



Willoughby City Council

ORDINARY COUNCIL

ATTACHMENT BOOKLET

15 JUNE 2021

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15 REPORTS FROM THE OFFICERS

CUSTOMER & CORPORATE DIRECTORATE

15.3 WILLOUGHBY CITY OPERATIONAL PLAN AND BUDGET 2021-22 AND SCHEDULE OF FEES AND CHARGES 2021-22

ATTACHMENTS:

- 1. IMPLICATIONS**
- 2. OPERATIONAL PLAN 2021-22**
- 3. SCHEDULE OF FEES AND CHARGES 2021-22**
- 4. SUMMARY OF SUBMISSIONS ON DRAFT OPERATIONAL PLAN 2021-22 AND DRAFT SCHEDULE OF FEES AND CHARGES 2021-22**
- 5. SUBMISSIONS ON DRAFT OPERATIONAL PLAN 2021-22 AND DRAFT SCHEDULE OF FEES AND CHARGES 2021-22**

RESPONSIBLE OFFICER:

LAURA KENDALL – CUSTOMER & CORPORATE DIRECTOR

AUTHOR:

**STEPHEN NAVEN – CHIEF FINANCIAL OFFICER
KATRINA FURJANIC – CORPORATE STRATEGIC PLANNER**

CITY STRATEGY OUTCOME:

5.1 – BE HONEST, TRANSPARENT AND ACCOUNTABLE IN ALL THAT WE DO

MEETING DATE:

15 JUNE 2021

OPERATIONAL PLAN 2021/2022



WILLOUGHBY
CITY COUNCIL

WILLOUGHBY CITY OPERATIONAL PLAN AND BUDGET 2021-22 AND 57
SCHEDULE OF FEES AND CHARGES 2021-22

City of Diversity 4

Acknowledgement of Country

We wish to acknowledge the traditional inhabitants of the land on which we stand, the Aboriginal People, their spirits and ancestors.

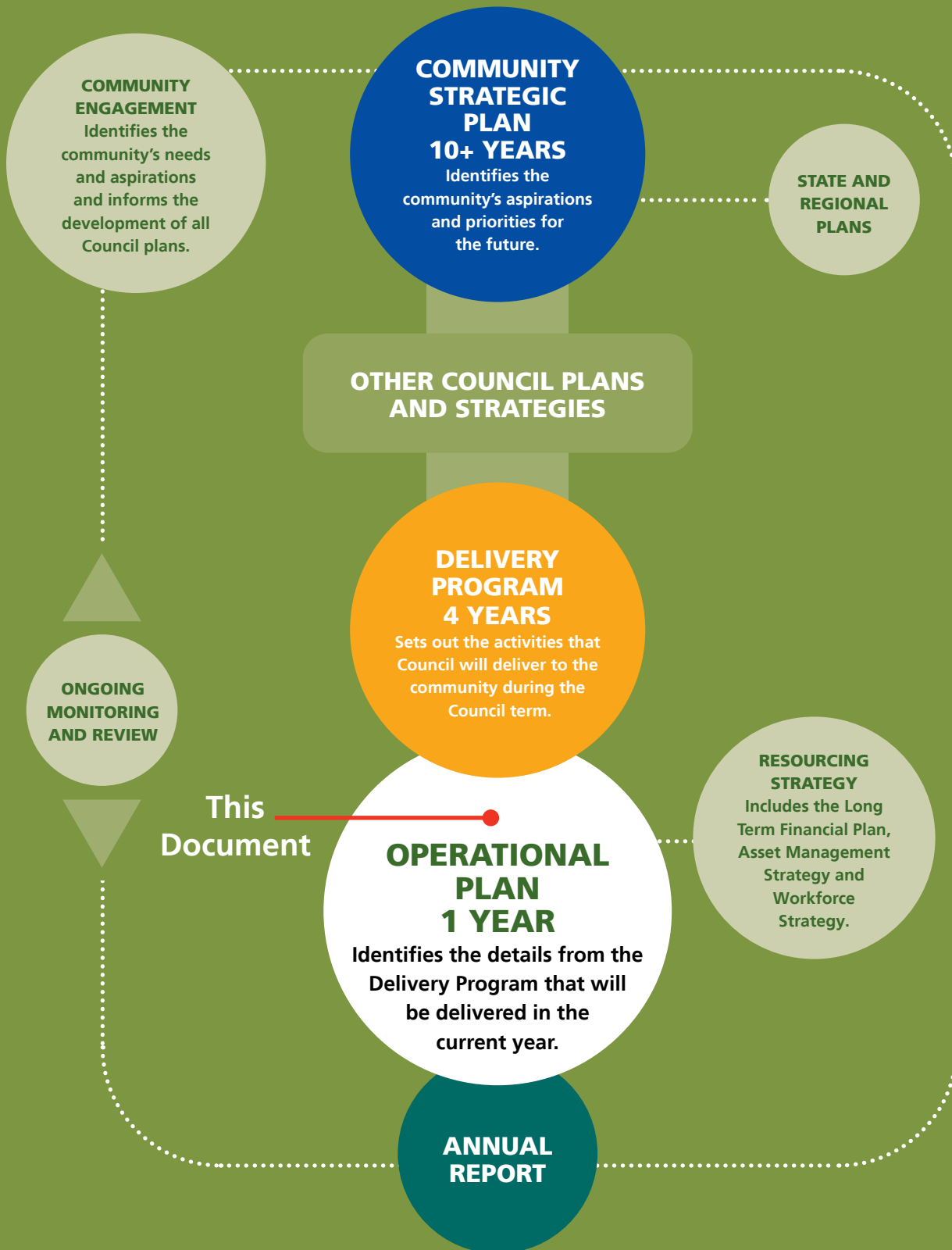
We acknowledge the vital contribution that Indigenous people and cultures have made and still make to the nation that we share, Australia.

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Fees and Charges	Refer to separate document



INTEGRATED PLANNING AND REPORTING FRAMEWORK



Introduction

Willoughby City Council provides a huge range of services and works for our communities, including projects, capital works programs, services and activities.

This operational plan and budget details the services and projects we will provide – and how we will fund these – for 2021–22. Included in this plan are the annual budget and annual rates, fees and charges. The plan and budget also show how we measure progress and work to make our organisation and our services more efficient. This work links directly to our five-year delivery program for 2017–2022, which was extended to accommodate the extension of the Council's term due to the deferred local government election in response to COVID-19. It is guided by the outcomes in our community strategic plan, *Our Future Willoughby 2028*.

These outcomes are:

A City that is green

A City that is connected and inclusive

A City that is liveable

A City that is prosperous and vibrant

A City that is effective and accountable



Projects and capital works – We prioritise all proposed projects for the financial year according to community needs and time them so the funding reflects the staging of projects and available grants.



Business improvements – There are areas where we can be more efficient or improve customer services. This program sets out the target areas for the year.



Resources – We allocate budgets, staffing and assets for different services and projects. These form part of this operational plan.



Activities – These are services that do not require project funding. They are part of the operational plan and their progress is tracked.



Performance indicators – These keep us accountable to our communities and ensure we provide services as promised, set targets and report on these.

Mayor's Message



Many would say local councils are the closest level of government to grass roots community and in many ways I believe that is true.

We walk on council footpaths and travel on council roads every day. We have our waste and recycling collected

each week and enjoy the parks, libraries, community centres and events hosted by council. While the past year has presented challenges many of us could not have imagined, Willoughby City Council, and all councils across Australia, have continued to be a pillar of strength and deliver essential services and support vulnerable people. It's been a challenging time for many in our community and I have been deeply touched by the way our community has pulled together during these difficult times.

In this annual Operational Plan, we've carefully considered the impact of COVID-19 and how best we can support our community over the next 12 months. I'm pleased to write that while our budget has been hampered by the pandemic, we still have a healthy cash flow and budget to continue with key services and major projects.

The highlights of the upcoming year include beginning construction on the new Artarmon Pavilion and new drainage and turf at Castle Cove Oval. These are in addition to our regular services including youth services, aged care services, waste and recycling collection, library and multi-cultural services.

In an exciting move, we're starting design and construction of new affordable housing units at Artarmon and Northbridge, which will add to the existing 37 affordable homes already owned by council.

As part of our Community Recovery Plan and Economic Recovery Plan, we've started an employment working group to improve access to employment opportunities for young people. I hosted the first Mayor's Business Forum and we're launching the new Economic Data Dashboard to produce an annual business activity report.

In November 2020 we surveyed 604 residents in our community perception survey. This enabled us to 'take the pulse' of our community. Most residents (96%) said they were 'very satisfied', 'satisfied' or 'somewhat satisfied' with council's performance and rated their quality of life as 'good' or 'excellent'. Overall, the results were good, but we can always do more, particularly in communication and community engagement. We are always looking for new and innovative ways to increase participation and to get more people in our community involved in Council decision making.

I hope that you will read this plan and get in touch if you have any questions.

Gail Giles-Gidney
Mayor
Willoughby City Council



BACK ROW L-R: Clr Stuart Coppock (Naremburn Ward), Clr Craig Campbell (West Ward), Clr Angelo Rozos (Middle Harbour Ward), Clr Nic Wright (Naremburn Ward), Clr Denis Fernandez (Sailors Bay Ward)
FRONT ROW L-R: Clr Hugh Eriksson (Sailors Bay Ward), Clr Christine Tuon (Naremburn Ward), Clr Wendy Norton (Middle Harbour Ward), Clr Brendon Zhu (Sailors Bay Ward), Mayor Gail Giles-Gidney, Clr Tony Mustaca (West Ward), Clr Lynne Saville (West Ward), Clr Judith Rutherford (Middle Harbour Ward)



CEO's Message



COVID-19 has been a major part of our lives since early 2020 and continues to have long term effects, resulting in revenue losses to Council. To recover financial sustainability, Councillors and staff have worked together to find a

balance between costs, income and delivering for the community. This operational plan and budget is the result of these efforts and seeks to deliver a modest operating surplus of \$0.5m. Our cash flow will remain healthy and we will advance new projects and continue maintenance, cleansing and other normal activities.

The operating times of some of our facilities and services were altered through the need to adhere to public health orders and to balance the financial impacts of reduced patronage. Most have now returned to more regular hours. We will also continue to be a good steward for the environment.

The results from our Community Perception Survey conducted in November 2020, affirms the community's appreciation of Council's efforts with 96% satisfaction rating of Council's overall performance. All 38 services surveyed were rated by residents at, and mostly above, the average level of satisfaction for other councils.

In the upcoming year we will remove and replace the cladding on The Concourse and enhance streetscapes thereby supporting local businesses and community life. The streetscapes include new upgrades at Hampden Road Artarmon and the Sailors Bay/Strathallen/Eastern Valley Northbridge.

After a number of years of consultation and research, we will finalise a new Local Environment Plan to guide planning and development within the City of Willoughby.

We'll deliver better customer and staff experiences, as well as increase efficiencies, through the roll out new software systems and the design of a new customer service centre on the ground floor, Victor Street.

Support will be provided to run the election process in September 2021 together with the post-election induction of the new Council.

Other highlights of this plan include:

- developing more vibrant and usable laneways in Chatswood
- upgrades at the Dougherty Community Centre, Chatswood
- delivering the Artarmon Parklands Pavilion project
- upgrade of drainage, irrigation and oval surface at OH Reid and Castle Cove Ovals
- developing the concept design and achieving DA approval for the Gore Hill Indoor Recreation facility
- Northbridge Baths pontoon maintenance

Staff and the Executive Leadership Team look forward to supporting the community and Council through recovery and transformation post COVID-19 with the continued delivery of high quality facilities and services.

Debra Just
Chief Executive Officer
Willoughby City Council

ORGANISATION STRUCTURE



Office of Chief Executive
Debra Just



Community Culture and Leisure
Melanie Smith



Customer and Corporate
Laura Kendall



Planning and Infrastructure
Hugh Phemister

Highlights

PROJECTS FOR 2021-22



Upgrading The Concourse cladding – \$4.15m

About this project: We will replace the existing composite cladding with solid aluminium cladding to retain the same finish and appearance. This important work will ensure the cladding meets the latest fire safety regulations.

Work for 2021-22: We will start work in March 2021 and complete the project in early 2022.



Implementation of a public domain masterplan for Artarmon local centre – \$1m

About this project: The Artarmon local centre public domain masterplan is a long-term vision for the area west of the railway line in Artarmon local centre. This masterplan will guide future projects. These include traffic calming measures around the centre and a greener and more people-friendly streetscape along Hampden Road.

Work for 2021-22: Following adoption of the masterplan, we expect to complete detailed documentation and the tender for the traffic calming works and by mid-2021. Detailed documentation and the tender for the Hampden Road streetscape will be completed by late 2021. Construction will start in early 2022.





An updated Artarmon Pavilion for our communities – \$1.5m

About this project: We will repurpose the original bowling club into a new community facility and pavilion to support activities including community gardening and the nearby playground.

The new design will include an undercover open area for yoga and other activities, a bookable room for community use and public amenities.

Work for 2021-22: A development application was lodged in December 2020 and we expect a decision in mid-2021. If approved, construction work will start in mid-2021 and be complete by early 2022.



New drainage and turf at Castle Cove Oval – \$650,000

About this project: A new drainage system and new turf will help Castle Cove Oval withstand high demand usage, especially in winter.

Work for 2021-22: We will install a new drainage system including turf, with the cricket wicket remaining in place. Works will be done out of season.

Highlights (continued)

PROJECTS FOR 2021-22



The Chatswood CBD Changing Lanes program – \$1.6m

This program will transform the former service lanes of Spring Place, Post Office Lane, Mills Lane, and Charlotte Lane into shared zones that are more flexible urban spaces. It will encourage a wider range of uses and provide opportunities for businesses to expand their operations such as outdoor dining, artistic activities, and space for community events.



Improving Thomson Park picnic area – \$150,000

About this project: A new picnic area and seating will help create a pleasant outdoor space for people to gather and socialise.

Work for 2021-22: We will install a picnic area shelter with a barbecue, an accessible drinking fountain, and tiered seating next to the sportsground.

Projects to shape the future of Willoughby

This year, Council will undertake a number major projects to shape the future of our city – defining our community’s vision and priorities, the way we plan our built environment and how we look after our assets. Involving our community in decisions that affect them is vital to include their range of experiences, interests and need. Major projects that you can get involved in over the next twelve months include:



Local Environment Plan and Development Control Plan

The Local Environment Plan tells us what we can build and where in our local government area. The Development Control Plan aims to provide controls to ensure a high standard of development in Willoughby City.

Council has been talking with our community about a range of strategic planning directions over the past four years which has informed these draft plans.



Community Strategic Plan Review

The Community Strategic Plan, *Our Future Willoughby 2028*, outlines the community’s long term vision and outcomes for the future of our city. It informs the direction we take by setting strategic priority goals for the next ten years.



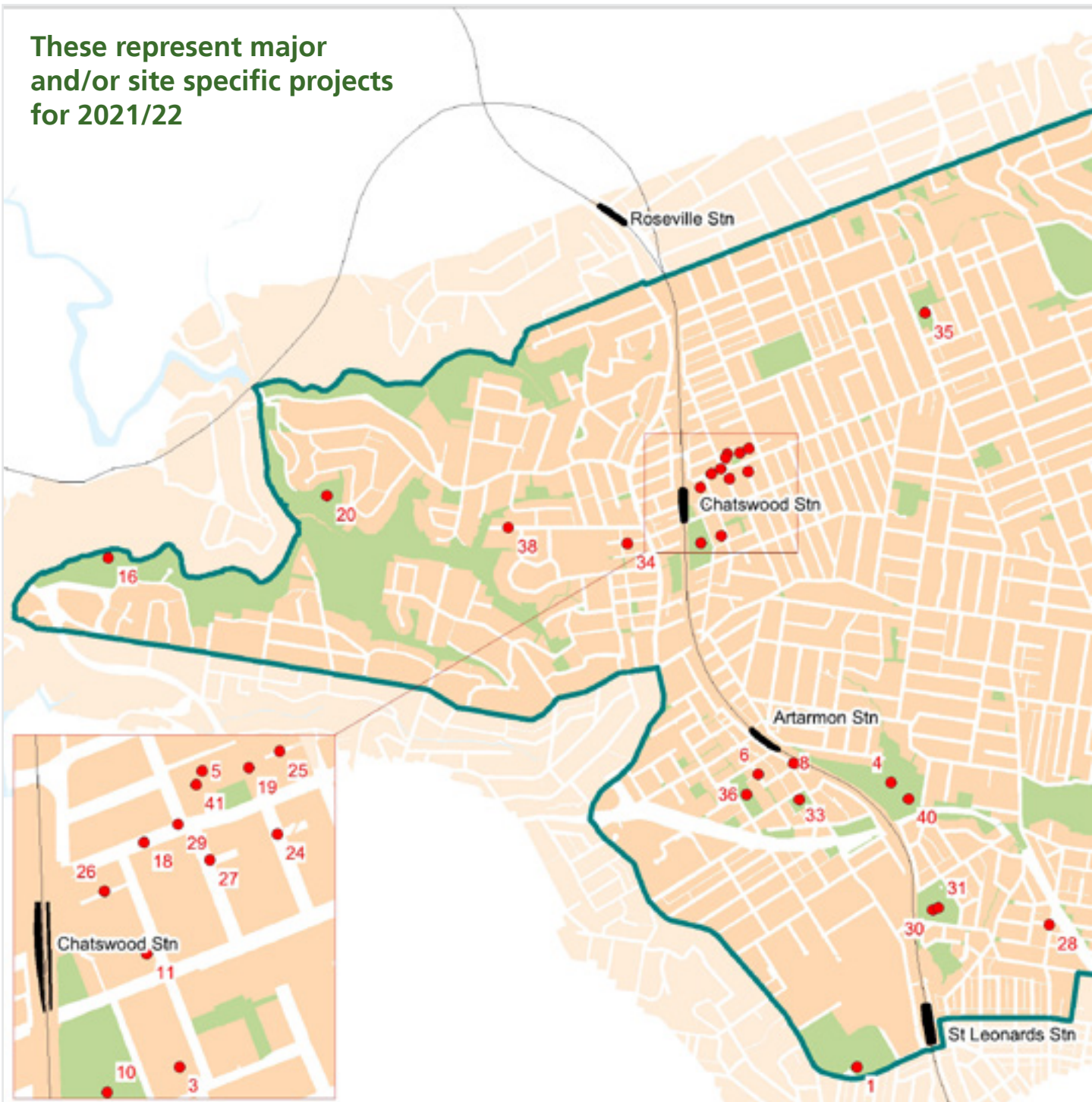
Asset Management Strategy and Plans

The engagement empowers residents to decide on the desired ‘level of service’ for infrastructure assets under our control (including roads, bridges, footpaths, kerb and gutter, buildings, stormwater and drainage, playgrounds, parks, and sports facilities).

Highlights (continued)

PROJECTS FOR 2021-22

These represent major and/or site specific projects for 2021/22





- 1 Gore Hill Oval – design – stage 2 works
- 2 Willoughby Leisure Centre – design for major upgrade of pool hall
- 3 Dougherty Centre – furniture and fittings
- 4 Artarmon Parklands Pavilion – construction
- 5 The Concourse cladding upgrade
- 6 Affordable housing – Abbott Road, Artarmon – design
- 7 Natural area management for Middle Harbour
- 8 Hampden Road Artarmon, streetscape stage 2 – construction
- 9 Sailors Bay/Strathallen/Eastern Valley Northbridge streetscape – construction
- 10 Chatswood Park – Masterplan – Stage 4
- 11 Council Customer Centre upgrade
- 12 Northbridge RSL Memorial Hall renewal
- 13 Northbridge Plaza Car Park (capital repairs)
- 14 Affordable housing development – 258 Sailors Bay Road Northbridge – design
- 15 Maintenance for Middle Harbour
- 16 Maintenance for Lane Cove River catchment
- 17 Middle Harbour walking track network upgrade
- 18 Chatswood CBD Special Event
- 19 Resource collections – central library
- 20 Upgrade of drainage, irrigation and oval surface at OH Reid Oval
- 21 Renew turf at Castle Cove Oval
- 22 New floodlights for courts at Northbridge Park
- 23 Renew drainage at Castle Cove Oval
- 24 CBD laneways activation Spring Place Chatswood – construction
- 25 CBD laneways activation Mills Lane Chatswood – construction
- 26 CBD laneways activation Post Office Lane Chatswood – construction
- 27 CBD laneways activation Charlotte/Anderson Chatswood – construction
- 28 Naremburn Local Centres streetscape – construction
- 29 Anderson to Victoria, Chatswood – pedestrian safety
- 30 Naremburn Park new lighting
- 31 Naremburn Park new planting and seating
- 32 Edinburgh Rd, Castlecrag shops – new park – construction
- 33 Renew landscape features at Cleland Park Stage 2 – construction
- 34 Whitton Park brick wall – construction
- 35 Muston Park new picnic area north side
- 36 Thomson Park new picnic area – design & construction
- 37 Renew road pavement, Lower Cliff Avenue, Northbridge (Cliff Avenue – Tunks Park)
- 38 Stormwater upgrade pipe extension at Centennial Avenue, Chatswood
- 39 Stormwater upgrade at Sugar loaf Crescent, Castlecrag
- 40 Stormwater investigation at Scotts Creek, Artarmon
- 41 The Concourse Parking equipment upgrade

MANAGED BY COUNCIL



67,000+

HELP & SERVICE
CALLS RECEIVED

95% calls answered

81% calls resolved on first contact




60K

STREET
TREES

MAINTAINED

288km

OF SEALED ROADS

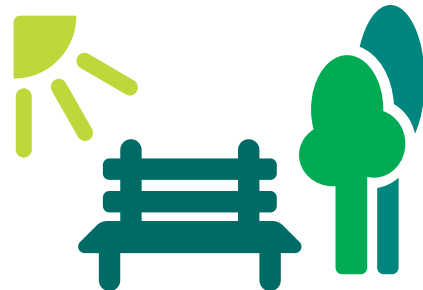
 **\$38.8m** projects and capital works expenditure
\$147.9m total budget

 **22**
SPORTS
FIELDS

 **7**
LIBRARIES

 **45%**

residential waste diverted
from landfill



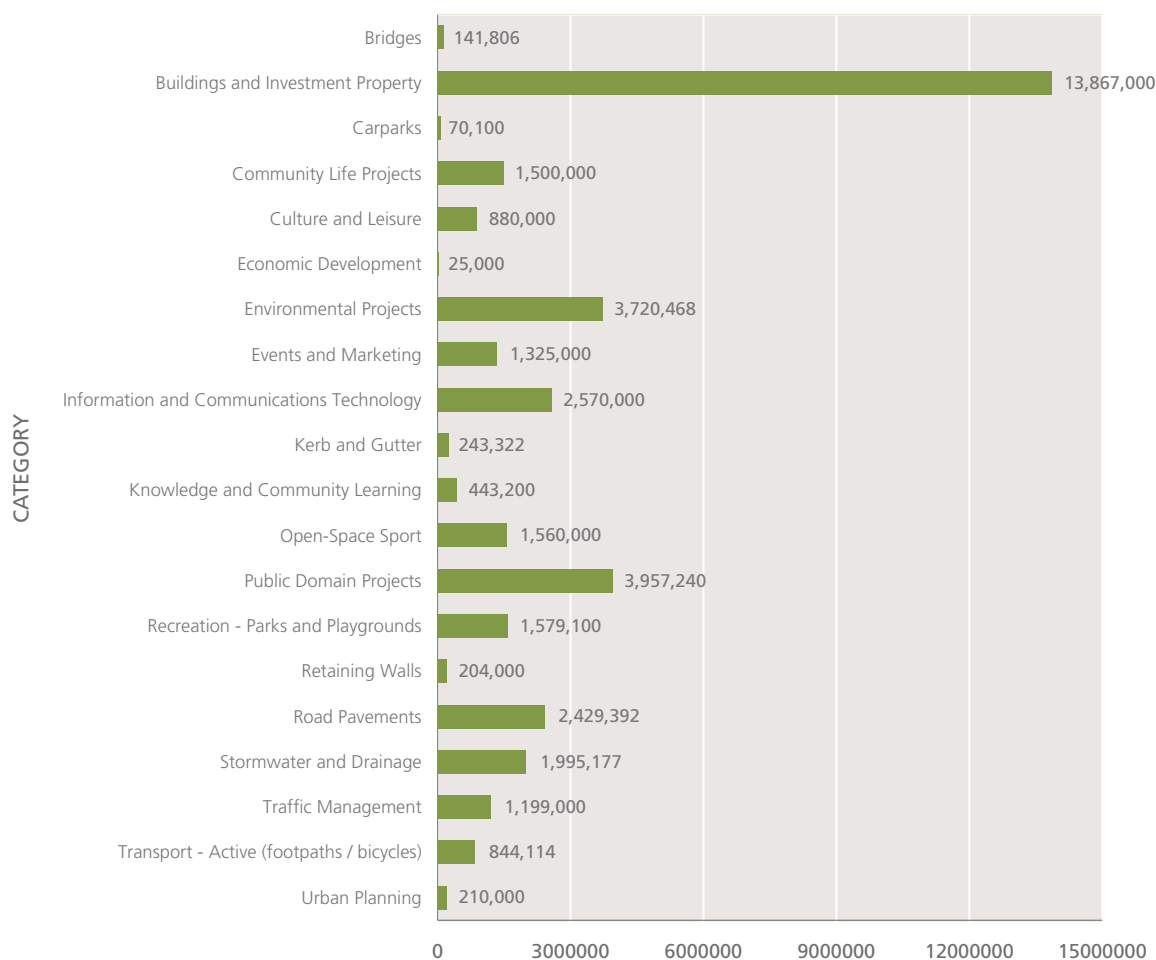
100+
PARKS AND
RESERVES AND

47
PLAYGROUNDS

Projects & Capital Works

PROPOSED 2021/22 FUNDING (\$)

Total \$38,763,919





HOW TO READ THIS DOCUMENT

Category of Projects and Capital Works

PUBLIC DOMAIN			
302039	CBD laneways activation Spring Place Chatswood – construction	4.4	\$692,240
301810	CBD laneways activation Mills Lane Chatswood – construction	4.4	\$300,000
301811	CBD laneways activation Post Office Lane Chatswood – construction	4.4	\$580,000
301812	CBD laneways activation Charlotte/Anderson Chatswood – construction	4.4	\$80,000
301865	Sustainable porous pavement at various locations	1.1	\$80,000
301959	Hampden Road Artarmon, streetscape stage 2 – construction	5.3	\$1,000,000
301960	Sailors Bay/Strathallen/Eastern Valley Northbridge streetscape – construction	5.3	\$1,000,000
301983	Naremburn local centre streetscape – construction	5.3	\$100,000
302028	Anderson to Victoria, Chatswood – pedestrian safety	5.3	\$125,000

Project Number

Estimated cost of Project for 2021/22

Strategic alignment

BRIDGES

301934	Bridge asset inspections	2.1	\$53,000
301998	Repair works to bridges	2.1	\$88,806

BUILDINGS AND INVESTMENT PROPERTIES

301695	Rolling roof replacement program – construction	5.3	\$1,100,000
301429	Hazardous materials audits and removal	5.3	\$100,000
301723	Community radio building refurbishment, 112 Victoria Ave, Chatswood	5.3	\$200,000
301961	Artarmon Parklands Pavilion – construction	5.3	\$1,530,000
301962	Gore Hill Oval – design – stage 2 works	3.2	\$2,500,000
301963	Council Customer Centre upgrade	5.3	\$1,680,000
301964	Council building – Victor Street accommodation upgrade – design	5.3	\$290,000
301965	The Concourse cladding replacement	5.3	\$4,147,000
301984	Regency Leisure Centre capital works, 24 Endeavour Street Chatswood	5.3	\$1,550,000
302017	Northbridge RSL Memorial Hall renewal	5.3	\$100,000
301982	Rolling floor program – renewal	5.3	\$135,000
302032	Fire safety compliance program	5.3	\$35,000
302040	Dougherty Centre – furniture and fittings	5.3	\$500,000

CARPARKS

301936	Car park renewal design	5.3	\$100
302023	Northbridge Plaza Car Park (capital repairs)	5.3	\$50,000
302025	Car park maintenance	5.3	\$20,000

COMMUNITY LIFE

302036	Community wellbeing survey	2.5	\$55,000
301801	Affordable housing – Abbott Road, Artarmon – design	3.5	\$1,100,000
301818	Affordable housing development – 258 Sailors Bay Road Northbridge – design and construction	3.5	\$330,000
302011	Artarmon kids cottage upgrade, 18 Broughton Road, Artarmon	5.3	\$15,000

CULTURE AND LEISURE

301790	Willoughby Leisure Centre – design for major upgrade of pool hall	3.3	\$760,000
301192	Northbridge Baths pontoon maintenance	3.3	\$120,000

ECONOMIC DEVELOPMENT

302024	Economic development	4.1	\$25,000
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ENVIRONMENTAL PROJECTS

301871	Maintenance for Middle Harbour	1.3	\$468,381
301872	Site rehabilitation and pest plant management, Lane Cove River catchment	1.3	\$182,782
301873	Natural area management for Lane Cove River catchment	1.3	\$45,695
301874	Natural area management for Middle Harbour	1.3	\$142,798
301876	Reserve linkage planting	1.3	\$154,222
301877	Streetscape canopy replenishment, Willoughby	1.3	\$44,660
301878	'Live Well' bushland community education project	1.3	\$91,391
301879	Flat Rock Gully restoration, Small Street, Naremburn	1.3	\$30,450
301880	Connectivity for Castlecrag Reserve	1.3	\$94,275
301881	Bushland stormwater armouring	1.3	\$40,600
301882	'Sharing Sydney Harbour access' project construction	1.3	\$30,450
301883	Interpretive signs for Castlecrag Reserve	1.3	\$15,225
301884	Middle Harbour walking track network upgrade	1.3	\$154,280
301885	Renewal of walking tracks for Lane Cove River Catchment	1.3	\$40,600
301886	Manual cleaning of creeks	1.3	\$55,825
301889	Resilient Willoughby program	5.4	\$140,000
301898	Willoughby Leisure Centre energy efficient operations maintenance	1.4	\$27,500
301899	Council owned lighting – maintenance	1.5	\$60,000
301897	Council owned buildings electricity meter upgrades	1.4	\$50,000
301900	Better Business Partnership	1.2	\$120,000
301901	Council buildings solar installation	1.5	\$250,000
301902	Community commercial solar PV assessments program	1.5	\$42,000
301903	Sustainable fleet and plant – procurement	1.5	\$95,000
301904	Electric vehicle mobile battery fleet feasibility study	1.5	\$25,000
301906	Live Well in Willoughby sustainability education campaign	1.2	\$170,434
301907	Community energy project	1.2	\$60,900
301968	Water harvesting program	1.3	\$262,000
301969	Water efficiency upgrade	1.4	\$67,000
301970	Water asset maintenance	1.3	\$240,000

301971	Water quality monitoring	1.3	\$45,000
301972	Catchment waterway consultant	1.3	\$50,000
301977	Water saving urban design program	1.3	\$257,000
301993	Air quality monitoring	1.3	\$17,000
302006	Street light improvement program	1.3	\$50,000
302019	Public tree data collection	1.3	\$100,000

EVENTS AND MARKETING

301985	Chatswood CBD special event	4.4	\$900,000
301986	Chatswood Lunar New Year Festival	2.3	\$152,250
301987	Carols	3.6	\$21,500
301988	Emerge Festival	4.4	\$72,000
302038	Willoughby Street Fair, Chatswood	3.6	\$132,250
301989	CBD Christmas tree	3.6	\$25,000
301990	Family Festival	4.5	\$5,000
301991	Australia Day	2.3	\$10,000
301992	National Pet Day	3.6	\$7,000

INFORMATION AND COMMUNICATIONS TECHNOLOGY

302008	CONNECT software implementation phase 3	5.1	\$2,400,000
302020	Technology solutions to fully enable flexible working	5.1	\$150,000
302030	Body cameras for the rangers team	5.1	\$20,000

KERB AND GUTTER

301845	Kerb and gutter repair program	2.1	\$14,322
301924	Renew kerb and gutter on the north side of Glover Street, Willoughby	5.3	\$109,000
301925	Renew kerb and gutter on the south side of Rembrandt Drive Middle Cove	5.3	\$120,000

KNOWLEDGE AND COMMUNITY LEARNING

301919	Resource collections – central library	2.7	\$372,708
301920	Resource collections – branches	2.7	\$44,051
301921	Library services – furniture and fittings	2.7	\$26,441

OPEN SPACE

300142	Install synthetic cricket wickets at Willoughby Oval and Bales Park	3.2	\$15,000
300463	Upgrade of drainage, irrigation and oval surface at OH Reid Oval	3.2	\$550,000

301664	Renew irrigation tanks and pumps at Castle Cove Oval	3.2	\$110,000
301746	New floodlights for courts at Northbridge Park	3.2	\$170,000
301857	Synthetic oval surface at Willoughby Girls High School – planning	3.2	\$20,000
301862	Renew drainage at Castle Cove Oval	3.2	\$650,000
301890	Upgrade the Cloudmaster (irrigation) control units at Warners Park and Chatswood Bowling Club croquet greens	3.2	\$15,000
301891	Oval floodlights reglobe at Castle Cove and Gore Hill Ovals	3.2	\$30,000

PUBLIC DOMAIN

302039	CBD laneways activation Spring Place Chatswood – construction	4.4	\$692,240
301810	CBD laneways activation Mills Lane Chatswood – construction	4.4	\$300,000
301811	CBD laneways activation Post Office Lane Chatswood – construction	4.4	\$580,000
301812	CBD laneways activation Charlotte/Anderson Chatswood – construction	4.4	\$80,000
301865	Sustainable porous pavement at various locations	1.1	\$80,000
301959	Hampden Road Artarmon, streetscape stage 2 – construction	5.3	\$1,000,000
301960	Sailors Bay/Strathallen/Eastern Valley Northbridge streetscape – stage 1 construction	5.3	\$1,000,000
301983	Naremburn local centre streetscape – design	5.3	\$100,000
302028	Anderson to Victoria, Chatswood – pedestrian safety	5.3	\$125,000

RECREATION – PARKS AND PLAYGROUNDS

300583	Renew Bales Park Playground and prepare Park masterplan – design	3.2	\$100
300634	Naremburn Park new lighting	3.1	\$70,000
300647	Naremburn Park new planting and seating	3.2	\$85,000
300948	Wickham Park Playground renewal	3.2	\$100
301047	Chatswood Park – masterplan – stage 4	3.2	\$500,000
301261	Upgrade open spaces to improve inclusiveness	3.2	\$40,000
301851	Northbridge Park safety netting – maintenance	3.2	\$23,400
301870	Edinburgh Road, Castlecrag shops – new park – construction	3.2	\$150,000
301892	Playground inspection reports at various sites – construction	3.2	\$30,000
301893	Renew barbecues with 'smart' barbecues – Clive Park	3.2	\$30,000
301894	Renew landscape features at Cleland Park stage 2 – construction	3.2	\$150,000
301895	Willoughby Park perimeter path design	3.2	\$100
301949	Whitton Park brick wall – construction	3.2	\$155,000
301950	Renew Hallstrom Park learner's bike track	3.2	\$100



301951	Renew garden beds Beauchamp Park – construction	3.2	\$30,000
301952	Warners Park masterplan actions –construction	3.2	\$100
301953	Upgrade Muston Park Wisteria Walk – planning	3.2	\$10,000
301954	New picnic area in the north part of Muston Park	3.2	\$75,000
301956	Renew Willoughby Park Bowling Club fence – construction	3.2	\$10,000
301997	Review Willoughby Park masterplan – design	3.2	\$100
300635	New/renewal – Beauchamp Park – Beauchamp Avenue streetscape improvements – design	3.2	\$100
300638	New carpark lighting at Northbridge Park	3.2	\$45,000
300643	New Thomson Park picnic area – design and construction	3.2	\$150,000
302016	Renew footpath in Garden of Remembrance – maintenance	3.2	\$25,000

RETAINING WALLS

301932	Retaining wall inspections	5.3	\$20,000
301933	Retaining walls design	5.3	\$55,000
301994	Upper Minimbah Road, Northbridge, retaining wall	5.3	\$129,000

ROAD PAVEMENTS

301822	Renew road pavement, Dickson Avenue, Artarmon (Pacific Hwy – Clarendon Street)	2.1	\$130,000
301823	Renew road pavement, Anderson Street, Chatswood (Help Street – Endeavour Street)	2.1	\$92,000
301824	Renew road pavement, Centennial Avenue, Chatswood (Whitton Road – Edgar Street)	2.1	\$100,000
301826	Renew road pavement, De Villiers Avenue, Chatswood (Carr Street – Dardanelles Road)	2.1	\$55,000
301827	Renew road pavement, Spearman Street, Chatswood (Ashley Street – Waratah Street)	2.1	\$65,000
301828	Renew road pavement, Victoria Avenue, Chatswood (Archer Street – Havilah Street)	2.1	\$108,000
301829	Renew road pavement, Deepwater Road, Castle Cove (Eastern Valley Way – Warrane Place)	2.1	\$84,000
301830	Renew road pavement, Clifton Ave, Northbridge (Bligh Street – Tunks Street)	2.1	\$52,000
301831	Renew road pavement, Weemala Road, Northbridge (Council boundary 22/24 –western end)	2.1	\$56,000
301832	Renew road pavement, Dargan Street, Naremburn (Northcote Street – Ruth Street)	2.1	\$81,000
301833	Renew road pavement, McBurney Street, Naremburn (Parkes Street – Brook Street)	2.1	\$50,000
301834	Renew road pavement, Parkes Street, Naremburn (McBurney Street – end)	2.1	\$30,000

301835	Renew road pavement, Boundary Street, Castle Cove (Warrane Place – Eastern Valley Way)	2.1	\$56,000
301836	Renew road pavement, Evans Lane, St Leonards (north section)	2.1	\$54,000
301837	Renew road pavement, Herbert Street, St Leonards (no.19 – Westbourne Street)	2.1	\$66,000
301838	Renew road pavement, Keary Street, Willoughby (Oakville Road – Eaton Street)	2.1	\$26,000
301839	Renew road pavement, Keary Street, Willoughby (Eaton Street – Mowbray Road)	2.1	\$61,000
301840	Renew road pavement, Laurel Street, Willoughby (Ward Street – Peshurst Street)	2.1	\$66,000
301841	Renew road pavement, Remuera Street, Willoughby (Mowbray Place – end southern)	2.1	\$46,000
301842	Roads and Maritimes Services block grant	2.1	\$123,000
301843	Roads and Maritimes Services block grant supplementary	2.1	\$41,000
301844	Bus bay road pavement repair	2.1	\$33,600
301846	Road patching under \$15,000	2.1	\$477,686
301847	Project management and software licencing	2.1	\$8,000
301848	Renew road pavement, Kameruka Road, Northbridge (no.1 – Lower Bligh Street)	2.1	\$111,000
301849	Renew road pavement, High Street, Willoughby (Stan Street – McClelland Street)	2.1	\$110,000
301850	Renew road pavement, Lower Cliff Avenue, Northbridge (Cliff Avenue – Tunks Park)	2.1	\$154,507
302014	Renew road pavement, Telford Lane, Willoughby	2.1	\$15,000
302015	Road pavement survey	2.1	\$77,599

STORMWATER AND DRAINAGE

301908	Stormwater upgrade pipe extension at Centennial Avenue, Chatswood	5.3	\$120,000
301909	Stormwater upgrade at Sugar loaf Crescent, Castlecrag	5.3	\$183,440
301913	Stormwater renewal at Chandos Street, St Leonards	5.3	\$15,000
301914	Stormwater renewal repair program	5.3	\$100,000
301915	Stormwater investigation at Rohan Street, Naremburn	5.3	\$15,000
301916	Stormwater renewal pipe replacement program	5.3	\$108,500
301917	Stormwater renewal relining program, design and construction	5.3	\$461,000
301918	Stormwater upgrade inlet safety program	5.3	\$29,137
301943	Stormwater renewal pit chamber – construction	5.3	\$90,900
301944	Stormwater renewal patch program	5.3	\$150,000

301945	Stormwater cleaning – maintenance	5.3	\$84,900
301946	Stormwater investigation CCTV	5.3	\$26,300
301947	Stormwater upgrade pipe service removals	5.3	\$30,000
301948	Software fees and monitoring	5.3	\$11,000
302000	Stormwater design and construction at Hampden and Broughton Roads, Artarmon	5.3	\$122,000
302001	Stormwater design and construction at Goodchap and Mowbray Roads, Chatswood	5.3	\$48,000
302002	Stormwater design and construction at Ashley Street, Chatswood	5.3	\$125,000
302003	Stormwater design and construction at 19 Camaray Road, Castle Cove	5.3	\$40,000
302005	Stormwater design and construction at Rosebridge Avenue, Castle Cove	5.3	\$25,000
302021	Stormwater design and investigation	5.3	\$10,000
302022	Scotts Creek Flood Study and Risk Management Plan	5.3	\$200,000

TRAFFIC MANAGEMENT

301853	Road safety behavioural program	2.1	\$10,000
301854	Local area traffic management at The Fairway and Reid Drive, Chatswood	2.4	\$40,000
301855	Electric vehicle charging bay	1.5	\$25,000
301863	Pedestrian and Cyclist Improvement Plan at Bowen Street, Chatswood	3.3	\$15,000
301940	Local area traffic management detailed design and implementation for Hampden Road, Artarmon	3.1	\$100,000
302041	Gates, pay-stations, ticket system and intercommunication at The Concourse car park upgrade and replacement	2.4	\$1,000,000
302044	Northbridge Oval, Northbridge – Traffic and parking study	2.4	\$4,000
302043	Parking study at Edward and Penkivil Streets, Willoughby	2.1	\$5,000

TRANSPORT – ACTIVE (FOOTPATHS/BICYCLES)

301499	Alternative forms of transport study	1.5	\$45,000
301864	Artarmon loop and extended bus services	2.1	\$330,000
301922	New footpaths – footpath missing links program	2.1	\$119,114
301930	Bus stop access upgrade – construction	2.7	\$300,000
301931	Bus stop access upgrade – design	2.7	\$40,000
301939	Improvements for pedestrians and cyclists in Edward Street between Penkivil Street to Artarmon Road, Artarmon – design	2.7	\$10,000

URBAN PLANNING

302009	Review of Local Environmental Plan and Development Control Plan 2020/2021	5.4	\$150,000
302010	Implementation of Willoughby Integrated Transport Strategy 2036	2.1	\$60,000



Corporate Performance Indicators

These corporate performance indicators for 2021/22 will ensure our services meet community needs.

