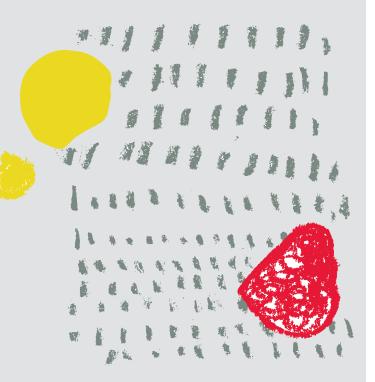
JMD design

North Rocks Park Precinct Masterplan City of Parramatta Council

James Mather Delaney Design Pty Ltd Landscape Architects ABN 30 128 554 638

190 James Street Redfern NSW 2016 Australia September 2018

Adopted by the City of Parramatta Council, 29 October 2018



Contents

Introduction Social Context Physical Context Physical Context Climate Mean mInimum and maximum temperature (°C) Mean daily solar exposure (MJ/(m*m)) Mean rainfall (mm) **Physical Context** Land Use Physical Context Active Transport Context Physical Context Social Infrastructure **Physical Context** Open Space Infrastructure Site Analysis Topography, Drainage and Soils Conditions Site Analysis Flora & Fauna Site Analysis History Site Analysis Land Ownership Site Analysis Access, Circulation, Parking and Connections Site Analysis Utility Service Infrastructure Site Analysis Community Facilities & Recreation Infrastructure

JMD design









- **19** 19
- 9
- **18** 18
- **17** 17
- 15 16 16
- 13 14 14
- **11** 11 **12**
- **9** 9 **10**
- 8
- 7 8

8

8

10

12

13

15

- 5 6

Park Infrastructure - North Rocks Park

Site Analysis

Park Infrastructure - John Wearn Reserve

Site Analysis

Play Audit

Site Analysis

Building Facilities- Don Moore Centre

Site Analysis

Building Facilities- Clubs, Amenities & Kiosk

Site Analysis

Building Facilities-Seniors Centre, Pre-School & Childcare

Opportunities & Constraints

Constraints

Opportunities & Constraints

Opportunities

Consultation Outcomes & Way Forward

North Rocks Park Precinct

Working Vision

North Rocks Park Precinct

North Rocks Park Precinct Masterplan

North Rocks Park & John Wearn Reserve

North Rocks Park Precinct Masterplan

NRP Community Centre Building

North Rocks Park Precinct Masterplan

NRP Sport Clubs & Amenities

North Rocks Park Precinct Masterplan

Recreation & Blue Gum High Forest

North Rocks Park Precinct Masterplan

Order of Costs

North Rocks Park Precinct Masterplan

Stage 1 Works within approved budget







North Rocks Park Precinct | Design Report Outline | September 2018

- 20 20 21 21 22 22 23 23 24 24 25 25 26 26 27 27 28 28 29 29 30 30 31 31 32 32
- 33
- 33 **34**
- 34
- 35
- 35





Appendixes Appendix 1 Preliminary Desktop Contamination Assessment Appendix 2 **Ecological Constraints Analysis** Appendix 3 **Pavements Condition Report** Appendix 4 Water Sensitive Urban Design Strategy Appendix 5 North Rocks Park Analysis & Opportunities - Lighting and Electrical Appendix 6 **Building Audit Report** Appendix 7 Social Infrastructure Needs Study - North Rocks Park Precinct Appendix 8 North Rocks Park Precinct Master Plan Engagement Outcomes Report Appendix 9 Stage 2 Consultation Outcomes: Meetings with Stahkeholder Groups Appendix 10 Public Exhibition: Community Feed-back and Submissions to CoPC Appendix 11 Probable Cost Estimate

36
37
37
38
38
39
39
40
40
41
41
42
42
43
43
44
44
45
45
46
46
48

48

Introduction

North Rocks Park Precinct is located in the north west of the City of Parramatta Local Government Area on North Rocks Road and Farnell Avenue. The Precinct comprises:

- North Rocks Park (7.4 ha) a combination of Crown Land and Community land (Park & Bushland)

- John Wearn Reserve (2.4 ha) Community land (Park)

The Precinct sits in the suburb of Carlingford within a largely residential area. The recreational precinct is well used and valued by the community with expansive views to the south.

North Rocks Park and John Wearn Reserve (the Precinct) together provide for a broad range of recreation and community activities. North Rocks Park has two distinct characters the higher, flatter, heavily used area and the lower, steeper, treedless used area. Over time there has been substantial incremental development of the higher part of the park, the cumulative impact of these interventions is that the core of the park is a labyrinth of single purpose buildings, fencing and retaining walls which obstruct clear sightlines and paths of travel, creating a barrier to access and eroding legibility.

John Wearn Reserve is comparatively open and appears under used, with large grassed areas that are in essence a setting for a scattering of recreational facilities.

Purpose of this report

Master planning for the Precinct will ensure that the use and operation of facilities and open spaces are optimised and well coordinated with Council's other recreational infrastructure. There is a need for a strong and coherent urban structure for the Park and for the Park and Reserve to be better integrated through visual connectivity and in the the suite of activities and facilities provided. These considerations will be balanced against strategies for the protection, conservation and management of the Park's significant flora and habitat.

Key objectives and outcomes for the project are summarised as:

1. Ensure better utilisation of open space resources through understanding Council's open space resources and opportunities to value add.

