnected network of open space.

Context: the physical, social, cultural, economic, environmental and geographic circumstances that form the setting for a place or building.

D

Diversity: the range of open space setting types within a given area will determine the diversity of recreation opportunity for a community.

Distribution: the spread of supply of open space and tree canopy.

E

Equitable: a built environment that is fair and accessible for all citizens.

G

Green and Blue Link: selected road connecting several open spaces within a continuous walkable network of footpaths, laneways, pedestrian bridges and undercrossing. This link will define a major route for bikes, pedestrians, water management and biodiversity, therefore, possible further enhancement of streetscape amenity, verge vegetation, water sensitive urban design strategies and setback treatment will be encouraged.

Green Plan: The framework assessing open space and tree canopy proposed in .

Greater Sydney: is defined as the 33 local government areas of Bayside, Blacktown, Blue Mountains, Burwood, Camden, Campbelltown, Canada Bay, Canterbury, Bankstown, Cumberland, Fairfield, Georges River, Hawkesbury, Hornsby, Hunters Hill, Inner West, Ku-ring-gai, Lane Cove, Liverpool, Mosman, Northern Beaches, North Sydney, Parramatta, Penrith, Randwick, Ryde, Strathfield, Sutherland, and The City of Sydney.

Green Grid: strategic planning document for the greater Sydney region, and a precursor to the Greener Places policy comprising a cohesive map of green assets across metropolitan Sydney.

Green Infrastructure: describes the network of parks, trees and water systems that deliver multiple environmental, economic and social values and benefits to urban communities. Refer to Section 1.1 of this document for entire definition.

Green Space: an area of grass, trees, and other vegetation set apart for recreational or aesthetic purposes in an urban environment.

Grey Infrastructure: refers to the human-engineered infrastructure for water resources such as water and wastewater treatment systems, piped drainage and reservoirs.

H

Healthy: a place or space that promotes positive social, emotional and physical health for its people.

High Performing Green Space / High Quality Green Space: are multifunctional spaces designed to produce concurrent ecological, social, environmental and economic benefits.

I

Integration: combining green space with urban development and grey infrastructure.

L

Liveable: a built environment which supports and responds to people's patterns of living, and is suitable and appropriate for habitation, promoting enjoyment, safety and prosperity.

M

Master Plan: a framework document showing how development will occur in a given place and includes building parameters like height, density, shadowing and environmental concerns. It is a visual document that details a clear strategy or plan for the physical transformation of a place, supported by financial, economic, and social policy documents which outline delivery mechanisms and implementation strategies.

Multi-functionality: the ability of Green Infrastructure to deliver multiple ecosystem services simultaneously, providing added value, and improved health and well-being.

O

Open space: land that has no buildings or other built structures, which is accessible to the public, including green space.

P

Park - Pocket: defines parks with maximum area 0.4 hectare and with a walking catchment area of 300 metres.

Park - Local: defines parks with areas varying from 0.4 to 1 hectare and with a walking catchment area of 400 metres.

Park - Neighbourhood: defines parks with areas varying from 1 to 5 hectare and a walking catchment area of 800 metres.

Participation: the involvement of stakeholders in the development and implementation of neighbourhood, local, district and regional Green Infrastructure policies and actions.

Place: is a social and a physical concept –a physical setting, point or area in space conceived and designated by people and communities. In this sense, place can describe different scales of the built environment – for example, a town is a place, as well as a building can be a place.

Place Making: proposes a multi-faceted approach to the planning, design and management of public spaces. 'Place Making' looks at understanding the local community with the intention of creating public spaces that promote health and well-being.

: a designated area within real or perceived boundaries of a specific building or place. A can be of different scales and usually responds to a study area of a particular place.

Priority Growth Areas: The Priority Growth Areas Greater Sydney are identified by the NSW Government as major greenfield development areas. Information about Priority Growth Areas is available at http://www.planning.nsw.gov.au/

Priority s: areas that have a wider social, economic or environmental significance for the community or have redevelopment potential on a scale that is important in implementing the State's planning objectives. Priority s are envisaged as larger areas, usually made up of multiple land holdings, capable of delivering significant additional growth and requiring coordination from State and local governments to realise their potential.

Public Realm: is the collective, communal part of cities and towns, with shared access for all. It is the space of movement, recreation, gathering, events, contemplation and relaxation. The public realm includes streets, pathways, rights of way, parks, accessible open spaces, plazas and waterways that are physically and visually accessible regardless of ownership.

Q

Quality: the standard of something, measured comparatively against things of a similar kind.

Quantity: the amount or number of open space or abstract thing not usually estimated by spatial measurement.

R

Recreation - Active: activities that require physical exertion and considerable expenditure of energy; such as football and soccer.

Recreation - Passive: activities that require minimum physical exertion; such as reading and relaxing.

Resilient: place or space that can withstand or recover from difficult conditions.

S

Scale: the relative size or extent of something – scale is a device used to quantify objects in a sequence by size; for example a city scale, or a building scale. In architecture, scale is also used to describe a ratio of size in a map, model, drawing, or plan.

State Environmental Planning Policy (SEPP): is a statutory plan, typically prepared by the Department of Planning, Industry and Environment and endorsed by the Minister for Planning. It can be a spatial plan for particular land in NSW, and/or it can set policy which applies to particular land or all land in NSW.

Strategic Plan: document that guides the implementation of a strategy for a particular area.

Statutory Plan: is part of the planning process that is concerned with the regulation and management of changes to land use and development.

Sustainable: relates to the endurance of systems, buildings, spaces and processes – their ability to be maintained at a certain rate or level, which contributes positively to environmental, economic and social outcomes.

U

Urban Forest: the layer of trees and tree populations that exist in urban settings.

Urban Tree Canopy: the layer of leaves, branches, and stems of trees that cover the ground when viewed from above.

W

Water Sensitive Urban Design (WSUD): is the sustainable integration of water cycle management into planning, design and construction of the built environment. It is the term given to the replication of natural processes into treatment of water in an urbanised environment and is relevant to all built environments from highly urbanised to rural settings.

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