The progress on these indicators is tracked throughout the year. It is reported to Council and our communities every six months.

Corporate performance indicator	Target
Operational budget Year to date actual compared to revised budget	≤±5%
Operational budget Year to date expenditure compared to budget	≤±5%
Projects and capital works Project and capital works milestones delivered on time	≥85%
Community perception Overall community satisfaction	≥70%
Customer satisfaction Overall customer satisfaction with council services	≥70%
Enterprise risk management Enterprise Risk Management open actions not overdue	≥85%
Work health and safety Lost time injury incident rate	≤4.10
Work health and safety Work health and safety matters addressed within 30 days	≥90%



Business Improvement Initiatives

Our business improvement program continues to improve value for our customers. The initiatives

below were developed based on surveys and feedback from our local communities.

Initiative	Strategic Alignment
Improve customer experience	Outcome 5
Improve corporate processes	Outcome 5
Improve planning approval process	Outcome 5
Implement CONNECT (corporate systems) project	Outcome 5



Budget Summary and Revenue Policy

Key Financial Information	2021/22 Budget \$M	2020/21 Adopted Budget \$M
Operating Income	113.6	110.4
Operating Expenditure	113.1	113.4
Net Operating Result (before Capital Grants and Contributions)	0.5	(3.0)
Capital Grants and Contributions	4.5	3.5
Operating Result	5.0	0.5

The 2021/22 operating budget finds Willoughby City Council budgeting for a slight surplus of \$0.5m before capital grants and contributions.

The budget moves to a surplus of \$5.0m when capital revenue is accounted for.

Impact of COVID-19 on 2020/21 Revenue and Council's response

COVID-19 and related restrictions had a profound impact on revenues throughout the 2019/20 and 2020/21 financial years with combined revenue losses estimated at \$14m. Changes to the economic environment and consumer behaviour in the wake of COVID-19 will continue to have a major impact on areas such as paid parking, interest returns and rental revenue.

This ongoing impact meant that the starting point for the 2021/22 budget was \$6.2 million in deficit. In response, Council and staff worked collaboratively to identify opportunities to reduce variable costs and to optimise revenue where possible. We found \$5.5 million savings in employee costs, operational

expenses and by introducing controllable cost savings in areas such as consultants and materials. Of the remaining, \$1 million will be raised by way of fee increases, where they are under market value or haven't kept pace with inflation.

Our collaborative effort results in us presenting a balanced budget with a minor surplus for the 2021/22 financial year, putting Council and our community in good stead as we continue to recover from the impacts of COVID-19.



Financial Performance for the year ended 30 June 2022 (Profit and Loss and Funding Statement)

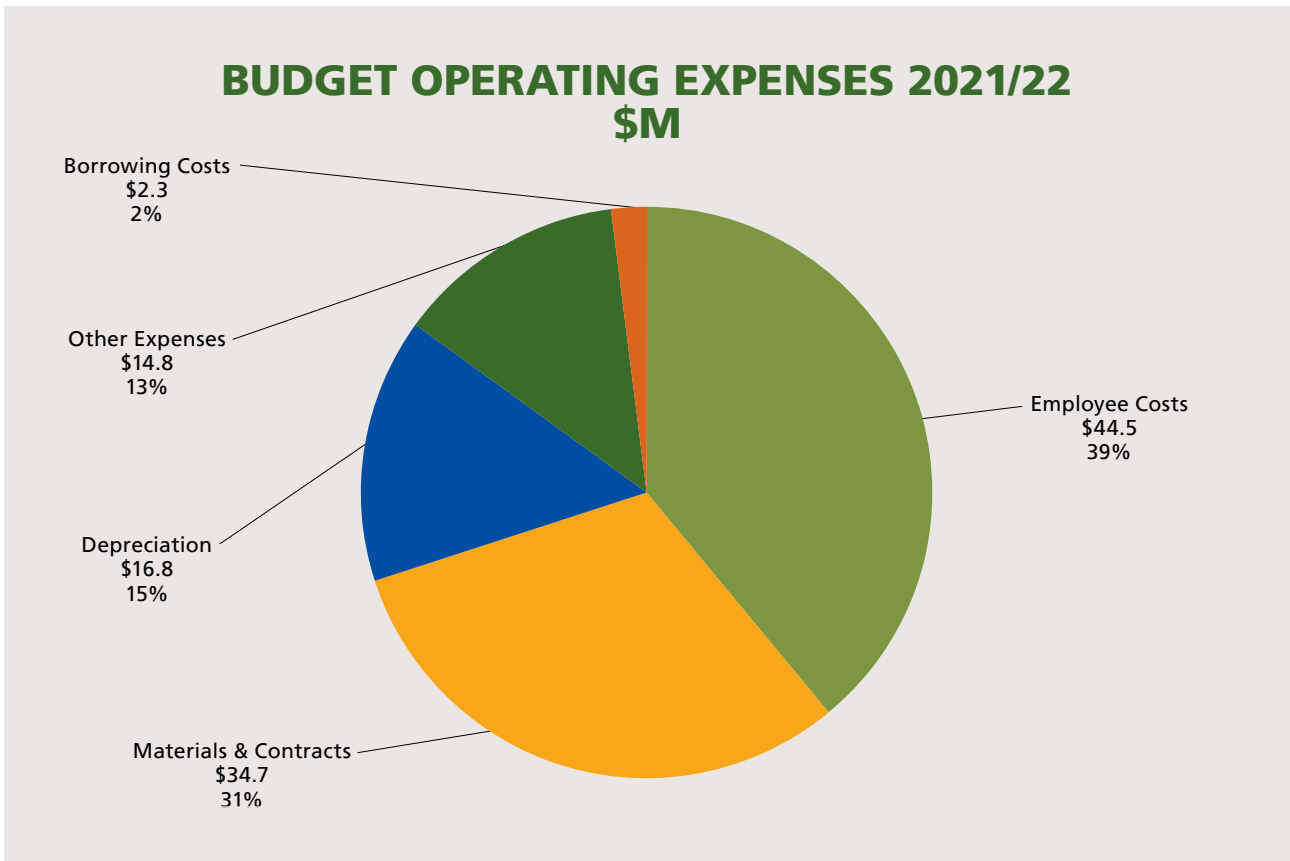
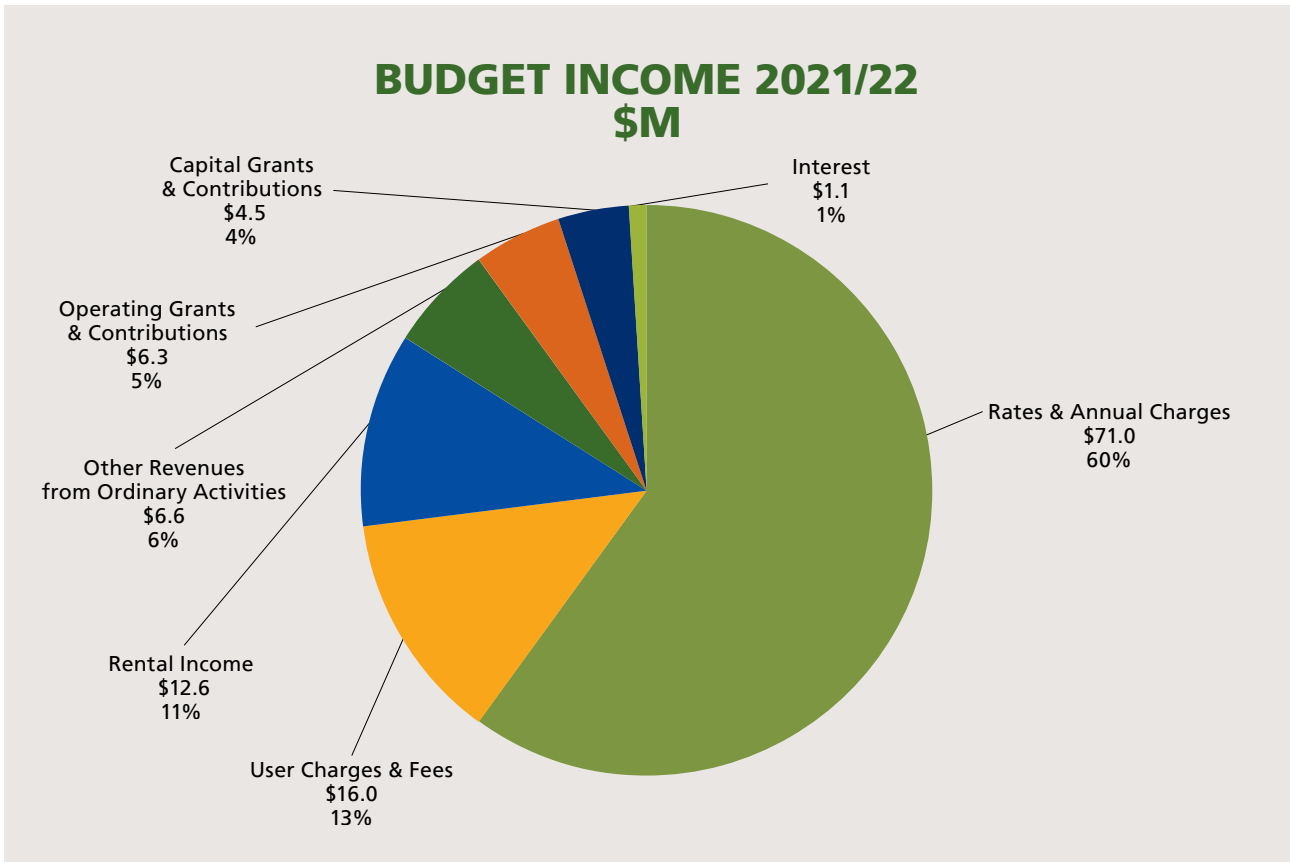
Review of the detailed budget operating statement indicates that revenue is derived from a number of sources and that Council is self-sufficient with a high

level of own source operating revenue from rates and charges, fees, interest and other sources.

WILLOUGHBY CITY COUNCIL PROJECTED STATEMENT OF FINANCIAL PERFORMANCE FOR THE YEAR ENDED 30 JUNE 2022

REVENUE FROM ORDINARY ACTIVITIES	Budget 2020/21 \$M
Rates and annual charges	71.0
User charges and fees	16.0
Other revenues from ordinary activities	6.6
Operating grants and contributions	6.3
Interest	1.1
Rental Income	12.6
REVENUES FROM ORDINARY ACTIVITIES BEFORE CAPITAL AMOUNTS	113.6
EXPENSES FROM ORDINARY ACTIVITIES	
Employee Costs	44.5
Borrowing Costs	2.3
Materials & Contracts	34.7
Depreciation	16.8
Other Expenses	14.8
TOTAL EXPENSES FROM ORDINARY ACTIVITIES	113.1
SURPLUS (DEFICIT) FROM ORDINARY ACTIVITIES BEFORE CAPITAL AMOUNTS	0.5
Capital Grants & Contributions	4.5
SURPLUS (DEFICIT) FROM ORDINARY ACTIVITIES AFTER CAPITAL AMOUNTS	5.0



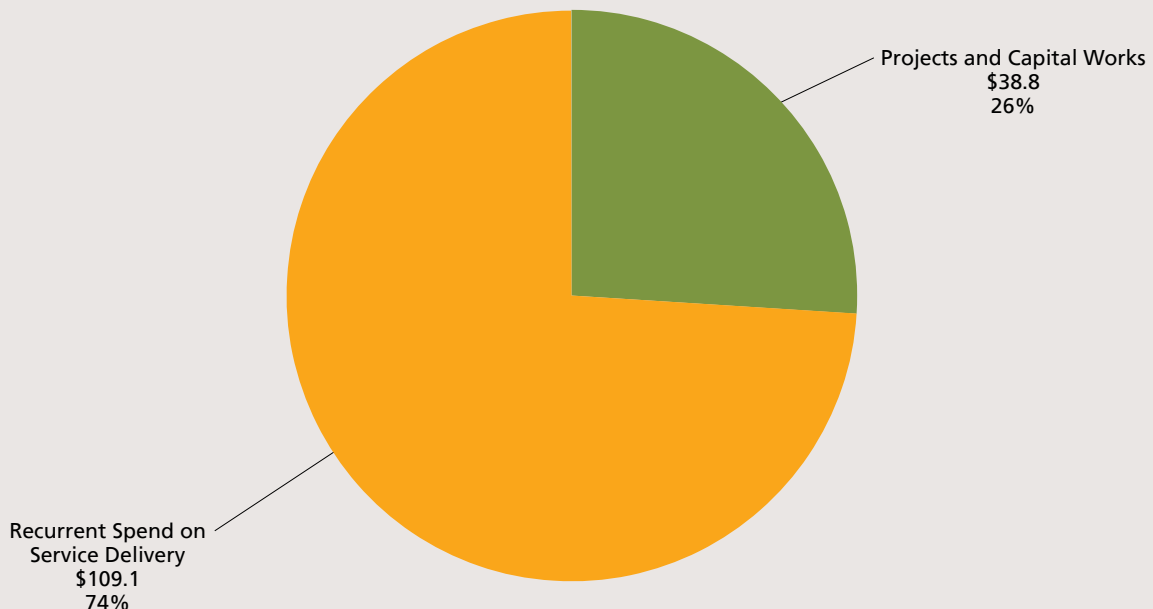


Breakdown of 2021/22 Budget Expenditure	Projects and Capital Works	Recurrent Spend on Service Delivery	2021/22 Draft Budget TOTAL \$M
Operational Expenditure	5.9	107.2	113.1
Capital Expenditure	32.9	1.9	34.8
Total Expenditure	38.8	109.1	147.9

As well as the \$113.1m of operational expenses, Willoughby City Council will spend \$34.8m of capital (asset) spend. This will renew and upgrade existing assets and provide new assets for the community. Of the combined total spend of \$147.9m, \$38.8m

will be spent on projects and capital works. The above includes \$7.7m to fund the infrastructure levy program. \$3.2m of this comes from the additional rates income with the remaining \$4.5m from the general fund.

BREAKDOWN OF 2021/22 BUDGET EXPENDITURE \$M



CASH-FLOW AND FUNDING STATEMENT

The budget is a fully funded and balanced with a small general fund funding surplus of \$0.3m. We have managed to balance our cash inflows and outflows

despite the challenges of COVID-19. This means we can fund our projects and capital works and continue high levels of ongoing services to the community without impacting our ability to pay our bills into the future.



BUDGET SUMMARY BY FUNDING AND EXPENDITURE

SUMMARY OF FUNDING	2021/22 \$M	2020/21 \$M
Rates	44.9	43.7
User charges and fees	16.0	13.5
Other	5.4	4.4
Rental Income	12.6	12.4
Domestic waste management	16.3	15.8
Transfer from reserves	27.5	33.3
Grants and contributions	7.6	6.7
Internal recharge income	7.0	6.1
Environmental levy and stormwater charge	6.6	6.5
Infrastructure levy	3.2	3.2
Developer contributions	3.2	3.2
Interest	1.1	3.5
Disposal of assets	0.4	0.4
TOTAL	151.8	152.7
SUMMARY OF EXPENDITURE		
Employee costs	41.4	43.3
Capital assets	32.4	35.0
Materials and contracts	18.6	20.0
Domestic waste management	15.0	14.6
Others	14.5	12.7
Transfer to reserves	12.4	8.4
Internal recharges	6.6	5.7
Environmental levy	6.0	8.6
Borrowing costs	1.6	1.6
Loan redemption	1.4	1.4
Employee costs – capital	1.4	1.1
Contributions and donations	0.2	0.2
TOTAL	151.5	152.6
SURPLUS (DEFICIT)	0.3	0.1

EXPENDITURE ON OUTCOMES

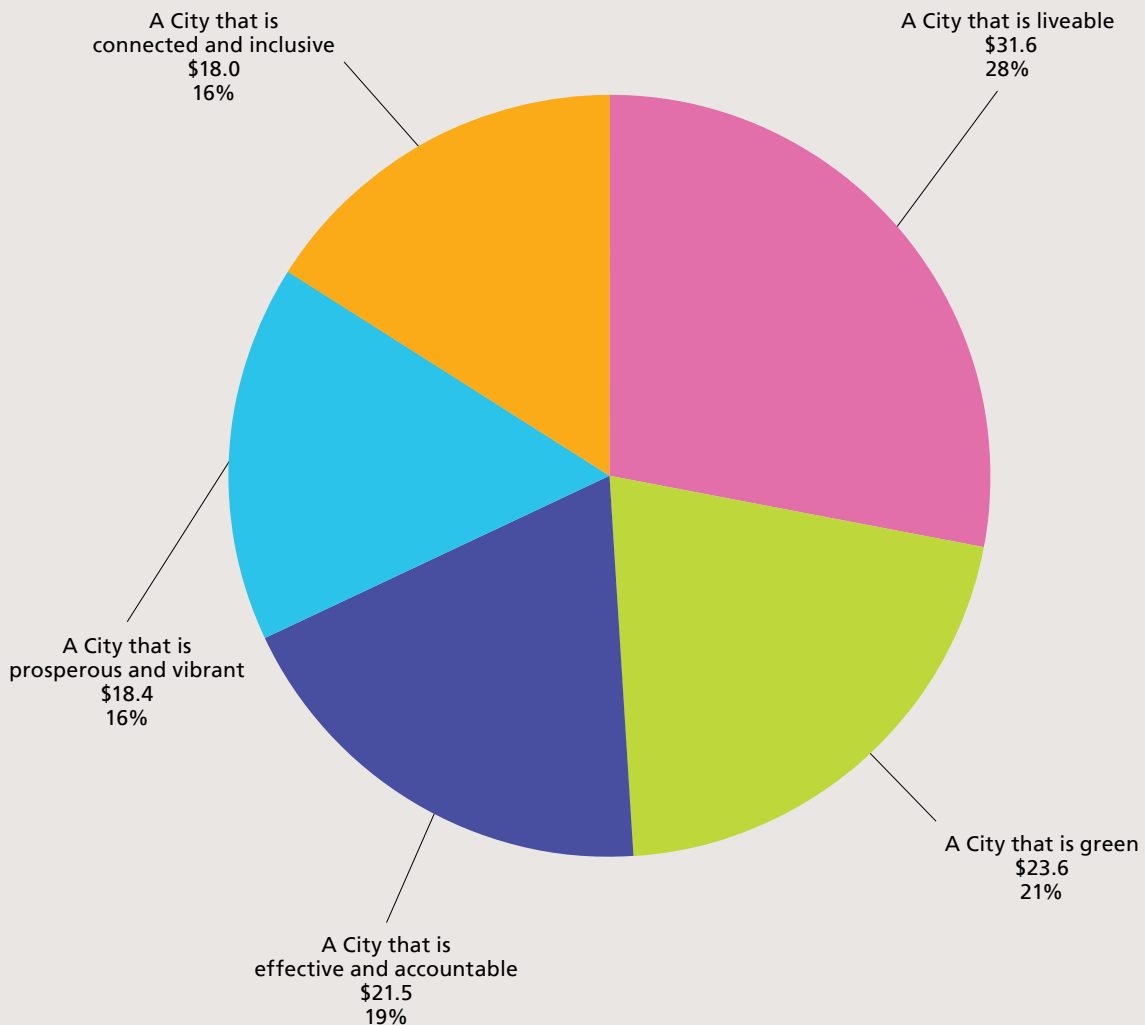
We provide a wide range of services and infrastructure that reflect community needs. Decisions on where we spend our budget are guided by community feedback. This is used to develop our strategic plans.

The projected 2021/22 spend of \$113.1m covers expenditure on the five outcomes in the community strategic plan, *Our Future Willoughby 2028*.

These outcomes are:

- A City that is green
- A City that is connected and inclusive
- A City that is liveable
- A City that is prosperous and vibrant
- A City that is effective and accountable

**2021/22 OPERATING EXPENDITURE BY OUTCOME
\$M**



Revenue Policy 2021/22

1. Rating Structure

Total revenue raised from the levying of land rates continues to be capped by the state government with the Independent Pricing and Regulatory Tribunal (IPART).

The rates information below is based on IPART's rate peg limit of 2% with our budget based on the take up of the full increase. We have adopted the following rating categories in 2021/22 (including the following rates in the dollar, minimum rates and their associated yields):

ORDINARY RATES	2021/22 RATE
Residential	
Ad valorem*	.00086802
Minimum	\$896.40
Yield	\$31.80m
Business	
Ad valorem*	.00471265
Minimum	\$1,280.15
Yield	\$12.77m
Chatswood Town Centre	
Ad valorem*	.00685895
Minimum	\$1,361.55
Yield	\$7.35m
Chatswood Major Retail Centre – Chatswood Chase	
Ad valorem*	.016491
Minimum	\$1,141.10
Yield	\$0.94m
Chatswood Major Retail Centre – Westfield	
Ad valorem*	.0153425
Minimum	\$1,141.10
Yield	\$1.20m
Strata Storage Facility	
Ad valorem*	.0068305
Minimum	\$865.50
Yield	\$0.09m
Total Yield Rates	\$54.17m

*All Ad valorem amounts are expressed as cents per \$ land value.

The levy for Chatswood Major Retail – Chatswood Chase and Chatswood Major Retail – Westfield remains at the same percentage of the rate levy compared to other categories as in previous years. The percentage of the levy will change with the addition or cancellation of properties from the category. It will not be affected by valuation changes.

(All rating classes include the e.restore levy funding)

Rates are calculated on the base date 1 July 2019 valuation.

HARDSHIP POLICY

We updated our hardship policy in November 2013. Full details are at willoughby.nsw.gov.au

The policy includes a statement on our commitment to prevent financial hardship to ratepayers in the payment of annual rates and charges. This policy has proven its effectiveness throughout the COVID-19 crisis with a number of ratepayers being granted rate deferrals as a result of hardship caused by the pandemic.

We have the ability to extend a pension concession to an individual eligible pensioner to avoid hardship, if we are satisfied that the person has paid or is likely to pay the whole of a rate or charge. Applications must be made using the hardship rate relief form available at willoughby.nsw.gov.au.

2. e.restore Environmental Restoration Program

A sustainability levy replaced the existing environmental levy to fund a third round of the e.restore program known as 'e.restore 3' in July 2008. The sustainability levy is subject to open reporting to ensure accountability to our community and that it is only spent on sustainability projects. In line with the rate peg increase of 2%, an amount of \$5.9m will be raised from the rate levy in 2021/22.

Our *Green City Plan 2028* outlines projects by e.restore 3. It builds on previous rounds of environmental levy programs by ensuring the continuation of the vital bushland and catchment management initiatives that protect and restore our local environment. It also has a focus on mitigating and adapting to climate change. The plan sets key performance indicators so we can measure our performance and report on these each year. The plan details our specific actions that support the community strategic plan with a focus on ecological sustainability. It demonstrates our commitment to ecological sustainability.

3. Stormwater Management Service Charge

We are continuing detailed investigation and assessment programs of our drainage assets. Many drainage assets are approaching a critical phase in their lifespan and will require a significant program of renewal, repair and upgrade. Maintenance will be needed to optimise their service life. Other capital works such as capacity upgrades in the Chatswood CBD to resolve flooding of properties have been completed. Stormwater harvesting has been identified for inclusion in a long-term drainage program. The program in 2021/22 based on a 20-year plan, incorporates further investigation of pipeline condition, cleaning and blockage removal and the specification and design of repair and upgrade works.

Stormwater Management Service Charge:

\$25.00 per rateable residential property
 \$12.50 per rateable strata titled property
 \$25.00 per 350 sq. m for business related properties

Total Yield: \$699,000

We will charge fees for services in line with our schedule of fees and charges for 2021/22.

4. Domestic Waste Management Charge

We have an annual domestic waste management charge on all rateable land in the City of Willoughby area that is categorised as residential. This recovers the cost of providing domestic waste management services for the 2021/22 rating year as outlined here.

Charge Type	Amount
Domestic Waste Management Charge	\$545
Domestic waste management self-funded retiree and pensioner charge	\$415
Total Yield	\$16.4m

We reduce waste going to landfill by promoting the waste hierarchy (avoid, reduce, reuse, recycle) and ensuring waste is disposed of in a sustainable manner. The domestic waste management charge covers the following services for residential dwellings:

- Weekly Waste Collection (Red bins);
- Weekly Recycling Collection (Yellow bins);
- Weekly Vegetation (Green bins) and
- 3 general clean-up collections per financial year
- A free on call clean up collection per year (this can be used either for bulk vegetation or general household goods).

We also provide an on-call clean up service for a fee of \$100 per service.

We charge a commercial waste collection service as below:

Charge Type	Amount
Commercial Waste Charge	\$822
Total	\$260,000

5. State Government Determinations

Eligible pensioners receive a statutory reduction of 50% of the combined rates and domestic waste management charge to a maximum of \$250. Pensioners and qualifying self-funded retirees also receive a \$130 reduction in the domestic waste service charge.

Under Section 566(3) of the Act, the Minister for Local Government determines the maximum rate of interest payable on overdue rates and annual charges in a given year. The interest rate for 2021/2022 has not yet been set but is expected to be 7%. Council will take up the maximum rate.

6. Pricing Policy/Fees & Charges

All fees and charges quoted are GST inclusive. We apply GST to our fees and charges in line with the relevant legislation. The schedule of fees and charges in this document has been prepared using the best available information on the GST impact on the fees and charges at the time of publication. The fees and charges have as a minimum been increased by 1.5% where appropriate. Willoughby City Council is committed to raising revenue in a fair and equitable manner to enable it to meet the community's needs. In determining how its fees and charges have been set, we have considered the full costs of providing the particular goods and services.

Our fee structure uses the pricing principles below.

User Pays Principle	Full Cost recovery
Subsidised Pricing	Partial Cost recovery
Market Pricing	Charged where the market has a preparedness to pay
Legislative Pricing	Standard Fee imposed by legislation

Our fee structure also recognises our community service obligations to provide particular goods and services. These are reflected in the fees charged for those particular goods and services.

7. Work on Private Lands

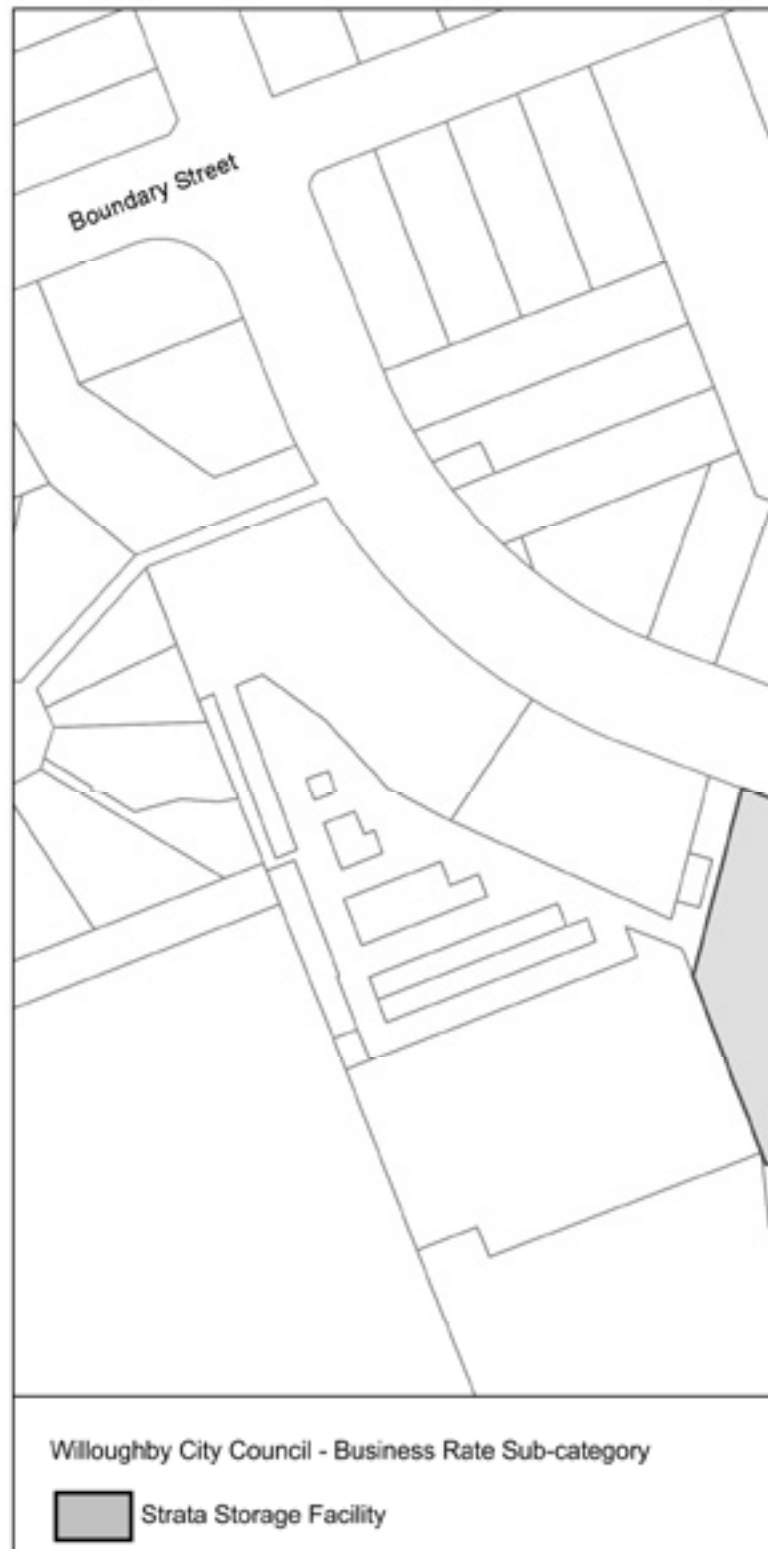
If we carry out work on private land, we charge the actual prime costs plus a standard on costs. This provides a full cost recovery plus a return for Willoughby City Council.

8. Loan Borrowing 2021/22

We do not propose any new borrowing in 2021/22.

9. Definition of business sub categories

The maps on the following pages show those areas to which each category and sub-category of rates included in the Plan applies.





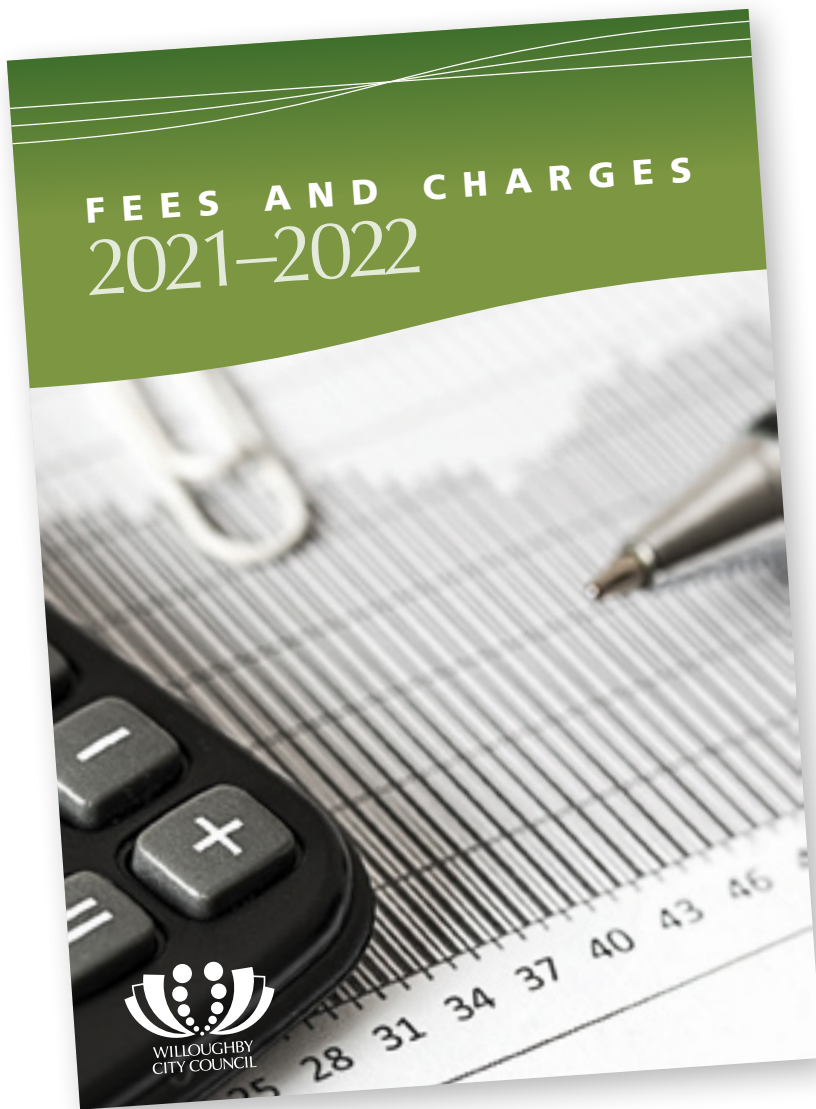






Fees and Charges

See the separate Schedule of Fees and Charges 2021/22 document.







WILLOUGHBY
CITY COUNCIL

Published June 2021

Willoughby City Council

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To find out how you can participate in the decision-making process for Willoughby City's current and future initiatives, visit www.haveyoursaywilloughby.com.au



FEES AND CHARGES 2021-2022



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Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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WILLOUGHBY CITY COUNCIL

All fees and charges and GST applicability are correct at the time of adoption of the Schedule.

Any statutory charges or GST treatment that changes following adoption will be amended from the applicable date.

All fees and charges are GST inclusive (where applicable).

COMMUNITY, CULTURE & LEISURE DIRECTORATE

COMMUNITY LIFE

COMMUNITY LIFE | WILLOUGHBY PARK CENTRE & UNMANNED COMMUNITY SPACES

Program, Class/Course fees, material charges – calculated for each individual class/course dependent upon costs and location.			Varies
Concessions - apply to course fees			
Pensioner 10%			
Senior's Card 5%			
Staff 10%			
Health Care card 10%			
Tertiary Students card 5%			
Booking Amendment Fee	\$25.00	\$2.50	\$27.50
Room Reset Fee	\$25.00	\$2.50	\$27.50
Damage/Equipment/Cleaning/Key Deposit/Bond	\$250.00	\$0.00	\$250.00
Cancellation fees – written notice 8 to 14 days prior to booking date			50% of Hire Fee
Cancellation fees – written notice 7 days or less prior to booking date			100% of Hire Fee
Weekend casual booking cleaning fee – Full day	\$54.55	\$5.45	\$60.00
Weekend casual booking cleaning fee – Half day	\$27.27	\$2.73	\$30.00

Late Pickup Fees

Late pickup fees (per family)	\$20.00 for first 10 minutes or part thereof (min payment \$20.00) \$2 per minute thereafter
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WILLOUGHBY PARK CENTRE & UNMANNED COMMUNITY SPACES

Credit vouchers are issued at the discretion of senior management for special circumstances.

An annual student/teacher exhibition is held at the centre and commission from sale of works is taken.