- Understand the current resource through an audit of facility condition and uptake.
- Consider the park and reserve in the context of the Council's Social Infrastructure Audit and Needs Analysis and Draft Strategy to envision the range of facilities that may be accommodated to best service the community both present and future.
- Consider current best practise in open space hierarchy position/ type and character.
- Ensuring open space is working harder in the

context of changing residential patterns; the cultural diversity of the community, environmental initiatives, and sustainability targets;

- Identify opportunities for co-location of facilities;
- Leverage proximity to multiple modes of public transport as well as active transport connections including proximity to other open space, Parramatta's Green Ways, and bicycle networks.

2. Respond to the changing community in density and diversity. Initially the team will need to:

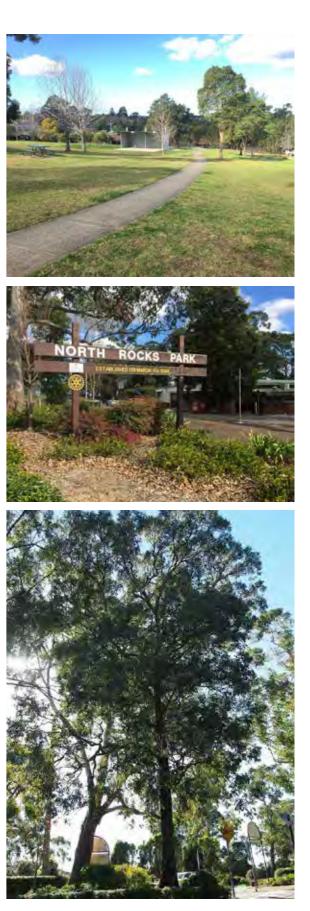
- Understand the demographic profile of both the current and evolving community to enable it to identify existing and future recreational needs
- Gain an overall understanding of the community's own thinking about the park and its civic identity in the suburb, especially in relation to future growth.

3. Clarify and reinforce civic legibility & character through understanding:

- The character of the park and reserve that embraces unique attributes;
- Leveraging views into and from the park and reserve;
- The communities 'vision' for the park and reserve inspiring support and commitment for the Precinct;
- The major street frontages and how these might be programmed to enhance access, identity and character of the park and reserve.

4. Implement Parramatta 2036 Community Strategic Plan objectives through :

- Clarity and consensus in relation to the Precinct's role, facilities and amenities to be provided;
- Review and reprogramming of park frontages that are inactive after hours and on weekends;
- Making the Precinct more visible and improve legibility throughout; and
- Tieing the park back into the surrounding communities through improved access & connections.
- 5. Optimise capital and recurrent investment through:
- Best value for money for initial capital expenditure; Importance of high impact early projects to 'kick start' Precinct transformation.
- Procurement developing a staged strategy that provides for the incremental delivery of the Master Plan;
- Sustainable recurrent expenditure planning; and
- Strategies for managing 'down time' of key facilities and infrastructure.



Social Context

About the City of Parramatta LGA Current population (2016 and 2011)

The North Rocks Park Precinct is located in the newly formed City of Parramatta Local Government Area (LGA). The LGA is located in the geographical centre of Sydney, around 24 kilometres from the Sydney CBD. The current

population (2016) of the LGA is 235,981, which represents a 16% increase in population in 5 years since 2011. In 2016, compared to Greater Sydney, the City of Par-

ramatta LGA has:

- A lower proportion of households earning a high income (26.7% compared to 28.3%) and lower proportion of low income households (14.3% compared to 15.1%).
- A higher proportion of couples with children households (38.5% compared to 35.3%). Around 9.2% of households are one parent households with children (lower than Greater Sydney at 10.4%)
- A higher proportion of children aged o to 4 (7.3% compared to 6.4%), 25 to 34 year olds (20.2% compared to 16.1%) and 35 to 49 years (21.9% compared to 21.1%)
- A much higher proportion of medium and high density housing (55.3% compared to 44%)
- A much higher proportion of residents from Non-English speaking backgrounds (52% compared to 38.5%). The main non-English languages spoken at home were Mandarin (10.5%), Cantonese (6.5%) and Korean (5.0%)
- A lower proportion of people without access to the internet (9.4% and 11.2%)

Current population and age profile Carlingford - North Rocks Suburbs (combined)

While existing studies relating to Carlingford use Catchment 2 (which includes North Rocks, Carlingford, Telopea, Dundas Valley and Dundas) to determine demand for social infrastructure, this study provides an additional analysis of the suburbs of Carlingford and North Rocks suburbs only. The reason for this is that Catchment 2 includes Telopea, Dundas and Dundas Valley which may be serviced through the new community facilities proposed as part of the Telopea Estate Renewal Master Plan including a new library and community hub.

In 2016, the suburbs of Carlingford and North Rocks had

- A total population of 33,176 in 2016.
- Carlingford had 50.2% of its population born overseas, while North Rocks only had 34%. For comparison, the Parramatta LGA had a similar proportion of people born overseas (49.5%) to Carlingford.
- 35% of people in North Rocks spoke a language other than English at home. The top three languages were; Mandarin (10%), Cantonese (6.8%) and Korean (4.2%).
- In Carlingford, 57% of people spoke a language other than English at home, with 40% of the population speaking an Asian language at home. The top three languages were; Mandarin (18.7%), Cantonese (14.9%) and Korean (6.5%).
- In North Rocks, 36% of households earned an income of \$2,500 or more per week in 2016, a higher proportion of households compared to Carlingford (30%). However, both North Rocks and Carlingford had a larger proportion of high income earners than Parramatta LGA (27%).
- In Carlingford, 88.2% of households had access to broadband internet and North Rocks had 90.4%. Both suburbs are higher than the Parramatta LGA average of 83.5%.
- North Rocks had less households without a car compared to Carlingford (3.2% compared to 5.7%).
- The age structure of Carlingford/North Rocks is mostly families with primary school aged children, and seniors.