Commercial Hire Costs per hour

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Northbridge Library – Mezzanine Community Space– Room Hire

Regular – per hour	\$36.36	\$3.64	\$40.00
Casual – per hour	\$51.82	\$5.18	\$57.00
Daily Rate (8hrs)	\$331.82	\$33.18	\$365.00

Northbridge Library Loft Community Space

Regular – per hour	\$45.45	\$4.55	\$50.00
Casual Hirers – per hour	\$64.55	\$6.45	\$71.00
Daily Rate (8hrs)	\$418.18	\$41.82	\$460.00

Castle Cove – Room Hire

Regular – per hour	\$45.45	\$4.55	\$50.00
Casual – per hour	\$64.55	\$6.45	\$71.00
Daily Rate (8hrs)	\$418.18	\$41.82	\$460.00

West Chatswood – Room Hire

Regular – per hour	\$36.36	\$3.64	\$40.00
Casual – per hour	\$51.82	\$5.18	\$57.00
Daily Rate (8hrs)	\$331.82	\$33.18	\$365.00

Naremburn Community Centre

Community Room

Regular Hirers – per hour	\$45.45	\$4.55	\$50.00
Casual Hirers – per hour	\$64.55	\$6.45	\$71.00
Daily Rate (8hrs)	\$418.18	\$41.82	\$460.00

Saturday Night Function (Special Rate 6 pm to 11 pm)

Commercial/Private	\$259.09	\$25.91	\$285.00
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Sunday Children's Birthday Parties (Special rate – 11 am – 2 pm & 2.30 pm – 5.30 pm)

Commercial/Private	\$140.91	\$14.09	\$155.00
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Meeting Room

Suitable for small group meetings only

Regular – per hour	\$26.36	\$2.64	\$29.00
Casual – per hour	\$38.18	\$3.82	\$42.00
Daily Rate (8hrs)	\$240.91	\$24.09	\$265.00

Name	Fee (excl. GST)	GST	Year 21/22
			Fee (incl. GST)

Artarmon Bowling Club

Meeting Room

Suitable for small group meetings only

Willoughby Park Centre

Chowne Hall – Commercial Hirers Per Hour

Regular – per hour	\$55.45	\$5.55	\$61.00
Casual – per hour	\$79.09	\$7.91	\$87.00

Chowne Hall – Social Functions

Community use only	\$313.64	\$31.36	\$345.00
Security Call Back Charge	\$195.45	\$19.55	\$215.00
Security personnel (as required)			Varies

Chowne Hall Hire for Sunday Afternoon Children's Parties

11.00 am to 2 pm or 2.30 pm to 5.30 pm

Commercial Use Only	\$159.09	\$15.91	\$175.00
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Mills Room – Commercial Hirers Per Hour

Regular – per hour	\$53.64	\$5.36	\$59.00
Casual – per hour	\$76.36	\$7.64	\$84.00
Daily Rate (8hrs)	\$490.91	\$49.09	\$540.00

Community Room 1

Regular – per hour	\$45.45	\$4.55	\$50.00
Casual – per hour	\$64.55	\$6.45	\$71.00
Daily Rate (8hrs)	\$418.18	\$41.82	\$460.00

Community Room 2

Regular – per hour	\$36.36	\$3.64	\$40.00
Casual – per hour	\$51.82	\$5.18	\$57.00
Daily Rate (8hrs)	\$331.82	\$33.18	\$365.00

Equipment Hire

For community groups under special circumstances

Exhibition Art Screens, including fittings (each) – per week (or part thereof)	\$21.82	\$2.18	\$24.00
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Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Equipment Hire [continued]

Exhibition Plinths, Medium and Large (each) – per week (or part thereof)	\$21.82	\$2.18	\$24.00
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Kiln Fire

Quarter Kiln Fire	\$18.18	\$1.82	\$20.00
Half Kiln Fire	\$33.64	\$3.36	\$37.00
Full Kiln Fire	\$66.36	\$6.64	\$73.00

Audio Visual Equipment Hire

Audio system – Daily	\$20.91	\$2.09	\$23.00
Audio system – Quarterly	\$59.09	\$5.91	\$65.00
Projector – Daily	\$30.91	\$3.09	\$34.00
Projector – Quarterly	\$88.18	\$8.82	\$97.00
Microphone – daily	\$11.36	\$1.14	\$12.50
Audio Visual Bond	\$250.00	\$0.00	\$250.00

MOSAIC MULTICULTURAL CENTRE**MOSAIC ROOM HIRE**

Damage/Equipment/Cleaning/Key Deposit/Bond	\$200.00	\$0.00	\$200.00
Weekend Cleaning Charges – Saturday	\$63.64	\$6.36	\$70.00
Weekend Cleaning Charges – Sunday	\$84.55	\$8.45	\$93.00

Function Room

Regular (full rate per hour)	\$43.64	\$4.36	\$48.00
Casual (full rate per hour)	\$69.09	\$6.91	\$76.00

Classroom 1

Regular (full rate per hour)	\$35.45	\$3.55	\$39.00
Casual (full rate per hour)	\$55.91	\$5.59	\$61.50

Classroom 2

Regular (full rate per hour)	\$35.45	\$3.55	\$39.00
Casual (full rate per hour)	\$55.91	\$5.59	\$61.50

Whole Building (Excluding Office & Interview Room)

Regular (full rate per hour)	\$103.18	\$10.32	\$113.50
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Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Whole Building (Excluding Office & Interview Room) [continued]

Casual (full rate per hour)	\$158.18	\$15.82	\$174.00
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PROGRAM FEES

Student enrolment fee (per semester)	\$42.73	\$4.27	\$47.00
Seniors enrolment fee (per semester)	\$33.64	\$3.36	\$37.00
Program, Class/Course fees, material charges – calculated for each individual class/course dependent upon costs and location			Negotiable

MULTICULTURAL PROGRAMS

Lower North Shore Multicultural Aged Day Care Program

Program Fee for Occasional Client (per excursion) – Wednesday	\$30.00	\$0.00	\$30.00
Program Fee for Regular Client (per visit) – Wednesday	\$25.00	\$0.00	\$25.00
Private/package/NDIS fee			Varies

CHATSWOOD YOUTH CENTRE

CHATSWOOD YOUTH CENTRE & ROOFTOP SPORTS AND RECREATIONAL AREA

Main Room – Regular Hirers per hour	\$48.18	\$4.82	\$53.00
Main Room – Casual Hirers per hour	\$68.18	\$6.82	\$75.00
Basketball Court – Regular Hirers per hour	\$25.45	\$2.55	\$28.00
Basketball Court – Casual Hirers per hour	\$34.55	\$3.45	\$38.00
Youth Dance/Event – entry fee (as determined by event)			Varies - min \$2.00
Music Studio – Youth Hire only per hour or part thereof (per person)	\$3.64	\$0.36	\$4.00
Music Studio – Youth Hire only per hour or part thereof (per band)	\$5.45	\$0.55	\$6.00
Music Studio – Corporate Rate Per Hour	\$93.64	\$9.36	\$103.00
Extra Key Deposit – Rooftop Sports Recreational Area (RSRA)	\$50.00	\$0.00	\$50.00
Damage/Equipment/Cleaning/Key Deposit/Bond	\$200.00	\$0.00	\$200.00

COMMUNITY CENTRES

ARTARMON KIDS COTTAGE COMMUNITY CENTRE

Hire Charges

For child-related use only

Regular Hirers – per hour	\$55.45	\$5.55	\$61.00
Casual Hirers – per hour	\$79.09	\$7.91	\$87.00
Daily rate (8hrs)	\$509.09	\$50.91	\$560.00
Equipment Hire (per term)	\$87.27	\$8.73	\$96.00
Storage Area – per month	\$181.82	\$18.18	\$200.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Office Space 1

Regular – per hour	\$26.36	\$2.64	\$29.00
Casual – per hour	\$38.18	\$3.82	\$42.00
Daily rate (8 hrs)	\$240.91	\$24.09	\$265.00

Office Space 2

Regular – per hour	\$36.36	\$3.64	\$40.00
Casual – Per hour	\$51.82	\$5.18	\$57.00
Daily rate (8 hrs)	\$331.82	\$33.18	\$365.00

BALES PARK PAVILION

Hire Charges

Regular Hirers – per hour	\$45.45	\$4.55	\$50.00
Casual Hirers – per hour	\$64.55	\$6.45	\$71.00
Daily rate (8 hrs)	\$418.18	\$41.82	\$460.00

DOUGHERTY COMMUNITY CENTRE

Food Services

Café Refreshments / Meals	Varies		
Function Catering	Price on Application		

Hiring Charges

Damage/Equipment/Cleaning/Key Deposit/Bond	\$210.00	\$0.00	\$210.00
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Monday-Friday (Rates per Hour)

Commercial

Auditorium	\$88.18	\$8.82	\$97.00
Auditorium with extension	\$120.00	\$12.00	\$132.00
Function Room	\$71.82	\$7.18	\$79.00
Annexe	\$65.45	\$6.55	\$72.00
Extension	\$65.45	\$6.55	\$72.00
Meeting Room	\$56.36	\$5.64	\$62.00
Orchard	\$55.45	\$5.55	\$61.00
Craft Room	\$56.36	\$5.64	\$62.00
Studio/Hideaway	\$47.27	\$4.73	\$52.00
Room 1 & 2	\$23.64	\$2.36	\$26.00
Jack Donnelley	\$55.45	\$5.55	\$61.00
Kitchen Hire (without other Venue Hire) (One off casual rate)	\$82.73	\$8.27	\$91.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Monday-Friday (Rates per Hour) [continued]

Kitchen Hire (with other Venue Hire)	\$40.00	\$4.00	\$44.00
Regular Kitchen Hire rates to be negotiated			Negotiable

Full Day Hire (6-8 hours) Monday to Friday up to 9 pm

Auditorium Full day	\$440.91	\$44.09	\$485.00
Auditorium with extension full day	\$640.91	\$64.09	\$705.00
Annexe full day	\$350.00	\$35.00	\$385.00
Extension full day	\$350.00	\$35.00	\$385.00
Meeting Room full day	\$313.64	\$31.36	\$345.00
Craft Room full day	\$313.64	\$31.36	\$345.00

Saturday, Sunday (Rates per Hour)

Commercial

Auditorium	\$140.00	\$14.00	\$154.00
Auditorium with extension	\$189.09	\$18.91	\$208.00
Function Room	\$105.45	\$10.55	\$116.00
Annexe	\$90.91	\$9.09	\$100.00
Extension	\$90.91	\$9.09	\$100.00
Meeting Room	\$80.00	\$8.00	\$88.00
Craft Room	\$80.00	\$8.00	\$88.00
Studio/Hideaway	\$70.00	\$7.00	\$77.00
Rooms 1 & 2	\$48.18	\$4.82	\$53.00
Orchard	\$71.82	\$7.18	\$79.00
Kitchen Hire (without other Venue Hire) (One Off Casual Rate)	\$112.73	\$11.27	\$124.00
Kitchen Hire (with other Venue Hire)	\$57.27	\$5.73	\$63.00
Regular Kitchen Hire rates to be negotiated			Negotiable

Equipment Hire Charges

Special Cleaning (Post – function / per hour)	\$149.09	\$14.91	\$164.00
BBQ Hire	\$55.45	\$5.55	\$61.00
Screen	\$9.09	\$0.91	\$10.00
Laptop	\$18.18	\$1.82	\$20.00
Microphones	\$9.09	\$0.91	\$10.00
Electronic keyboard	\$18.18	\$1.82	\$20.00
Garbage	\$22.73	\$2.27	\$25.00

Booking Fees

All rooms	100% payable before confirmation		
Administration fee for cancellation	\$22.73	\$2.27	\$25.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Booking Fees [continued]

Administration fee for post booking changes	\$23.18	\$2.32	\$25.50
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Cancellation Fees

8 – 14 days prior to booking	50% of Hire Fee		
7 days or less prior to booking	100% of Hire Fee		

CHILDREN'S SERVICES

Excursions/Entertainment Costs

Excursion fees (varied no set amount)	Varies		
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OUT-OF-SCHOOL HOURS CARE

Benefits provided by Federal Govt (gap fees will apply)

After School Centres (Per child per day) up to	\$31.75	\$0.00	\$31.75
Casual Loading After School Care/session Each child	\$2.15	\$0.00	\$2.15
Bond of 2 weeks fees required prior to commencing in BASC services			
Vacation Care (Per child per day) up to	\$56.15	\$0.00	\$56.15
Pupil Free Day	\$56.15	\$0.00	\$56.15
Search Fee	\$20.00	\$0.00	\$20.00

Late Pickup Fees

Late Pickup Fees

Late pickup fees (per family)	\$20.00 for first 10 minutes or part thereof (min payment \$20.00) \$2.00 per minute thereafter		
Administration charge for late payment of fees	\$19.00	\$0.00	\$19.00

DEVONSHIRE STREET CHILDREN'S CENTRE

Gap Fees Apply - maximum fees quoted

Formula for Childcare Benefits provided by the Federal Govt. Gap fees will apply.

Placement Fee	\$50.00	\$0.00	\$50.00
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Child Care Fees (Per Day) From 1 July 2021

Bond of 2 weeks fees required prior to commencement

0-2 years	\$140.70	\$0.00	\$140.70
2-3 years	\$133.65	\$0.00	\$133.65
3-5 years	\$131.00	\$0.00	\$131.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Child Care Fees (Per Day) From 1 January 2022

0-2 years	\$154.75	\$0.00	\$154.75
2-3 years	\$147.00	\$0.00	\$147.00
3-5 years	\$144.10	\$0.00	\$144.10

Child Care Fees (Per Day) From 1 July 2022

0-2 years	\$164.75	\$0.00	\$164.75
2-3 years	\$156.50	\$0.00	\$156.50
3-5 years	\$153.40	\$0.00	\$153.40

OOSH AND LONG DAY CARE DIRECT DEBIT FEES

Direct Debit Establishment Fee (one off payment per family)	Fees determined by third party direct debit providers		
CCMS Provider Transaction Fee (per transaction)	Fees determined by third party direct debit providers		
Bank Account Transaction Fee (per transaction)	Fees determined by third party direct debit providers		
Credit Card Fee (per transaction)	Fees determined by third party direct debit providers		
Rejection fee (per transaction)	Fees determined by third party direct debit providers		

COMMUNITY AID SERVICES

LINEN SERVICE

Flat fee to cover all linen and delivery, per service	\$13.00	\$0.00	\$13.00
Private/package/ NDIS linen fee			Varies

SOCIAL SUPPORT

WCA Shopping Bus – one way	\$5.00	\$0.00	\$5.00
Private/package/NDIS Shopping Bus one way			Varies
WCA Shopping Bus – return	\$7.50	\$0.00	\$7.50
Private/package/NDIS Shopping Bus – return			Varies
WCA Outings Bus + (entry fee if applicable) – long day	\$17.00	\$0.00	\$17.00
Private/package/ NDIS WCA Outings Bus + (entry fee if applicable) – long day			Varies
WCA Outings Bus + (entry fee if applicable) – short day	\$17.00	\$0.00	\$17.00
Private/package/NDIS WCA Outings Bus + (entry fee if applicable) – short day			Varies
WCA Companion Shopping	\$19.50	\$0.00	\$19.50
Private/package/NDIS WCA Companion Shopping			Varies

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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OUT AND ABOUT WITH WILLOUGHBY

Full fee for non-eligible users (per trip)	\$16.36	\$1.64	\$18.00
Subsidised fee (per trip)	\$6.75	\$0.00	\$6.75

- * Limited to persons aged 65 years or older.
- * Individual trips capped at a maximum of four trips per client per week
- * Individual client subsidy capped at \$2,200 per client per annum.
- * Clients must be eligible and registered for Commonwealth Home Support Program funding to receive a subsidised fee.

MEALS ON WHEELS (MOW)

MOW Centre Based Lunch	\$16.00	\$0.00	\$16.00
Private/package/NDIS provider Social Lunch			Varies
MOW Per Main Meal Only	\$7.50	\$0.00	\$7.50
MOW Per Meal Package	\$10.50	\$0.00	\$10.50
Private/package/NDIS provider Meal Only			Varies
Private/package/NDIS provider Meal Package			Varies

LIBRARY BRANCH

LIBRARY

Charges for lost items			Replacement cost
Processing Fee (Books and Audio-Visual)	\$11.95	\$0.00	\$11.95
Processing Fee (Magazines)	\$5.65	\$0.00	\$5.65
Reservations per item	\$2.55	\$0.00	\$2.55
ILL Request	\$3.14	\$0.31	\$3.45
Replacement Library Cards	\$10.00	\$0.00	\$10.00
Inter-Library Loans Charges (charge imposed from lending library passed on)			Full cost
Overdue Fine (per item per day)			Up to 30c
Fees not to be charged for overdue items on a trial basis from 1 July 2020			
Activities in the Library			\$0.00 - \$50.00
Display areas (Community groups and community information only)	\$0.00	\$0.00	\$0.00

Item Replacement Parts Charges

Audio books – (where available)	\$28.40	\$0.00	\$28.40
Lost and/or damaged Audio book cases	\$19.30	\$0.00	\$19.30
Lost and/or damaged DVD or CD cases	\$6.55	\$0.00	\$6.55
Miscellaneous lost or damaged AV parts (e.g. CD/DVD locks)	\$3.85	\$0.00	\$3.85
Language kit cases – Assorted sizes			Replacement cost

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Miscellaneous

Library Bags	\$4.64	\$0.46	\$5.10
Sale of USB memory sticks			Full Cost
Accessories			Full Cost

Publications

Publications			Varies
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Local Studies

Scanned Image (emailed) non-commercial (per image)	\$14.20	\$0.00	\$14.20
Scanned Image on Disk non-commercial (per image)	\$17.25	\$0.00	\$17.25
Scanned image – commercial	\$47.00	\$0.00	\$47.00
House trace (per hour) non-commercial	\$34.00	\$0.00	\$34.00
House trace (per hour) commercial	\$97.40	\$0.00	\$97.40
Local Studies research (per hour) non-commercial	\$34.00	\$0.00	\$34.00
Local Studies research (per hour) commercial	\$97.40	\$0.00	\$97.40
Local Studies memorabilia items	Price varies according to cost/market value		

Photocopying and Printing

A4 per copy – B/W	\$0.18	\$0.02	\$0.20
A3 per copy – B/W	\$0.36	\$0.04	\$0.40
A4 per copy – Colour	\$1.82	\$0.18	\$2.00
A3 per copy – Colour	\$4.55	\$0.45	\$5.00
Scanning – per scan	\$0.09	\$0.01	\$0.10

Internet Printing

Refer to Photocopying and Printing section.

LIBRARY MEETING SPACES

THE CONCOURSE LIBRARY - MEETING ROOM HIRE

Damage/Equipment/Cleaning/Key Deposit/Bond	\$215.00	\$0.00	\$215.00
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Willoughby Room – Room Hire (Meeting Room 3)

Regular Mon-Fri (per hour)	\$46.36	\$4.64	\$51.00
Casual Mon-Fri (per hour)	\$69.09	\$6.91	\$76.00
Daily rate (Per 8 hrs) Weekdays	\$431.82	\$43.18	\$475.00
Weekend rate – Regular (per hour)	\$55.45	\$5.55	\$61.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Willoughby Room – Room Hire (Meeting Room 3) [continued]

Weekend rate – Casual (per hour)	\$80.91	\$8.09	\$89.00
Daily rate (Per 7 hrs) weekend when available	\$445.45	\$44.55	\$490.00
Dry hire – tea making fac – cup/saucer per hire	\$22.14	\$2.21	\$24.35

Front Meeting Room – Room Hire

Regular (per hour)	\$35.45	\$3.55	\$39.00
Casual (per hour)	\$57.27	\$5.73	\$63.00
Daily rate Mon-Sat (8 hrs)	\$374.55	\$37.45	\$412.00
Weekend rate – Regular (per hour)	\$44.55	\$4.45	\$49.00
Weekend rate – Casual (per hour)	\$70.91	\$7.09	\$78.00

Meeting Room 1A, 1B, 2A, 2B – Room Hire (Study Rooms)

Regular Mon-Fri (per hour)	\$28.59	\$2.86	\$31.45
Casual Mon-Fri (per hour)	\$42.73	\$4.27	\$47.00
Daily rate (Per 8 hrs) Weekdays	\$269.09	\$26.91	\$296.00
Weekend rate – Regular (per hour)	\$37.27	\$3.73	\$41.00
Weekend rate – Casual (per hour)	\$50.91	\$5.09	\$56.00
Daily rate (Per 7 hrs) Weekend when available	\$287.27	\$28.73	\$316.00

Creator Space

Regular (per hour)	\$55.36	\$5.54	\$60.90
Casual (per hour)	\$81.82	\$8.18	\$90.00
Daily rate (Per 8 hrs)	Hourly rate x 75%		
Community Learning Activities	Full Concession as per Council's Concessional Hire Policy		
Dry hire – tea making fac– cup/saucer per hire	\$22.14	\$2.21	\$24.35

Meeting Room 4 – Room Hire

Regular Mon-Fri (per hour)	\$39.09	\$3.91	\$43.00
Casual Mon-Fri (per hour)	\$57.27	\$5.73	\$63.00
Daily rate (Per 8 hrs) Weekdays	\$341.82	\$34.18	\$376.00
Weekend rate – Regular (per hour)	\$45.23	\$4.52	\$49.75
Weekend rate – Casual (per hour)	\$66.36	\$6.64	\$73.00
Daily rate (Per 7 hrs) Weekends when available	\$350.00	\$35.00	\$385.00

Booking Fees

All Rooms	100% payable before confirmation		
Admin fee for cancellation	\$24.00	\$2.40	\$26.40

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Booking Fees [continued]

Admin fee for post booking changes	\$24.00	\$2.40	\$26.40
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Cancellation Fees

8-14 days prior to booking	50% of Hire Fee		
7 days or less prior to booking	100% of Hire Fee		

Equipment Hire

Data projector	\$17.27	\$1.73	\$19.00
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CULTURAL ACTIVITIES

WILLOUGHBY OPEN STUDIOS WEEKEND

Per artist or venue

One Artist per venue	\$72.00	\$7.20	\$79.20
Two Artists per venue	\$126.00	\$12.60	\$138.60
Three or more Artists per venue	\$160.64	\$16.06	\$176.70

INCINERATOR ART SPACE

Council Curated Exhibition	20% of Sale Price		
Deposit	20% of Sale Price		

Gallery Space Hire – Cost Per Week For 3 Week Hire

Category A – Commercial/Private/Education Institution (per week)	\$744.55	\$74.45	\$819.00
Category B – Community Organisation/Group or Artist Group Exhibition (per week)	\$536.45	\$53.65	\$590.10
Category C – Individual Artist (per week)	\$349.36	\$34.94	\$384.30
Category D – Full Concession as per Council's Concessional Hire Policy	Refer to Policy		
Damage/Equipment/Cleaning/Key Deposit/Bond	\$200.00	\$0.00	\$200.00

Hire Fees For Corporate Functions

Per Day (max. 4 Hours)	\$613.18	\$61.32	\$674.50
Each additional hour	\$177.64	\$17.76	\$195.40
Damage/Equipment/Cleaning/Key Deposit/Bond	\$200.00	\$0.00	\$200.00

Cancellation Fees

More than 60 days prior	50% of Hire Fee		
Less than 60 days prior	100% of Hire Fee		

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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THE CONCOURSE ART SPACE

Council Curated Exhibition			20% of Sale Price
Deposit			20% of Sale Price

Hire Fees For Exhibitions

Category A – Commercial galleries, educational institutions (per week)	\$744.55	\$74.45	\$819.00
Category B – Community arts organisations/ artist group exhibitions (per week)	\$536.45	\$53.65	\$590.10
Category C – Individual Artist (per week)	\$349.36	\$34.94	\$384.30
Category D – Full Concession as per Council's Concessional Hire Policy	\$0.00	\$0.00	\$0.00
Damage/Equipment/Cleaning/Key Deposit/Bond	\$200.00	\$0.00	\$200.00

Hire Fees For Corporate Functions

Per Night (max 4 hours)	\$613.18	\$61.32	\$674.50
Each additional hour	\$177.64	\$17.76	\$195.40
Damage/Equipment/Cleaning/Key Deposit/Bond	\$200.00	\$0.00	\$200.00

Cancellation Fees

More than 60 days prior			50% of Hire Fee
Less than 60 days prior			100% of Hire Fee

Sundry Charges

Art Workshop			\$10.00 - \$40.00
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THE CONCOURSE SPECIAL EVENTS

Seniors Concert tickets	\$4.55	\$0.45	\$5.00
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PERFORMING ARTS UNIT

See also WSOC & Zenith Theatre

TICKETING SERVICES FOR INTERNAL AND EXTERNAL EVENTS

Charges and services assessed on an event / facility basis			Event Based
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PRODUCTION UNIT SERVICES

Charges and services assessed on an event / facility basis			Event Based
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Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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WILLOUGHBY SYMPHONY COMMERCIAL SERVICES HIRE

Changes and services assessed based on Commercial market rates for the hire of Musicians

Price determined by cost/market value

JOE CIANTAR MUSIC REHEARSAL STUDIO

Commercial Groups (per 4 hour session)

\$492.73

\$49.27

\$542.00

The above rates are exclusive of staffing.

Staffing services will incur an additional charge.

Minimum staff required to service an event is at the manager's discretion.

WILLOUGHBY SYMPHONY ORCHESTRA & CHOIR

TICKET PRICES ARE EFFECTIVE FROM 1 JANUARY 2021

Subscription Packages

Platinum – Double (Full Price)	\$720.00	\$72.00	\$792.00
Platinum – Double (Concession)	\$681.82	\$68.18	\$750.00
Platinum – Single (Full Price)	\$381.82	\$38.18	\$420.00
Platinum – Single (Concession)	\$360.00	\$36.00	\$396.00
9A Reserve Concert Tickets (Full Price)	\$384.55	\$38.45	\$423.00
9A Reserve Concert Tickets (Concession)	\$343.64	\$34.36	\$378.00
8A Reserve Concert Tickets (Full Price)	\$341.82	\$34.18	\$376.00
8A Reserve Concert Tickets (Concession)	\$305.45	\$30.55	\$336.00
7A Reserve Concert Tickets (Full Price)	\$299.09	\$29.91	\$329.00
7A Reserve Concert Tickets (Concession)	\$267.27	\$26.73	\$294.00
6A Reserve Concert Tickets (Full Price)	\$256.36	\$25.64	\$282.00
6A Reserve Concert Tickets (Concession)	\$229.09	\$22.91	\$252.00
5A Reserve Concert Tickets (Full Price)	\$218.18	\$21.82	\$240.00
5A Reserve Concert Tickets (Concession)	\$200.00	\$20.00	\$220.00
4A Reserve Concert Tickets (Full Price)	\$192.73	\$19.27	\$212.00
4A Reserve Concert Tickets (Concession)	\$178.18	\$17.82	\$196.00

Tickets At Door

Single Ticket A Reserve (Full price)	\$50.91	\$5.09	\$56.00
Single Ticket A Reserve (Concession)	\$46.36	\$4.64	\$51.00
Single Ticket A Reserve (Youth 16 – 26 years)	\$22.73	\$2.27	\$25.00
Single Ticket A Reserve (Children aged 5 – 16 years)	\$13.64	\$1.36	\$15.00
Family Pass A Reserve (2 Adults, 2 Children aged 5 – 16 yrs)	\$113.64	\$11.36	\$125.00
Symphony Children's Concert Ticket	\$23.64	\$2.36	\$26.00
Group 10+	\$44.55	\$4.45	\$49.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Tickets At Door [continued]

Group 20+	\$43.64	\$4.36	\$48.00
Special concert Ticket price (Family and Friends ticket)	\$38.18	\$3.82	\$42.00

TICKET PRICES ARE EFFECTIVE FROM 1 JANUARY 2022

Subscription Packages

Platinum – Double (Full Price)	\$720.00	\$72.00	\$792.00
Platinum – Double (Concession)	\$681.82	\$68.18	\$750.00
Platinum – Single (Full Price)	\$381.82	\$38.18	\$420.00
Platinum – Single (Concession)	\$360.00	\$36.00	\$396.00
6A Reserve Concert Tickets (Full Price)	\$256.36	\$25.64	\$282.00
6A Reserve Concert Tickets (Concession)	\$229.09	\$22.91	\$252.00
5A Reserve Concert Tickets (Full Price)	\$218.18	\$21.82	\$240.00
5A Reserve Concert Tickets (Concession)	\$200.00	\$20.00	\$220.00
4A Reserve Concert Tickets (Full Price)	\$192.73	\$19.27	\$212.00
4A Reserve Concert Tickets (Concession)	\$178.18	\$17.82	\$196.00

Tickets At Door

Single Ticket A Reserve (Full price)	\$50.91	\$5.09	\$56.00
Single Ticket A Reserve (Concession)	\$46.36	\$4.64	\$51.00
Single Ticket A Reserve (Youth 16 – 26 years)	\$22.73	\$2.27	\$25.00
Single Ticket A Reserve (Children aged 5 – 16 years)	\$13.64	\$1.36	\$15.00
Family Pass A Reserve (2 Adults, 2 Children aged 5 – 16 yrs)	\$113.64	\$11.36	\$125.00
Group 10+	\$44.55	\$4.45	\$49.00
Group 20+	\$43.64	\$4.36	\$48.00
Special concert Ticket price (Family and Friends ticket)	\$40.00	\$4.00	\$44.00

ZENITH THEATRE & CONVENTION CENTRE

Standard Hire Rates

Rates noted for Main Auditorium and Rehearsal Studio hire are based on a 4-hour block. Additional time beyond the 4-hour block will be charged in hour increments based on a percentage of the block rate. Terms and conditions of hire are noted in the hire agreement and support documentation. Additional fees apply for some services and amenities.

MAIN AUDITORIUM

A Duty Manager and a House Technician are included in the hire rate only, all other staffing, equipment and services will incur additional costs

Monday – Thursday	\$1,299.09	\$129.91	\$1,429.00
Friday – Saturday	\$1,524.55	\$152.45	\$1,677.00
Sunday	\$1,749.09	\$174.91	\$1,924.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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MAIN AUDITORIUM [continued]

Public Holiday	\$2,569.09	\$256.91	\$2,826.00
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SEMINAR ROOM (2 HOUR RATE)

A Duty Manager is included in the hire rate only, all other staffing, equipment and services will incur additional costs

Please note Seminar fees are based on a minimum 2 hour hire 8-5 pm Mon-Fri, outside these times the 4 hour minimum is required.

Monday – Thursday	\$330.91	\$33.09	\$364.00
Friday – Saturday	\$389.09	\$38.91	\$428.00
Sunday	\$506.36	\$50.64	\$557.00
Public Holiday	\$657.27	\$65.73	\$723.00

REHEARSAL STUDIO

A Duty Manager is included in the hire rate only, all other staffing, equipment and services will incur additional costs

Monday – Thursday	\$535.45	\$53.55	\$589.00
Friday – Saturday	\$590.91	\$59.09	\$650.00
Sunday	\$641.82	\$64.18	\$706.00
Public Holiday	\$858.18	\$85.82	\$944.00

ZENITH STAFF RATES

Minimum staff required to service an event is at the Operation Managers discretion. The minimum number of Venue staff required is determined by OHS regulations.

Staff costs will be quoted at the applicable rate at the time of booking. Staff costs will include GST. A minimum charge of 4 hours will be incurred for staff requirements plus penalty rates and allowances. Specialist technician or other specialist staff will be charged as assessed.

The range of Venue Staff are:

FOH Manager/Duty Manager

Front of House Ushers

Box Office Manager

House Technician

Lighting Designer

Sound Engineers

Specialist Technical Staff

Name	Fee (excl. GST)	GST	Year 21/22
			Fee (incl. GST)

CHATSWOOD CBD AND WILLOUGHBY LGA ONE-OFF SPECIAL EVENTS

Public Liability Insurance document to be lodged with Events Unit prior to booking

Handing out pamphlets – Community groups & church promotions (per hour per person) (Max 10 hours per month)	\$23.00	\$0.00	\$23.00
Sampling or handing out pamphlets – Commercial Promotions (per hour per person)	\$46.70	\$0.00	\$46.70
Fundraising via promotions companies (per day)	\$62.50	\$0.00	\$62.50
Busking (per day)	\$16.00	\$0.00	\$16.00
Sampling Products (per hour per person – with vehicle & equipment)/Promotional Vehicle rate	\$163.00	\$0.00	\$163.00
Hire of parking spaces CBD per hour per vehicle for promotional purposes subject to approval.	\$141.82	\$14.18	\$156.00
Chatswood Mall – Permit to use one zone (per day)	\$2,175.00	\$0.00	\$2,175.00
Chatswood Mall – Permit to use entire space (per day)	\$6,520.00	\$0.00	\$6,520.00
Security vehicle access to mall per annum	\$2,180.00	\$0.00	\$2,180.00

MARQUEE

Marquee (6m x 6m) max 6 people

Commercial rate (per day)	\$2,210.00	\$0.00	\$2,210.00
Community & Church rate (per day)	\$1,007.90	\$0.00	\$1,007.90
Commercial rate (per hour)	\$309.00	\$0.00	\$309.00
Community & Church rate (per hour)	\$125.00	\$0.00	\$125.00

Marquee (3m x 3m) max 3 people

Commercial Rate (per day)	\$1,320.00	\$0.00	\$1,320.00
Community & Church rate (per day)	\$623.20	\$0.00	\$623.20
Commercial Rate (per hour)	\$205.00	\$0.00	\$205.00
Community & Church rate (per hour)	\$78.50	\$0.00	\$78.50

THE CONCOURSE OPEN SPACE ONE-OFF SPECIAL EVENTS

Public Liability Insurance document to be lodged with Events Unit prior to booking

Urban Screen Sponsorship (per instance) (per hour)	\$1,090.00	\$109.00	\$1,199.00
Urban Screen Display (per instance) (maximum fee)	\$5,431.82	\$543.18	\$5,975.00
Special events pricing determined based on event type and duration.	Based on event type and duration		

THE CONCOURSE PODIUM LEVEL – GREENSPACE

Commercial rate	\$2,593.00	\$0.00	\$2,593.00
Community rate	\$882.00	\$0.00	\$882.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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THE CONCOURSE PODIUM LEVEL – AMPHITHEATRE

Commercial rate	\$2,180.00	\$0.00	\$2,180.00
Community rate	\$882.00	\$0.00	\$882.00

THE CONCOURSE UPPER PODIUM LEVEL – OUTSIDE OF THEATRE

Commercial rate	\$2,180.00	\$0.00	\$2,180.00
Community rate	\$882.00	\$0.00	\$882.00

CULTURAL EVENTS

WILLOUGHBY STREET FAIR

Commercial Stall Holders (maximum fee, per day)	\$420.00	\$0.00	\$420.00
Commercial Food Stall Holders (maximum fee, per day)	\$565.00	\$0.00	\$565.00
Corporate Stall (maximum fee, per day)	\$2,300.00	\$0.00	\$2,300.00
Community Group and Club Stall Holders (maximum fee, per day)	\$150.00	\$0.00	\$150.00
Charities and Churches (maximum fee, per day)	\$150.00	\$0.00	\$150.00

CHATSWOOD MARKET

Commercial Stall (maximum fee, per day)	\$199.00	\$0.00	\$199.00
Commercial cart (maximum fee, per day)	\$195.00	\$0.00	\$195.00
Community and Churches stall (maximum fee, per day)	\$100.00	\$0.00	\$100.00
Food Stall (maximum fee, per day)	\$327.00	\$0.00	\$327.00
Corporate Stall (maximum fee, per day)	\$2,300.00	\$0.00	\$2,300.00
Introductory week rate (maximum fee, per day)	\$200.00	\$0.00	\$200.00
Bring our own marquee – retail	\$120.00	\$0.00	\$120.00

LIVE AT LUNCH

Single Ticket Prices

Live at Lunch Adult	\$32.32	\$3.23	\$35.55
Live at Lunch Child / Concession	\$29.55	\$2.95	\$32.50

Packages

Live at Lunch 4 concerts (Adult)	\$114.55	\$11.45	\$126.00
Live at Lunch 5 concerts (Adult)	\$132.73	\$13.27	\$146.00
Live at Lunch 6 concerts (Adult)	\$158.18	\$15.82	\$174.00
Live at Lunch 4 concerts (Concession)	\$103.64	\$10.36	\$114.00
Live at Lunch 5 concerts (Concession)	\$123.64	\$12.36	\$136.00
Live at Lunch 6 concerts (Concession)	\$142.73	\$14.27	\$157.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Packages [continued]

Live at Lunch 7 concerts (Adult)	\$179.09	\$17.91	\$197.00
Live at Lunch 7 concerts (Concession)	\$165.45	\$16.55	\$182.00

Group Tickets

Live at Lunch Group 10+ (Individual Ticket)	\$25.45	\$2.55	\$28.00
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HIRE OF SPORTING FIELDS

For all venues 75% additional fee applies to commercial hirers

Cleaning Bond Per season	\$485.00	\$0.00	\$485.00
Parks Deposit Key Refundable if returned within 12 months	\$190.80	\$0.00	\$190.80
Security breach/property issue – per callout	\$157.27	\$15.73	\$173.00
School Licence Administration Fee – Per Year	\$47.27	\$4.73	\$52.00

SCHOOLS

See Also Chatswood Rotary Athletic Field

In School Hours

Schools within WCC area	Free
Schools outside WCC area	100% seasonal fees apply

After School Hours

Schools within WCC area	50% seasonal fees apply
Schools outside WCC area	100% seasonal fees apply
PSSA Fee (All sports)	75% seasonal fees apply

CLASS 1 SPORTING FIELDS

Lights additional fee per hour applies	\$26.82	\$2.68	\$29.50
Lights higher lux lighting fee to 200lux (per hour)	\$45.91	\$4.59	\$50.50
Cricket nets only, per net	\$7.55	\$0.75	\$8.30

Sportsfields

Beauchamp Park*, Castle Cove*, Chatswood*, Willoughby Park*, Bicentennial Baseball Diamond* & Lawn Tennis Courts (* denotes lights)

Per hour turf wicket	\$142.27	\$14.23	\$156.50
Per hour (not using turf wicket)	\$78.64	\$7.86	\$86.50
Per hour lawn tennis court	\$38.64	\$3.86	\$42.50
Per hour diamond	\$75.00	\$7.50	\$82.50

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Sportsfields [continued]

Seasonal – per hour turf wicket	\$49.09	\$4.91	\$54.00
Per hour (not using wicket)	\$27.27	\$2.73	\$30.00
Per hour lawn tennis court	\$30.00	\$3.00	\$33.00
Per hour diamond	\$37.73	\$3.77	\$41.50
Curator – Ground staff – per hour (min 4hrs)	\$67.73	\$6.77	\$74.50
Line Marking – Per Field	\$248.64	\$24.86	\$273.50

Synthetic Sportsfields

Northbridge Oval*, Thomson Oval*, Chatswood High School*, Gore Hill Oval* (* denotes lights)

Casual – per hour	\$71.36	\$7.14	\$78.50
Seasonal – per hour	\$42.73	\$4.27	\$47.00

CLASS 2 SPORTING FIELDS

Artarmon*, Bales, Bicentennial*, Mowbray PS*, Naremburn 1* & 2*, OH Reid, Bicentennial Baseball Diamond Outers (* denotes lights)

Casual – per hour	\$56.82	\$5.68	\$62.50
Seasonal – per hour	\$18.82	\$1.88	\$20.70
Small Sided Games eg Bales – per field	\$4.55	\$0.45	\$5.00
Touch football field eg Artarmon – per field	\$11.45	\$1.15	\$12.60
Lights – additional fee per hour applies	\$26.82	\$2.68	\$29.50
Lights – higher lux lighting fee to 200lux (per hour)	\$45.91	\$4.59	\$50.50
Cricket nets only, per net	\$7.55	\$0.75	\$8.30

CLASS 3 SPORTING FIELDS

Greville St, "Alan Hyslop"* (* denotes lights)

Per hour	\$12.00	\$1.20	\$13.20
Cricket nets only	\$7.55	\$0.75	\$8.30

CHATSWOOD ROTARY ATHLETIC FIELD

Casual – per hour	\$65.45	\$6.55	\$72.00
Seasonal – per hour	\$32.73	\$3.27	\$36.00
Lights – additional fee per hour applies	\$26.82	\$2.68	\$29.50
School Carnivals per day or part includes P/A system	\$377.27	\$37.73	\$415.00

SPORTS TRAINING COURT

Northbridge Oval (including lights), Bonds Corner

Casual – per hour	\$61.36	\$6.14	\$67.50
Seasonal – per hour	\$25.45	\$2.55	\$28.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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SPORTS TRAINING COURT [continued]

Lights – per hour	\$26.82	\$2.68	\$29.50
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NETBALL/ BASKETBALL COURTS

Bicentennial*; Naremburn*; Beauchamp*; Thomson*; Chatswood HS* (* denotes lights)

Casual – per hour, per court	\$26.82	\$2.68	\$29.50
Seasonal – per hour, per court	\$13.09	\$1.31	\$14.40
Association rate Range per hour, per court		\$3.55 - \$5.55	
Lights – additional fee per hour/court/zone applies	\$26.82	\$2.68	\$29.50

CANCELLATION FEES

Cancellation fees only apply to casual hirers. No refunds/ cancellation fees apply to seasonal hire fees.