Forecast Population :

- The combined population for Carlingford and North Rocks is forecast to undergo significant growth in 20 years to 2036, increasing by 35% (or 11,662 people) to 44,838.
- Population distribution between North Rocks and Carlingford will continue to trend towards Carlingford, as higher density communities are built around transport and services.
- As shown in Table 3, the majority (76%) of the population of the two suburbs live in Carlingford. By 2036, this will increase to 80%.
- In terms of numbers, the largest population group in 2016 and 2036 is expected to remain as Parents and Homebuilders (35 – 49yrs), increasing from 6,661 to 9,131 people.
- The second largest group is expected to remain older workers and pre-retirees (50 to 59yrs), increasing from 4,287 to 5,813 between 2016 and 2036.
- The third largest group in 2016 was the young workforce, also expected to maintain third largest age group in 2036.
- By 2036 much of the density in Carlingford will surround the train station and areas immediately to the North and South
- In North Rocks 15.8% of the dwellings were medium or high density, while Carlingford was more than double that at 33.7%, with more high density living planned for the future.

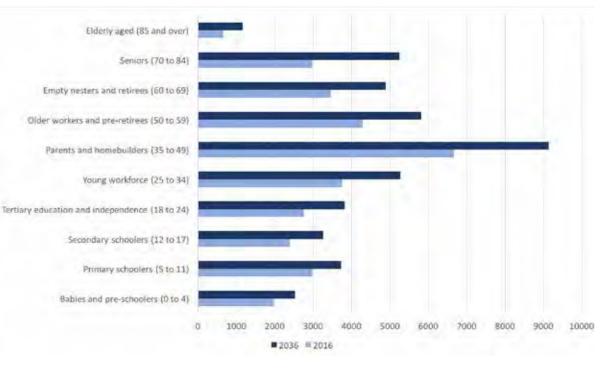


Figure 1. Population Projections: SOURCE - Forecast id. Carlingford and North Rocks

Key findings

- The population of Carlingford and North Rocks suburbs combined will increase from 33,176 in 2016 to 44,830 in 2036.
- In 2016 in North Rocks, 15.8% of the dwellings were medium or high density, while Carlingford was more than double that at 33.7%, with more high density living planned for the future.
- Carlingford & North Rocks suburbs have higher than average proportions of 5-9yr olds and 10-19yrs olds, and residents aged 50 years and over (compared to Parramatta LGA).
- By 2036, Carlingford will house 80% of the combined population of Carlingford & North Rocks.
- Carlingford-North Rocks is culturally diverse. In 2016, Carlingford had 50.2% of its population born overseas, while North Rocks comparatively only had 34%. For comparison, the Parramatta LGA had a similar proportion of people born overseas (49.5%)to Carlingford. Main languages spoken are Cantonese, Mandarin and Korean.
- Proportionally, the highest growth forecast in the area will be seniors 70 years and over. The densest part of the combined suburbs will continue to be around Carlingford Station, as well as just to the north and south.

Geology

The majority of the Precinct is underlain by Ashfied Shale of the Wianamatta Group which consists of black to dark grey shale and laminite. A small area in the south of John Wearn Reserve is underlain by Hawkesbury Sandstone typically consisting of medium to coarse grained quartz sandstone with minor shall and laminite lenses.

Soils

The soil landscape of the Precinct is Glenorie Soil Landscape being shallow to moderate deep red and brown Podzolic Soils, being friable dark browm loam to a clay loam on fine sandy clay loam.

Topography

North Rocks Park is located on the North Rocks Road ridgeline on a south facing slope.

High point 125.00m AHD

Lowest point 102.00m AHD

The Park's topography has been modified to create a large flat (1:60) area for the double playing fields and smaller areas for buildings. The remainder of the site slopes away to the west and south.

John Wearn Reserve located on a spur off the ridgeline further down the same southern slope with the northern quarter of the park being flatter and the remainder falling at 1:10 or steeper.

High point 111.00m AHD

Lowest point 95.00m AHD

Drainage

The Park Precinct and the southern slopes off the North Rocks Road ridge drains to Hunts Creek. A number of drainage lines have been piped.

It is noted that there are extensive aquifers on site with low to moderate productivity .(ref: Hydrogeology Map of Australia). There are no bores on site