8 – 14 days prior to booking	50% of hire fee
7 days or less prior to booking	100% of hire fee

COMMERCIAL FITNESS GROUPS HIRE

Group of 6 – 18 persons maximum Per Quarter	\$490.91	\$49.09	\$540.00
Group of 6 – 18 persons maximum Per Annual	\$1,454.55	\$145.45	\$1,600.00

WILLOUGHBY LEISURE CENTRE

CASUAL ADMISSION

Entry – All Access (Excludes Play Club & Casual Shooting) – Adult	\$23.55	\$2.35	\$25.90
Entry – All Access (Excludes Play Club & Casual Shooting) – Concession	\$17.55	\$1.75	\$19.30
Entry – Spectator	\$2.73	\$0.27	\$3.00
Entry – Pool – Adult	\$7.91	\$0.79	\$8.70
Entry – Pool – Concession	\$6.45	\$0.65	\$7.10
Entry – Pool – Child	\$6.27	\$0.63	\$6.90
Entry – Pool – Squad Participant	\$6.00	\$0.60	\$6.60
Entry – Pool – Family (2 Adults, 3 Children U16)	\$17.45	\$1.75	\$19.20
Entry – Pool – Family Inflatable Pass (Ages 5-12 Years)	\$22.91	\$2.29	\$25.20
Entry – Pool – Inflatable Pass (Ages 5-12 Years)	\$9.00	\$0.90	\$9.90
Entry – Pool – Swim Club Night	\$5.09	\$0.51	\$5.60
Entry – Pool – Sports Focus Physio (Adult)	\$7.55	\$0.75	\$8.30
Entry – Pool – Sports Focus Physio (Concession)	\$6.18	\$0.62	\$6.80
Entry – Aquatic (Pool & Spa) – Adult	\$9.09	\$0.91	\$10.00
Entry – Aquatic (Pool & Spa) – Concession	\$6.91	\$0.69	\$7.60
Entry – Health Club or Group Fitness – Adult	\$21.68	\$2.17	\$23.85
Entry – Health Club or Group Fitness – Concession	\$13.95	\$1.40	\$15.35
Entry – Health Club – Sports Focus Physio	\$13.95	\$1.40	\$15.35

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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CASUAL ADMISSION [continued]

Entry – Play Club (2-Hour Session)	\$7.36	\$0.74	\$8.10
Entry – Casual Basketball Shooting (Shared Half-Court) – Per Person Per Hour	\$9.09	\$0.91	\$10.00

VISIT PASSES

Play Club Pass – 10 Visits (2 Hours Per Visit)	\$66.27	\$6.63	\$72.90
Play Club Pass – 20 Visits (2 Hours Per Visit)	\$125.18	\$12.52	\$137.70
Health Club or Group Fitness Pass – Adult – 10 Visits	\$195.14	\$19.51	\$214.65
Health Club or Group Fitness Pass – Adult – 20 Visits	\$368.59	\$36.86	\$405.45
Health Club or Group Fitness Pass – Concession – 10 Visits	\$125.59	\$12.56	\$138.15
Health Club or Group Fitness Pass – Concession – 20 Visits	\$237.23	\$23.72	\$260.95
Health Club or Group Fitness Pass – Willoughby City Council Employee – 10 Visits	\$89.59	\$8.96	\$98.55
Health Club or Group Fitness Pass – Willoughby City Council Employee – 20 Visits	\$169.23	\$16.92	\$186.15
Swim Pass – Child – 10 Visits	\$56.45	\$5.65	\$62.10
Swim Pass – Child – 20 Visits	\$106.64	\$10.66	\$117.30
Swim Pass – Adult – 10 Visits	\$71.18	\$7.12	\$78.30
Swim Pass – Adult – 20 Visits	\$134.45	\$13.45	\$147.90
Swim Pass – Concession – 10 Visits	\$58.09	\$5.81	\$63.90
Swim Pass – Concession – 20 Visits	\$109.73	\$10.97	\$120.70
Swim Pass – Family – 10 Visits	\$157.09	\$15.71	\$172.80
Squad Pass – Participant – 20 Visits	\$102.00	\$10.20	\$112.20
Squad Pass – Participant – 40 Visits	\$204.00	\$20.40	\$224.40
Aquatic Pass (Pool & Spa) – Adult – 10 Visits	\$81.82	\$8.18	\$90.00
Aquatic Pass (Pool & Spa) – Adult – 20 Visits	\$154.55	\$15.45	\$170.00
Aquatic Pass (Pool & Spa) – Concession – 10 Visits	\$62.18	\$6.22	\$68.40
Aquatic Pass (Pool & Spa) – Concession – 20 Visits	\$117.45	\$11.75	\$129.20

ADMINISTRATION

Locker Hire – Small – Non-Member	\$2.73	\$0.27	\$3.00
Locker Hire – Large – Non-Member	\$3.64	\$0.36	\$4.00
Locker Hire – Large – Member	\$0.91	\$0.09	\$1.00
Merchandise Sales	For the sale of goods as per Willoughby Leisure Centre's merchandise agreements: \$0.10 - \$200.00		
Membership – Admin Fee	\$45.45	\$4.55	\$50.00
Membership – Suspension Fee (Per day)	\$0.32	\$0.03	\$0.35
Promotional Fee – Services (Per Person)	\$1.00 - \$500.00		
Swim School – Administration Fee	\$6.60	\$0.00	\$6.60
Access Card Replacement Fee	\$4.55	\$0.45	\$5.00
Promotional Fee – Membership & Health Club (Per Person)	\$1.00 - \$500.00		

Name	Year 21/22		
	Fee (excl. GST)	GST	Fee (incl. GST)

ADMINISTRATION [continued]

Promotional Fee – Swim School (Per Person)	Fee for one-off promotional use only. \$1.00 - \$300.00 Per Person.		
Specialised Program Fee (i.e. NDIS Rate) – Per Person	Fee for specialised programs only. \$5.00 - \$500.00 Per Person		
Specialised Program Fee – Group Fitness (i.e. Kids Yoga) – Per Person	\$5.00 - \$500.00		
Membership – Joining Fee	\$54.55	\$5.45	\$60.00
Membership – Transfer Fee	\$55.91	\$5.59	\$61.50
Access Card Replacement	\$4.55	\$0.45	\$5.00
Membership – Early Cancellation Fee	\$151.82	\$15.18	\$167.00
Direct Debit – Failed Payment / Dishonour Fee (Per Transaction)	\$6.00	\$0.00	\$6.00
Chargeback Fee (Per Transaction)	\$45.00	\$0.00	\$45.00

PROGRAM FEES

Kids Holiday Program – After Hours Care	\$17.55	\$1.75	\$19.30
Kids Holiday Program – External Activity	\$69.09	\$6.91	\$76.00
Kids Holiday Program – Internal Activity	\$64.55	\$6.45	\$71.00
Basketball Holiday Clinic Per Person	\$14.82	\$1.48	\$16.30
Life Ball Fee (per week)	\$3.86	\$0.39	\$4.25

SWIM SCHOOL

Swimming Lesson Fee – Per Lesson – First Student Per Term	\$21.50	\$0.00	\$21.50
Swimming Lesson Fee – Per Lesson – Second Student Per Term	\$19.35	\$0.00	\$19.35
Swimming Lesson Fee – Upfront – Per Lesson – Third Student Per Term	\$18.28	\$0.00	\$18.28
Swimming Lesson Discount – Second Lesson Per Week	10% to 20% Discount off the First Student Price. Applicable discount is determined by the number of students enrolled within a family. Contact Swim School Staff for further details.		
Swimming Lesson Discount – Third Lesson Per Week	15% to 30% Discount off the First Student Price. Applicable discount is determined by the number of students enrolled within a family. Contact Swim School Staff for further details.		
Swimming Lesson Discount – Fourth or More Lesson Per Week	20% to 40% Discount off the First Student Price. Applicable discount is determined by the number of students enrolled within a family. Contact Swim School Staff for further details.		
Swimming Lesson Fee – Private Sessions	\$62.00	\$0.00	\$62.00
Swimming Lesson Fee – Schools – Term 4	\$13.00	\$0.00	\$13.00
Swimming Lesson Fee – Schools – Terms 1, 2 and 3	\$12.00	\$0.00	\$12.00
Swim School – School Sport	\$7.27	\$0.73	\$8.00

FACILITY HIRE AND BOOKINGS

Deposit – Returnable Key	\$50.00	\$0.00	\$50.00
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Name	Year 21/22		
	Fee (excl. GST)	GST	Fee (incl. GST)
Deposit – Birthday Party	\$45.45	\$4.55	\$50.00
Entry – Pool Birthday Party – Additional Child	\$29.55	\$2.95	\$32.50
Entry – Pool Birthday Party – Child (No Food)	\$24.00	\$2.40	\$26.40
Entry – Pool – School Pool Party (Per Participant)	\$12.00	\$1.20	\$13.20
Hire – 25m Pool Lane – Commercial (Per Lane Per Hour)	\$41.36	\$4.14	\$45.50
Hire – 25m Pool Lane – Non-Commercial (Per Lane Per Hour)	\$30.91	\$3.09	\$34.00
Hire – 25m Pool Lane – Squad Agreement	As per agreement with Council		
Hire – Cycling Room (Per Hour)	\$44.55	\$4.45	\$49.00
Entry – Health Club Group Hire (Per Person)	\$14.73	\$1.47	\$16.20
Hire – Instructor Fee (Per Session)	\$68.18	\$6.82	\$75.00
Hire – Play Club Room (Per Hour)	\$44.55	\$4.45	\$49.00
Play Club – Cleaning Fee	\$18.18	\$1.82	\$20.00
Hire – Full Court – Casual Rate (Per Hour)	\$82.73	\$8.27	\$91.00
Hire – Half Court (Basketball Only) – Casual Rate (Per Hour)	\$58.18	\$5.82	\$64.00
Hire – Badminton Court – Per Court Per Hour (Maximum 4 Players)	\$29.45	\$2.95	\$32.40
Hire – Full Court – Regular Rate (Per Hour)	\$75.09	\$7.51	\$82.60
Entry – Sports Birthday Party (Per Person)	\$15.00 - \$30.00		
Damages Fee	\$90.91	\$9.09	\$100.00
Sports Hall – Emergency Alarm Activation	\$45.45	\$4.55	\$50.00

MEMBERSHIPS ADMINISTRATION

Membership Admin Fee	\$45.23	\$4.52	\$49.75
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MEMBERSHIP

UPFRONT

All Access Membership – 12 Month Fixed Term – Upfront	\$1,054.55	\$105.45	\$1,160.00
Aquatic Membership – 12 Month Fixed Term – Upfront	\$817.73	\$81.77	\$899.50
All Access Membership – 3 Month Fixed Term – Upfront	\$336.82	\$33.68	\$370.50
All Access Membership – Flexible – 1 Month Fixed Term – Upfront	\$122.73	\$12.27	\$135.00
All Access Membership – Concession – 12 Month Fixed Term – Upfront	\$865.00	\$86.50	\$951.50
All Access Membership – Concession Off-Peak – 12 Month Fixed Term – Upfront	\$497.73	\$49.77	\$547.50
All Access Membership – Family (2 Adults, 3 Children U18) – 12 Month Fixed Term – Upfront	\$1,754.09	\$175.41	\$1,929.50
All Access Membership – Family – Additional Child (Under 18) – 12 Month Fixed Term – Upfront	\$355.45	\$35.55	\$391.00
All Access Membership – Family – Additional Concession (Over 18) – 12 Month Fixed Term – Upfront	\$474.09	\$47.41	\$521.50
All Access Membership – Family – Additional Adult – 12 Month Fixed Term – Upfront	\$829.55	\$82.95	\$912.50
Willoughby City Council Staff Membership – 12 Month Fixed Term – Salary Sacrifice / Upfront	\$618.18	\$61.82	\$680.00
Health Club Membership – 12 Month Fixed Term – Upfront	\$817.73	\$81.77	\$899.50

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
DIRECT DEBIT			
Corporate Membership – 12 Month Term (Ongoing) – Rate Per Fortnight	\$33.18	\$3.32	\$36.50
All Access Membership – 12 Month Term – Rate Per Fortnight	\$40.45	\$4.05	\$44.50
All Access Membership – Family (2 Adults, 3 Children U18) – 12 Month Term (Ongoing) – Rate Per Fortnight	\$67.27	\$6.73	\$74.00
All Access Membership – Family – Additional Child (Under 18) – 12 Month Term (Ongoing) – Rate Per Fortnight	\$13.64	\$1.36	\$15.00
All Access Membership – Family – Additional Concession (Over 18) – 12 Month Term (Ongoing) – Rate Per Fortnight	\$18.18	\$1.82	\$20.00
All Access Membership – Family – Additional Adult – 12 Month Term (Ongoing) – Rate Per Fortnight	\$31.82	\$3.18	\$35.00
All Access Membership – Flexible – 1 Month Term (Ongoing) – Rate Per Fortnight	\$49.55	\$4.95	\$54.50
All Access Membership – Concession Off-Peak – 12 Month Term (Ongoing) – Rate Per Fortnight	\$19.09	\$1.91	\$21.00
All Access Membership – Concession – 12 Month Term (Ongoing) – Rate Per Fortnight	\$33.18	\$3.32	\$36.50
Aquatic Membership – 12 Month Term (Ongoing) – Rate Per Fortnight	\$31.36	\$3.14	\$34.50
Health Club Membership – 12 Month Term (Ongoing) – Rate Per Fortnight	\$31.36	\$3.14	\$34.50
Willoughby City Council Staff Membership – Flexible – 1 Month Term (Ongoing) – Rate Per Fortnight	\$23.18	\$2.32	\$25.50

PERSONAL TRAINING

Personal Training – Non-Member – Adult – 3x45min (Stater Pack)	\$232.73	\$23.27	\$256.00
Personal Training – Non-Member – Adult – 5x45min	\$411.82	\$41.18	\$453.00
Personal Training – Non-Member – Adult – 10x45min	\$774.55	\$77.45	\$852.00
Personal Training – Non-Member – Adult – 5x60min	\$463.64	\$46.36	\$510.00
Personal Training – Non-Member – Adult – 10x60min	\$875.45	\$87.55	\$963.00
Personal Training – Member – Adult – 3x45min (Stater Pack)	\$172.73	\$17.27	\$190.00
Personal Training – Member – Adult – 5x45min	\$311.82	\$31.18	\$343.00
Personal Training – Member – Adult – 10x45min	\$573.64	\$57.36	\$631.00
Personal Training – Member – Adult – 5x60min	\$362.73	\$36.27	\$399.00
Personal Training – Member – Adult – 10x60min	\$675.45	\$67.55	\$743.00
Personal Training – Member – Duo – 5x60min	\$488.18	\$48.82	\$537.00
Personal Training – Member – Duo – 10x60min	\$925.45	\$92.55	\$1,018.00
Personal Training – Non-Member – Concession – 3x45min (Starter Pack)	\$174.55	\$17.45	\$192.00
Personal Training – Non-Member – Concession – 5x45min	\$309.09	\$30.91	\$340.00
Personal Training – Non-Member – Concession – 10x45min	\$580.91	\$58.09	\$639.00
Personal Training – Non-Member – Concession – 5x60min	\$347.27	\$34.73	\$382.00
Personal Training – Non-Member – Concession – 10x60min	\$657.27	\$65.73	\$723.00
Personal Training – Member – Concession – 3x45min (Stater Pack)	\$129.09	\$12.91	\$142.00
Personal Training – Member – Concession – 5x45min	\$233.64	\$23.36	\$257.00
Personal Training – Member – Concession – 10x45min	\$430.00	\$43.00	\$473.00
Personal Training – Member – Concession – 5x60min	\$271.82	\$27.18	\$299.00
Personal Training – Member – Concession – 10x60min	\$505.45	\$50.55	\$556.00
Group Personal Training – Member – Per Session	\$15.64	\$1.56	\$17.20
Group Personal Training – Non-Member – Per Session	\$25.09	\$2.51	\$27.60

Name	Fee (excl. GST)	GST	Year 21/22
			Fee (incl. GST)

OTHER VENUES

BEAUCHAMP PARK PAVILION

Additional charges or extra technical equipment, staffing, musical instruments, room set-up/breakdown and services charged as assessed.

Regular Hirers – per hour			\$13.00 - \$79.00
Casual Hirers – per hour			\$54.00 - \$106.00
Damage/Cleaning/Key Deposit	\$164.00	\$0.00	\$164.00
Commercial groups – minimum 4 hour charge			Minimum 4 hour charge

GORE HILL PAVILION

Additional charges or extra technical equipment, staffing, musical instruments, room set-up/breakdown and services charged as assessed.

Regular Hirers – per hour			\$13.00 - \$79.00
Casual Hirers – per hour			\$54.00 - \$106.00
Damage/Cleaning/Key Deposit	\$164.50	\$0.00	\$164.50
Commercial groups – minimum 4 hour charge			Minimum 4 hour charge

WARNERS PARK HALL

Regular Hirers – per hour	\$53.64	\$5.36	\$59.00
Casual Hirers – per hour	\$76.36	\$7.64	\$84.00
Daily rate (8 hrs)	\$490.91	\$49.09	\$540.00

NORTHBRIDGE BOWLING CLUB

Regular Hirers – per hour	\$53.64	\$5.36	\$59.00
Casual Hirers – per hour	\$76.36	\$7.64	\$84.00
Daily rate (8 hrs)	\$490.91	\$49.09	\$540.00

ARTARMON CHURCH AND COMMUNITY HALL – CNR TINDALE RD & ARTARMON RD

Regular Hirers – per hour	\$30.36	\$3.04	\$33.40
Casual Hirers – per hour	\$51.64	\$5.16	\$56.80
Damage/Cleaning/Key Deposit	\$100.00	\$0.00	\$100.00
Key Issue/Replacement	\$13.64	\$1.36	\$15.00

THE WILLIS RECREATION & SPORTS CENTRE

ACE Room

Regular Hirers – per hour	\$24.55	\$2.45	\$27.00
Casual Hirers – per hour	\$40.05	\$4.00	\$44.05

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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ACE Room [continued]

Damage/Cleaning/Key Deposit	\$101.50	\$0.00	\$101.50
Key Issue/Replacement	\$13.84	\$1.38	\$15.22

The Willis – Tennis Court Hire

Tennis Court Hire (7:00 AM – 4:59 PM) Per Hour – Casual	\$15.27	\$1.53	\$16.80
Tennis Court Hire (5:00 PM – 10:00 PM) Per Hour – Casual	\$24.91	\$2.49	\$27.40
Tennis Court Hire (7:00 AM – 4:59 PM) Per Hour – Regular	\$12.55	\$1.25	\$13.80
Tennis Court Hire (5:00 PM – 10:00 PM) – Regular	\$19.82	\$1.98	\$21.80
Multipurpose Synthetic Turf Court Hire (Per Hour) – Casual	\$58.14	\$5.81	\$63.95
Multipurpose Synthetic Turf Court Hire (Per Hour) – Regular	\$46.59	\$4.66	\$51.25
Multipurpose Synthetic Turf Court Hire (Per Hour) – Associations	\$44.09	\$4.41	\$48.50

TYNESIDE TENNIS COURTS

Court Hire – Casual	\$15.27	\$1.53	\$16.80
Court Hire – Regular	\$12.55	\$1.25	\$13.80
Room Hire – Regular	\$12.18	\$1.22	\$13.40

NORTHBRIDGE BATHS

Lane Hire (Per Lane Per Hour) – Commercial Rate	\$22.18	\$2.22	\$24.40
Lane Hire (Per Lane Per Hour) – Non Commercial Rate	\$16.32	\$1.63	\$17.95
Lifeguard Fee	\$47.27	\$4.73	\$52.00

WEDDINGS IN PARKS

Ceremony & Photos	\$227.27	\$22.73	\$250.00
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REMOVAL OF GARDEN REFUSE, ETC.

For eligible pensioners only (or as directed by the CEO)	\$390.91	\$39.09	\$430.00
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ADVERTISING**WEB PAGE ADVERTISING****Home Page Including Page Listing**

Symphony Program Booklet– Full Page Advertisement	\$310.91	\$31.09	\$342.00
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Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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SUNDRY CHARGES

Sundry Charges	Price determined by cost/market value		
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Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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CUSTOMER & CORPORATE DIRECTORATE

RATES & FINANCE CHARGES

CERTIFICATES UNDER SECTION 603 REGARDING RATES

Per Certificate	\$85.00	\$0.00	\$85.00
Statutory			
Urgency Fee (additional)	\$130.00	\$0.00	\$130.00

STORMWATER MANAGEMENT SERVICE CHARGE

Residential	\$25.00	\$0.00	\$25.00
Strata	\$12.50	\$0.00	\$12.50
Business	\$25.00	\$0.00	\$25.00

INTEREST ON OVERDUE RATES & CHARGES

Interest on Overdue Rates & Charges	6.00% (based on maximum allowable)
Statutory	

RATING INFORMATION

Copy of rate / instalment notice for previous year only	\$0.00	\$0.00	\$0.00
Copy notices only available for current and preceding year	\$0.00	\$0.00	\$0.00
Statement of rates for previous years		\$75.00 + \$5.00 per year^	
^ \$5 to be charged for each year requested			
^ Plus archive retrieval fees if applicable			

OTHER FEES

Dishonoured Cheque Fee (Charge per dishonoured cheque)	\$50.00	\$0.00	\$50.00
Dishonoured Direct Debit Fee (Charge per dishonoured direct debit)	\$25.00	\$0.00	\$25.00
Administration Fee – Refunds	\$35.00	\$0.00	\$35.00
Where not elsewhere provided, Council reserves the right to charge an administration fee for refund of payments where proposed events, applications etc. are cancelled or withdrawn.			
Credit Card Service Fee		.75% (GST where applicable)	

COUNCIL INFORMATION

Subpoena – Conduct Money (Minimum Charge)	\$108.00	\$0.00	\$108.00
Subpoena – Processing Charge (per hour)	\$87.00	\$0.00	\$87.00
File Research Information Request (per hour)	\$87.00	\$0.00	\$87.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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COUNCIL INFORMATION [continued]

Delivery of Archives (per file part)	\$12.75	\$0.00	\$12.75
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GOVERNMENT INFORMATION (PUBLIC ACCESS) ACT

GIPA Requests– Initial Application Fee	\$30.00	\$0.00	\$30.00
GIPA processing charges (including transcripts of Tapes of Council Meetings) per hour or part thereof	\$30.00	\$0.00	\$30.00
GIPA – Internal Review	\$40.00	\$0.00	\$40.00

SALE OF DOCUMENTS

Search Fee and Photocopy Fee	\$90.00	\$0.00	\$90.00
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PLANS & CODES

Custom Map Creation (per hour)	\$87.00	\$0.00	\$87.00
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COUNCIL BUILDING LEVEL 6 – MEETING & FUNCTION ROOMS 31 VICTOR STREET

COUNCIL CHAMBERS

Only to be booked with permission of Mayor or Chief Executive Officer

140 people, concert style seating

Caretaker rate per hour for nights & Sat/Sun	\$61.32	\$6.13	\$67.45
Damage/Equipment/Cleaning/Key Deposit/Bond	\$211.75	\$0.00	\$211.75
Kitchen per hour for early access before function	\$42.45	\$4.25	\$46.70
Not a commercial kitchen, reheating only is permitted			

Tuesday To Friday

Until 5 p.m. per day – commercial	\$415.45	\$41.55	\$457.00
Half day (minimum 4 hours)	\$207.27	\$20.73	\$228.00
Until 5 p.m. per day – community groups	\$310.91	\$31.09	\$342.00
Half day (minimum 4 hours)	\$156.36	\$15.64	\$172.00

Tuesday To Thursday

5 p.m. – 11p.m. – commercial	\$310.91	\$31.09	\$342.00
5 p.m. – 11p.m. – community groups	\$233.64	\$23.36	\$257.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
Friday			
5 p.m. – 12 midnight – commercial evening	\$415.45	\$41.55	\$457.00
5 p.m. – 12 midnight – community groups evening	\$310.91	\$31.09	\$342.00
Saturday/Sunday			
Until 5 p.m. – commercial	\$570.91	\$57.09	\$628.00
Until 5 p.m. – community groups	\$430.91	\$43.09	\$474.00
Saturday Evening			
5 p.m. – midnight – commercial	\$674.55	\$67.45	\$742.00
5 p.m. – midnight – community groups	\$508.18	\$50.82	\$559.00
COACHWOOD SUPPER ROOM			
Only to be booked with permission of Mayor or Chief Executive Officer			
40 people seated			
Caretaker rate per hour for nights & Sat/Sun	\$61.32	\$6.13	\$67.45
Damage/Equipment/Cleaning/Key Deposit/Bond	\$211.75	\$0.00	\$211.75
Kitchen per hour for early access before function	\$42.45	\$4.25	\$46.70
Not a commercial kitchen, reheating only is permitted			
Tuesday To Friday			
Until 5 p.m. – commercial	\$310.91	\$31.09	\$342.00
Half day (minimum 4 hours)	\$156.36	\$15.64	\$172.00
Until 5 p.m. – community groups	\$233.64	\$23.36	\$257.00
Half day (minimum 4 hours) community groups	\$119.09	\$11.91	\$131.00
Tuesday To Thursday			
5 p.m. – 11p.m. – commercial	\$207.27	\$20.73	\$228.00
5 p.m. – 11p.m. – community groups	\$156.36	\$15.64	\$172.00
Friday			
5 p.m. – 12 midnight – commercial	\$310.91	\$31.09	\$342.00
5 p.m. – 12 midnight – community groups	\$233.64	\$23.36	\$257.00
Saturday/Sunday			
Until 11p.m. – commercial	\$415.45	\$41.55	\$457.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Saturday/Sunday [continued]

Until 11p.m. – community groups	\$310.91	\$31.09	\$342.00
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Monday To Friday

Until 5 p.m. per hour – commercial	\$15.91	\$1.59	\$17.50
Until 5 p.m. per hour – community groups	\$12.73	\$1.27	\$14.00

Tuesday To Friday

5 p.m. – 11p.m. per hour – commercial	\$21.23	\$2.12	\$23.35
5 p.m. – 11p.m. per hour – community groups	\$15.91	\$1.59	\$17.50

Saturday/Sunday

Until 11p.m. per hour – commercial	\$31.82	\$3.18	\$35.00
Until 11p.m. per hour – community groups	\$26.55	\$2.65	\$29.20

BANKSIA ROOM – 14 – 20 PEOPLE

Damage/Equipment/Cleaning/Key Deposit/Bond	\$211.72	\$0.00	\$211.72
Caretaker rate per hour for nights & Sat/Sun	\$61.32	\$6.13	\$67.45

Monday To Friday

Until 5 p.m. per hour – commercial	\$26.55	\$2.65	\$29.20
Until 5 p.m. per hour – community groups	\$21.36	\$2.14	\$23.50

Tuesday To Friday

5 p.m. – 11p.m. per hour – commercial	\$31.82	\$3.18	\$35.00
5 p.m. – 11p.m. per hour – community groups	\$26.55	\$2.65	\$29.20

Saturday/Sunday

Until 11p.m. per hour – commercial	\$42.45	\$4.25	\$46.70
Until 11p.m. per hour – community groups	\$31.82	\$3.18	\$35.00

FILMING & PHOTOGRAPHY**COMMERCIAL PHOTOGRAPHY**

Undertaking of commercial photography in Council streets, public places, parks, reserves, etc. per day or part thereof	\$460.00	\$0.00	\$460.00
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Name	Fee (excl. GST)	GST	Year 21/22
			Fee (incl. GST)

FILMING AND TELEVISION LOCATIONS

Filming Within a private property (normal parking – no trucks or vans)	\$0.00	\$0.00	\$0.00
Filming on private parking (special parking – trucks or vans on the public road etc)	\$150.00	\$0.00	\$150.00
Ultra low impact filming (defined)	\$0.00	\$0.00	\$0.00
Low impact filming (defined)	\$150.00	\$0.00	\$150.00
Medium impact filming (defined)	\$300.00	\$0.00	\$300.00
High impact filming (defined)	\$500.00	\$0.00	\$500.00
Assessment of Traffic Management Plans for filming – Low impact	\$100.00	\$0.00	\$100.00
Assessment of Traffic Management Plans for filming – Medium impact	\$300.00	\$0.00	\$300.00
Assessment of Traffic Management Plans for filming – High impact	\$530.00	\$0.00	\$530.00
Administration fee when major changes are made to an approved application	75% of the application fee		

ADMINISTRATION CHARGES

PRINTING / PHOTOCOPYING / SCANNING

A4 (per copy) Black & White	\$0.18	\$0.02	\$0.20
A3 (per copy) Black & White	\$0.36	\$0.04	\$0.40
A2 (per copy) Black & White	\$9.09	\$0.91	\$10.00
A1 (per copy) Black & White	\$13.64	\$1.36	\$15.00
A0 (per copy) Black & White	\$13.64	\$1.36	\$15.00
A4 (per copy) Colour	\$4.55	\$0.45	\$5.00
A3 (per copy) Colour	\$4.55	\$0.45	\$5.00

DOCUMENTS/PLANS ON DISK OR USB

Equivalent (B&W) photocopy charges to apply	Per sheet plus \$10.00 per disk/usb
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SUNDRY CHARGES

Sundry Charges	Price determined by cost/market value
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Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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PLANNING & INFRASTRUCTURE DIRECTORATE

DEVELOPMENT MATTERS

Fees for all certificates issued by Council under the Environmental Planning & Assessment Act include any administrative costs incurred.

Estimated cost of works for Development Applications and Complying Development Applications exclude cost of any photovoltaic and/or solar hot water systems.

Building and Construction Long Service Levy			0.35%
Fees for Various Approvals – Applications under LGA 1993 (excl. on-site sewerage management systems)	\$150.00	\$0.00	\$150.00
In addition to any Development Application Fees as applicable			

DEVELOPMENT APPLICATIONS

Development Applications for Heritage Items listed on Schedule 7 of WLEP are exempt from Development Application Fee.

Development Applications (includes Planning Reform fee of 0.064% cost of work over \$50,000)

Development that does not involve the erection of a building, the carrying out of a work, the subdivision of land or the demolition of a building or work.	\$285.00	\$0.00	\$285.00
Development Application Administration Fee	\$100.00	\$0.00	\$100.00
Submission of amended plans prior to determination.	50% of the original DA assessment fee.		
Re-issue of determination documents on CD/DVD/USB or making available via secure link for a second time.	\$55.00	\$0.00	\$55.00

Estimated Cost Of Works

Up to \$5,000	\$110.00	\$0.00	\$110.00
\$5,001 – \$50,000	\$170 plus \$3.00 for each \$1,000 of total cost		
\$50,001 – \$250,000	\$352 plus \$3.64 for each \$1,000 over \$50,000		
\$250,001 – \$500,000	\$1,160 plus \$2.34 for each \$1,000 over \$250,000		
\$500,001 – \$1,000,000	\$1,745 plus \$1.64 for each \$1,000 over \$500,000		
\$1,000,001 – \$10,000,000	\$2,615 plus \$1.44 for each \$1,000 over \$1M		
\$10,000,001 +	\$15,875 plus \$1.19 for each \$1,000 over \$10M		

Designated, Integrated and Concurrence Fees

Additional Fees for Designated Development Fee (Cl.251 EP&A Reg.)	\$920.00	\$0.00	\$920.00
Additional Fees for Development that requires concurrence (Cl.252A EP&A Reg.)	\$140.00	\$0.00	\$140.00
Additional Fees for Integrated Development (Cl.253 EP&A Reg.)	\$140.00	\$0.00	\$140.00

Name	Fee (excl. GST)	GST	Year 21/22
			Fee (incl. GST)

REVIEW OF DETERMINATION FEE (SECTION 8 EPA ACT 1979)

No demolition or construction works	50% of the original DA assessment fee.		
Fee to verify estimated cost of works if required (Cl. 255 Regs)	\$110.00	\$0.00	\$110.00

Estimated Cost Of Works

Up to \$5,000	\$50.00	\$0.00	\$50.00
\$5,001 – \$250,000	\$85 plus \$1.50 for each \$1,000 of total cost		
\$250,001 – \$500,000	\$500 plus \$0.85 for each \$1,000 over \$250,000		
\$500,001 – \$1,000,000	\$712 plus \$0.50 for each \$1,000 over \$500,000		
\$1,000,001 – \$10,000,000	\$987 plus \$0.40 for each \$1,000 over \$1M		
\$10,000,001 +	\$4,737 plus \$0.27 for each \$1,000 over \$10M		

APPLICATION TO MODIFY DEVELOPMENT CONSENT (SECTION 4.55 AND 4.56 OF EPA ACT 1979)

Section 4.55(1) application fee (correct error or mis description)	\$71.00	\$0.00	\$71.00
Applications made under Section 4.55(1A) i.e. involving minimal environmental impact	\$645 or 50% of the original fee, whichever is the lesser		
Review of Determination of Modification	50% of Original DA Fee		

Applications Made Under Section 4.55(2)

(a) If the fee for the original application was less than \$100

Fee	50% of Original Fee
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(b) If no building or Demolition work involved

Fee	50% of Original Fee
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(c) In All Other Cases; Estimated Cost Of Works

Up to \$5,000	\$55.00	\$0.00	\$55.00
\$5,001 – \$250,000	\$85 plus \$1.50 for each \$1,000 of total cost		
\$250,001 – \$500,000	\$500 plus \$0.85 for each \$1,000 over \$250,000		
\$500,001 – \$1,000,000	\$712 plus \$0.50 for each \$1,000 over \$500,000		
\$1,000,001 – \$10,000,000	\$987 plus \$0.40 for each \$1,000 over \$1M		

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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(c) In All Other Cases; Estimated Cost Of Works [continued]

\$10,000,001 +	\$4,737 plus \$0.27 for each \$1,000 over \$10M		
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NOTIFICATION / RE-NOTIFICATION OF DA'S AS PER WILLOUGHBY COMMUNITY PARTICIPATION PLAN**Dwellings and Ancillary Development (Category A&B) including S 4.55 and S 4.56 modifications****Estimated Cost Of Works**

\$0 – \$10,000	\$195.00	\$0.00	\$195.00
\$10,001 – \$100,000	\$380.00	\$0.00	\$380.00
\$100,001 – \$250,000	\$525.00	\$0.00	\$525.00
\$250,000 +	\$700.00	\$0.00	\$700.00

Other (Category C)

All other applications requiring notification (Category C) and may include Building Certificates (Unauthorised work) and Division 8.2 Review of Determination	\$700.00	\$0.00	\$700.00
\$250,001 – \$2,000,000	\$700.00	\$0.00	\$700.00
\$2,000,001 – \$ 10,000,000	\$1,200.00	\$0.00	\$1,200.00
\$10,000,001 +	\$2,000.00	\$0.00	\$2,000.00

ADVERTISED DEVELOPMENT COSTS

Designated Development (Cl.252 EP&A Reg.)	\$2,200.00	\$0.00	\$2,200.00
Other Advertised Development (Statutory Instrument) (Cl.252 EP&A Reg.)	\$1,105.00	\$0.00	\$1,105.00
Planning Agreement (including Voluntary Planning Agreement) (Cl.252 EP&A Reg.)	\$1,105.00	\$0.00	\$1,105.00

DESIGN REVIEW PANEL

Additional fee for any application for residential apartment development which is required to be referred to a Design Review Panel (cl.248 EP&A Reg)	\$3,000.00	\$0.00	\$3,000.00
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DESIGN EXCELLENCE

Panel or Competition	Full costs to be borne by the Proponent
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SUBDIVISION (DEVELOPMENT APPLICATION)

Strata	\$330 base fee plus \$65 per additional lot/s
Subdivision of Land / Stratum	\$330 base fee plus \$53 per additional lot/s

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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SUBDIVISION (DEVELOPMENT APPLICATION) [continued]

Subdivision of Land (including roads) /Stratum	\$665 base fee plus \$65 per additional lot/s		
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ASSESSMENT AND PREPARATION OF SUBDIVISION CERTIFICATES

Land Subdivision

Fee for each lot	\$295.00	\$0.00	\$295.00
Common Boundary Adjustments	\$295.00	\$0.00	\$295.00
Consolidations	\$295.00	\$0.00	\$295.00

Proposed New Roads

First 100m	\$1,165.00	\$0.00	\$1,165.00
Each additional metre	\$25.00	\$0.00	\$25.00
Minimum charge	\$1,165.00	\$0.00	\$1,165.00

Strata Subdivisions

Base fee	\$118.00	\$0.00	\$118.00
Fee for each lot	\$30.00	\$0.00	\$30.00

Urgency Fee For Subdivision Certificates (48hrs)

Termination of Strata Scheme – signature of Council	\$92.27	\$9.23	\$101.50
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PRE LODGEMENT MEETINGS

Costs for Pre lodgement meeting(s) to be paid prior to meeting

Pre lodgement Development Application

Class 1 & 10	\$454.55	\$45.45	\$500.00
Class 1 & 10 (Heritage Items and Conservation Areas)	\$545.45	\$54.55	\$600.00
Minor – Class 2 – 9 (Change of use / minor or internal alterations and additions / signage)	\$681.82	\$68.18	\$750.00
Minor – Class 2 – 9 (Change of use / minor or internal alterations and additions / signage) (Heritage Items and Conservation Areas)	\$772.73	\$77.27	\$850.00
Major – Class 2 – 9	\$1,090.91	\$109.09	\$1,200.00
Major – Class 2 – 9 (Heritage Items and Conservation Areas)	\$1,181.82	\$118.18	\$1,300.00
Pre lodgement Development Application Cancellation Fee (Prior to 7 days before meeting)			10% of Fee
Pre lodgement Development Application Cancellation Fee (Within 7 days of meeting)			50% of Fee

Pre lodgement Complying Development Certificate

Name	Fee (excl. GST)	GST	Year 21/22
			Fee (incl. GST)

Pre lodgement Planning Proposal

Pre Lodgement Planning Proposal Meeting (Recommended)	\$2,031.82	\$203.18	\$2,235.00
Pre Lodgement Planning Proposal Meeting (Heritage Item Conservation Areas) (Recommended)	\$2,090.91	\$209.09	\$2,300.00
Pre lodgement Planning Proposal Cancellation (Prior to 7 days before meeting)			10% of Fee
Pre lodgement Planning Proposal Cancellation (Within 7 days of meeting)			50% of Fee

PLANNING PROPOSAL FEE

Proposals that are minor and low impact	\$30,000.00	\$0.00	\$30,000.00
All other Proposals	\$70,000.00	\$0.00	\$70,000.00
Amended Proposal at the Proponent's request	50% of the original Planning Proposal Fee		
Fees for Council engaging external consultants may be charged at Council's discretion	At cost		
Planning Proposal Public Hearing (if necessary)	Full cost recovery.		
Assessment Fee for additional studies following Gateway determination	10% of category fee		
Voluntary Planning Agreement	Full costs including Council's legals borne by the proponent		

PLANNING PROPOSAL ADVERTISING FEE

Advertising costs to be paid at lodgement of Planning Proposal.

Proposals that are minor and low impact	\$2,025.00	\$0.00	\$2,025.00
All other Proposals	\$4,050.00	\$0.00	\$4,050.00

SECTION 7.11 CONTRIBUTIONS

Development Contributions	Payable in accordance with Section 7.11 (Section 94) Contributions Plans		
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SECTION 7.12 CONTRIBUTIONS

Development Contributions	Payable in accordance with Section 7.12 (Section 94A) Contributions Plans		
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TREE PRESERVATION ORDER APPLICATIONS

Pensioners & Health Care Card Holders are exempt from Inspection Fee

Application Fee	\$35.00	\$0.00	\$35.00
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Inspection Fees

1 – 3 Trees	\$48.00	\$0.00	\$48.00
Each additional tree	\$35.50	\$0.00	\$35.50

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Inspection Fees [continued]

Onsite appointment request	\$67.00	\$0.00	\$67.00
Pre-DA assessment request per hour	\$153.50	\$0.00	\$153.50
Request for review of assessment decision	\$79.50	\$0.00	\$79.50
Exempt or Complying Development Certificate application (inc inspection + permit)	\$221.50	\$0.00	\$221.50

Offset fee for replacement planting where unable to be provided on site

Standard	\$2,030.00	\$0.00	\$2,030.00
Pensioner	\$406.00	\$0.00	\$406.00

CERTIFICATION MATTERS

COMPLYING DEVELOPMENT CERTIFICATE APPLICATIONS

In addition, a further 20% fee will be charged when the application involves assessment of bushfire prone land or flood prone land or when the application involves assessment of a performance solution.

Change of Use	\$909.09	\$90.91	\$1,000.00
Unlisted		Price On Application	
In addition a neighbour notification fee is applicable for – new dwelling houses; additions to an existing dwelling; demolition of a building; secondary dwelling or group home	\$136.36	\$13.64	\$150.00
Amended Complying Development Certificate Fee (Section 4.30)	\$200 or 20% of the original fee, whichever is greater		

Class 10

Outbuilding	\$500.00	\$50.00	\$550.00
Garage	\$500.00	\$50.00	\$550.00
Swimming Pool	\$500.00	\$50.00	\$550.00
Deck, terrace	\$500.00	\$50.00	\$550.00
Ancillary development	\$500.00	\$50.00	\$550.00
Demolition	\$400.00	\$40.00	\$440.00

Class 1A

Dwelling – new	\$1,363.64	\$136.36	\$1,500.00
Dwelling – addition	\$1,090.91	\$109.09	\$1,200.00
Dwelling – external alteration	\$636.36	\$63.64	\$700.00
Dwelling – internal alteration	\$454.55	\$45.45	\$500.00

Secondary Dwelling (60M2 'Granny Flat')

Attached – side by side	\$1,363.64	\$136.36	\$1,500.00
Attached – one above another (Class 2)	\$1,818.18	\$181.82	\$2,000.00
Detached	\$1,363.64	\$136.36	\$1,500.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Class 2/4

Internal alteration	\$636.36	\$63.64	\$700.00
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Class 3 – Boarding House

New	\$1,818.18	\$181.82	\$2,000.00
Addition	\$1,363.64	\$136.36	\$1,500.00
External alteration	\$909.09	\$90.91	\$1,000.00
Internal alteration	\$727.27	\$72.73	\$800.00

Class 5,6,7,8 – Commercial / Industrial

Internal alteration >= 500m2	\$1,090.91	\$109.09	\$1,200.00
Internal alteration < 500m2	\$818.18	\$81.82	\$900.00
Addition	\$3,636.36	\$363.64	\$4,000.00
New	\$7,272.73	\$727.27	\$8,000.00

Class 9A – Health Care

New	\$13,636.36	\$1,363.64	\$15,000.00
Addition	\$9,090.91	\$909.09	\$10,000.00
External alteration	\$5,454.55	\$545.45	\$6,000.00
Internal alteration	\$3,636.36	\$363.64	\$4,000.00

Class 9B – School, Child Care, Assembly Building

New	\$4,545.45	\$454.55	\$5,000.00
Addition	\$3,636.36	\$363.64	\$4,000.00
External alteration	\$1,818.18	\$181.82	\$2,000.00
Internal alteration	\$909.09	\$90.91	\$1,000.00

CONSTRUCTION CERTIFICATES

NOTE: For any building involving an Alternative Solution or involving Bushfire construction, a 20% surcharge applies

Application to amend Construction Certificate	\$200 or 20% of the original fee, whichever is greater		
Development Consent/Complying Development Certificate Food Premises Fitout Inspection	\$240.91	\$24.09	\$265.00
Subsequent inspections (per 1/2 hour or part thereof)	\$94.55	\$9.45	\$104.00

Outbuildings – Class 10

Carport, swimming pool, garage, retaining wall etc	\$450.00	\$45.00	\$495.00
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Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Dwellings – Class 1

New	\$863.64	\$86.36	\$950.00
Additions	\$727.27	\$72.73	\$800.00
Alterations	\$454.55	\$45.45	\$500.00

Residential Buildings – Class 2, 3 & 4

Alterations

1st Unit	\$590.91	\$59.09	\$650.00
Subsequent Units	\$409.09	\$40.91	\$450.00

Multistorey

1st Unit	\$863.64	\$86.36	\$950.00
Car Park	\$863.64	\$86.36	\$950.00
Subsequent Units	\$318.18	\$31.82	\$350.00

Commercial / Industrial – Class 5, 6, 7 & 8

Alterations

Minor < 500m ²	\$1,045.45	\$104.55	\$1,150.00
Major > 500m ²	\$1,772.73	\$177.27	\$1,950.00

Additions

Minor < 500m ²	\$1,363.64	\$136.36	\$1,500.00
Major > 500m ²	\$2,272.73	\$227.27	\$2,500.00

New Building

< 500m ²	\$1,818.18	\$181.82	\$2,000.00
> 500m ² – 2,000m ²	\$3,181.82	\$318.18	\$3,500.00
> 2,000m ²		Price On Application	

Healthcare Buildings, Assembly Buildings And Care Buildings – Class 9A, 9B & 9C

Alterations

Minor < 500m ²	\$1,090.91	\$109.09	\$1,200.00
Major > 500m ²	\$2,000.00	\$200.00	\$2,200.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Additions

< 500m ²	\$1,363.64	\$136.36	\$1,500.00
> 500m ² – 2,000m ²	\$2,272.73	\$227.27	\$2,500.00
> 2,000m ²	\$3,181.82	\$318.18	\$3,500.00

New Building

< 500m ²	\$2,272.73	\$227.27	\$2,500.00
> 500m ² – 2,000m ²	\$3,181.82	\$318.18	\$3,500.00
> 2,000m ²		Price On Application	

BUILDING INSPECTIONS

Reinspection Fee (per hour or part thereof)	\$146.36	\$14.64	\$161.00
Fee for after-hours building inspections (eg smoke testing)(per hour or part thereof)	\$160.91	\$16.09	\$177.00
Fee for fire safety audit inspections (per hour or part thereof)	\$146.36	\$14.64	\$161.00
Annual Fire Safety Statement Registration / Administration Fee	\$53.64	\$5.36	\$59.00
Boarding House Compliance First Inspection	\$322.00	\$0.00	\$322.00
Boarding House Reinspection	\$161.00	\$0.00	\$161.00
Awning Inspection Fee	\$161.00	\$0.00	\$161.00

Class 1 And 10 Buildings (Including New Dwellings , Additions/Alterations To Dwellings And Structures Ancillary To A Dwelling)

Class 1 and 10 buildings	\$205.45	\$20.55	\$226.00
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Class 2 – 9 Buildings (Including Multi Unit Development, Townhouses, Commercial And Industrial Buildings)

1st dwelling	\$278.18	\$27.82	\$306.00
Each additional dwelling (fee for over 20 additional dwellings will be negotiated)	\$73.64	\$7.36	\$81.00

OCCUPATION CERTIFICATES

INTERIM/FINAL OCCUPATION CERTIFICATE

Class 1 Or 10 Buildings (Where Final Inspection Has Been Completed) – Estimated Cost Of Works

\$0 – \$100,000	\$145.45	\$14.55	\$160.00
\$100,001 upwards	\$172.73	\$17.27	\$190.00

Class 2 Or 9 Buildings Where Cost Of Work (Per Unit Or Separate Occupancy) – Estimated Cost Of Works

\$0 – \$10,000	\$160.91	\$16.09	\$177.00
\$10,001 – \$100,000	\$242.73	\$24.27	\$267.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Class 2 Or 9 Buildings Where Cost Of Work (Per Unit Or Separate Occupancy) – Estimated Cost Of Works [continued]

\$100,001 – \$500,000	\$402.73	\$40.27	\$443.00
\$500,001 upwards	\$645.45	\$64.55	\$710.00

REGISTRATION OF CERTIFICATES

All certificates issued by private certifiers requiring registration by Council (cost per certificate)	\$36.00	\$0.00	\$36.00
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APPOINTMENT OF COUNCIL TO REPLACE PRINCIPAL CERTIFYING AUTHORITY

Council will apply the full fees required for a Construction Certificate or a Complying Development Certificate including Building Inspection Fees, PCA agreement and Occupation Certificate

MISCELLANEOUS MATTERS

CD/DVD/USB CORRECTION FEE

Construction Certificate / Complying Development Certificate only where Cost of Works < \$100,000	\$50.00	\$5.00	\$55.00
Single dwellings and ancillary development	\$155.00	\$0.00	\$155.00
All other development applications	\$510.00	\$0.00	\$510.00

BUILDING CERTIFICATES

Standard Building Certificates	As prescribed by legislation		
Building Certificate Admin Fee (Where PCA previously engaged)	\$185.00	\$0.00	\$185.00
Building Certificates Unauthorised Works or Non Certified Building Work	Fee equivalent to the maximum fee for a joint Development and Construction Certificate application or a Complying Development application (whichever is relevant).		

OTHER FEES

Exempt Development Certificate	\$147.73	\$14.77	\$162.50
Out of Hours Work Permit	\$272.00	\$0.00	\$272.00
Urgency fee (48 hrs) – Additional to Out of Hours fee	\$133.00	\$0.00	\$133.00
Bank Guarantee Administration Fee (>\$10,000 value)	\$267.00	\$0.00	\$267.00
PCA sign	\$20.00	\$2.00	\$22.00
Flood Information Certificate	\$273.04	\$0.00	\$273.04

CANCELLED OR WITHDRAWN DEVELOPMENT, COMPLYING DEVELOPMENT, CONSTRUCTION CERTIFICATES OR BUILDING CERTIFICATE APPLICATION

Council retains a minimum of the following

(a) Within one working day of lodgement	\$0.00	\$0.00	\$0.00
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Name	Fee (excl. GST)	GST	Year 21/22
			Fee (incl. GST)

CANCELLED OR WITHDRAWN DEVELOPMENT, COMPLYING DEVELOPMENT, CONSTRUCTION CERTIFICATES OR BUILDING CERTIFICATE APPLICATION

[continued]

(b) Prior to notification and no substantial assessment	25% of DA Fee + Admin Fee		
(c) Referrals, Notification and Preliminary Assessment undertaken (No meeting with applicant)	50% of DA Fee + Admin Fee + Notification Fee		
(d) Referrals, Notification and Detailed Assessment undertaken (One or more meetings with applicant)	70% + Admin Fee + Notification Fee		
(e) Assessment substantially completed but report not written.	80% + Admin Fee + Notification Fee		

SWIMMING POOLS ACT 1992

Safety Barrier Inspection	\$136.36	\$13.64	\$150.00
Reinspection of Pool Safety Barrier	\$90.91	\$9.09	\$100.00
Application for an Exemption Section 22	\$250.00	\$0.00	\$250.00
Swimming Pool Registration by Council	\$9.09	\$0.91	\$10.00
CPR Chart (Pool Poster)	\$18.18	\$1.82	\$20.00

PROFESSIONAL ADVICE

Fees for Council engaging external consultants may be charged at Council's discretion

Formal written responses for advice	\$260.45	\$26.05	\$286.50
Bushfire Attack Level Advice	\$240.91	\$24.09	\$265.00
Fees for Council engaging external consultants	Full costs to be borne by the Proponent		

PLANNING CERTIFICATES (E P & A ACT 1979)

Section 10.7(2) Basic Certificate	\$53.00	\$0.00	\$53.00
Full Certificate – including 10.7(5) (additional information)	\$133.00	\$0.00	\$133.00
Expedited Fee (24 hours) (non-refundable)	\$130.00	\$0.00	\$130.00
Admin fee for refund of Planning Certificate	\$20.00	\$0.00	\$20.00

FEES UNDER SECTION 735A OF THE LGA 1993 & DIVISION 9.2 OF THE EP&A ACT 1979

Outstanding Notices	\$150.00	\$0.00	\$150.00
Urgency Fee (48 hours) (non-refundable)	\$130.00	\$0.00	\$130.00
Admin fee for refund of 735A or 121ZP Certificate	\$20.00	\$0.00	\$20.00

PLANS, CODES AND REGISTERS

Available by contacting Help & Service Centre

Planning documents A4 B&W photocopy per page	\$0.20	\$0.00	\$0.20
Certified copy or extract of Plan, Document, Map (Section 10.8 EPA 1979)	\$100.00	\$0.00	\$100.00

Name	Fee (excl. GST)	GST	Year 21/22
			Fee (incl. GST)

FEES FOR DEVELOPMENT MATTERS – ENVIRONMENTAL PLANNING & ASSESSMENT ACT/ROADS ACT

INFRASTRUCTURE WORKS

AUSPEC Technical Specification per section per set	\$98.00	\$0.00	\$98.00
Design of Footpath Crossing (including survey, initial inspection and completion Certificate)	\$1,185.00	\$0.00	\$1,185.00
Inspection of drainage works (prior to backfilling)	\$297.00	\$0.00	\$297.00
Inspection of infrastructure works (per inspection)	\$297.00	\$0.00	\$297.00
Completion Certificate for road / footpath / kerb and gutter / drainage / OSD / vehicular crossing works (includes one inspection)	\$516.00	\$0.00	\$516.00
Section 88G Certificate – No Inspection	\$10.50	\$0.00	\$10.50
Urgency Processing Fee – additional fees	\$138.00	\$0.00	\$138.00
OSD plaque	\$90.00	\$0.00	\$90.00

DAMAGE DEPOSIT

Single residential developments (less than \$50,000 in value)	\$2,235.00	\$0.00	\$2,235.00
Single residential developments (in excess of \$50,000 in value)	\$4,500.00	\$0.00	\$4,500.00
Other developments including multi-unit residential, industrial and commercial etc (Including CDC applications)	To be assessed on a case by case basis		
Dual Occupancy	\$7,000.00	\$0.00	\$7,000.00
Plus Dual Occupancy (Additional fee per Lineal meter of road frontage to any secondary road or lane)	\$400.00	\$0.00	\$400.00
Complying Development Certificate (CDC) application (Single dwelling and/or secondary dwelling only)	\$4,500.00	\$0.00	\$4,500.00
Inspection – Release of Damage Deposit	\$176.00	\$0.00	\$176.00
Temporary access through Open Space / community land	\$360.00 & bond as required		

An additional damage deposit applies for development sites that contain Council stormwater infrastructure or where the stormwater infrastructure is in the footway fronting the site. The amount is assessed on a case by case basis.

RECTIFICATION FEES (SUBJECT TO PROCEDURAL CHANGE)

Fee for rectification of damage to public road/infrastructure in lieu of Damage Deposit (Based on cost of works)

Cost of Works

HOARDING PERMIT

Class "A" Hoardings - Plywood hoardings will only be permitted

Class "B" Gantries or Container Hoardings will only be permitted

Note: Class A hoardings - minimum width for calculation is 1 metre

Note: If parking meter spaces affected, 100% of parking rate at time of removal will be added.

Administration Fee – Class A or B	\$1,100.00	\$0.00	\$1,100.00
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Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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HOARDING PERMIT [continued]

Plus \$ per square metre per week– Class A	\$18.00	\$0.00	\$18.00
Plus \$ per square metre per week– Class B	\$20.00	\$0.00	\$20.00
Plus if airspace utilised – per square metre per week– Class B	\$20.00	\$0.00	\$20.00
Builder's fence on Council's Property (max. 600mm off the property boundary) – per metre per week in residential areas only	\$18.00	\$0.00	\$18.00

FOOTPATH PERMIT FOR PERMISSION TO OCCUPY PUBLIC SPACE

For short term building works - maximum 2 weeks

Application fee	\$75.00	\$0.00	\$75.00
CBD areas – per square metre per week or part thereof	\$35.00	\$0.00	\$35.00
Residential areas – per square metre per week or part thereof	\$25.00	\$0.00	\$25.00
Plus Damage Deposit (apply in CBD areas)	\$4,500.00	\$0.00	\$4,500.00
Inspection – Release of Damage Deposit	\$150.00	\$0.00	\$150.00
Permit Cancellation Fee	50% of the permit fees		
Change of Date (2nd amendment)	\$100.00	\$0.00	\$100.00

TRADE PARKING PERMIT

Note: If parking meter spaces affected, 100% of parking rate at time of removal will be added.

Trade parking permits	\$32 application fee additional \$7.50 per day
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WORK ZONE PERMIT

Note: If parking meter spaces affected, 100% of parking rate at time of removal will be added.

Administration & Installation/Removal Fees	\$2,100.00	\$0.00	\$2,100.00
Plus per metre per week (first year)	\$70.00	\$0.00	\$70.00
Thereafter per metre per week	\$75.00	\$0.00	\$75.00
Amendment of the existing work zone	\$250.00	\$0.00	\$250.00

CRANE/HEAVY PERMIT – OCCUPATION OF PUBLIC ROADS FOR CRANE/CONCRETE PUMP/HEAVY PLANT

Note: If parking meter spaces affected, 100% of parking rate at time of removal will be added.

Note: Applications lodged for urgent processing (72 hours or less) may incur an additional surcharge of 20% of the application fee.

Application fee	\$75.00	\$0.00	\$75.00
One road lane or Work zone per day	\$360.00	\$0.00	\$360.00
Plus each additional lane per plant item per day	\$450.00	\$0.00	\$450.00
Half Road/Lane closure if permitted per day (No Plant)	\$1,475.00	\$0.00	\$1,475.00
Full Road/Lane closure if permitted per day (No Plant)	\$2,200.00	\$0.00	\$2,200.00
Plus Damage Deposit (Non DA related application)	\$4,465.00	\$0.00	\$4,465.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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CRANE/HEAVY PERMIT – OCCUPATION OF PUBLIC ROADS FOR CRANE/CONCRETE PUMP/HEAVY PLANT [continued]

Change of Date	\$100.00	\$0.00	\$100.00
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SKIP BIN PERMIT – WASTE CONTAINERS ON COUNCIL'S NATURE STRIP

Note: Applications lodged for urgent processing (72 hours or less) may incur an additional surcharge of 20% of the application fee.

Shipping containers are not permitted to be placed on Council's property

Hours are excluding public holidays - weekends count as 1 day or 24 hrs

Application fee	\$75.00	\$0.00	\$75.00
Up to 3 days	\$210.00	\$0.00	\$210.00
Placement per Container (max. size 6m3)			
More than 72hrs - Not permitted			
Change of Date	\$35.00	\$0.00	\$35.00
Permit Cancellation Fee		50% of the permit fees	

VEHICULAR CROSSING PERMIT – CONSTRUCTION OF CROSSOVER ON COUNCIL'S PROPERTY

Note: Applications lodged for urgent processing (72 hours or less) may incur an additional surcharge of 20% of the application fee.

Inspection fee per crossing (includes initial, formwork & final inspection)	\$309.00	\$0.00	\$309.00
Each additional inspection visit	\$176.00	\$0.00	\$176.00
Damage Deposit (Complying Development Certificate (CDC) application)	\$4,500.00	\$0.00	\$4,500.00
Damage Deposit (Replace existing crossing only)	\$1,350.00	\$0.00	\$1,350.00
Inspection – Release of Damage Deposit	\$176.00	\$0.00	\$176.00
Permit Assessment Fee for Non-DA application (includes one inspection)	\$309.00	\$0.00	\$309.00
Permit Cancellation or Extension Fee		50% of the permit fees	

VEHICULAR CROSSING – PRE-APPROVAL CERTIFICATE (SUBJECT TO PROCEDURAL CHANGE)

Required prior to application for Driveway Permit

Application & Assessment Fee (Subject to Submission of Satisfactory Longitudinal sections) – in association with development consent	\$250.00	\$0.00	\$250.00
Application & Assessment Fee (Subject to Submission of Satisfactory Longitudinal sections) – not associated with development consent	\$250.00	\$0.00	\$250.00

ROAD OPENING PERMIT – ROAD RESTORATION

For developments other than single residential dwellings, restoration costs will be quoted on a per project basis (Contact Council's Restoration Officer)

Road Opening Permit fee	\$112.00	\$0.00	\$112.00
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Name	Fee (excl. GST)	GST	Year 21/22
			Fee (incl. GST)

ROAD OPENING PERMIT – ROAD RESTORATION [continued]

Damage Deposit (Complying Development Certificate (CDC) application)	\$4,500.00	\$0.00	\$4,500.00
Inspection – Release of Damage Deposit	\$176.00	\$0.00	\$176.00
Permit Assessment Fee for Non-DA application (includes one inspection)	\$297.00	\$0.00	\$297.00
Inspection of drainage works (prior to backfilling)	\$297.00	\$0.00	\$297.00
Permit Cancellation or Extension Fee		50% of the permit fees	

ROADS (PER SQ.M – MINIMUM CHARGE – 1.2 SQ.M.)

Note: Minimum width for the purpose of calculating the restoration charge is 1.2 metres

Concrete	\$657.27	\$65.73	\$723.00
Asphalt / Bitumen	\$527.27	\$52.73	\$580.00
Plus Traffic Control for Restoration Works (per day)	\$1,256.00	\$0.00	\$1,256.00
Plus Surcharge for Night Works / Weekends		40% of Scheduled Fee	
Plus Concrete / Asphalt Plant Opening Fee for Night Works (for each night of opening)	\$2,897.27	\$289.73	\$3,187.00

FOOTPATH (PER SQ.M – MINIMUM CHARGE – 1.4 SQ.M.)

Note: For excavation on footpath areas, full footpath width and to the nearest joint shall be used for the purpose of calculating the restoration charge.

Note: For excavation on grassed areas, minimum width for the purpose of calculating the restoration charge is 1 metre.

Cost reduction are offered on the basis of the volume of work to be undertaken at one specific location, ie one street address

For large area restorations cost may be reduce as follow:

>50m² = 10%

>100m² = 20%

>500m² = Quote: based on direct contract cost plus

- a 10% Administration fee

- a 25% Ongoing maintenance cost

After completion of post work restorations by the applicant/ or utility authorities conforming to council satisfaction, Council will carry out final surface restorations. However, utility authorities (those are exempted under the legislation) may choose to carry out their own restorations subject to council approval. A formal proposal/submission is required for council consideration and approval.

Concrete / Asphaltic Bitumen	\$305.45	\$30.55	\$336.00
Standard paving blocks or tiles	\$454.55	\$45.45	\$500.00
Standard paving – PGH Pompee Header Course with Bitumen infill	\$657.27	\$65.73	\$723.00
CBD paving blocks (inc Pebblecrete Pavers etc.)	\$657.27	\$65.73	\$723.00
CBD paving blocks or tiles (inc Granite Pavers)	\$954.55	\$95.45	\$1,050.00
Plus Traffic Control for Restoration Works (per day) on Main Traffic Routes (e.g. State Roads, Regional roads and Important local roads including signalised intersections)	\$1,141.82	\$114.18	\$1,256.00
Plus Surcharge for Night Works / Weekends		40% of Scheduled Fee	
Plus Concrete / Asphalt Plant Opening Fee for Night Works (for each night of opening)	\$2,897.27	\$289.73	\$3,187.00
Formed or grassed area	\$111.82	\$11.18	\$123.00

Name	Fee (excl. GST)	GST	Year 21/22
			Fee (incl. GST)

FOOTPATH CROSSINGS

Note: For excavation on vehicular crossing, full panel of the crossing shall be used for the purpose of calculating the restoration charge.

Cost reduction are offered on the basis of the volume of work to be undertaken at one specific location, ie one street address

For large area restorations cost may be reduce as follow:

>50m² = 10%

>100m² = 20%

>500m² = Quote: based on direct contract cost plus

- a 10% Administration fee

- a 25% Ongoing maintenance cost

After completion of post work restorations by the applicant/ or utility authorises conforming to council satisfaction. Council will carry out final surface restorations. However, utility authorities (those are exempted under the legislation) may choose to carry out their own restorations subject to council approval. A formal proposal/submission is required for council consideration and approval.

Concrete residential driveway (125mm) (per sq.m)	\$329.09	\$32.91	\$362.00
Concrete industrial/commercial driveway (150mm) (per sq.m)	\$436.36	\$43.64	\$480.00
Concrete industrial/commercial driveway (200mm) (per sq.m)	\$527.27	\$52.73	\$580.00
Kerb / Kerb & Gutter and / or layback (per lineal meter)	\$305.45	\$30.55	\$336.00
Dish crossing at intersection (Standard or heavy duty) (per lineal meter)	\$387.27	\$38.73	\$426.00
Stormwater Kerb Outlet (per outlet)	\$212.73	\$21.27	\$234.00
Perpendicular driveway line marking (2 lines approx. 2.5m long)	\$155.45	\$15.55	\$171.00
Plus Traffic Control for Restoration Works (per day) on Main Traffic Routes (e.g. State Roads, Regional roads and Important local roads including signalised intersections)	\$1,141.82	\$114.18	\$1,256.00
Plus Surcharge for Night Works / Weekends		40% of Scheduled Fee	
Plus Concrete / Asphalt Plant Opening Fee for Night Works (for each night of opening)	\$2,897.27	\$289.73	\$3,187.00

PARKING METERS

Removal of Parking Meter			Cost + 20%
Parking Meter Installation (does not include supply of meter)			Cost + 20%
Reprogramming Cost of Parking Meters – Strada (does not include supply of meter)	\$270.00	\$0.00	\$270.00
New Parking Meter Cost – Strada			Council's purchase price + 20%

PROVISION OF BARRICADES AND WEBBING

Maximum 1 Week Hire

Supply and delivery of 10 barricades	\$87.00	\$0.00	\$87.00
Supply and delivery of additional 10 barricades	\$23.00	\$0.00	\$23.00
Supply and delivery of 50m of webbing and star pickets	\$88.00	\$0.00	\$88.00
Supply and delivery of additional 50m of webbing and star pickets	\$44.00	\$0.00	\$44.00

Name	Fee (excl. GST)	GST	Year 21/22
			Fee (incl. GST)

PARKING CHARGES

PARKING CHARGES

Where flat rate parking fees apply, the minimum charge shall be the flat rate.

Parking charges (maximum) – per hour	\$13.64	\$1.36	\$15.00
Parking charges (maximum) – hourly steps	\$13.64	\$1.36	\$15.00
Parking charges (maximum) – daily fee	\$77.27	\$7.73	\$85.00
Lost Ticket Charge per day (maximum, Off Street car parks)	\$39.09	\$3.91	\$43.00
Overnight Parking Charge (maximum, Off Street car parks)	\$47.27	\$4.73	\$52.00
Early Bird Parking Charge (maximum, Off Street car parks)	\$23.64	\$2.36	\$26.00
Ticket Production Administration Fee (maximum)	\$47.27	\$4.73	\$52.00
Damage to parking equipment (cost + 20%)			Cost + 20%
Removal of vehicle when car park closed (maximum, Off Street car parks)	\$122.73	\$12.27	\$135.00
Reservation of parking space – per space per reservation (maximum, Off Street car parks)	\$18.18	\$1.82	\$20.00
Credit Card transaction surcharge fee (maximum)	\$1.82	\$0.18	\$2.00
Administration fee (maximum) permanent parker or value card etc-new (Off Street car parks)	\$47.27	\$4.73	\$52.00
Administration fee (maximum) permanent parker or value card etc-reissue (Off Street car parks)	\$47.27	\$4.73	\$52.00
Maximum permanent parking agreement fee per month (Off Street car parks)	\$640.91	\$64.09	\$705.00
Reserved permanent parking space			Maximum 150% of permanent parking fee
Minimum credit card charge for parking meters			Where an hourly parking fee of more than \$2 applies, the minimum credit card charge will be the 50% of this hourly parking fee. Where an hourly parking fee of \$2 or less applies, the minimum credit card charge will be the 100% of this hourly parking fee.

PARKING PERMITS

Residential Parking Permit – first vehicle	\$46.00	\$0.00	\$46.00
Residential Parking Permit – second vehicle	\$90.00	\$0.00	\$90.00
Residential Parking Permit – third vehicle	\$254.00	\$0.00	\$254.00
Carer parking permit	\$50.75	\$0.00	\$50.75
Replacement Fee	\$27.60	\$0.00	\$27.60
Visitor Parking Permit (first 10 permits)		\$22 (First 10 Permits)	
Visitor Parking Permit (second 10 permits)		\$32 (10 permits)	
Visitor Parking Permit (third 10 permits or above)		\$53 (10 permits)	

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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CAR SHARE PERMITS

Application, Installation & Administration for new car share parking space (cost for each parking space)	\$1,827.00	\$0.00	\$1,827.00
Non- refundable amount: \$500.00 Refundable amount: \$1300.00. This would occur if the decision is not to install the proposed new bay *Last year's fees only include marking & sign posting*			
Service Administration (cost for each request)	\$305.00	\$0.00	\$305.00
Removal of a Car – Share Parking Space (cost per parking space)	\$1,320.00	\$0.00	\$1,320.00
Car Share Annual Permit (parking space in paid parking area)	\$1,525.00	\$0.00	\$1,525.00
Car Share Annual Permit (All other locations)	\$427.00	\$0.00	\$427.00
Replacement Annual Car Share Permit (cost per permit)	\$31.00	\$0.00	\$31.00

ALBERT AVENUE CARPARK (250 BAYS) – BIKE STORAGE FACILITY

Annual fee	\$20.45	\$2.05	\$22.50
Swipe card deposit	\$25.45	\$2.55	\$28.00
Swipe card replacement fee	\$24.55	\$2.45	\$27.00

ENCROACHMENTS IN COUNCIL LANDS

Assessment of Application	\$280.00	\$0.00	\$280.00
Site inspection fee (includes pre-construction, formwork, final inspection)	\$290.00	\$0.00	\$290.00
Each additional inspection visit	\$120.00	\$0.00	\$120.00
Damage Deposit (for minor works <= 5 sq.m on Council land)	\$2,235.00	\$0.00	\$2,235.00
Damage Deposit (for major works > 5 sq.m on Council land)	To be assessed on a case by case basis.		
Additional Inspection for release of damage deposit if required	\$120.00	\$0.00	\$120.00
Legal Fees for Council	At Cost + 10% (administration fee)		
Bond to ensure registration of positive covenant within 12 months by applicant	\$4,200.00	\$0.00	\$4,200.00
Bond for Council expenses for encroachments	To be assessed on a case by case basis.		

COMPLIANCE MATTERS

INSPECTION FEES – SECTION 608, LGA 1993

Food Premises (per half hour or part thereof)	\$104.00	\$0.00	\$104.00
Food Premises – medium (P3) (per half hour or part thereof)	\$104.00	\$0.00	\$104.00
Market – Food Stall Inspections (per hour or part thereof)	\$104.00	\$0.00	\$104.00
Health / Beauty Premises (per half hour or part thereof)	\$104.00	\$0.00	\$104.00
Child Care Centres (per hour or part thereof)	\$207.00	\$0.00	\$207.00
Shared Accommodation (per hour or part thereof)	\$207.00	\$0.00	\$207.00
Mortuary Funeral Parlours / Undertaker (per hour or part thereof)	\$207.00	\$0.00	\$207.00
Skin Penetration (per half hour or part thereof)	\$104.00	\$0.00	\$104.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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ANNUAL ADMINISTRATION FEE – FOOD / HEALTH / BEAUTY & SKIN PENETRATION PREMISES

Health / Beauty / Skin Penetration	\$160.00	\$0.00	\$160.00
Food Premises – Up to 5 FTE food handlers	\$160.00	\$0.00	\$160.00
Food Premises – 6 or more FTE food handlers	\$265.00	\$0.00	\$265.00

FOOD ACT 2003

Improvement Notice	\$330.00	\$0.00	\$330.00
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PUBLIC HEALTH ACT 2010

Reinspection Fee subject to Prohibition Order (per half hour or part thereof and maximum charge of two hours)	\$125.00	\$0.00	\$125.00
Improvement Notice & Prohibition Order – Skin Penetration	\$270.00	\$0.00	\$270.00
Improvement Notice & Prohibition Order – Regulated Water System	\$560.00	\$0.00	\$560.00

LOCAL GOVERNMENT ACT SECTION 68 APPROVALS

Engage In A Trade Or Business On Community Land

Application Fee – Engage in a Trade or Business	\$160.00	\$0.00	\$160.00
Application Fee – Use a standing vehicle or any article for the purpose of selling any article in a public place	\$160.00	\$0.00	\$160.00
Administration Fee	\$67.00	\$0.00	\$67.00

ABANDONED VEHICLES / REMOVAL OR IMPOUNDING OF ARTICLES

Removal – Derelict Vehicles	\$157.33	\$0.00	\$157.33
Shopping Trolleys Impounding Release Fee	\$76.13	\$0.00	\$76.13
Impounded Article Release Fee (other)	\$55.83	\$0.00	\$55.83
Abandoned Vehicles – Administrative Costs	\$106.58	\$0.00	\$106.58
Abandoned Vehicles – Towing Costs	\$182.70	\$0.00	\$182.70

PROTECTION OF THE ENVIRONMENT (OPERATIONS) ACT 1997

Administration Fee – Clean Up Notice	\$550.00	\$0.00	\$550.00
Administration Fee – Prevention Notice	\$550.00	\$0.00	\$550.00
Administration Fee – Noise Control Notice	\$550.00	\$0.00	\$550.00
Compliance Officers (Time and Travel per hour)	\$106.58	\$0.00	\$106.58

COMPANION ANIMALS ACT CATS

Cat – Not Desexed (recognised breeder)	\$50.00	\$0.00	\$50.00
Cat – Desexed or Not Desexed	\$50.00	\$0.00	\$50.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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COMPANION ANIMALS ACT CATS [continued]

Cat – Desexed (sold by pound/shelter)	\$25.00	\$0.00	\$25.00
Cat – Not Desexed (not recommended)	\$50.00	\$0.00	\$50.00

COMPANION ANIMALS ACT DOGS

Lifetime registration

Animal Under 6 months not desexed	\$60.00	\$0.00	\$60.00
Non Desexed Animal	\$216.00	\$0.00	\$216.00
Breeder (Recognised) Concession	\$60.00	\$0.00	\$60.00
Late payment Fee	\$16.00	\$0.00	\$16.00
Desexed Animal	\$60.00	\$0.00	\$60.00
Pensioner Concession (Desexed Animal Only)	\$26.00	\$0.00	\$26.00
Desexed Animal sold by an eligible pound or shelter	\$30.00	\$0.00	\$30.00

ANNUAL ANIMAL PERMITS

Annual Permit Fee – Cat not desexed by 4 months of age	\$80.00	\$0.00	\$80.00
Annual Permit Fee – Dog of restricted breed	\$195.00	\$0.00	\$195.00
Annual Permit Fee – Dog declared dangerous	\$195.00	\$0.00	\$195.00
Late Fees – Where permit is not paid within 28 days	\$16.00	\$0.00	\$16.00

WASTE MANAGEMENT

WASTE CHARGES

Commercial Waste Management Charges

Commercial Waste Collection	\$822.00	\$0.00	\$822.00
Commercial Recycling Collection	\$822.00	\$0.00	\$822.00
Deposit Commercial Bin (Refundable)	\$200.00	\$0.00	\$200.00

Domestic Waste Management Charges

Domestic Waste Management Charge – annual charge	\$545.00	\$0.00	\$545.00
Domestic Waste Extra Service Charge – per service	\$545.00	\$0.00	\$545.00

Domestic Waste Services – Pensioners & Self-funded Retirees

Domestic Waste Service SFR	\$415.00	\$0.00	\$415.00
Domestic Waste Service Pensioners	\$415.00	\$0.00	\$415.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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Domestic Waste Management – Additional Bins

Extra Green Waste Service – per service	\$85.00	\$0.00	\$85.00
Extra Recycling Bin – per service	\$100.00	\$0.00	\$100.00
On-call clean up service	\$100.00	\$0.00	\$100.00
On-call Bulk Vegetation clean up	\$100.00	\$0.00	\$100.00
Compost bins 200 litre	\$40.91	\$4.09	\$45.00
Bokashi Bucket	\$64.09	\$6.41	\$70.50
Worm Farms	\$64.09	\$6.41	\$70.50

Bin Waste & Recycling Service – Special Events

Provide 3 Bin Waste & Recycling Service	\$165.45	\$16.55	\$182.00
Provide 9 Bin Waste & Recycling Service	\$230.91	\$23.09	\$254.00
Additional Waste or Recycling Bin	\$14.18	\$1.42	\$15.60

ENVIRONMENTAL HEALTH

PUBLIC HEALTH REGULATION 2012

On-site sewerage management systems (includes pump to sewer and greywater treatment systems)

Regulated Systems Annual Administration Fee (includes cooling towers, warm water systems)	\$120.00	\$0.00	\$120.00
Inspection of regulated systems (per hour or part thereof)	\$179.00	\$0.00	\$179.00
Regulated System Sample Analysis (per sample test)	\$180.00	\$0.00	\$180.00
Environmental Audits	\$223.00	\$0.00	\$223.00

SWIMMING POOLS & SPA POOLS

Registration Fee Public Swimming Pools & Spa Pools	\$104.00	\$0.00	\$104.00
Inspection of Public Pools/Spas (per hour or part thereof)	\$175.00	\$0.00	\$175.00

LOCAL GOVERNMENT ACT SECTION 68 APPROVALS

On-site sewerage management systems (includes pump to sewer and greywater treatment systems)

On-Site Sewage Management Systems

Application Fee to install	\$282.00	\$0.00	\$282.00
Approval to operate	\$100.00	\$0.00	\$100.00
OSMS inspection (per hour or part thereof)	\$179.00	\$0.00	\$179.00

Name	Fee (excl. GST)	GST	Year 21/22 Fee (incl. GST)
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PROPERTY

FOOTWAY RESTAURANT / OUTDOOR EATING AREAS

Application Fee / Renewal Fee	\$170.00	\$0.00	\$170.00
Administration Fee	\$72.00	\$0.00	\$72.00
Chatswood Mall / Anderson Street sq m per annum	\$673.00	\$0.00	\$673.00
Chatswood (Town Centre Plan Map) sq m per annum	\$540.00	\$0.00	\$540.00
All Other Areas sq m per annum	\$397.00	\$0.00	\$397.00
Cleaning Outdoor Seating Areas Chatswood CBD per clean	\$110.00	\$11.00	\$121.00

FOOTWAY MERCHANDISING DISPLAY FEES

Application Fee	\$60.00	\$0.00	\$60.00
Chatswood (Town Centre Plan Map) \$ per square metre per annum	\$404.00	\$0.00	\$404.00
All Other Areas \$ per square metre per annum	\$136.00	\$0.00	\$136.00

COMMERCIAL PROPERTY PORTFOLIO

Lease of Council's Commercial Property	As per negotiations and Council resolution
Note: Each application assessed on an individual basis	

ROAD RESERVE LEASES

Road Reserve Lease Rent	As per negotiated valuation and Council resolution
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SUNDRY CHARGES

Sundry Charges	Price determined by cost/market value
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SUMMARY OF SUBMISSIONS

Number of Submissions	Submission Summary	Proposed Council Response	Change to Plan or Fees and Charges Supported
3	Objection to an increase to and existence of the \$2.55 library item reservation fee.	<p>The fee incentivises library members to collect reserved items promptly when they become available, or to cancel reservations if no longer required. This helps to reduce delays in making items available for others who would like to borrow them.</p> <p>The fee is an existing fee that has been increased by 5 cents. The cost of \$2.55 helps offset the costs associated with reserving physical items, including staff time and transport to the relevant branch, and is charged only to adult library members.</p> <p>Council may waive the fee in cases where the member provides evidence that the payment of the fee will impose financial hardship.</p> <p>Library Services recently conducted the Library Customer Survey which garnered 127 responses. Of these, only six included comments regarding reservation fees.</p> <p>This fee is consistent with fees charged by other councils and is charged by six of the eight councils within the Northern Sydney Region of Councils.</p>	No
1	Objection to an increase in charges for car sharing spaces.	Charges for car sharing spaces are in place to recover set-up costs related to the reserved spaces, and to offset the revenue lost through the space not being a paid parking bay.	No
1	Seeking explanation as to why no funds have been allocated in the	Council, at its meeting on 9 May 2016, resolved to “ <i>Provide a maximum allocation of \$544,000 in 2017/18 subject to</i>	While the submission is not

Number of Submissions	Submission Summary	Proposed Council Response	Change to Plan or Fees and Charges Supported
	budget to the rebuilding of the Haven Amphitheatre. Commented that prior allocation of funds to a reserve are irrelevant in relation to the amounts to be disclosed in a budget.	<i>matching dollar for dollar from community donations and grants.</i> ” No matching funds from the community have been received.	supported, Council has received a Heritage Near Me grant in the amount of \$63,000 that can be utilised for (partial) implementation of works in the <i>Haven Amphitheatre Landscape Plan 2020</i>
1	Proposed inclusion of project a project – resident parking scheme in Edward and Penkivil Streets Willoughby	The inclusion of a project - 302043 – Parking study at Edward and Penkivil Streets, Willoughby, in the amount of \$5,000 has support. It was assessed against project and capital works criteria and identified as a priority.	Yes
1	Seeking further details on: a) consultation on the Draft Operational Plan itself	a) Consultation on the Draft Operational Plan was undertaken in accordance with s.405 of the <i>Local Government Act 1993</i> . This includes public exhibition of the draft Plan. In deciding on the final operational plan to be adopted, Council must consider any submission that has been made concerning the draft Plan. In response to the public exhibition of the draft Plan on Council’s Have Your Say web page, there were 424 page views, 178 visits, 146 visitors, 95 document downloads and six online submissions.	
	b) consultation on projects and	b) Council has in place a Community Engagement Strategy	

Number of Submissions	Submission Summary	Proposed Council Response	Change to Plan or Fees and Charges Supported
	capital works; and Asset Management Strategy and Plans	and Processes. Council utilises this framework to prepare and undertake project based and/or specific community consultation to gain the view of the community and/or specific stakeholders. A range of in-person and online forms of engagement are planned to gauge residents' preferences with respect to Council's infrastructure assets. Council's Asset Management Strategy and Plans are available on Council's website at: https://www.willoughby.nsw.gov.au/Council/Policies-Publications/Asset-Management-Plans-and-Resourcing-Strategy .	
	c) clarity on some specific projects and capital works	c) Descriptors of the following projects have been refined: <ul style="list-style-type: none"> • Page 21 – Project 301723 112 Victoria Avenue community radio upgrade amended to read: Community radio building refurbishment, 112 Victoria Ave Chatswood. • Page 21 – Project 301984 Regency Leisure Centre Chatswood amended to read: Regency Leisure Centre capital works, 24 Endeavour Street Chatswood • Page 22 – Project 301872 Maintenance for Lane Cove River catchment amended to read Site rehabilitation and pest plant management, Lane Cove River catchment • Page 22 – Project 301904 Electric vehicle – vehicle to grid – research and installation amended to read: Electric vehicle mobile battery fleet feasibility study • Page 27 – Project 301844 Bus route subsidy amended to read: Bus bay road pavement repair 	Yes

Number of Submissions	Submission Summary	Proposed Council Response	Change to Plan or Fees and Charges Supported
		<ul style="list-style-type: none"> • Page 28 – Project 302041 concourse parking equipment upgrade amended to read: Gates, pay-stations, ticket system and intercommunication at The Concourse car park upgrade and replacement 	
	<p>d) funding for review of Local Environmental Plan and Development Control Plan and publishing of outcome of review</p> <p>e) funding for <i>Willoughby Integrated Transport Strategy</i></p> <p>f) The relationship between projects 301904 Electric vehicle – vehicle to grid – research and installation and 301904 Electric Vehicle – vehicle access to grid – research and installation</p>	<p>d) Funding for the review of the Local Environmental Plan (LEP) and Development Control Plan (DCP) will include evidence-based reports, and community engagement including a formal public hearing by an independent facilitator. Submissions on the draft LEP and DCP will be considered and reported to Council prior to the Plans' finalisation. The outcomes will be reported to Council in a meeting open to the public. The endorsement of the draft DCP for public exhibition in tandem with the draft LEP is the subject of a report in this Council Meeting.</p> <p>e) The budget allocated to project implementation of <i>Willoughby Integrated Transport Strategy</i> (WITS) is for actions defined in the Strategy.</p> <p>f) Whilst both projects relate to electric vehicles, they are not dependent on, or impact each other in any way. Project 301855 Electric vehicle charging bay is the installation of electric vehicle charging stations both on-street and in public car parks. Project 301904 Electric Vehicle – vehicle access to grid – research and installation anticipates the deployment of charging technology that allows charge from a battery electric vehicle to be fed back into a building enabling the electric vehicle to act as a mobile battery.</p>	

SUBMISSIONS ON DRAFT OPERATIONAL PLAN 2021-22 AND DRAFT SCHEDULE OF FEES AND CHARGES 2021-22

Individual Submission 1

Good work and a good read. Well presented.

p13 - it is unclear what more Council must do to respond to community feedback. What has already been provided and how will the canvassing of further feedback take place.

p13 - under "Asset Management Strategy and Plans"; what form of engagement will empower residents' decisions on desired service levels?

p21 - #301723 112 Victoria Ave Community radio upgrade. Just what is this - building refurbishment or a new studio technology fitout?

p21 - where is the Regency Leisure Centre located in Chatswood. address?

p22 - #301872 a better description of the "maintenance for Lane Cove River catchment?"

p22 - #301904 EV vehicle to grid research and installation \$25K. a better description would be welcome

p27 - #301844 Bus route subsidy \$33.6K a better description of what services or explanation would be welcome.

p28 - #301855. How does this tie in with #301904 \$25K on p22?

p28 - #302041 concourse parking equipment upgrade \$1.0m is rather vague. More info would be welcome.

p28 - Review of LEP and DCP 2021/2022 \$150K. How will this be spent? How will the outcome be published?

p28 - #302010 Implementation of Willoughby Integrated Transport Strategy (WITS) 2036 \$60K. This is a strategic outlook matter which is influenced by EV use and associated charging infrastructure rollout. How is this \$60K affected by or will affect the WITS?