Legend

Parramatta LGA catchment 2

North Rocks Park Precinct

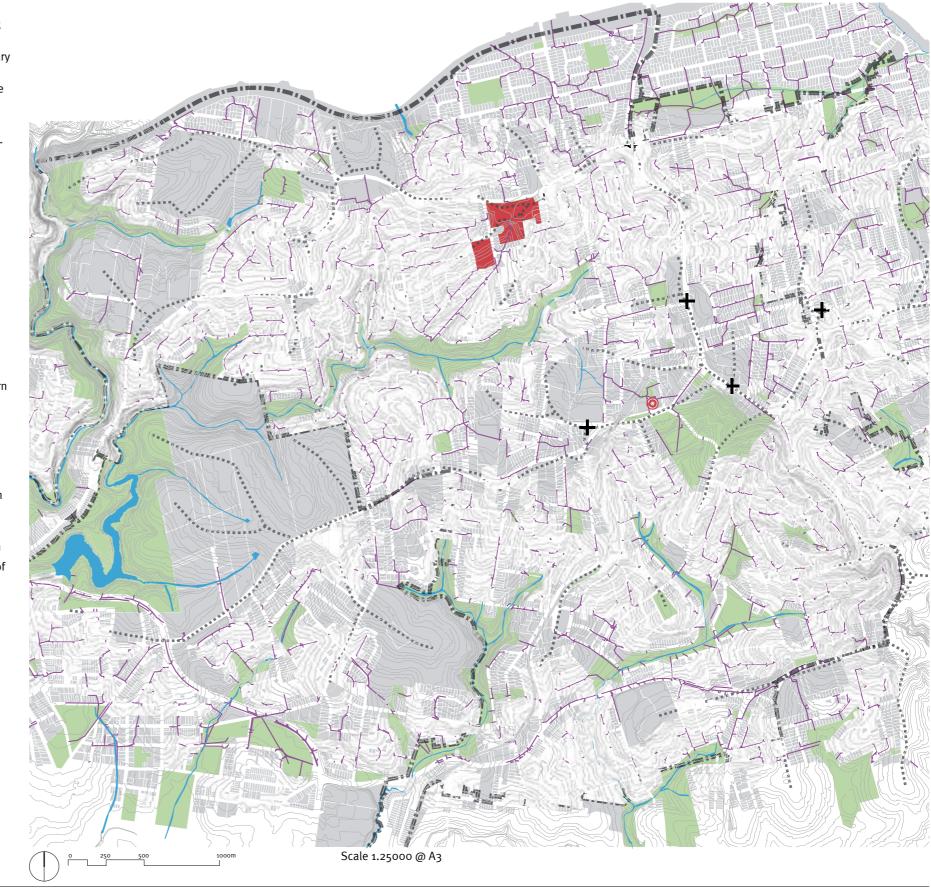
O Carlingford Library

Ridges

Creeks and Rivers

— Existing stormwater pipe network

High point



North Rocks Park Precinct | Design Report Outline | September 2018

Climate

The region generally enjoys a mild warm temperate climate. The Parramatta area generally experiences 2-5° hotter or colder than the coast.

Average rainfall is 900mm/ annum

The areas is subject to the cold and hot westerly winds in winter and summer respectively as well as enjoying the moderating NE winds in summer.

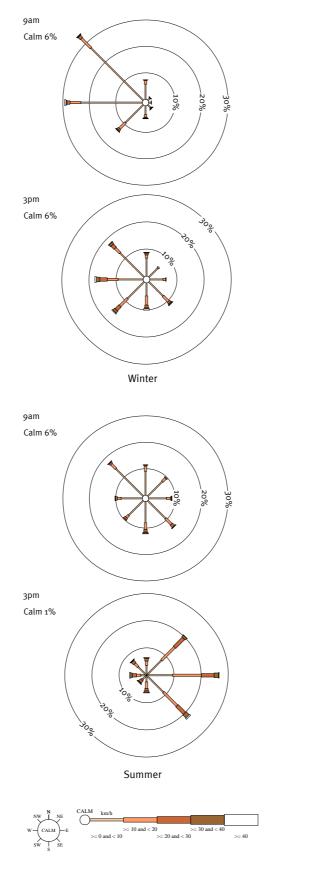




Figure 3. Mean minimum and maximum temperature: Parramatta North (BOM 2017)

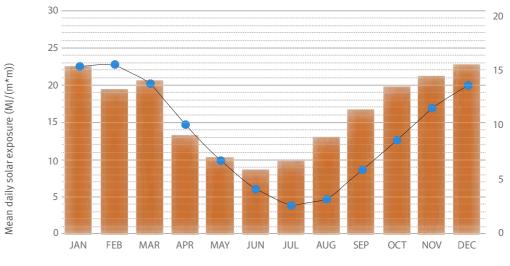
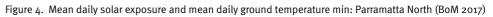




Figure 2. Rose of Wind direction Wind speed in km/h (BoM 2017)

Figure 5. Mean rainfall: Parramatta North (BoM 2017)