Individual Submission 2

FEES FOR RESERVING BOOKS AT THE WILLOUGHBY CITY LIBRARIES SHOULD BE SCRAPPED

I am contacting you today to ask you to remove the \$2.50 reservation fee at Willoughby City libraries. I have previously spoken to Mayor Gail about this earlier in the year and she was receptive to my suggestions to scrap the reservation fee, yet it seems in the new council budget this fee has been increased to \$2.55 which is very disappointing.

A library is intended to be a free, educational, community resource which should be equally accessible for all community members. A library is a public, council resource which is paid for by local residents in their rates and therefore you shouldn't have to pay for this service again.

Paying \$2.50 to reserve one book means wealthier people are able to access and consume popular books and ultimately results in an unfair and discriminatory system. \$2.50 may not be a lot to some, but it is a significant amount to other people, especially when the library is intended to be free and equitable.

Many libraries in Sydney do not charge this reservation fee, so it definitely is a feasible thing for library staff to find a book and move it to the requisite branch for free.

If you are using the reservation fee as an incentive for people to pick up their reserved books, then firstly, it is an unnecessary incentive when you already have to pick up the book in 7 days before

moving on to another person. Secondly, perhaps you could then only charge people who don't pick up their books rather than preemptively charging everyone for this fee.

I have made a petition for this change which has been signed by many local Willoughby residents, please see below.

https://www.change.org/p/willoughby-city-library-remove-willoughby-library-reservation-fees/c?source_location=petition_show

Individual Submission 3

FEES FOR RESERVING BOOKS AT THE WILLOUGHBY CITY LIBRARIES SHOULD BE SCRAPPED

Libraries are a community resource and should be FREE to use as they should be funded out of rates. Adding any fee for service disadvantages the poor and non-privileged

Books and other library resources improve society knowledge and well-being and should be free for users.

Most other libraries in Sydney do not have a reservation fee (so cost recover cannot be a valid argument).

Individual Submission 4

I am objecting to the price rise for library book reservation. This should be a free service. Libraries are an important council function and all library services should be accessible for all residents. Payments will be particularly off-putting for those with low incomes, so this is not an equitable policy. Many other councils across greater Sydney offer library book reservation for free. I can't understand why Willoughby council, surely in one of the more affluent regions of Sydney, cannot offer this for its local users, and enable those from lower socio-economic backgrounds to have the same access to library services.

Individual Submission 5

I note there is no allocation of funds to the re-building of The Haven Amphitheatre in the 2012-22 Draft Budget.

Can you please explain why?

Prior allocations of funds to a reserve are irrelevant in relation to the amounts to be disclosed in a Budget

Individual Submission 6

To Willoughby City Council - Re: Draft Fees & Charges for FY21/21

On behalf of over 3,400 carshare members in your LGA, we thank you for the opportunity to comment on the Draft Fees & Charges for FY21/22.

The current Fees & Charges support private car ownership while disincentivising the uptake and growth of carshare. For this reason, we're concerned that Willoughby City Council is looking to further disadvantage carshare users by maintaining high carshare fees in FY21/22.

In Willoughby City Council's GoGet Annual Member Survey, the percent of members who did not own a car grew from 22% (prior to joining the service) to 47% (after joining the service). As well as this, 56% of members actively avoided purchasing a new or second car in the last year because they can access carshare. Had they been purchased, 19% of these cars would have been parked on Council streets, taking up parking unnecessarily.

The Draft Fees & Charges for FY21/22 proposes:

- an increase in the cost of the annual carshare fee by 1.6%
- an increase in the cost of the annual first resident parking permit by 2.1%
- an increase in the cost of the annual second resident parking permit by 1.1%
- the cost of a 2nd resident permit remains almost five times lower than the cost for one carshare vehicle

We request that the increased charges to carshare be either removed from the FY21/22 Fees & Charges, or, be amended to match the maximum cost which a resident would pay for a parking permit.

Should the current carshare fees be maintained, or proposed fees be implemented, GoGet may consider a Willoughby City Council Surcharge of an additional \$0.30 per hour on the use of carshare spaces to recover this added cost. This would be communicated to our Willoughby City Council resident members, who would be disadvantaged compared to neighbouring Council areas.

Carshare, and its resident members, support various Council strategies, including Our Future Willoughby 2028 Community Strategic Plan, Willoughby City Strategy Community Strategic Plan 2010-2025, Our Green City Plan 2028 and Willoughby City Council Integrated Transport Strategy 2036. Carshare supports these strategies as it:

- reduces overall demand for parking, particularly from poorly used 2nd and 3rd cars
- reduces vehicle kilometres driven annually by up to 50%
- reduces congestion and Co2 emissions
- has a benefit to cost ratio for Council of 19:4
- improves overall road safety

Sources: Phillip Boyle and Associates (2017) The Impact of Carshare Services in Australia Austroads (2015) Research Report AP-R534-16 ANCAP (2020)

Based on this, we argue that Willoughby City Council rate payers who choose to use carshare should not be penalised with higher rates than those who choose to own private vehicles. We request that the increased charges to carshare be either removed from the FY21/22 Fees & Charges, or be adapted to reflect the maximum cost which a resident would be asked to pay for a parking permit.

Individual Submission 7

Please, can you help us! No-one else seems to hear our cries for help with the traffic situation in Willoughby.

Once again we have yet another vehicle parked long term in Edward Street. It has been more than four (4) weeks that this black Audi has been parked on our Street, depriving local residents of a parking space. What is deemed a reasonable distance between finding a street park nearby and dragging all your belongings to the house 300 metres away in the dark?

Ever since the building of apartments in quiet end of Penshurst street, (Sienna and The Mint) parking is impossible. Combined with commuters to and from the city and holiday makers who leave their cars here whilst taking Ubers to the airport.

The system appears that we must be the squeaky wheel on numerous occasions before any action. I have written on numerous occasions and so has my neighbour. We are all working class families, leading busy lives and we need your help please Gail.

We need a resident parking scheme implemented on this street and in Penkivil Street too. We used to joke about where these commuters go and why they abandon their cars for so long but it is no longer funny.

PLANNING & INFRASTRUCTURE DIRECTORATE**15.7 REVIEW OF WILLOUGHBY DEVELOPMENT CONTROL PLAN**

ATTACHMENTS:	2. DRAFT WILLOUGHBY DEVELOPMENT CONTROL PLAN
RESPONSIBLE OFFICER:	HUGH PHEMISTER – PLANNING & INFRASTRUCTURE DIRECTOR
AUTHOR:	ARTHUR TSEMBIS – DEVELOPMENT ASSESSMENT OFFICER
CITY STRATEGY OUTCOME:	1.2 – PROMOTE SUSTAINABLE LIFESTYLES AND PRACTICES 3.4 - CREATE DESIRABLE PLACES TO BE AND ENJOY 5.1 - BE HONEST, TRANSPARENT AND ACCOUNTABLE IN ALL THAT WE DO
MEETING DATE:	15 JUNE 2021

PART A - Overview of Draft Willoughby Development Control Plan (WDCP) 2021

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PART A - Overview of Draft Willoughby Development Control Plan (WDCP) 2021

1 Preliminary

1.1 Introduction

Draft Willoughby Development Control Plan (WDCP) 2021 has been prepared in accordance with Section 3.43 under Part 3 of the *Environmental Planning and Assessment Act, 1979* and Part 3 of the *Environmental Planning and Assessment Regulation 2000*.

WDCP provides guidelines and controls for developments within the Willoughby Local Government Area. It supports the objectives and planning provisions of *Draft Willoughby Local Environmental Plan 2021 (WLEP 2020)*.

All applications submitted to Council for determination will be assessed in accordance with the performance criteria, development controls and other relevant provisions of WDCP.

Note:

- Compliance with development controls under the draft WDCP does not necessarily ensure a proposal is acceptable and will be approved; every application is assessed on the individual merits of the proposed development.

1.2 Aim

The specific aim of this Part is to outline the framework of draft WDCP 2021 to make it easier to navigate the overall document.

1.3 Objectives

The objectives of this Part are to:

- i. advise which other Parts are included in the draft WDCP 2021
- ii. advise when a development application is required and what supporting information is required to be submitted with that application
- iii. explain how the draft WDCP 2021 relates to other State and local plans, policies, and guidelines

2 Framework of the Plan

2.1 Land covered by the draft WDCP 2021

This Plan applies to all land and development within the Willoughby City Local Government Area.

2.2 Interpretation

A reference to 'this Plan', 'the Plan', 'DCP' or 'WDCP' is a reference to this document, being *Draft Willoughby Development Control Plan 2021*. A reference to 'WLEP 2020' or 'the LEP' is a reference to *Draft Willoughby Local Environmental Plan 2020*. Definitions and meaning of the terms used in this document are the same as the terms listed in the Dictionary under draft WLEP 2020, and any other definitions under relevant State plans, policies or codes.

2.3 Components of the draft WDCP

This draft DCP is divided into twelve Parts from Part A to L as follows:

2.3.1 Part A (Overview of draft WDCP 2021)

This Part provides an outline of the draft WDCP and includes a link to the development application process. It also provides the relationship of the draft WDCP to other State and local plans, policies, and guidelines.

2.3.2 Part B (Residential Development)

This Part includes the following sections and attachments:

- i. Section 1 provides an introduction and includes the aims and objectives of this Part of the draft WDCP
- ii. Section 2 provides the performance criteria relating to all types of residential accommodation.
- iii. Section 3 includes controls relating to 'minor' developments such as dwelling houses and dual occupancies.
- iv. Section 4 provides guidelines and controls for residential development that is deemed to be 'major', such as residential flat buildings, manor houses, and apartments associated with shop top housing and mixed use developments.
- v. Section 5 provides specific controls for additional permitted land uses such as secondary dwellings, bed and breakfast accommodation, boarding houses and 'built-to-rent' housing.
- vi. Section 6 provides additional controls for any future development of specific sites and areas.
- vii. Attachment 1 includes a compliance checklist table for controls in the R2 zone (excluding heritage conservation areas)
- viii. Attachment 2 includes a compliance checklist table for controls relating to manor houses, attached dwellings and multi dwelling housing in the R3 zone.
- ix. Attachment 3 includes a compliance checklist table for controls relating to residential development comprising three or more storeys and four or more dwellings in the R3 and R4 zones, and the residential components of shop top and mixed-use developments.

Note:

- Additional controls for developments in the R2 zones which are within a heritage conservation area are included in Part H of the draft WDCP 2021.

2.3.3 Part C (Development in E4 Environmental Living Zone)

This Part of the draft WDCP includes specific performance criteria and controls to provide for low impact development on land in proximity to foreshore areas and other environmentally sensitive locations.

Note:

- Additional controls for developments in the E4 zone which are within a heritage conservation area are included in Part H of draft WDCP 2021.

2.3.4 Part D (Commercial Development)

This Part of the draft WDCP includes performance criteria and controls for all types of commercial development, including the commercial components of shop top housing and mixed use developments, and placed based plans.

Note:

- Additional controls may apply to commercial/retail premises in a heritage conservation area under Part H of draft WDCP 2021.

2.3.5 Part E (Industrial Development)

This Part of the draft WDCP includes guidelines and controls for industrial development and other land uses permitted in the industrial zones.

2.3.6 Part F (Transport and Parking Management)

This Part of the draft WDCP provides advice and controls relating to traffic management, off-street car parking, bicycle parking and end of trip facilities, loading and unloading facilities, and other traffic and transport related matters. This Part applies to all developments.

Part F is informed by the *Willoughby Integrated Transport Strategy 2036*. A link to the Strategy is provided in Part F of draft WDCP 2021.

2.3.7 Part G (Vegetation Management)

This Part of the draft WDCP applies to any development that involves the removal of trees and/or vegetation. It is made under Part 3 of *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017*. Part G of draft WDCP 2021 is supported by the *Vegetation Management Guidelines*.

A link to the *Vegetation Management Guidelines* and *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017* are provided in Part G of draft WDCP 2021.

2.3.8 Part H (Heritage Items and Heritage Conservation Areas)

This Part of the draft WDCP is subject to Clause 5.10 (Heritage conservation) of draft WLEP 2020. This Clause deals with the environmental heritage of Willoughby, including heritage items, heritage conservation areas, conservation of archaeological sites, and conservation of Aboriginal objects and Aboriginal places of heritage significance.

Heritage items and an archaeological site are identified in Schedule 5 of draft WLEP 2020. Heritage conservation areas are shown on the 'Heritage' Maps accompanying draft WLEP 2020.

Part H also provides additional controls and measures to conserve and protect the heritage values of existing dwellings and commercial/retail buildings, and ensure any new development is in keeping and sympathetic to the character of the particular heritage conservation area.

Notes:

- Any residential or commercial/retail development in a heritage conservation area must have regard to the performance criteria and controls provided in Part B, C and D of this Plan.
- If there is any inconsistency with the controls under Parts B, C and D of the draft WDCP, the controls under Part H prevail.
- The LEP does not identify Aboriginal objects or Aboriginal places of heritage significance; Council should be contacted to determine if the site comprises or is in proximity to an Aboriginal object or Aboriginal place of heritage significance.

2.3.9 Part I (Water Management)

This Part of the draft WDCP provides advice and controls relating to stormwater management. It applies to any proposal required to provide an on-site detention (OSD) system or rainwater reuse tank in lieu of OSD for developments that will increase the amount of impervious surface areas.

2.3.10 Part J (Building Sustainability)

This Part of the draft WDCP provides advice and controls to achieve energy efficient and environmentally sustainable buildings. It applies to any application for new development or significant alterations and additions to ensure best practice sustainability measures are incorporated into the design and construction of buildings.

2.3.11 Part K (Development near Lane Cove Tunnel Ventilation Stacks)

This Part of the draft WDCP applies to any new development within an 800m radius of the ventilation stacks in Sirius Road and Marsden Street, Artarmon.

2.3.12 Part L (Place based plans)

This Part of the draft WDCP provides specific guidelines and controls for the future development in the Chatswood Central Business District (CBD) and the local centres identified in the Willoughby Local Centres Strategy, being:

- i. Artarmon
- ii. Castlecrag
- iii. North Willoughby
- iv. High Street
- v. Naremburn
- vi. Northbridge
- vii. Penshurst Street

viii. Willoughby South.

Notes:

- The relevant performance criteria and controls under Part B and D of WDCP relating to residential and commercial development apply to the place based plans.
- If there is inconsistency with the controls under Parts B and D of the draft WDCP, the controls under Part L prevail.

3 Existing Use Rights

The existing use provisions under Division 4.11 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and Part 5 of the Environmental Planning Regulations 2000 (EP&A Regs) apply to any development that is not a permissible land use within a particular zone. This includes dwellings which are not permissible in the R3 Medium Density or R4 High Density Zones.

Any application for a change of use, alterations or extensions or rebuilding of a non-conforming existing use must address the development standards for that type of development that would otherwise be permissible in a zone under draft WLEP 2020. Any such application will be assessed in accordance with any relevant provisions for that type of development under the draft WDCP.

Note:

- The onus of proof is on the owner of the subject property to establish that 'existing use rights' apply in accordance with the Clause 4.65 of the EP&A Act and Section 39 of the EP&A Regs.

4 Development Application Process

Part 4 (Development assessment and consent) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) provides the legislative framework for lodgment, assessment and determination of applications that require development approval. The EP&A Act can be viewed at.

<https://www.legislation.nsw.gov.au/view/whole/html/inforce/current/act-1979-203#sec.1.5>

The application forms, checklists and other information and details required to be submitted with a DA and modification application under s4.55 of the EP&A Act can be viewed on Council's website at:

<https://www.willoughby.nsw.gov.au/Development/Get-Approval/DA/Development-Application-s4.55-Process/Lodge-a-Development-Application-DA-or-s4.55-Modification>

Council offers applicants a pre-lodgment meeting for development applications. Following the meeting, a written response is provided.

Note:

- Proponents should contact Council's Customer Services division for an appointment and the current fee for a pre-lodgment meeting.

5 Notification

Depending on the type and scale of development, a proposal may be notified and/or advertised before assessment and determination of the application. All aspects of Council's community participation process and practices in the planning process are set out in the Willoughby Community Participation Plan (CPP). The DA notification process is provided in Part D of the CPP.

A copy of the CPP can be viewed on Council's website at:

<https://www.willoughby.nsw.gov.au/Council/Policies-Publications/Publications/Willoughby-Community-Participation-Plan>

6 Relationship to other Plans, Policies and Guidelines

6.1 Draft Willoughby Local Environmental Plan (WLEP) 2020

The statutory planning instrument relating to land and development in the Willoughby LGA is *Draft Willoughby Local Environmental Plan 2020* (WLEP 2020). Draft WLEP 2020 provides the objectives and land use tables for residential, business, industrial, special purpose, and environmental protection zones. Each category identifies land uses that are permitted without consent, permitted with consent, and those land uses that are prohibited. Draft WLEP 2020 also includes additional permitted uses under Schedule 1 for certain sites.

Draft WLEP 2020 provides the principal development standards, including height of buildings, landscaped area, gross floor area (GFA) and floor space ratio (FSR) controls. Draft WDCP 2020 provides 'guidelines' and controls that support the provisions of draft WLEP 2020. Draft WDCP 2021 can supplement but not be more onerous than any planning provisions under WLEP 2020.

6.2 Willoughby Local Strategic Planning Statement (LSPS)

The LSPS sets out the 20-year vision for land use in the Willoughby LGA. It gives effect to the North District Plan and informs the proposed amendments to *Draft Willoughby Local Environmental Plan 2021* and *Draft Willoughby Development Control Plan 2021*.

The LSPS provides information on the following:

- The existing and future character of Willoughby.
- Future housing, jobs, and services.
- Future infrastructure requirements such as community facilities and transport initiatives.
- Protection of the environmental and heritage values, areas, and items.

A copy of the LSPS can be viewed on Council's website at:

<https://www.willoughby.nsw.gov.au/Development/Plan/Planning-Rules/Planning-Strategies#section-3>

6.3 State Environmental Planning Policies

State Government are responsible for a large number of environmental planning policies (SEPPs). In many cases, these policies have created inconsistent and sometimes overlapping controls.

6.3.1 *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* (Exempt and Complying Development SEPP).

The exempt provisions of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* (Exempt and Complying Development SEPP) allows certain structures and land uses to be carried out without approval, subject to prescribed development standards and other relevant provisions. The exempt provisions also allow some business and building identification signs to be erected without approval.

The Exempt and Complying Development SEPP includes a number of Codes which allow certain works, change of use and subdivision to be carried out as complying development. The following Codes are relevant to development in the Willoughby LGA:

- Housing Code (Part 3)
- Low Rise Housing Diversity Code (Part 3B)
- Housing Alterations Code (Part 4)
- General Development Code (Part 4A)
- Commercial and Industrial Alterations Code (Part 5)
- Commercial and Industrial (New Buildings and Additions) Code (Part 5A)
- Container Recycling Facilities Code (Part 5B)
- Subdivision Code (Part 6)
- Demolition Code (Part 7)
- Fire Safety Code (Part 8)

The Exempt and Complying Development SEPP can be viewed at:

<https://www.legislation.nsw.gov.au/#/view/EPI/2008/572>

The intent of the draft WDCP 2021 is to create a more 'user-friendly' plan that includes contemporary controls in line with these Codes under the Exempt and Complying Development SEPP.

Note:

- If a proposed development does not satisfy all the criteria under the Codes, a development application (DA) is required.

6.3.2 *State Environmental Planning Policy (Affordable Rental Housing) 2009*

In accordance with the *State Environmental Planning Policy (Affordable Rental Housing) 2009* (Affordable Housing SEPP), a secondary dwelling on a lot may be built as complying development, subject to compliance with certain development standards under Schedule 1 of the Affordable Housing SEPP.

Build-to-rent housing is permissible with consent under the Affordable Housing SEPP. If the identified development standards are complied with, Council cannot apply more onerous standards.

Under the SEPP, dual occupancies, boarding houses and attached dwellings that provide 'affordable housing' within an 'accessible area' may be carried out with consent, subject to compliance with certain development standards. If certain standards for dual occupancies, boarding houses and attached dwellings comply, these standards cannot be used to refuse consent.

The Affordable Housing SEPP can be viewed at:

<https://www.legislation.nsw.gov.au/#/view/EPI/2009/364>

Notes:

- If any part of a proposal relating to a secondary dwelling does not satisfy the criteria under the Affordable Housing SEPP, a development application (DA) is required.
- The meaning of 'affordable housing' is provided in Clause 6 of *State Environmental Planning Policy (Affordable Rental Housing) 2009*.
- The definition of 'accessible area' is provided in Clause 4(1) of *State Environmental Planning Policy (Affordable Rental Housing) 2009*.

6.3.3 *State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004*

Under the provisions of *State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004* (BASIX SEPP), an application for residential accommodation requires submission of a BASIX certificate which provides a list of commitments to achieve a prescribed level of sustainable residential development.

Council cannot approve a development application for residential development that exceeds \$50,000 or a swimming pool/spa with a volume exceeding 40,000 litres if they do not achieve the minimum BASIX score.

Detailed information regarding BASIX is available on the Department of Planning Industry and Environment website at:

<https://www.planningportal.nsw.gov.au/basix>

The BASIX SEPP can be viewed at:

<https://www.legislation.nsw.gov.au/~view/EPI/2004/396>

6.3.4 *State Environmental Planning Policy No 19 – Bushland in Urban Areas*

The aim of *State Environmental Planning Policy No 19 – Bushland in Urban Areas* (Bushland SEPP) is to protect and preserve bushland within urban areas. The Bushland SEPP can be viewed at:

<https://www.legislation.nsw.gov.au/#/view/EPI/1986/014/whole>

6.3.5 *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 and Sydney Harbour Foreshores and Waterways Area Development Control Plan 2005*

The aim of *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005* is to ensure the catchment, foreshores, waterways, and islands of Sydney Harbour are recognised, protected, enhanced, and maintained. This plan can be viewed at:

<https://www.legislation.nsw.gov.au/#/view/EPI/2005/590/whole>

The *Sydney Harbour Foreshores and Waterways Area Development Control Plan 2005* is required to be taken into consideration when preparing or assessing development applications within the area covered by the *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*. A copy of the DCP can be viewed at:

https://www.planning.nsw.gov.au/~/_media/Files/DPE/Plans-and-policies/sydney-harbour-foreshores-and-waterways-area-development-control-plan-2005.ashx

6.3.6 *State Environmental Planning Policy (Coastal Management) 2018*

The aim of this Policy is to promote an integrated and coordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the *Coastal Management Act 2016*. This Act can be viewed at:

<https://www.legislation.nsw.gov.au/view/html/inforce/current/act-2016-020>

Council must be satisfied that any proposed development within the coastal zone is not likely to cause increased risk of coastal hazards on that land or other land. The Coastal Management SEPP can be viewed at:

<https://www.legislation.nsw.gov.au/view/whole/html/inforce/current/epi-2018-0106#pt.2-div.5>

6.3.7 *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017*

The aim of this Policy is to facilitate the effective delivery of educational establishments and early education and care facilities. It establishes consistent State-wide assessment requirements and design considerations for educational establishments and early education and care facilities, and allows for the efficient development, redevelopment or use of surplus government-owned land. This SEPP can be viewed at:

<https://www.legislation.nsw.gov.au/view/whole/html/inforce/current/epi-2017-0494>

6.3.8 *State Environmental Planning Policy (Infrastructure) 2007*

The aim of this Policy is to facilitate the effective delivery of infrastructure across the State by, inter alia, improving regulatory certainty, providing greater flexibility in the location of infrastructure and service facilities, and allowing for the efficient development, redevelopment, or disposal of surplus government owned land.

The Policy allows the installation of a photovoltaic electricity generating system as exempt development providing, inter alia, the system is:

- i. installed in accordance with the manufacturer's specifications or by a person who is accredited by the Clean Energy Council for the installation of photovoltaic electricity generating systems
- ii. the development does not reduce the structural integrity of, or involve structural alterations to, any building to which the system is attached

If the land contains a State or local heritage item or is in a heritage conservation area, the system must not be attached to any wall or roof of a building facing a primary road. This SEPP can be viewed at:

<https://www.legislation.nsw.gov.au/view/whole/html/inforce/current/epi-2007-0641#pt.3-div.4>

6.3.9 *State Environmental Planning Policy No 64 – Advertising and Signage 2001*

The aims of the Policy are, inter alia, to ensure that signage (including advertising) is compatible with the desired amenity and visual character of an area, and is of high-quality design and finish.

Council must be satisfied that the signage is consistent with the objectives of the Policy, and satisfies the assessment criteria specified in Schedule 1 of the Policy. This SEPP can be viewed at:

<https://www.legislation.nsw.gov.au/view/whole/html/inforce/current/epi-2001-0199>

Note:

- The Policy does not regulate the content of signage and does not require consent for a change in the content of signage.
- The Policy does not apply to signage that, or the display of which, is exempt development under another environmental planning instrument that applies to it, or that is exempt development under this Policy

6.3.10 *State Environmental Planning Policy No 55 – Remediation of Land*

The aim of the Policy is to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment.

The Policy specifies, inter alia; when consent is required for a remediation work; certain considerations that are relevant in determining development applications for consent to carry out a remediation work; and, certain standards and notification requirements for remediation works. This SEPP can be viewed at:

<https://www.legislation.nsw.gov.au/view/whole/html/inforce/current/epi-1998-0520>

6.4 Other State and local Plans, Policies and Guidelines

State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004, State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development and the Apartment Design Guide, NSW Department of Planning and Environment, July 2015 apply to residential development. Details and a link to these policies and guidelines are provide in Part B (Developments in Residential Zones) of the draft WDCP.

Various other plans, policies and guidelines may apply to specific or different types of developments. A link to those plans, policies and guidelines can be found on the NSW Legislation website at:

<https://www.legislation.nsw.gov.au/browse/inforce#/epi/title/s>

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Part B: Residential Development

1 Introduction

This Part of the draft WDCP includes guidelines and controls for low, medium and high density residential development. Additional controls apply to residential development in the heritage conservation areas (Part H) and for dwellings within the E4 Environmental Living Zone (Part C) This Part also includes controls for the residential components of shop top housing and mixed use developments in the business zones.

1.1 Aim

The specific aim of this Part is to provide a consistent and equitable approach to residential development outcomes by incorporating the provisions of relevant State Planning Policies and Guidelines, and including current best practice provisions into Council's local planning controls.

1.2 Objectives

The objectives of this Part are to:

- i. provide numerical controls and performance criteria to ensure the assessment of development applications is consistent, including consideration of any variation to the adopted controls
- ii. encourage development that is compatible with the urban scale and character of the locality
- iii. ensure new development does not unduly impact on the residential amenity of adjoining and nearby properties
- iv. ensure a high standard of development that provides for good residential amenity in respect to solar access, privacy, views, tree retention and open space
- v. ensures residential development maximises thermal comfort and minimizes urban heat impacts in the interests of health and wellbeing, and local ecology
- vi. provide guidelines to enhance walkability through greening and improvement to the streetscape character of individual localities

1.3 Checklist for development applications

There are three compliance checklists for different types of residential development provided in **Attachments 1, 2 and 3**. The relevant compliance checklist must be submitted with a development application for residential development.

The first checklist is for minor residential development, including single dwellings and dual occupancies in the R2 zone (excluding heritage conservation areas); the second is a checklist for manor houses, attached dwellings and multi dwelling housing in the R3 zone; and, the third checklist is for residential flat buildings, and the residential component of shop top housing and mixed use developments comprising three or more storeys and four or more dwellings.

Notes:

- Controls and a compliance checklist for residential development in the E4 zone are provided in Part C (Development in E4 Environmental Living Zone).
- Shop top housing is permissible in the R4 zone and certain business zones.
- Mixed use developments are permissible in the B4 Mixed Use zone.

2 Performance Criteria

2.1 General performance criteria

The performance criteria apply to all developments for residential accommodation. If the development standards and controls under the relevant provisions of the State Planning Policies, Guidelines, draft WLEP 2020, and this and other Parts of the draft WDCP 2021 are complied with, it will generally be regarded that the performance criteria relating to the design and amenity issues of a proposed development are satisfied. However, any variation of the controls must be justified, and have regard to the following general performance criteria and/or the provisions of other relevant plans, policies and guidelines.

2.1.1 Subdivision

The objective is to ensure new allotments have access to services and facilities, and the subdivided land has the capacity for the proposed development on individual lots. The subdivision of land should:

- i. provide adequate services, including water supply, sewerage, electricity, gas, and telecommunication services
- ii. demonstrate stormwater disposal by gravity to Council's street drainage system or if this is not possible, that an inter-allotment drainage easement can be established over downstream properties(s)
- iii. ensure each new lot created for a dwelling or dual occupancy has a frontage to a public road
- iv. ensure each new dwelling within a 'multi dwelling housing' or 'attached dwelling' development has a frontage to a public road or a properly constructed internal private road
- v. ensure all allotments are provided with a constructed driveway, including along the entire access handle of battle-axe allotments
- vi. demonstrate that each allotment(s) has the capacity to be developed for the purpose of a dwelling house, dual occupancy, multi dwelling housing or attached dwelling (this may require the submission of a concept plan showing building envelopes on the proposed new lots to be created)

2.1.2 Site area and lot dimensions

The objective is to ensure allotments have sufficient area for the effective siting of developments to achieve a good relationship to adjoining development. The site area and lot dimensions should:

- i. ensure adequate provision is made for usable open space and sufficient area for landscaping, including deep soil zones which can support tree planting
- ii. allow convenient vehicle access and parking
- iii. enable erection of buildings which do not unduly overshadow adjoining properties
- iv. have regard to topographical constraints and retention of trees
- v. enable effective control of stormwater on site
- vi. reduce the instances of isolated properties being left with reduced development potential on land that permits medium and high-density residential development

2.1.3 Setbacks

The objective is to ensure the siting of buildings provide adequate separation for the amenity of residents, and adequate space for landscaping (including deep soil zones), solar access, and minimise overshadowing. Setbacks should:

- i. progressively increase as the height of the external wall increases to reduce bulk and overshadowing
- ii. reinforce the streetscape character of the locality
- iii. ensure new buildings and alterations and additions on corner lots provide a transition along the secondary street frontage between the proposed development and existing adjoining development
- iv. ensure that garages and carports, or access to underground parking, do not dominate the streetscape

2.1.4 Design

The objective is to encourage good environmental outcomes and a high standard of architectural design. The design of buildings should:

- i. deliver durability, resilience and environmental sustainability over the long term
- ii. minimise overshadowing, overlooking and visual impacts on the streetscape and adjoining and adjacent properties
- iii. minimise carbon emissions with the sustainable choice of materials
- iv. use materials with a low Solar Reflectance Index (SRI) and incorporate shade structures to reduce urban heat island effects
- v. ensure that residential buildings address the street and incorporate a visible and readily identifiable entry point
- vi. address both streets on corner lots using windows, landscaping, awnings, and other architectural elements to create visual interest
- vii. avoid open under-croft spaces, particularly when viewed from the street and other public places
- viii. ensure the orientation promotes, as far as possible, passive heating and cooling for thermal comfort and reduced carbon emissions due to mechanical heating and cooling
- ix. ensure the orientation, siting and height provides for reasonable sharing of views from surrounding properties and the public domain
- x. provide articulation to break up the length of walls to reduce the bulk and visual impacts
- xi. respect the visual and aural privacy of adjoining properties by effective siting, layout and location of windows and balconies to avoid direct overlooking
- xii. maintain a reasonable level of solar access to adjoining properties by careful siting, height, and orientation of buildings
- xiii. locate noise sensitive rooms and private open spaces away from noise sources such as busy roads and railway lines

2.1.5 Landscaping

The objective is to achieve good environmental outcomes and enhance the visual quality of the locality. Landscaped areas should:

- i. retain significant trees and be sensitive to site attributes such as land capability (soil type and slope), microclimate (especially access to sunlight), views and natural features
- ii. include deep soil zones located primarily along the street frontage, and side and rear boundaries of individual lots
- iii. retain and plant trees with wide canopies within the deep soil zones to reduce the impacts of urban heat island effects and support local ecology
- iv. provide greening and enhancement to the street frontage to encourage the benefits of local walkability
- v. take into account the location and scale of buildings in the selection of species
- vi. be designed to minimise the impact of overlooking, maintain privacy between dwellings and minimise the dominance of buildings from adjoining properties
- vii. predominantly use species which are indigenous/endemic to the locality, and ensure the vegetation types decrease surface runoff, reduce maintenance, and minimise water utilisation
- viii. provide irrigation using a non-potable water supply and maximise absorption for on-site infiltration of stormwater
- ix. relate well to the indoor living areas and contributes to useable outdoor recreation space
- x. contribute to the solar efficiency of buildings by selecting and positioning trees for shade in summer and solar access in winter
- xi. have regard to maintaining significant views from adjoining properties and the public domain
- xii. have regard to potential bush fire hazard in the selection of species, and reduce any potential for soil erosion or weed establishment
- xiii. be located to protect solar access to roof mounted solar energy systems on adjoining buildings
- xiv. be provided on walls and roofs of larger developments at various levels of the building

Note:

- 'Deep soil zone' means an area of soil within a development that is unimpeded by buildings or structures above or below ground.

2.1.6 Private open space

The objective is to provide usable and accessible private open space. Private open space for dwellings, including secondary dwellings, should:

- i. be relatively flat and have sufficient area to provide for the reasonable recreational needs of residents
- ii. be located to integrate with living areas, achieve privacy from the public domain and receive adequate sunlight
- iii. be located or screened to ensure visual and aural privacy

Note:

- If it is necessary to locate private open space at the front of the property due to site constraints, the relationship to the streetscape should be taken into consideration in terms of planting, fencing, privacy, noise, and security.
- Private open space must not include driveways, turning areas or car spaces.

2.1.7 Private recreation facilities

The objective is to integrate private recreational facilities with the natural environment, topography of the land, and limit the impact on adjoining properties. Private recreation facilities such as tennis courts and swimming pools should:

- i. be constructed to limit the amount of cut and fill
- ii. be located to maintain the amenity of neighbouring properties in terms of privacy, glare or light spill from external lighting, noise, and visual impacts
- iii. ensure adjoining properties, including reserves, are not impacted by stormwater drainage

2.1.8 Privacy

The objective is to protect the visual and acoustic privacy of residents. Developments should maintain a reasonable level of aural and visual privacy for both residents of the development and neighbours by:

- i. providing effective siting, layout and location of windows, balconies, and private open space
- ii. avoiding elevated terraces or decks that result in direct overlooking
- iii. constructing privacy screens, high window sills or translucent glazing
- iv. increasing building setbacks

Note:

- Greater emphasis should be placed on maintaining privacy to the living areas and private open spaces of dwellings.

2.1.9 Solar access

The objective is to protect residential amenity and maximise energy efficiency of buildings. Developments should maintain and provide a reasonable level of solar access to both residents of the development and adjoining properties by:

- i. avoiding overshadowing to living areas and private open spaces
- ii. planting deciduous trees in appropriate locations to maximise winter sun
- iii. exploring alternate design options

Note:

- Shadow diagrams may need to be submitted to demonstrate that an acceptable level of solar access can be achieved for both residents of the development and adjoining properties.

2.1.10 Service facilities and structures

The objective is to protect the residential amenity and integrate the provision of services and facilities with the design of the development. Service facilities should be located and designed to:

- i. ensure safe and convenient access to garbage and clothes drying areas by residents
- ii. ensure garbage areas do not have an adverse effect on the amenity of adjoining neighbours

- iii. contain garbage bins in an enclosed area and in the basement area for larger developments where possible
- iv. ensure clothes drying areas do not have an adverse visual impact on the amenity of adjoining properties
- v. visually integrate within the development and not impact on the streetscape
- vi. ensure satellite dishes and similar structures are out of sight from the public domain and not visually intrusive on adjoining neighbours
- vii. ensure air conditioning units and any other noise generating plant and equipment are designed to minimise noise impacts and meet relevant environmental standards

2.1.11 Urban heat

The objective is to reduce temperatures and create a resilient framework to mitigate the extreme impacts of urban heat by including appropriate measures to improve the health, comfort and wellbeing of residents. To reduce the impacts of urban heat island effects the development should:

- i. use external materials, façade elements and glazing to limit solar reflectivity (this may include retractable shade structures, 'green' walls, and roofs, and/or rooftop solar panels)
- ii. apply best practice water sensitive urban design (WSUD) principals
- iii. reduce the extent of hard surfaces
- iv. irrigate landscaped areas using non-potable water
- v. ensure landscaped areas include large trees with wide canopies

2.1.12 View Sharing

The objective is limit the extent and impact on existing views. Developments should, as far as reasonably possible:

- i. maintain existing views from adjoining and neighbouring properties
- ii. have particular regard to water views which are more highly regarded than land views
- iii. prioritise consideration of potential view loss from living areas
- iv. consider alternative design options to maintain significant and iconic views

2.1.13 Natural Heritage

The objective is to preserve and protect significant trees/vegetation and other natural features such as rock outcrops. Council has a Natural Heritage Register which identifies items of natural heritage, including items on private properties.

A proponent should access the register to determine if the subject property comprises significant trees or other natural features which should be preserved and protected from any proposed development. The register can be viewed on Council's website at:

<https://www.willoughby.nsw.gov.au/Environment/Bushland-and-Wildlife/Natural-Heritage-Register>

3 Minor developments

Minor residential developments include construction of and alterations and additions to:

- i. single dwellings
- ii. secondary dwellings
- iii. boarding houses not exceeding 300m² and 12 persons
- iv. attached and detached dual occupancies

Notes:

- Except for corner lots, detached dual occupancies where one dwelling is located behind another dwelling are not permitted in the R2 zone under draft WLEP 2020.
- A boarding house is required to be maintained and operated in a single entity; therefore, strata subdivision will not be permitted.
- Depending on the size and scale, and any likely impacts, an Authorised Officer may determine that a proposal is regarded as 'major' development.
- An Authorised Officer is a Council employee that has been granted delegated authority to make decisions on behalf of Council.

3.1 Controls for development in the R2 zone (excluding heritage conservation areas)

For dwellings and dual occupancies, the minimum requirements for subdivision, gross floor areas (GFA) and the landscaped area are provided in the draft WLEP 2020. The required number of car parking spaces is provided in Part F (Transport and Car Parking Management) of the draft WDCP 2021.

To ensure a consistent approach is provided in the assessment of development applications, unless otherwise stated, all other controls of the Housing Code under Part 3, the Low Rise Housing Diversity Code relating to certain dual occupancies under Part 3B, and, the Housing Alterations Code under Part 4 of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*, have been adopted.

Site constraints may preclude a development achieving full compliance and/or the most desirable amenity outcomes. Therefore, any variation of these controls must be justified, having regard to the relevant performance criteria under Section 2.1 of this Part of the draft WDCP, and/or the provisions of other relevant plans, policies and guidelines.

Any development for attached or detached dual occupancies must satisfy the objectives and design criteria under the *Low Rise Housing Diversity Design Guide, Department of Planning Industry and Environment, July 2020*. A copy of the guide can be viewed on the Department's website at:

<https://www.planning.nsw.gov.au/-/media/Files/DPE/Other/Policy-and-legislation/Housing-Diversity-DA-A-2020-10.pdf>

3.2 Controls for ancillary structures

The development standards of the Housing Code under Part 3 of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* have been adopted for attached and detached balconies, decks, patios, terraces and verandahs located at the side and rear of a dwelling. Any variation to these controls must satisfy to the following performance criteria:

- i. the location and size of balconies, decks, patios, terraces, and verandahs must have regard to the visual and acoustic privacy needs of both residents and neighbours
- ii. screening devices must be integrated into the building design and have minimal negative effect on the amenity of adjoining residents

Note:

- Greater emphasis will be placed on maintaining visual privacy to living areas and private open spaces than for non-living rooms including bedrooms, stairways, and bathrooms.

3.3 Controls for ancillary works

3.3.1 Car parking and vehicular access

Except for the number of car parking spaces, the other requirements of the Housing Code under Part 3 of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* have been adopted for car parking and vehicle access. Any variation to these controls must satisfy the following performance criteria:

Garages and carports should:

- i. be located behind the building line if alternative locations (side or rear) are available to the site
- ii. not be visually dominant or have an adverse impact on the streetscape if they are required to be located in front of the building
- iii. integrate with the overall design of the existing or proposed building in terms of height, form, materials, detailing and colour

In accordance with *Part F (Transport and Parking Management) of WDCP*, a new driveway crossing may be required if the proposal involves a change to the vehicle access arrangements and/or car parking spaces.

For further information regarding car parking and vehicular access, please refer to *Part F (Transport and Parking Management) of WDCP*.

3.3.2 Earthworks, retaining walls, drainage, protection of walls, and protection of trees

The requirements of the Housing Code under Part 3 of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* have been adopted for earthworks, retaining walls, drainage, protection of walls, and protection of trees.

Any variation of these controls must demonstrate that any excavation, fill or construction of retaining walls or any works in proximity to trees, as a result of a variation of the development controls, will not have any significant impacts on adjoining and nearby residential properties or the health of the trees to be retained on the site.

All earthworks and/or construction of retaining walls, whether or not associated with a development, must have regard to the provisions of Clause 6.2 under the draft WLEP 2020.

All drainage works, whether or not associated with a development, must have regard to the relevant provisions of *Part I (Stormwater Management) of WDCP*.

The removal or replacement planting of trees and vegetation, whether or not associated with a development, must have regard to the relevant provisions of *Part G (Vegetation Management) of WDCP*.

3.3.3 Fences

The requirements of the Housing Code under Part 3 of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* have been adopted for the construction of fences. Any variation of these controls must demonstrate that the proposed fence:

- i. is compatible with fencing in the streetscape
- ii. enables surveillance of the street for security from the dwelling
- iii. maintains any significant views from the public domain
- iv. integrates with the landscaped area of the site
- v. is in keeping with the design and style of the dwelling

3.3.4 Swimming Pools

The requirements of the Housing Code under Part 3 of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* have been adopted for the construction or installation of a swimming pool and/or spa.

Any variation of these controls must demonstrate that the swimming pool, as a result of the variation of the development control, will not have any significant impacts on adjoining and nearby residential properties.

4 Major developments

Major development includes boarding houses that exceed 300m² or 12 persons, manor houses, multi dwelling housing, attached dwellings, residential flat buildings, seniors housing, 'build-to-rent' housing, and the residential component of shop top housing and mixed use developments where the development consists of:

- i. the erection of a new building
- ii. substantial redevelopment, refurbishment, or conversion of an existing building

'Multi dwelling housing' is often referred to as townhouses, and 'attached dwellings' are often described as terraces or semi-detached dwellings.

Apartments within a 'shop top housing' development must be located above the ground floor level comprising retail or business premises. 'Mixed use' developments comprise 2 or more different land uses, one of which can include residential apartments.

Notes:

- Redevelopment is generally regarded as 'substantial' if the proposal will result in more than a 10% increase in 'gross floor area'.
- Shop top housing is permissible in the R4 zone; however, controls for the commercial component for this type of development are included in Part D (Commercial Development).

4.1 Strategies/Plans

Council has undertaken a number of studies and prepared several strategies to set the direction for future commercial and residential development in key locations within the Willoughby LGA. As a result, Council has prepared several place based plans under Part L of the draft WDCP 2021. These plans include performance criteria and controls that relate to residential flat buildings and the residential components of shop top housing and mixed used developments. A brief description of the strategies adopted to inform these place-based plans is provided below.

4.1.1 Willoughby Local Centres Strategy 2036

Council at its meeting in December 2019 resolved to adopt the *Willoughby Local Centres Strategy (WLCS) 2036*. The WLCS aims to revitalise the local economy and provides the framework for future planning controls to achieve thriving, attractive and distinctive local centres. Those centres are:

i. Artarmon

The Artarmon local centre is situated on Hampden Road and Wilkes Plaza, adjacent to the Artarmon railway station. The place based plan includes development opportunities for residential accommodation within shop top housing developments. Performance criteria and controls are included to maintain the fine grain shopfronts and retain the heritage values of the Artarmon Heritage Conservation Area.

ii. Castlecrag

The Castlecrag local centre is situated on Edinburgh Road between Eastern Valley Way and Rutland Avenue/The Postern. The place based plan includes development opportunities for residential accommodation within shop top housing developments, and residential flat buildings at 95-103 Edinburgh Road. Any future development must respect the heritage values of the Griffin Heritage Conservation Area.

iii. North Willoughby

The North Willoughby local centre is located around the intersection of Penshurst Street and Victoria Avenue, extending south to Patrick Street. The place based plan includes development opportunities for residential accommodation within shop top housing developments.

iv. High Street

The High Street local centre is located on the eastern side of High Street, bounded by McClelland Street and Glover Street. The place based plan includes development opportunities for residential accommodation within shop top housing developments. Performance criteria and controls are included for upper level setbacks at the rear to protect the residential amenity of adjoining dwellings.

v. Naremburn

The Naremburn local centre is on the western side of Willoughby Road, bounded by Quiamong Street, Bongalong Street and Glenmore Street. The centre includes two heritage items. The place based plan includes development opportunities for residential accommodation within shop top housing developments. However, any future development must maintain the fine grain shopfronts, and respect the heritage values of the heritage items at 284/284A and 272-276 Willoughby Road.

vi. Northbridge

The commercial precinct of Northbridge is located along the major arterial roads of Sailors Bay Road, Eastern Valley Way and Strathallen Avenue. Northbridge Plaza is located on the north-eastern corner of Eastern Valley Way and Sailors Bay Road. The place based plan includes development opportunities for residential accommodation within shop top housing developments, and residential flat buildings on the southern side of Sailors Bay Road and at the rear of the Northbridge Plaza.

vii. Penshurst Street

The Penshurst Street commercial centre is located along, and north of Mowbray Road. There is an eclectic mix of business premises, shop top housing, and a small retail shopping strip on the eastern side of Penshurst Street near Oakville Road. The place based plan includes development opportunities for residential accommodation within shop top housing developments. Performance criteria and controls are included for upper level setbacks at the rear to protect the residential amenity of adjoining dwellings.

viii. Willoughby South

The commercial area of the Willoughby South local centre predominantly fronts Willoughby Road with additional commercial areas branching off Frenchs Road. The place based plan includes development opportunities for residential accommodation within shop top housing developments, and residential flat buildings.

Part L of the draft WDCP 2021 includes specific performance criteria and controls for the local centres. The *Willoughby Local Centres Strategy 2036* provides background information and the vision for each local centre. To view the Strategy, please refer to Council's website at:

<https://www.willoughby.nsw.gov.au/Development/Plan/Planning-Rules/Planning-Strategies#section-4>

4.1.2 Chatswood CBD Planning and Urban Design Strategy to 2036

Council at its meeting in June 2017 resolved to adopt the *Chatswood CBD Planning and Urban Design Strategy to 2036 (Chatswood CBD Strategy)*. The Chatswood CBD Strategy aims to guide future private and public development over the next 20 years.

The CBD includes a large mix of land uses, including commercial/office buildings, civic buildings, library and performance facilities, major retail complexes, banking and other services, cafes, restaurants and private health facilities and schools.

Part L of the draft WDCP 2021 includes performance criteria and controls that allows some additional residential growth as part of mixed use development. The Strategy includes more information, including measures to achieve the vision and objectives to create employment opportunities in the CBD and residential growth on the periphery of the core. To view the Strategy, please refer to Council's website at:

<https://www.willoughby.nsw.gov.au/Development/Plan/Planning-Rules/Planning-Strategies#section-4>

4.2 Controls for medium and high density residential development

To ensure a consistent approach is provided in the assessment of development applications, the relevant controls of the following plans, policies and guidelines apply to medium and high density residential development.

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

The statutory controls relating to height of building, FSR and minimum lot size under the provisions of the draft WLEP 2020 apply to manor houses, attached dwellings and multi dwelling housing. Many of the controls under Part 3B of the Low Rise Housing Diversity Code have been adopted for these types of development in the R3 zone. The most notable exception is the landscaped area controls.

Any development for manor houses, attached dwellings and multi dwelling housing should satisfy the objectives and design criteria under the *Low Rise Housing Diversity Design Guide, Department of Planning Industry and Environment, July 2020*. A copy of the guide can be viewed on the Department's website (please refer to the link provided under Section 3.1 of this Plan).

Notes:

- The meaning of manor houses is defined in Section 1.5 of the Exempt and Complying SEPP.
- The meaning of attached dwellings and multi dwelling housing are defined in the Dictionary under the draft WLEP.
- Any inconsistency between the *Low Rise Housing Diversity Design Guide* and the performance criteria and controls under this Part or any other Parts of the draft WDCP, the provisions of the draft WDCP prevail.

4.2.2 *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004*

State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (Seniors Housing SEPP) provides design principles and planning controls that set aside any local planning controls that would prevent the development of housing for seniors or people with a disability that meets the development criteria and standards of this Policy.

Note:

- The provisions and controls of the Seniors Housing SEPP also apply to any proposed seniors housing development in the R2 and E4 zones.

The Seniors Housing SEPP can be viewed at:

<https://www.legislation.nsw.gov.au/~view/EPI/2004/143>

4.2.3 *State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development*

State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development (Apartment Design SEPP) applies to residential apartments if the building is 3 or more storeys and contains 4 or more dwellings. The Apartment Design SEPP can be viewed at:

<https://www.legislation.nsw.gov.au/~view/EPI/2002/530/full>

4.2.4 *Apartment Design Guide, NSW Department of Planning and Environment, July 2015*

The Apartment Design SEPP provides objectives and design guidance set out in the *Apartment Design Guide, NSW Department of Planning and Environment, July 2015 (ADG)*. The Apartment Design SEPP states that any requirements, standards or controls under a development control plan have no effect if they are inconsistent with the requirements, standards or controls under the ADG.

Notes:

- Clause 50 of the *Environmental Planning and Assessment Regulations 2000* required an application that relates to a development for residential apartments to be accompanied by a 'design verification statement' prepared by a qualified designer.

- The statement must, inter alia, address how the design quality principles under SEPP 65 are achieved and demonstrate how the objectives of Parts 3 and 4 of the ADG have been addressed.
- The ADG applies to the residential component of a shop top housing or mixed use development in all zones where such land uses are permissible.

The ADG can be viewed at:

<https://www.planning.nsw.gov.au/apartmentdesignguide>

4.3 Specific controls for manor houses, attached dwellings, multi dwelling housing and residential flat buildings

Note:

- Wherever relevant, the following controls apply to other major residential developments such as boarding houses that exceed 300m² or 12 persons, seniors housing, the residential component of shop top housing and mixed use developments, and 'build-to-rent' housing.

4.3.1 Site area and lot dimensions

i. Lot size:

In accordance with Clause 6.10 of the draft WLEP 2020 the minimum lot size for manor houses, attached dwellings, multi dwelling housing and residential flat buildings in the R3 and R4 zones is 1,100m².

Note:

- Clause 6.10 of the draft WLEP 2020 also includes minimum lots areas for site specific locations.

ii. Amalgamation

Allotments should be amalgamated to achieve the minimum lot size. Council may consider a variation of the minimum site area in circumstances such as:

- a. the development is on an existing allotment which cannot be consolidated with another lot
- b. remaining allotments in the adjoining area are not left isolated by the proposal
- c. the performance criteria and other development controls under this Part of the draft WDCP are satisfied
- d. the neighbouring landowners are unwilling to be party to the consolidation

Notes:

- The proponent must provide written evidence that adjoining property owners were consulted and all reasonable attempts made to achieve consolidation of lots, including all reasonable offers made (this must be supported by an independent valuation of the property).

- Any variation to the minimum lot size will require a written submission in accordance with Clause 4.6 of the draft WLEP 2020 to justify contravention of the development standard.

4.3.2 Street frontage

To ensure vehicles can enter and leave a site in a forward direction, and adequate landscaped areas are provided along the streetscape, the minimum frontage is 27m.

4.3.3 Adaptable housing, access, and mobility

Adaptable housing is governed by *Australian Standard AS 4299-1995 Adaptable Housing*. Adaptable housing is required to be provided to accommodate people with mobility impairment, including access and facilities for people in a wheelchair.

All manor houses, attached dwellings, multi dwelling housing, residential flat buildings and the residential components of shop top housing and mixed use developments must provide the following minimum number of adaptable dwellings (the number of dwellings is required to be rounded up if there is 0.5 or more of a dwelling):

- i. 10% of single storey dwellings
- ii. 25% of two storey buildings
- iii. 33% of three storey buildings
- iv. 50% of residential flat buildings greater than 3 storeys
- v. 50% for mixed use and shop top housing developments if lift access is provided

In accordance with AS 4299, a dwelling is classified as Class A, B or C, depending on the number of features specified. AS 4299 designates features as being 'essential', 'first priority desirable' or 'desirable'.

Class A includes all essential and desirable features; Class B has all essential and at least 50% of desirable features, including those designated as 'first priority'; and, Class C has all essential features incorporated in the design.

Council requires adaptable dwellings to be designed and constructed to a Class C standard; however, Class A and B are encouraged.

The architectural plans must identify which apartments/dwellings are designed as adaptable.

The communal areas of a proposed development must provide a '*continuous accessible path of travel*' to assist people with a disability to access facilities independently, equitably and with dignity. The development should include ramps and toilets for people who use a wheelchair; appropriate lighting and colour contrast for people with a visual impairment; tactile surface indicators for people who are blind; and, any other appropriate measures to assist people with a disability.

Details are required to be submitted with the development application to demonstrate the proposal will comply with the *Disability (Access to Premises – Building) Standards 2010* under the *Disability Discrimination Act 1992*.

4.3.4 Energy efficiency

Council encourages applying 'best practice' principles in the design and construction of buildings to create energy efficient and environmentally sustainable buildings.

All major developments are required to comply with the relevant provisions of *Part J (Building Sustainability) of WDCP*.

4.3.5 Bicycle and car parking

Council encourages alternative and sustainable transport strategies to reduce the reliance on motor vehicles as the principal mode of transport. Therefore, all developments with 20 dwellings/apartments or more must submit a travel demand management plan (TDMP).

For more information regarding traffic and parking related matters, please refer to *Part F (Transport and Parking Management) of WDCP*.

4.3.6 Water management and conservation

All major developments are required to provide on-site detention (OSD) systems to capture and detain stormwater runoff for recycling (including irrigation systems for landscaped areas), and to mitigate the impacts of flooding.

Details of stormwater management are required to be submitted with the development application. For more information, please refer *Part I (Water Management) of WDCP*.

4.3.7 Urban heat

Council encourages applying 'best practice' principles in the design and construction of buildings and other measures to reduce the impacts of urban heat island effects.

In addition to increasing landscaped areas and the number of trees with large canopies, reducing hard surfaces, encouraging alternative and active transport, and water management, including applying WSUD principles, buildings should use external materials, façade elements and glazing to limit solar reflectivity to minimise urban heat impacts. This may include retractable shade structures, 'green' walls, and roofs, and/or rooftop solar panels.

Roofs should achieve the following Solar Reflectance Index (SRI) value:

- i. for roof pitch $<15^{\circ}$, 3-year SRI minimum of 64
- ii. for roof pitch $>15^{\circ}$, 3-year SRI minimum of 34
- iii. for terrace areas, 3-year SRI minimum of 38

Notes:

- Plans are required to illustrate the SRI values of all roof surfaces.
- Areas where PV is mounted flat on the roof are excluded from including a SRI value.

4.3.8 Waste management

Council has adopted the *Waste Management Technical Guide* and *Development Controls* prepared by the North Sydney Regional Organisation of Councils (NSROC) for multi dwelling housing, residential flat buildings and mixed-use developments.

The technical guide provides comprehensive information to achieve best practice design and construction of waste management and recycling systems.

The *Development Controls* provide specific requirements for internal waste storage facilities, individual bin storage areas, communal bin storage areas, bin carting routes, and access for collection vehicles.

All major residential developments must satisfy the relevant provisions of the *Waste Management Technical Guide* and comply with the specific controls for multi dwelling housing, residential flat buildings, and mixed-use buildings.

A copy of the *Waste Management Technical Guide* and the *Development Controls* can be viewed on Council's website at:

<https://www.willoughby.nsw.gov.au/Council/Policies-and-publications/Publications/Waste-Management-Guide-and-Development-Controls-for-Apartments>

4.3.9 Safety by design

All major developments are required to include safety and security measures to prevent criminal activity. Crime prevention measures include high visibility to front entries; careful siting of shrubs and landscape elements; and lighting of pathways or hidden spaces.

Details of the design and safety measures incorporated into the design are to be submitted with the development application

4.3.10 Utility structures

To ensure adequate provision is made and integrated into the design of the development for utility structures such as substations, water main boosters, and the like, the following controls apply:

- i. written advice is to be provided with the application from the energy provider and Sydney Water as to whether any such utility services are required to be provided for the development
- ii. all structures that are visible from the street or public domain must be suitably screened by landscaping
- iii. substations should preferably be located below ground level or at the rear of the property if rear lane access is available

4.3.11 Undergrounding of services

All services are to be located underground for major development. This includes publicly owned land immediately outside the development site.

Note:

- In some circumstances it may not be practical or possible to provide undergrounding of services. Any proposed variation to this control must include a written request to justify why this requirement cannot be satisfied.

4.4 Additional controls for residential flat buildings, and the residential components of shop top housing and mixed use developments

4.4.1 Site coverage

To ensure adequate open space and reasonable privacy levels can be achieved, the site coverage for residential flat buildings should progressively decrease as the height of the building increases.

The site coverage for residential flat buildings should not exceed:

- i. 30% of the site area for three storey building
- ii. 28% of the site area for four storey building
- iii. 26% of the site area for five storey building
- iv. 24% of the site area for six storey building
- v. 22% of the site area for seven storey building
- vi. 20% of the site area for a building with eight or more storeys

4.4.2 Building height

Section 2C of the ADG provides matters for consideration when setting the height of buildings. This section includes guidelines to ensure floor to ceiling heights provided adequate daylight and solar access. This section also includes guidelines to allow for articulated roof planes and building services, and/or architectural roof features within the overall height of the proposed building.

Notes:

- Clause 4.3 and 4.3A of the draft WLEP 2020 provides the maximum height of buildings and exceptions to height of buildings, respectively.
- Generally, 9m equates to 3 storeys; 12m equates to 4 storeys; 15m equates to 5 storeys; and 18m equates to 6 storeys.

4.4.3 Floor space ratio (FSR)

Section 2D of the ADG provides matters for consideration when setting the FSR for buildings. The FSR of a building is the theoretical maximum capacity that can be achieved. It may not always be possible to achieve the maximum FSR due to other controls and/or site specific constraints.

Note:

- Clause 4.4 and 4.4A of the draft WLEP 2020 provides the maximum FSR and exceptions to the FSR, respectively.

4.4.4 Setbacks

Section 2G (Street setbacks) and 2H (Side and rear setbacks) of the ADG provide matters for consideration when setting the setback requirements for buildings. To achieve the aims of the ADG, the following controls apply residential flat buildings:

- Front setbacks: 7.5m for residential flat buildings in the R3 zone and 9m in the R4 zone

Note:

- Car parking structures are not permitted within the front setback area.

- Side and rear setbacks: 3m plus 1.2m per storey above the ground floor level

Notes:

- The total required setback applies to all floors above the third floor.
- Balconies and verandahs not more than 1m above the finished ground level are permitted within the side and rear setback areas.
- Unroofed terraces, landings, steps, or ramps not more than 1m in height are permitted within the side and rear setback areas.
- Other intrusions into the side and rear setback areas may include; sunhoods/awnings, pergolas, gutters and downpipes, hot water heaters, rainwater tanks, and the like.

- Corner lots: 3.5m for residential flat buildings in the R3 zone, and 3m plus 1.2m per storey above the ground floor storey in the R4 zone.

4.4.5 Open space

Section 3D (Communal and public open space), 3E (Deep soil zones) and 4O (Landscape design) of the ADG provide guidelines for the provision of open space which can support healthy plant and tree growth that is environmentally sustainable. These components of the ADG also provide guidelines to ensure adequate communal and private open space is provided. To achieve these outcomes, the following controls apply to residential flat buildings:

- Soft landscaped area/deep soil zones

The site should:

- comprise at least 35% of soft landscaped areas and deep soil zones at ground level (excluding planter boxes)
- provide deep soil zones primarily in the front setback areas and around the perimeter of the site
- include species with a wide tree canopy which can cover hard stand areas to reduce the impacts of heat island effects

- d. include new trees that are semi mature when planted and be compatible with any existing predominant street trees

Notes:

- Except for deep soil zones, all other landscaped areas, which are considered to be soft landscaping, must have a minimum soil depth of 600mm.
- All communal landscaped areas must provide an irrigation system using non-potable water.

- ii. Private open space

The minimum area and depth of balconies and ground level private open spaces are required to be provided in accordance with Section 4E of the ADG.

- iii. For developments with 15 or more apartments, communal open space should:

- e. provide 25m² of communal open space per each dwelling where balconies are the only form of open space
- f. have a minimum dimension of 5m and minimum area of 50m²
- g. include a children's play area that has a minimum area of 30m², a minimum dimension of 5m and be no steeper than 1 in 20

5 Controls for other residential land uses

5.1 Secondary dwellings

A secondary dwelling may be built as complying development, subject to compliance with certain development standards under Schedule 1 of the Affordable Housing SEPP. However, if any part of the proposal does not satisfy the criteria under the SEPP, a development application is required. Any such application will be assessed in accordance with the performance criteria and any relevant controls under this Part of the draft WDCP.

5.2 Bed and Breakfast Accommodation

Bed and breakfast accommodation is complying development under Part 4A (General Development Code) of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*, except on bush fire prone land, and subject to certain development standards.

If a proposed bed and breakfast accommodation development does not fully satisfy all the criteria under the Code a development application is required. The application will be assessed on the individual merits of the proposal, having particular regard to any likely impacts on the residential amenity of adjoining and nearby residents.

Note:

- Bed and breakfast accommodation is only permitted in the R2 zone.

5.3 Boarding houses

Under *State Environmental Planning Policy (Affordable Rental Housing) 2009* (Affordable Housing SEPP), boarding houses that provide 'affordable housing' within an 'accessible area' may be carried out with consent, subject to compliance with certain development standards.

If a proposal for this type of development is not lodged under the Affordable Housing SEPP, applications will be assessed having regard to the development standards under the Affordable Housing SEPP, and any relevant performance criteria and controls under the draft WDCP 2021.

A Plan of Management is required to be submitted with an application for a boarding house. The Plan must include (but not limited to) details relating to the following matters to ensure the premises is maintained and operates effectively without impacting on adjoining and nearby residents:

- i. Maintenance and management of common rooms such as communal kitchen, lounge rooms, and open space areas
- ii. Maintenance and management of waste and recycling facilities and collection of storage bins
- iii. Repair, maintenance, and cleaning of the building
- iv. Maintenance and replacement of fire alarms and any other fire safety equipment.
- v. Procedures to deal with any complaints
- vi. Safety and security measures for access arrangements by visitors to the premises.
- vii. Monitoring and review of management actions, and any other administration procedures

Notes:

- A copy of the Plan of Management must be provided to all residents, and displayed in a prominent location within the premises at all times.
- The Plan must contain relevant provisions to ensure compliance with the *Boarding Houses Act, 2012* and the *Boarding Houses Regulations, 2013*.
- A boarding house is required to be maintained and operated in a single entity; therefore, strata subdivision will not be permitted.

5.4 'Build-to-rent' housing

'Build-to-rent' housing is permissible with consent under the Affordable Housing SEPP. Any application for this type of development will be assessed in accordance with the performance criteria and any relevant controls under this Part of the draft WDCP and the Apartment Design Guide (ADG).

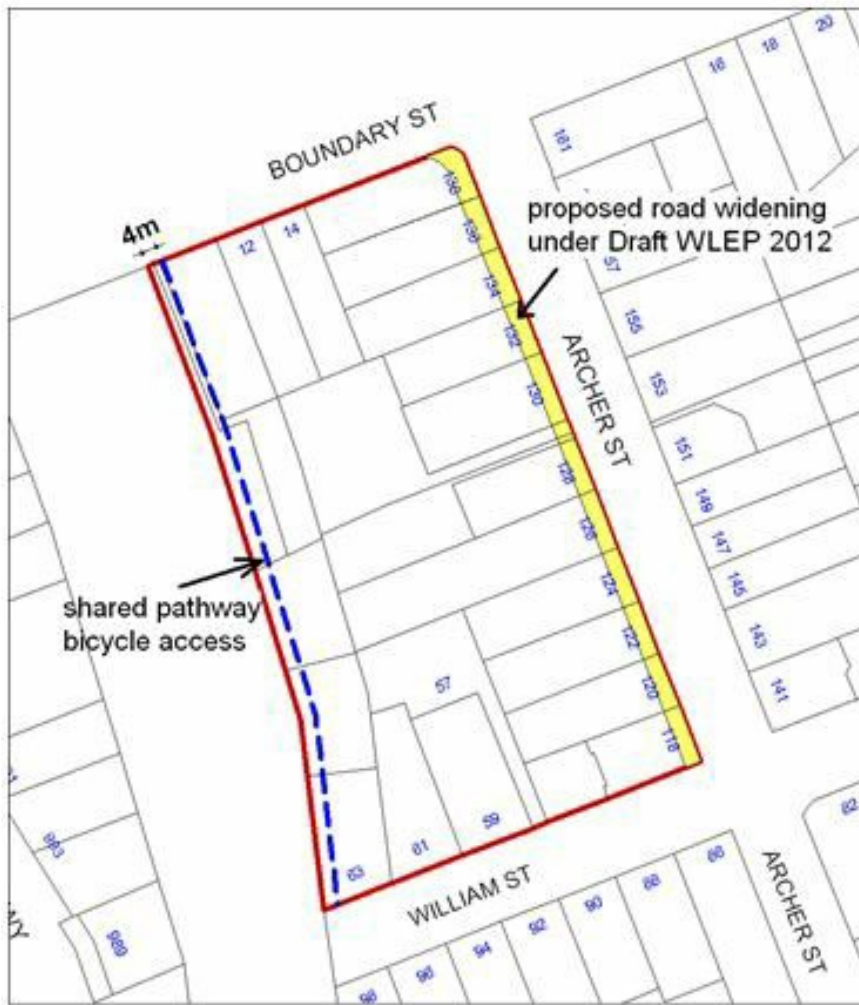
Note:

- If the identified development standards under the SEPP are complied with, Council cannot apply more onerous standards.

Notes:

- In accordance with Clause 6.10 of draft WLEP 2021, the minimum site area for any future development is 3,500m².
- Any future development of the site will be required to dedicate, at no cost to Council, a drainage easement in favour of Council.

6.5 10A-14 Boundary Street, 57-63 William Street and 118-138 Archer Street, Roseville



6.5.1 Vehicular access

To minimise conflict with vehicles queuing at the intersections of Boundary Street/Archer Streets and at Boundary Street/Pacific Highway, no vehicular access will be allowed from Boundary Street, and all vehicular access from Archer Street shall be from the William Street end of the site.

6.5.2 Road widening and bicycle/pedestrian pathway

To assist with traffic movement and ensure adequate provision is made for bicycle/pedestrian pathways, all new developments are required to provide:

- i. a four metre wide shared public cycle/pedestrian path by dedication or public right-of-way adjacent to the railway land along the western boundary between William Street and Boundary Street (Council is prepared to enter into a Voluntary Planning Agreement in relation to applicable Section 94A Contributions to assist in the delivery of this pathway)
- ii. a 3.5 metre wide strip of land along the Archer Street frontage of properties from numbers 118-138 Archer Street, with a 6 metre radius at 138 Archer Street on the corner with Boundary Road (this is in accordance with the Land Reservation Acquisition Map of draft WLEP 2020)

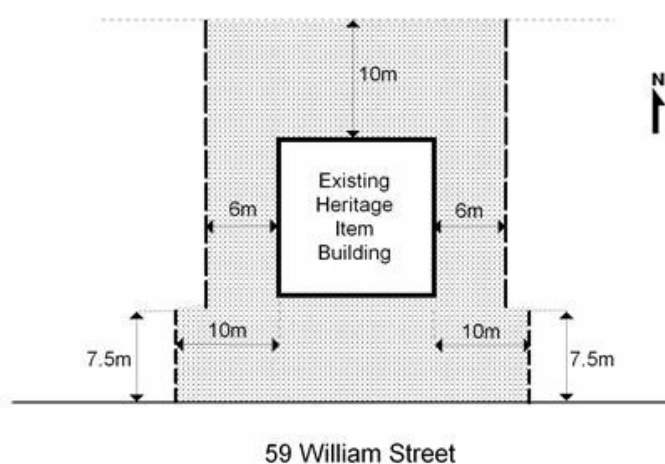
6.5.3 Drainage/flooding

Any new development is required to submit a flood study to identify the existing flood extent and demonstrate the development will not adversely affect any adjoining properties (a clear overland flood path must be maintained).

6.5.4 Heritage Item at 59 William Street.

To protect the impact of any new development on the significance of the heritage item at 59 William Street, the following setbacks apply:

- i. 6m from the eastern and western sides of the heritage item (measured from the building wall of the item)
- ii. 10m from the most northern building wall of the heritage item
- iii. any new development to the east and west of the heritage item is to be setback from the front (William Street) boundary by at least 7.5 metres within 10 metres of the eastern and western facades of the building



Note:

- In accordance with Clause 6.10 of draft WLEP 2021, the minimum site area for any future development is 4,000m².

6.6 1-31 Walter Street and 452-460 Willoughby Road (and adjoining vacant land), Willoughby



6.6.1 Vehicular access

To ensure safe vehicular access, only one left in/left out ingress/egress is permitted from Willoughby Road (a preferable alternative access could be proved off Walter Street)

Note:

- In accordance with Clause 6.10 of draft WLEP 2020, the minimum site area for any future development on 1 & 1A Walter Street and 452- 460 Willoughby Road is 2,000m².

ATTACHMENT 1**Controls for development in the R2 zone (excluding heritage conservation areas)**

This component of the draft WDCP is largely aligned to Part 3 (Housing Code), 3B (Low Rise Housing Diversity Code) as it applies to dual occupancies, and Part 4 (Housing Alterations Code) of SEPP (Exempt and Complying Development Codes) 2008.

For any development with an estimated cost of \$50,000 or more, a suitably qualified person must certify the proposed development complies with all relevant provisions of the draft WLEP 2020 and the numerical controls under this Part of the draft WDCP 2021. The table comprises the following sections:

1. Development standards under draft WLEP 2020.
2. General controls for dwellings, dual occupancies and attached development.
3. Amenity development standards.
4. Additional development controls for detached development.
5. Additional development controls for detached studios.
6. Development controls for swimming pools.
7. Development controls for fences.
8. Development controls for associated works (earthworks, retaining walls, drainage, protection of walls, and protection of trees).
9. Additional controls for dual occupancies.
10. Additional controls for attached dual occupancies where part of one dwelling is located above part of another dwelling.

Note:

- A suitably qualified person includes a practicing registered architect or a practicing qualified and accredited building designer or a registered Building Surveyor or a certified practicing planner (CPP).