Month



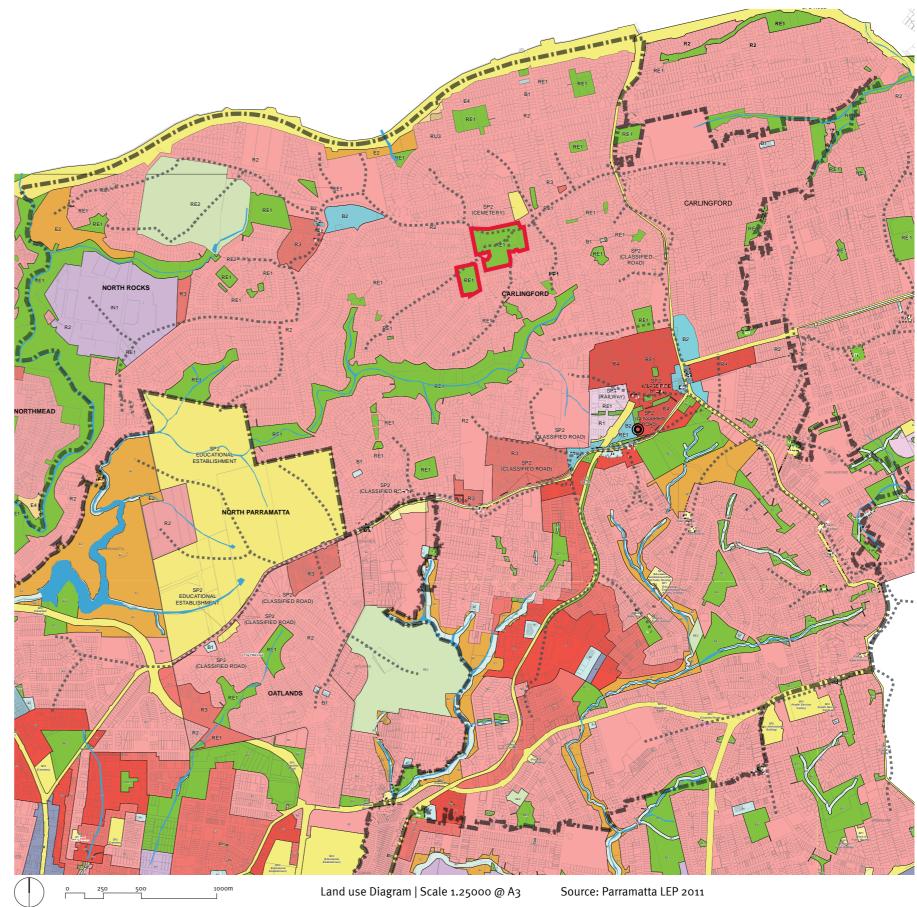
Land Use

The North Rocks Park Precinct is zoned Public Recreation under Parramatta LEP (2011) and surrounded by Low Density Residential.



Parramatta LGA catchment 2
North Rocks Park Precinct
Carlingford Library
Ridges
Creeks and Rivers
Neighbourhood centre
Local centre
Mixed use
Business development
Enterprise corridor
Business park
National parks and nature reserve
Environmental conservation
Environmental management
Environmental Living

IN1	General Industrial
IN2	Light industrial
Rı	General residential
R2	Low density residential
R ₃	Medium density residential
R4	High density residential
RE1	Public Recreation
RE2	Private recreation
RU1	Primary production
RU2	Rural landscape
RU3	Forestry
RU6	Transition
P ₂	Infrastructure
P ₃	Tourist
W2	Recreational waterways



Active Transport Context

Public Transport

The North Rocks Park Precinct is located on 2 Bus Routes being the 546 & 553 which run regularly along North Rocks Road & Farnell Avenue.

Bikeways

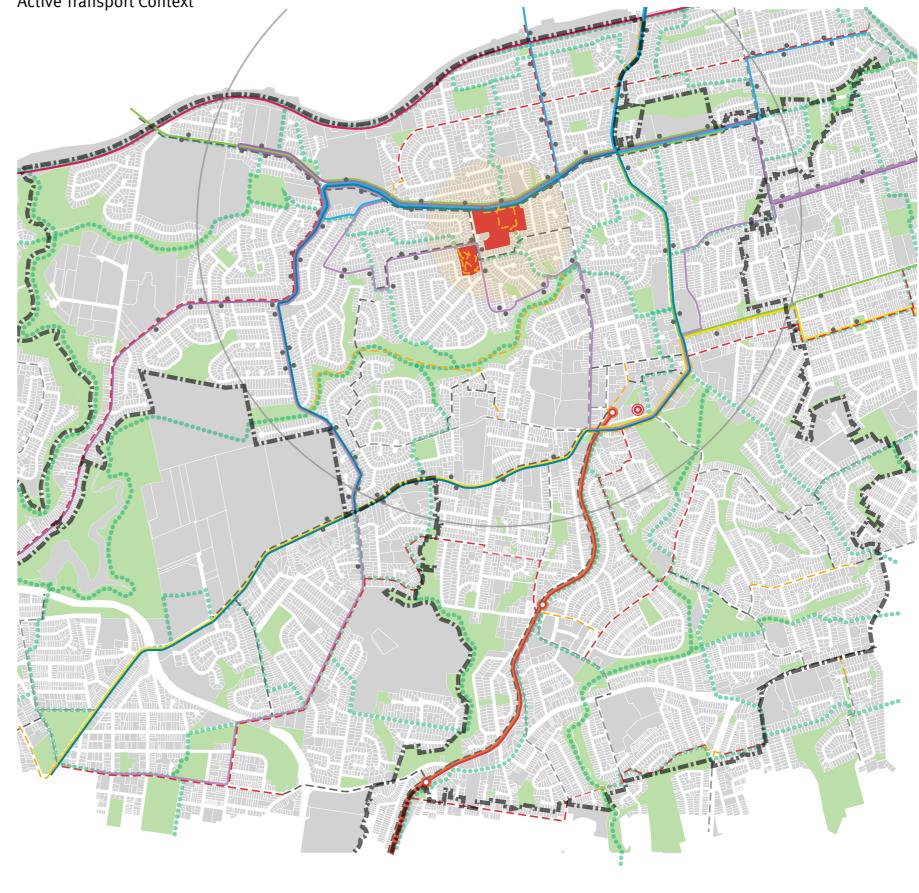
Parramatta Bicycle Path network shows off road shared paths access to the parks off Parkland Road, Balaka Drive and Farnell Avenue.

Parramatta Ways

Parramatta Ways shows minor connections to both parks via North Rocks Park, via Parkland Road to Robbie Crescent and Wattle Place, as well as off Farnell Avenue. John Wearn is being accessed through Balaka Drive and Farnell Avenue.

Legend

\bigcirc	Proposed lightrail stop	Existing Cycleways	
	Proposed lightrail route		Off road
•	Bus stop		On road
	625	Proposed	Cycleways
	553		Off Road
	546 Parramatta to Epping		On Road
	549 Parramatta to Epping		
	M54		
	630		
	614X		
• • • •	Parramatta ways major routes		
	Ridges		
	Creeks and Rivers		
	Parramatta LGA Catchment 2		
\bigcirc	2.okm Radius		
	400m Radius		
	North Rocks Park Precinct		
0	Carlingford Library		



Active Transport Diagram | Scale 1.25000 @ A3

City of Parramatta Council

North Rocks Park Precinct | Design Report Outline | September 2018

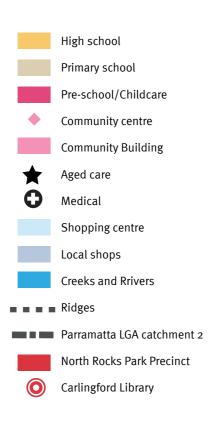
Source: Draft Parramatta Bike Plan & Parramatta Ways Report

The following estimates have been based on a forecast population of 44,838 people by 2036 in Carlingford and North Rocks (Forecast Id).

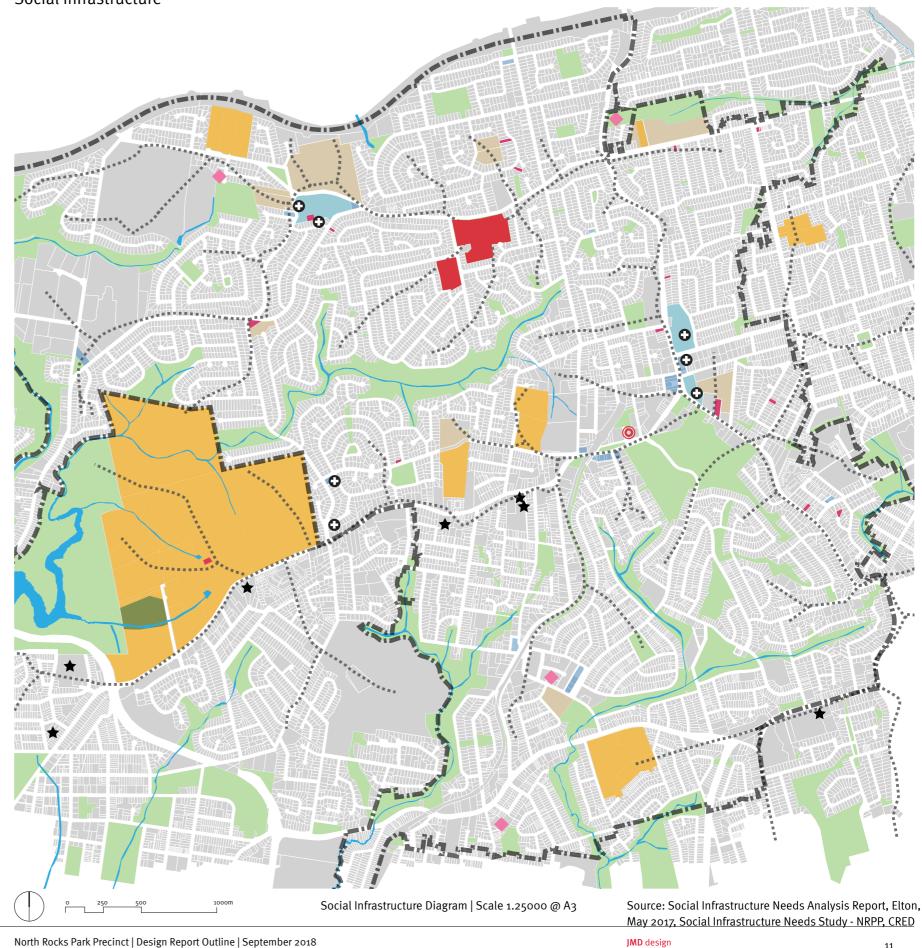
Table 1 Community Facility Benchmarking

Туре	Benchmark*	Current supply	Future demand	Gap in supply
LOCAL				
Long day care	o. 28 places per child (based on national utilisation rates in Australia of 40% of all children aged o to 5 accessing care on average 3.5 days per week)	419	561 places	142 places
Out of school hours care	o.16 places per child aged 6 to 12 years (based on National Usage rates in Australia of 16% all children accessing OSHC)	697	466 places	No gap
DISTRICT				
Multi purpose (staffed) community centre (could include arts space)	1:20,000-30,000 population = approx. GFA of 1,200 – 3000 sqm	1	3000sqm+	1
District library	1 "substantial" library per 20- 30,000 to NSW State Library benchmarks	1 local library	Potentially 2 substantial libraries	1-2
	35 sqm per 1,000 people, plus 20% circulation space – Elton Consulting (p 61)	1 local library (348sqm)	1,883sqm (1569 + 314)	1,535sqm
Senior Facilities	1:15,000 to 20,000 people (Cred benchmark)	1 (600M²)	2+	1+
Youth Centre	1 for every 3,000 young people aged 13 to 19 (Cred benchmark)	0	1	1 (600m²)
	(3,261 12 – 19 yr olds forecast id)			

*Benchmarks adopted from Elton Consulting Parramatta LGA Social Infrastructure Needs Analysis Report (P61) Source: "Social Infrastructure Needs Study North Rocks Park Precinct" October, 2017



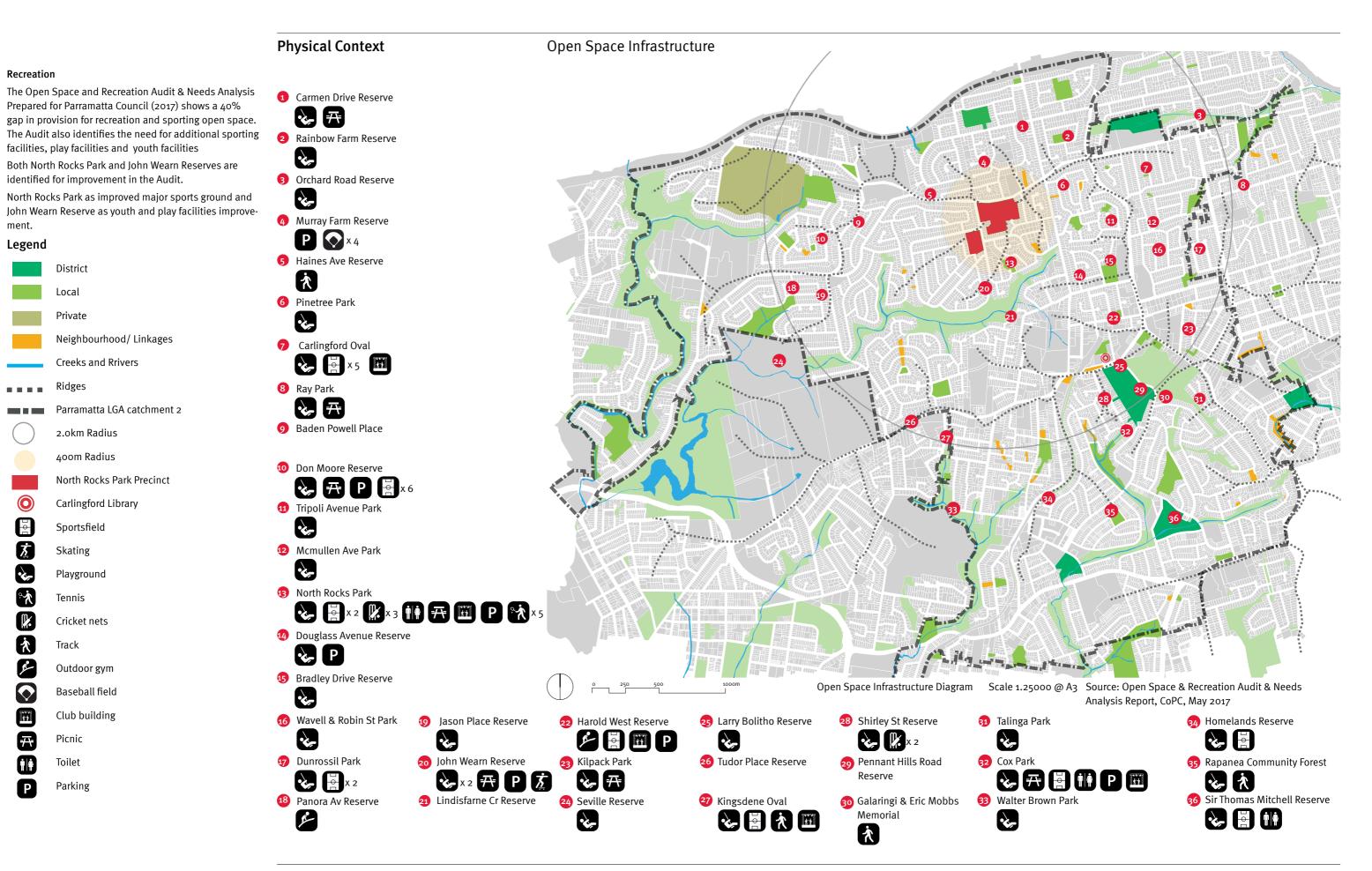




City of Parramatta Council

North Rocks Park Precinct | Design Report Outline | September 2018

Social Infrastructure



City of Parramatta Council

Topography, Drainage and Soils Conditions

Topography & Drainage

North Rocks Park falls from a the ridge into 4 subcatchments which are captured in pit and pipe systems. Some of this stormwater is captured for reuse to irrigate the playing fields.

Soil Conditions

The soil conditions on site have been modified initially through agricultural use and later through filling for recreational facilities.

EIS, Environmental Investigation Services have reviewed the site history and inspected the site and noted that there were no obvious signs of instability or soil erosion on site. (refer Appendix 01- Preliminary Desktop Contamination Assessment for Proposed Masterplan at North Rocks Park Precinct, August 2017 for full report)

A large volume of fill material (including ironstone, brick and concrete) was noted above the retaining wall on the south side of the sports fields.

EIS noted, multiple fragments of fibrous cement (suspected of containing asbestos) on site east of the Don Moore Community Building. No other visible or olfactory indicators of contamination were noted as observed by EIS.

EIS also noted that the site was not identified on the NSW acid sulfate soils risk map.

The site was noted as being located in a region with varying salinity potential depending on site conditions and EIS have noted a moderate classification based on vegetation on site.

Microclimate

North Rocks Park Precinct has a combination of aspects and microclimates. The flatter top of the ridge along North Rocks Road is exposed to winds as is John Wearn's south facing slope. The large trees within North Rocks Park provide shade and shelter throughout with the south facing bushland area being particularly sheltered.





Legend
Site boundary
ERgn - Glenorie soil profile
Rwa - Ashfield Shale (Black to dark grey shale and laminate)
Rh - Medium to course grained quartz sandstone, very minor shale and laminate lenses

Source: Property Boundaries & Topographic Data, Land and Property Information, 2017

Topography Map	(each	level =	2m)
----------------	-------	---------	-----

124-126m
122-124M
120-122M
118-120m
116-118m
114-116m
112-114M
110-112M
108-110m
106-108m
104-106m
102-104M
100-102M
98-100m
96-98m
94-96m

Stormwater pipe network

Flora & Fauna

Original Vegetation

Blue Gum High Forest originally covered the shale hills with slopes being dominated by Blackbutt (Eucalyptus pilularis) and Sydney Blue Gum (E. saligna).

Existing Flora Condition

The Blue Gum High Forest (BGHF) community across the North Rocks site predominately occurs as remnant trees and regrowth small trees without persisting native ground layer or understorey vegetation. The ground and shrub layers in most areas consist either of mown exotic grasses, or planted herbs and shrubs in gardens. Exceptions to this occur in the large patch in the south of North Rocks Park and across the adjoining residential Lot 1 in DP748981. A small area adjoining the residential lot is unknown, along with fringing areas in the residential lot, in which several BGHF shrub species persist and occur amongst exotic planting and weeds. The ground layer in this area also contains persisting native herbs and is generally native dominated . A native BGHF grass is also dominant and co-dominant in large areas of the patch in the area south of North Rocks Park. BGHF is listed under the Threatened Ecological Communities Act as a Critically Endangered Ecological Community

Fauna

Fauna recorded in the BGHF remnant include 2 species of possum and birdlife including Rainbow lorikeets, Sulphur Crested Cockatoo, and Musk Lorakeets. Habitats for fauna species across the parks are generally degraded or absent due to the long term utilisation as public parks, however a number of tall BGHF trees are present which provide key habitat features those recorded include:

- Hollow-bearing trees and stags;
- Cockatoo feed trees;
- Debris and leaf litter; and
- Nectar and fruit producing trees and shrubs.

These key habitat features provide habitat for a variety of fauna, including some species that are listed as threatened under the TSC Act and EPBC Act.

The BGHF in North Rocks Park meets the listing criteria for the community under the TSC Act and some areas which also meet the listing criteria under the EPBC Act. This vegetation also has the potential to provide habitat (in particular large hollows) for a number of threatened flora and fauna species listed under the TSC Act and/ or EPBC Act the area should be managed to minimise impacts and a Biodiversity Stewardship Site is created for this area.

Refer Appendix 02 - Ecological Constraints Analysis, September 2017 for full report)



Flora and Fauna Diagram | Scale 1.2500 @ A3

City of Parramatta Council

Source: NRP- Ecological Constraints Analysis, Cumberland Ecology, 2017

History

History (Aboriginal & non Aboriginal)

Traditionally the site region was occupied by Aboriginal people of the Darug Language Group. Bidjigal Reserve along Darling Mills Creek 3 km from the Park precinct retains numerous (52) sites of Aboriginal heritage sites including rock shelters, art and deposits mainly located along the Creek and other major drainage lines. No Aboriginal heritage items have been identified in either North Rocks Park or John Wearn Reserve.

The land within the site was initially logged and in the early to mid 1800's cultivated by the various early set-

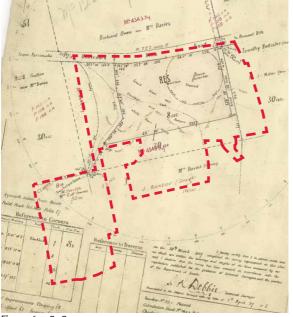




Figure 7. 1943









Figure 11. 2003

Legend

--- North Rocks Park Precinct

City of Parramatta Council

North Rocks Park Precinct | Design Report Outline | September 2018

Figure 10. 1982

tlers including the Mobbs family who were known in the area for cattle and orchard farming including production of oranges, peaches and nectarines. Other notable land owners in the area were Frederick Cox, George Barrington and Thomas Horton James. The heavy rail line from Clyde to Carlingford was constructed during the second half of the 19th Century and opened in 1869 to transport produce to market.

Post World War II the farms and orchards were gradually subdivided for residential allotments as illustrated in the aerial photo sequence below.

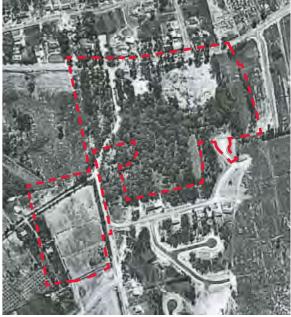


Figure 9. 1965





JMD design

Land Ownership

The land comprising North Rocks Park and John Wearn Reserve consist of a combination of land ownerships

The North Rocks Park and John Wearn Reserve sites comprises parts of the 30 acre grant to: Richard Owen - latter Mrs Davies Thomas Hollister Mrs Catt

On 23rd July 1898, 8 acres of Richard Owen was resumed and gazetted as Crown Land under Public Park Act for Public Recreation - R83210-Lot 7011 DP 93824

On 2nd June 1961 an additional 8 acres added from Mrs Davies land for public recreation vested in the Shire of Baulkam Hills

On 11th January 1980 1650m of the Crown Land was resumed from R83210 for Seniors Citizens Centre being known as Lot 7010 DP 93824 and can not be used for other purposes

On 13 May 1988 Baulkham Hills Shire Council resumed 22.115m wide for addition to North Rocks Park.

It is noted that the Crown Land is not the subject of Aboriginal Land Claims.

Legend



PK Park

BL Bushland



| Scale 1.2500 @ A3

City of Parramatta Council

Land Ownership Diagram

Source: CoPC

JMD design