1. Development standards under the draft WLEP 2020					
	Proposed	Control	Yes	No	N/A
i. Height of building (Clause 4.3)		8.5m			
ii. Maximum gross floor area (GFA) of all buildings (Clause 4.x)					
Lot area:					
Up to 200m ²		65% of lot area			
>200m ² – 250m ²		78% of lot area			
>250m ² – 300m ²		75% of lot area			
>300m ² – 350m ²		235m ²			
>350m ² – 450m ²		25% of lot area + 150m ²			
>450m ² – 560m ²		290m ²			
>560m ² – 600m ²		25% of lot area + 150m ²			
>600m ² – 740m ²		335m ²			
>740m ² – 900m ²		25% of lot area + 150m ²			
>900m ² – 920m ²		380m ²			
>920m ² – 1,000m ²		25% of lot area + 150m ²			

>1,000m ² (the GFA includes all attached and detached buildings but excludes the area of one car space (18m ²) within a garage)		400m ²			
iii. Landscaped area (Clause 6.x.)					
Lot area:					
Up to 200m ²		0.25 x site area			
200m ² – 400m ²		(0.35 x site area) – 20m ²			
401m ² – 600m ²		(0.6 x site area) – 120m ²			
601m ² – 1000m ²		(0.525 x site area) – 75m ²			
1001m ² – 1500m ²		(0.6 x site area) – 150m ²			
Over 1500m ² <i>Note:</i> the landscaped area should include a minimum 20% deep soil zone. The remainder of the landscaped area may be 'soft' landscaping which must comprise a minimum depth of 600mm.		(0.5 x site area)			
iv. Minimum lot size (Clause 6.10)					
Attached dual occupancy		700m ²			
Detached dual occupancy		900m ²			
2. General development controls for dwellings, dual occupancies and attached development					
<i>Notes:</i>					
<ul style="list-style-type: none"> • A concept subdivision layout must be submitted with an application for dual occupancy development. • The site area in the compliance checklist refers to the individual lot (excluding the access handle of a battle-axe allotment) that may be created by subdivision for each dual occupancy dwelling. 					
	Proposed	Control	Yes	No	N/A
i. Storeys		Not more than 2 storeys			
ii. Construction of basement					
Lot width:					
6m-10m		Not exceed 25m ²			
> 10m ²		Not exceed 45m ²			
iii. Primary road setback to be the average of 2 adjoining dwellings, otherwise;					
Lot area:					
Up to 300m ²		3m			
>300m ² – 900m ²		4.5m			
>900m ² – 1500m ²		6.5m			
>1500m ²		10m			

iv. Side setbacks					
Lot width:	Building Height:				
Up to 10m	0m-5.5m		900mm		
Up to 10m	>5.5m-8.5m		(height – 5.5m) / 4+0.9m		
>10m-18m	0m-4.5m		900mm		
>10m-18m	>4.5-8.5m		(height – 4.5m) / 4+0.9m		
>18m-24m	0m-4.5m		1.5m		
>18m-24m	>4.5m-8.5		(height – 4.5m) / 4+1.5m		
>24m	0m-8.5		2.5m		
(excludes common side boundary walls with a nil setback or within 900mm if the adjoining building is within 900mm)					
v. Max height of walls abutting or within 900mm of side boundary			3.3m or height of adjoining building abutting or within 900mm (max height for detached development is 4.5m)		
vi. Max length of wall abutting or within 900mm of side boundary (including any detached development)					
Lot width at the building line:					
6m-10			20m or 50% of lot depth (whichever is lesser)		
>10m-12.5m			10m		
(the length of the wall may be same as the adjoining dwelling if the length of the wall on the adjoining property is greater than these controls)					
vii. Rear setbacks					
Lot area:	Building Height:				
Up to 300m ²	0m-4.5m		3m		
Up to 300m ²	>4.5m-8.5m		10m or average of 2 adjoining houses, (whichever is lesser)		
>300m ² -900m ²	0m-4.5m		3m		
>300m ² -900m ²	>4.5m-8.5m		8m		

>900m ² -1500m ²	0m-4.5m		5m			
>900m ² -1500m ²	>4.5m-8.5m		12m			
>1500m ²	0m-4.5m		10m			
>1500m ²	>4.5m-8.5m		15m			
viii. Secondary road setbacks for corner lots						
Lot size:						
Up to 600m ²			2m			
>600m ² -1500m ²			3m			
>1500m ²			8m			
ix. Min front setback to a classified road (including any detached development)			9m			
x. Min setback to a public reserve (including any detached development)			3m			
xi. Front setback for battle axe lot			3m			
xii. Min side and rear setbacks for aerials, awnings, air conditioners, and the like (min setbacks do not apply to downpipes, driveways, electricity or gas meters, gutters, and the like)			450mm			
xiii. Setback of structures abutting or within 900mm of a rear lane			50% of the boundary			
xiv. Max height of balconies, decks, patios, terraces and verandahs attached to the side and rear of dwelling			Floor level above existing ground level			
Setback:						
>3m			2m			
3m-6m			3m			
>6m			4m			
(the lot must have a min width of 10m and area of 300m ²)						
xv. Total floor area of all attached side and rear balconies, decks, patios, terraces, and verandahs within 6m of the boundary and more than 2m above the existing ground level			12m ²			
xvi. Min length and width of landscaped area Note: this applies to deep soil zones and soft landscaping (any area with less than the minimum dimension is excluded from the landscaped area calculation)			1.5m			
xvii. Min landscaped area behind the building line			50% of the total landscaped area			
xviii. Min deep soil zone forward of			70% of the area			

the building line on a lot at least 18m wide		forward of the building line			
xix. Min deep soil zone forward of the building line on a lot less than 18m wide		50% of the area forward of the building line			
xx. Min principal private open space					
Lot width:					
Up to 10m		16m ²			
>10m		24m ²			
xxi. Min length and width of principal private open space		3m			
xxii. Max grade of principal private open space		1:50			

3. Amenity development standards

Note:

- Building elements include: an entry feature or portico; a balcony, deck, pergola, terrace or verandah; a window box treatment; a bay window or similar feature; an awning or other feature over a window; a sun shading feature; and an eave.

	Yes	No	N/A
3.1 Building design (does not apply to a dwelling on a battle-axe lot)			
i. A dwelling must contain at least 1 door and 1 window to a habitable room at ground floor level facing the primary road.			
ii. A dwelling with a setback from a primary road of at least 3m may have an articulation zone that extends up to 1.5m forward of the minimum required setback from the primary road.			
iii. Building elements may be located within the articulation zone providing the maximum total area of all building elements in the articulation zone, (other than an awning or other feature over a window, a sun shading feature or an eave) must not comprise more than 25% of the area of the articulation zone.			
iv. A building element on a dwelling (other than an entry feature or portico that has the same pitch as the roof on the dwelling) must not extend more than 1m above the gutter line of the eaves of a single storey dwelling house, or above the gutter line of the eaves of a 2 storey dwelling house.			
v. A dwelling on a corner lot must have a window to a habitable room with an area of at least 1m ² that faces and is visible from the secondary road.			
vi. A dwelling with a setback from a secondary road of not more than 4.5m must have at least one of the following building elements for a minimum length of 20% of the elevation of the walls that face the secondary road and that are within 4.5m of the secondary road:			
• an entry feature or portico			
• a balcony, deck, pergola, terrace or verandah			
• a bay window			
• a step of at least 600mm in depth			
vii. Building elements listed above may be located in a secondary road articulation zone if the zone extends no more than 1m into the minimum required setback area and spans the length of the walls			

that face the secondary road, and if the building element comprises no more than 20% of the zone area.			
viii. Any part of a gable or hipped roof that overhangs walls that are within 4.5m of the secondary road boundary must include eaves that extend for the length of those walls and project at least 450mm, but not more than 1m from those walls.			
3.2 Privacy screens			
i. a privacy screen must be provided for any part of a window to a habitable room that is less than 1.5m above the finished floor level of that room if:			
<ul style="list-style-type: none"> the window faces and is less than 3m from a side or rear boundary and the room has a finished floor level of more than 1m above ground level (existing), 			
<ul style="list-style-type: none"> or the window faces and is at least 3m, but not more than 6m, from a side or rear boundary and the room has a finished floor level of more than 3m above ground level (existing). 			
(does not apply to a bedroom window that has an area of not more than 2m ²)			
ii. a privacy screen of at least 1.7m, but not more than 2.2m, above the finished floor level of a balcony, deck, patio, terrace or verandah must be installed at the edge of that part of the balcony, deck, patio, terrace or verandah that is parallel to or faces towards the relevant side or rear boundary if the area of the balcony, deck, patio, terrace or verandah is at least 3m ² and:			
<ul style="list-style-type: none"> that edge is less than 3m from a side or rear boundary and the balcony, deck, patio, terrace or verandah has a finished floor level of more than 1m above ground level (existing), or 			
<ul style="list-style-type: none"> that edge is at least 3m, but not more than 6m from a side or rear boundary and the balcony, deck, patio, terrace or verandah has a finished floor level of more than 2m above ground level (existing) 			
iii. a privacy screen must be provided for any part of a window in a detached studio that is less than 1.5m above the finished floor level of that room if the window faces and is less than 3m from a side or rear boundary and:			
<ul style="list-style-type: none"> the room has a finished floor level more than 1m above ground level (existing), or 			
<ul style="list-style-type: none"> the window faces and is at least 3m, but not more than 6m from a side or rear boundary and the room has a finished floor level more than 3m above ground level (existing) 			
3.3 Solar access			
i. ensuring a minimum of 3 hours of solar access is provided for residents of the development between 9am and 3pm on 22 June to living areas, such as family rooms, rumpus, lounge/dining, kitchen, and the principal open space and recreational areas			
ii. ensuring a minimum of 3 hours of solar access is maintained to adjoining properties between 9am and 3pm on 22 June to living areas, such as family rooms, rumpus, lounge/dining, kitchen, and the principal open space and recreational areas			
3.4 Car parking and access			
All car parking and vehicular access must comply with the relevant provisions of Part F (Transport and Parking Management) of draft WDCP 2020. The following specific controls			

apply to dwelling houses.						
i.	Off-street car parking space, being an open hard stand space or a carport or garage, must be provided on a lot unless					
	<ul style="list-style-type: none"> the lot has a width of less than 8m measured at the building line, or the alteration of, or an addition to, a dwelling and the lot does not contain an off-street car parking space, or the development is the erection or alteration of, or an addition to, attached development and the lot does not contain an off-street car parking space 					
ii.	The off-street car parking space for a battle-axe lot must be constructed so that vehicles can leave the lot in a forward direction.					
iii.	An attached garage may only be erected on a lot that has a width of less than 8m measured at the building line if the garage is accessed only from a secondary road or lane.					
iv.	An attached garage, carport or car parking space accessed from a primary road must have a minimum setback 5.5m if the dwelling is setback less than 4.5m or 1m behind the building line if the dwelling is setback 4.5m or more.					
v.	The maximum width of all garage door openings facing a primary or secondary road is 3.2m for a lot between 8m-12m and 6m for a lot greater than 12m.					
vi.	Secondary road setback for garage or carport					
	Up to 600m ²	2m				
	600m ² -1500m ²	3m				
	>1500m ²	5m				
vii.	Rear setback for garage or carport					
	Up to 900m ²	900mm				
	>900m ² -1500m ²	1.5m				
	>1500m ²	2.5m				
	(a detached garage or carport of masonry construction may be built to the rear boundary if the lot area is at least 200m ² , but not more than 300m ² , and the wall of a building on the adjoining lot within 900mm of that boundary (if any) is of masonry construction and does not have a window facing that boundary)					
4. Additional development controls for detached development						
<i>Note:</i>						
<ul style="list-style-type: none"> Detached development includes: a deck, patio, pergola, terrace or verandah; a cabana, cubby house, fernery, garden shed, gazebo or greenhouse; a carport or garage, and a shed. The setback of detached development from a primary or secondary road (other than a detached garage or carport) must be located behind the building line of the dwelling. 						
		Proposed	Control	Yes	No	N/A
i.	Max height above existing ground level		4.5m			
ii.	Max GFA for all detached development:					
	Lot size:					

Up to 300m ²		36m ²			
>300m ² -600m ²		45m ²			
>600m ² -900m ²		60m ²			
>900m ²		100m ²			
(the max overall GFA includes the dwelling, attached and detached buildings)					
iii. Side setbacks for all detached development, including above ground rainwater tanks and shade structures (additional side setbacks apply to detached studios):					
Lot width:					
Up to 18m		900mm			
>18m-24m		1.5m			
>24m		2.5m			
(excludes common side boundary walls with a nil setback or within 900mm if adjoining building is within 900mm)					
iv. Rear setbacks for a cabana, cubby house, fenery, garden shed, gazebo, greenhouse, above ground rainwater tank, a shade structure or shed:					
Lot size:					
Up to 900m ²		0.9m			
>900m ² -1500m ²		1.5m			
>1500m ²		2.5m			
v. Height above existing ground level and rear setbacks for detached decks, patios, pergolas, terraces and verandahs					
Max finished floor level		600mm			
Rear Setbacks:					
Lot size:					
Up to 900m ²		900mm			
>900m ² -1500m ²		1.5m			
>1500m ²		2.5m			
5. Additional development controls for detached studios					
	Proposed	Control	Yes	No	N/A
i. Height (within 900mm of a lane and above a garage)		6m			
ii. Rear setbacks					
Lot size:					
Up to 900m ²		900mm			
>900m ² -1500m ²		1.5m			
>1500m ²		2.5m			
iii. Max GFA					
Lot size:					
Up to 350m ²		20m ²			
>350m ²		36m ²			
(the max overall GFA includes					

detached studios)					
iv. Side and rear setbacks					
Lot width:					
Up to 18m		900mm			
>18m		1.5m			
(excludes common side boundary walls with a nil setback or within 900mm if adjoining building is within 900mm)					
v. Max height of walls abutting or within 900mm of side boundary		3.3m or height of adjoining building but not more than 4.5m			
vi. Max height of walls abutting or within 900mm of side boundary if above a garage		height of adjoining building but not more than 6m			
6. Development controls for swimming pools					
			Yes	No	N/A
i. Coping around a swimming pool must not be more than 1.4m above ground level (existing), and 300mm wide if the coping is more than 600mm above ground level (existing).					
ii. Decking around a swimming pool must not be more than 600mm above ground level (existing).					
iii. A swimming pool must be located behind the building line of the dwelling.					
iv. The swimming pool water line must have a setback of at least 1m from a side or rear boundary.					
7. Development controls for fences					
			Yes	No	N/A
i. A fence erected behind the building line (except on a secondary street frontage) must:					
• not be higher than 1.8m above ground level (existing).					
• if it includes an entrance gate, not have a gate that opens outward.					
• if it is constructed of metal components, be of low reflective, factory pre-coloured materials.					
• if it is on a sloping site and stepped to accommodate the fall in the land, be no higher than 2.2m above ground level (existing) at each step.					
ii. A fence erected forward of the building line or on the boundary of the primary and secondary street frontage must:					
• not be higher than 1.2m above ground level (existing).					
• if it includes an entrance gate, not have a gate that opens outward.					
• if it is constructed of metal components, be of low reflective, factory pre-coloured materials.					
• be open for at least 20% of the area of the fence that is more					

than 400mm above ground level (existing), with any individual solid element of the fence above that height being no more than 350mm wide with a minimum aperture of 25mm.			
<ul style="list-style-type: none"> if it is on a sloping site and stepped to accommodate the fall in the land, be no higher than 1.6m above ground level (existing) at each step. 			
iii. Any fence must be designed so as not to restrict the flow of any floodwater.			
iv. A fence erected on bush fire prone land must be constructed of non-combustible materials.			
v. A solid fence located at the street alignment may be constructed up to a maximum height of 1.8m, where:			
<ul style="list-style-type: none"> the dwelling is affected by excessive traffic volumes and noise from the street (6000 vehicles/day or 60dBA); or 			
<ul style="list-style-type: none"> the fence encloses the main private open space of the dwelling with length limited to 75% of the frontage; or 			
<ul style="list-style-type: none"> fencing incorporates openings or consists of vegetation with minimum 50% transparency. 			
vi. Fences along the primary and secondary road frontages that are between 1.2m and 1.8m must to be <u>setback</u> a min <u>1m</u> from the street alignment for the entire frontage with provision of low <u>maintenance</u> planting in the <u>setback</u> area.			
8. Development controls for associated works			
<i>Note:</i>			
<ul style="list-style-type: none"> Associated works include earthworks, retaining walls, drainage, protection of walls, and protection of trees. 			
	Yes	No	N/A
i. Excavation for the purposes of development must not exceed a maximum depth, measured from ground level (existing), of:			
<ul style="list-style-type: none"> 1m if located not more than 1m from any boundary. 			
<ul style="list-style-type: none"> 2m if located more than 1m but not more than 1.5m from any boundary. 			
<ul style="list-style-type: none"> 3m if located more than 1.5m from any boundary. 			
ii. Fill must not exceed a maximum height, measured from ground level (existing), of:			
<ul style="list-style-type: none"> 1m if the fill is for the purposes of the erection or alteration of, or an addition to, a dwelling house, or 			
<ul style="list-style-type: none"> 600mm if the fill is for any other purpose. 			
<ul style="list-style-type: none"> (the height of fill contained wholly within the footprint of a dwelling house or any attached development or detached development is not limited). 			
iii. Fill that is higher than 150mm above ground level (existing) and is not contained wholly within the footprint of a dwelling house or any attached development or detached development is limited to 50% of the landscaped area of the lot.			
iv. The ground level (finished) of the fill must not be used to measure the height of any dwelling house or any attached development or detached development.			
v. Support for earthworks more than 600mm above or below ground level (existing) must take the form of a retaining wall or other structural support that:			

relating to dual occupancies where part of a dwelling is located above part of another dwelling					
iii. Rear setbacks*					
Lot area:	Building Height:				
700m ² -900m ²	0m-4.5m		3m		
700m ² -900m ²	>4.5m-8.5m		8m		
>900m ² -1500m ²	0m-4.5m		5m		
>900m ² -1500m ²	>4.5m-8.5m		12m		
>1500m ²	0m-4.5m		10m		
>1500m ²	>4.5m-8.5m		15m		
*see item 10(ii) for rear setback controls relating to dual occupancies where part of a dwelling is located above part of another dwelling					
iv. Secondary road setbacks for corner lots					
Lot size:					
700m ² -900m ²			2m		
>900m ² -1500m ²			3m		
>1500m ²			5m		
*see item 10(iii) for secondary road setbacks for corner lots relating to dual occupancies where part of a dwelling is located above part of another dwelling					
v. Dwelling configuration					
<ul style="list-style-type: none"> • Each dwelling must face a public road • Detached dual occupancies on a corner lot must be 3m from each other • Each dwelling must have a minimum width (measured at the building line) of: <ul style="list-style-type: none"> i. 6.5m where a car space is accessed from the primary road, or ii. 5m in any other case 					
vi. Attached balconies, decks, patios terraces and verandahs to the side or rear of the dual occupancy					
<ul style="list-style-type: none"> • The max height of the floor level is 4m • If more than 2m above ground level (existing), must be setback a min 3m from the boundary • If above 2m above the ground level (existing), must not have a total area of more than 12m² 					
vii. The maximum width of all garage door openings facing a primary is 6m for a lot between 15m-20m, 9.2m for a lot greater than 20m-25m and 12m for a lot greater than 25m..					
viii. The maximum width of all garage door openings facing a secondary road is 3.2m for a lot between 12m-15m, 6m for a lot greater than 15m-20m, 9m for a lot greater than 20m-25 and 12m for a lot greater than 25m.					

10. Additional controls for attached dual occupancies where part of a dwelling is located above part of another dwelling					
	Proposed	Control	Yes	No	N/A
i. Side setbacks The minimum side boundary setback is 1.5m; however, if the dual occupancy or any attached development is more than 10m behind the building line and is more than 4.5m above the ground level (existing) the minimum side boundary setback is: $s = h - 3m$; where (s) is the minimum setback and (h) is the height of any part of the building		1.5m			
ii. Rear setbacks					
Lot area:	Building height				
700m ² -1500m ²	0m-4.5m	6m			
700m ² -1500m ²	>4.5m-8.5m	10m			
>1500m ²	0m-4.5m	10m			
>1500m ²	>4.5m-8.5m	15m			
iii. Secondary road setbacks for corner lots					
Lot size:					
700m ² -1500m ²		3m			
>1500m ²		5m			

ATTACHMENT 2**Controls for manor houses, attached dwellings and multi dwelling housing in the R3 zone**

The manor house controls for this component of the draft WDCP are generally aligned to Part 3B (Low Rise Housing Diversity Code) of SEPP (Exempt and Complying Development Codes) 2008.

Many of the other controls under the Low Rise Housing Diversity Code have been adopted for attached dwellings and multi dwelling housing. The most notable exceptions are the landscaped area and setback controls.

A suitably qualified person must certify the proposed development complies with all relevant provisions of the draft WLEP 2020 and the numerical controls under this Part of the draft WDCP 2021. The table comprises the following sections:

1. Development standards under draft WLEP 2020
2. Amenity development standards.
3. Controls for manor houses.
4. Controls for attached dwellings and multi dwelling housing.
5. Controls for detached development.
6. Controls for detached studios.

Notes:

- A suitably qualified person includes a practicing registered architect or a practicing qualified and accredited building designer or a registered Building Surveyor or a certified practicing planner (CPP).
- If the proposed development includes construction of a swimming pools, fence, or associated works (earthworks, retaining walls, drainage, protection of walls, and protection of trees), please refer to and complete the relevant Sections 6, 7 and 8 provided in Attachment 1.
- A concept subdivision layout must be submitted with the application.
- Unless otherwise stated the site area refers to the 'parent lot' which is the entire site area prior to subdivision.
- Additional controls apply to individual lots that may be created by subdivision for each dwelling.
- A manor house, attached dwellings or multi dwelling housing must be consistent with the relevant design criteria in the Low Rise Housing Diversity Design Guide (the requirements of Part B and any other Parts of the draft WDCP 2021 and this compliance checklist prevail to the extent of any inconsistency with the Design Guide).

1. Development standards under draft WLEP 2020					
	Proposed	Control	Yes	No	N/A
i. Height of building (Clause 4.3) (please refer to 4.3A of draft WLEP 2020 for any exclusions)		As per the <i>Height of Buildings Map</i>			
ii. Max floor space ratio (Clause 4.4 of draft WLEP 2021) (please refer to Clause 4.4A of draft WLEP 2020 for any exclusions)		As per the <i>Floor Space Ratio Map</i>			

iii. Minimum lot size (Clause 6.10 of draft WLEP 2020)		1100m ²			
2. Amenity development standards for manor houses, attached dwellings and multi dwelling housing					
2.1 Building design			Yes	No	N/A
i. Articulation zone					
<ul style="list-style-type: none"> A manor house may have a primary road articulation zone that extends up to 1.5m forward of the minimum required setback from the primary road. 					
<ul style="list-style-type: none"> Attached dwellings and multi dwelling housing may have a primary road and secondary road articulation zone that each extend up to 1.5m forward of the minimum required setback from the primary road or secondary road 					
<ul style="list-style-type: none"> The maximum total area of all building elements in the articulation zone (other than an awning or other feature over a window, a sun shading feature or an eave) must not comprise more than 25% of the area of the articulation zone. 					
<p><i>Note:</i> Building elements include: an entry feature or portico; a balcony, deck, pergola, terrace or verandah; a window box treatment; a bay window or similar feature; an awning or other feature over a window; a sun shading feature; and an eave.</p>					
ii. Privacy screen					
A privacy screen must be provided for any part of a window to a habitable room that is less than 1.5m above the finished floor level of that room if:					
<ul style="list-style-type: none"> the floor level of the habitable room is 1m or more, but not more than 3m, above ground level (existing) and the window faces a side or rear boundary and is less than 3m from that boundary 					
<ul style="list-style-type: none"> the floor level of the habitable room is more than 3m above ground level (existing) and the window faces a side or rear boundary and is less than 6m from that boundary 					
<ul style="list-style-type: none"> the floor level of the habitable room is 1m or more, but not more than 3m, above ground level (existing) and the window faces a dwelling on the same lot is less than 6m from that dwelling 					
<ul style="list-style-type: none"> the floor level of the habitable room is more than 3m above ground level (existing) and the window faces a dwelling on the same lot is less than 12m from that dwelling 					
(these controls do not apply to a habitable room with a floor level not more than 1m above ground level (existing) or a window that faces a road or public space or a bedroom window that has an area of not more than 2m ²)					
iii. Balconies, decks, patios, terraces or verandahs					
The edge of a balcony, deck, patio, terrace or verandah must have a privacy screen with a height of a least 1.5 above its floor level if:					
<ul style="list-style-type: none"> the floor level of the balcony, deck, patio, terrace or verandah is 1m or more, but not more than 3m, above ground level (existing) and the edge faces a side or rear boundary and is less than 3m from that dwelling 					

<ul style="list-style-type: none"> the floor level of the balcony, deck, patio, terrace or verandah is more than 3m, above ground level (existing) and the edge faces a side or rear boundary and is less than 6m from that dwelling 					
<ul style="list-style-type: none"> the floor level of the balcony, deck, patio, terrace or verandah is 1m or more, but not more than 2m, above ground level (existing) and the edge faces a dwelling on the same lot and is less than 6m from that dwelling 					
<ul style="list-style-type: none"> the floor level of the balcony, deck, patio, terrace or verandah is more than 2m, above ground level (existing) and the edge faces a dwelling on the same lot and is less than 12m from that dwelling 					
(these controls do not apply to a balcony, deck, patio, terrace or verandah with a floor level not more than 1m above ground level (existing) or that faces a road or public space or that has an area of not more than 2m ²)					
iv. Solar access					
<ul style="list-style-type: none"> a minimum of 3 hours of solar access must be provided for residents of the development between 9am and 3pm on 22 June to living areas, such as family rooms, rumpus, lounge/dining, kitchen, and the principal open space and recreational areas 					
<ul style="list-style-type: none"> a minimum of 3 hours of solar access should be maintained to adjoining properties between 9am and 3pm on 22 June to living areas, such as family rooms, rumpus, lounge/dining, kitchen, and the principal open space and recreational areas 					
(if the adjoining property already has less than 3 hours of solar access between 9am and 3pm on 22 June to living areas and the principal open space, every reasonable attempt should be made to provide a minimum of 3 hours of solar access)					
v. Car Parking					
All car parking and vehicular access must comply with relevant provisions of Part F (Transport and Parking Management) of draft WDCP 2021. The following setbacks apply to manor houses, attached dwellings and multi dwelling housing:					
<ul style="list-style-type: none"> if the setback of the building from the road is less than 4.5m, a min 5.5m setback is required for the off-street parking space 					
<ul style="list-style-type: none"> if the setback of the building from the road is 4.5m or more, the off-street parking space is required to be 1m behind the building line 					
(an off-street parking space may be an open hard stand space or carport or garage, whether attached to or detached from the dwelling)					
<ul style="list-style-type: none"> the maximum width of all garage door openings facing a primary or secondary road is 3.2m for a lot between 6m-12m and 6m for a lot greater than 12m. 					
3. Controls for manor houses					
<i>Note: A manor house must face a public road</i>					
	Proposed	Control	Yes	No	N/A
i. Lot width of the parent lot		27m			
ii. Landscaped area (includes the deep soil zone and soft landscaped area but		Min 50% - 100m ² of the site area			

excludes planter boxes)					
iii. Deep soil zone		Min 20% of the site area			
iv. Soft landscaped area (soft landscaped area is landscaping that has a min depth of 600mm)		Min 20% of the site area			
v. Dimension of all landscaped areas (areas with less than the min dimension are excluded from the min landscape area requirements)		Min width and depth is 1.5m			
vi. Min landscaped area behind the building line		50% of the total landscaped area			
vii. Min deep soil zone forward of the building line		70% of the area forward of the building line			
viii. Primary road setback to be the average of 2 adjoining dwellings, otherwise;					
Lot area:					
1100m ² -1500m ²		6.5m			
>1500m ²		10m			
ix. Side setbacks The minimum side boundary setback is 1.5m; however, if the manor house or any attached development is more than 10m behind the building line and is more than 4.5m above the ground level (existing) the minimum side boundary setback is: $s = h - 3m$; where (s) is the minimum setback and (h) is the height of any part of the building		1.5m			
x. Rear setbacks					
Lot area:	Building height				
1100m ² -1500m ²	0m-4.5m	6m			
1100m ² -1500m ²	>4.5m-8.5m	10m			
>1500m ²	0m-4.5m	10m			
>1500m ²	>4.5m-8.5m	15m			
xi. Secondary road setback for corner lots:					
1100m ² -1500m ²		3m			
>1500m ²		5m			
xii. Classified road setback		9m			
xiii. Public reserve setback		3m			
xiv. Min side and rear setbacks for aerials, awnings, air conditioners, and the like		450mm			

(min setbacks do not apply to downpipes, driveways, electricity or gas meters, gutters, and the like)					
xv. Setback of structures abutting or within 900mm of a rear lane		50% of the boundary			
xvi. Min principal private open space					
1 bedroom or studio		8m ²			
2 bedrooms		12m ²			
3 or more bedrooms		16m ²			
xvii. Min length and width of principal private open space		2m			
xviii. Width of garage doors from a primary or secondary road		Max 6m			
4. Controls for attached dwellings and multi dwelling housing					
	Proposed	Control	Yes	No	N/A
i. Lot width of the parent lot		27m			
ii. Minimum width of each dwelling		6m			
<i>Note:</i> The width of an attached dwelling is measured from the centre of a side wall adjoining another dwelling.					
iii. Landscaped area (includes the deep soil zone and soft landscaped area) <i>Note:</i> Soft landscaped area is landscaping that has a min depth of 600mm)		Min 40% of the total site area			
iv. Deep soil zone		Min 20% of the total site area			
v. Soft landscaped area		Min 20% of the total site area			
vi. Dimension of all landscaped areas (areas with less than the min dimension are excluded from the calculation of min area requirements)		Min width and depth is 1.5m			
vii. Landscaped area for individual lots		Min 30% of each potential lot			
viii. Min landscaped area behind the building line of individual lots		50% of the landscaped area			
ix. Min deep soil zone forward of the building line on individual lots		50% of the area forward of the building line			
x. Primary road setback		6m			
xi. Min setback fronting internal communal road		3m			
xii. Side setbacks (if the dwelling is		1.5m for 1 and 2			

not attached) <i>Note:</i> The total setback applies to each level above the second storey.		storey dwellings + 1.2m for each level above 2 storeys			
xiii. Rear setbacks					
• One storey		6m			
• Two storeys		8m			
• Three storeys		10m			
xiv. Secondary road setback for corner lots:		3m			
xv. Classified road setback		9m			
xvi. Public reserve setback		3m			
xvii. Setback of structures from a rear lane		1m			
xviii. Min principal private open space for each dwelling		16m ²			
xix. Min length and width of principal private open space		3m			
xx. Adaptable housing (% of the total number of dwellings)					
• Single storey		10%			
• Two storey		25%			
• Three storey		33%			
• Four storey		50%			
xxi. Floor to ceiling height of rooms:					
• Habitable rooms		Min 2.7m			
• Non-habitable rooms		Min 2.4m			
xxii. Window for habitable rooms		Min glass area not less than 10% of the floor area of the room			
xxiii. Depth of habitable room		Max 2.5 x ceiling height			
xxiv. Solar access					
• to solar collectors on adjoining building		Min 4 hours			
• to living rooms and private open space (between 9am-3pm on 21 June)		Min 3 hours			
xxv. Natural ventilation:					
• Unobstructed window openings		Min 5% of the floor area			
5. Controls for detached development					
<ul style="list-style-type: none"> • Detached development includes: a deck, patio, pergola, terrace or verandah; a cabana, cubby house, fernery, garden shed, gazebo or greenhouse; a carport or garage, and a shed. • The setback of detached development from a primary or secondary road (other than a detached garage or carport) must be located behind the building line of the dwelling. 					

	Proposed	Control	Yes	No	N/A
i. Max height above existing ground level		4.5m			
ii. Max GFA for all detached development: (the max overall GFA includes the dwelling, attached and detached buildings)		100m ² of the site area			
iii. Side setbacks for all detached development, including above ground rainwater tanks and shade structures (additional side setbacks apply to detached studios): (excludes common side boundary walls with a nil setback or within 900mm if adjoining building is within 900mm)		900mm			
iv. Rear setbacks for a cabana, cubby house, fenery, garden shed, gazebo, greenhouse, above ground rainwater tank, a shade structure or shed:					
Lot size:					
1100m ² -1500m ²		1.5m			
>1500m ²		2.5m			
v. Height above existing ground level and rear setbacks for detached decks, patios, pergolas, terraces and verandahs					
Max finished floor level Rear setbacks:		600mm			
Lot size:					
200m ² -900m ²		900mm			
>900m ² -1500m ²		1.5m			
>1500m ²		2.5m			
6. Controls for detached studios					
	Proposed	Control	Yes	No	N/A
i. Height (within 900mm of a lane and above a garage)		6m			
ii. Max GFA (the max overall GFA includes detached studios)		36m ²			
iii. Rear setbacks		3m			
iv. Side and rear setbacks					
Lot width:					
12m-18m		900mm			
>18m		1.5m			
(excludes common side boundary walls with a nil setback or within 900mm if adjoining building is within 900mm)					

v. Max height of walls abutting or within 900mm of side boundary		3.3m or height of adjoining building but not more than 4.5m			
vi. Max height of walls abutting or within 900mm of side boundary if above a garage		height of adjoining building but not more than 6m			
vii. Separation from residential accommodation		3m			
viii. Solar access to solar collectors on adjoining building		Min 4 hours			
ix. Solar access:					
<ul style="list-style-type: none"> to solar collectors on adjoining buildings 		Min 4 hours			
<ul style="list-style-type: none"> To living room and private open space (between 9am-3pm on 21 June) 		Min 3 hours			
x. Natural ventilation:					
<ul style="list-style-type: none"> Unobstructed window openings 		Min 5% of the floor area			

ATTACHMENT 3**Controls for residential development comprising three or more storeys and four or more dwellings in the R3 and R4 zones**

This component of the draft WDCP is aligned to the *Apartment Design Guide (ADG), NSW Department of Planning and Environment, July 2015*. It applies to residential flat buildings and the residential components of shop top housing and mixed use developments

A practicing registered architect must certify the proposed development complies with all relevant provisions of the ADG, draft WLEP 2020 and the numerical controls under this Part of the draft WDCP 2021.

The table comprises the following sections:

1. Development standards under draft WLEP 2020.
2. Numerical controls, including the minimum requirements under the ADG

Notes:

- The 'Site analysis checklist' provided in Appendix 1 of the ADG must be completed and submitted with the development application.
- The 'Development application – recommended documentation checklist' provided in Appendix 3 of the ADG must be completed and submitted with the development application.

1. Development standards under draft WLEP 2020					
	Proposed	Control	Yes	No	N/A
i. Height of building (Clause 4.3) (please refer to 4.3A of draft WLEP 2020 for any exclusions)		As per the <i>Height of Buildings Map</i>			
ii. Max floor space ratio (Clause 4.4 of draft WLEP 2020) (please refer to Clause 4.4A of draft WLEP 2020 for any exclusions)		As per the <i>Floor Space Ratio Map</i>			
iii. Minimum lot size (Clause 6.10 of draft WLEP 2020)		1100m ²			
2. Numerical controls for residential development comprising three or more storeys and four or more dwellings.					
	Proposed	Control	Yes	No	N/A
i. Street frontage		Min 27m			
ii. Site Coverage of the site area					
• Single storey		50%			
• Two storeys		35%			
• Three storeys		30%			
• Four storeys		28%			
• Five storeys		26%			
• Six storeys		24%			
• Seven storeys		22%			
• Eight storeys or more		20%			

iii. Height of building The overall height should include:					
• Rooftop articulation		Min 1m			
• Allowance for topographic changes		2m			
• Allowance for services between floors		400mm			
(the uppermost floor should be set back so it is not visible from the ground level at a 45° plane and occupy not more than 60% of the floor area below)					
iv. Building depth (depending on floor to ceiling height and/or orientation)		12-18m			
v. Building separation Up to 4 storeys:					
• between non-habitable rooms		6m			
• between habitable rooms and non-habitable rooms		9m			
• between habitable rooms/balconies		12m			
5 – 8 storeys:					
• between non-habitable rooms		9m			
• between habitable rooms and non-habitable rooms		12m			
• between habitable rooms/balconies		18m			
9 storeys and above:					
• between non-habitable rooms		12m			
• between habitable rooms and non-habitable rooms		18m			
• between habitable rooms/balconies		24m Increase distance by 3m if adjacent to a lower density zone			
(these are min requirements that may need to increase to achieve adequate sunlight and/or other amenity for residents)					
vi. Street setbacks					
• R3 Zone		7.5m			
• R4 Zone		9m			
• Internal communal road		3m			
vii. Side and rear setbacks					
• single storey <5m		1.5m			
• 2 storey <8m		3m			
• storeys above the ground floor		3m plus 1.2m per storey			

viii. Setbacks for corner lots					
• R3 Zone		3.5m			
• R4 Zone (ground floor)		3m			
• R4 Zone (above the ground level)		3m plus 1.2m per storey			
ix. Deep soil zone					
• 1100m ²		Min 7%			
• 1100m ² – 1500m ²		Min 10%			
• >1500m ²		Min 15%			
(the deep soil zone may be included in the soft landscaped area requirement) <i>Note:</i> developments such as shop top housing in commercial zones which have significant site coverage at the ground level may not achieve the required amount deep soil zones.		6m			
x. Soft landscaped area (soft landscaped area is landscaping that has a min depth of 600mm)		Min 35% of the site area			
• Min dimension		6m for deep soil zone and 1.5m for soft landscaped areas			
(areas with less than the min dimensions for the deep soil zone and/or the soft landscaped area are excluded from the total min landscaped area requirement)					
xi. Communal open space (for development with 15 or more apartments)					
• Min area		25m ²			
• Min dimension		5m			
• Solar access		Min 50% over the usable space for a min 2 hours between 9am-3pm on 21 June			
xii. Children's play area (for developments with 10 or more apartments in addition to any communal open space)					
• Min area		30m ²			
• Min dimension		5m			
• Max grade		1 in 20			
xiii. Adaptable Housing (% of the total number of apartments)					
• 3 storeys		33%			

<ul style="list-style-type: none"> 4 or more storeys (includes apartments with a shop top or mixed-use development) 		50%			
xiv. Solar access to solar collectors on adjoining building		Min 4 hours			
xv. Solar access:		Min 4 hours			
<ul style="list-style-type: none"> To solar collectors on adjoining buildings To living room and private open space 		Min 70% of apartments to receive a min 2 hours between 9am-3pm on 21 June			
<ul style="list-style-type: none"> No solar access to apartments 		Max 15% of apartments between 9am-3pm on 21 June			
xvi. Natural ventilation					
<ul style="list-style-type: none"> Cross ventilation (up to the first 9 storeys) Unobstructed window openings 		Min of 60% of apartments Min 5% of the floor area			
xvii. Apartment size and layout					
Floor to ceiling heights:					
<ul style="list-style-type: none"> Habitable rooms Non-habitable rooms Second floor level 		Min 2.7m Min 2.4m 2.4m for 50% of apartment area			
Internal area of apartment:					
<ul style="list-style-type: none"> Studio 1 bedroom 2 bedroom 3 bedroom 4 or more bedrooms 		Min 35m ² Min 50m ² Min 70m ² Min 90m ² Min 102m ²			
(add 5m ² for each additional bathrooms)		Min 102m ² plus 12m ² per additional bedroom			
Window for habitable rooms		Min glass area not less than 10% of the floor area of the room			
Depth of habitable room		Max 2.5 x ceiling height			
xviii. Size of rooms:					
<ul style="list-style-type: none"> Master bedrooms Other bedrooms Living/dining rooms (studio & 1 bed room apartments) Living/dining rooms (2 & 3 		10m ² (excluding wardrobe space) 3m ² (excluding wardrobe space) 3.6m 4m			

bed room apartments)					
• Width of cross-over or cross-through apartments		4m			
xix. Balconies					
Size:					
• Studio		4m ²			
• 1 bed room apartment		8m ²			
• 2 bed room apartment		10m ²			
• 3 bed room apartment		12m ²			
Min depth:					
• Studio		-			
• 1 bed room apartment		2m			
• 2 bed room apartment		2m			
• 3 bed room apartment		2.4m			
• Private open space at ground level or adjoining a podium		15m ² with a min depth of 3m			
xx. Storage					
Size:					
• Studio		4m ²			
• 1 bed room apartment		6m ²			
• 2 bed room apartment		8m ²			
• 3 or more bed room apartments		10m ²			
(50% to be located within the apartment)					
xxi. Universal design (must satisfy the Liveable Housing Guideline's silver level universal design features)		20% of the total apartments			
xxii. Bicycle and car parking		In accordance with Part F of the draft WDCP 2021			

Part C: Development in E4 Environmental Living Zone

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Part C: Development in E4 Environmental Living Zone

1 Introduction

The E4 Environment Living Zone contains properties with special qualities and attributes such as natural bushland, geological features, and foreshore areas. This Part of the draft WDCP 2021 includes information, guidelines, and controls to maintain these special qualities and protect adjoining urban bushland and foreshore areas.

1.1 Aim

The specific aim of this Part is to ensure residential and other permitted land uses will result in low impact developments in environmentally sensitive locations.

1.2 Objectives

The objectives of this Part are to:

- i. protect environmentally sensitive foreshore and bushland areas from overdevelopment or visually intrusive development so that the scenic qualities, biodiversity, and ecological values of those areas are maintained
- ii. provide performance criteria and numerical controls to ensure low impact development is achieved
- iii. ensure development does not alter existing drainage patterns that could result in adverse sediment and erosion impacts on the foreshore
- iv. ensure new development includes appropriate measures to minimise the impacts of urban heat island effects
- v. ensure potential impacts on sea level rise are addressed
- vi. ensure new development does not impact on any heritage items, heritage conservation areas, Aboriginal objects, or Aboriginal places of heritage significance

Many properties in the Castle Cove/Middle Cove, Castlecrag, Northbridge, and Chatswood West localities are zoned E4 Environmental Living. A brief description of the unique characteristics and desired future character of these localities is provided in **Attachment 1**.

1.3 Checklist for development applications

The compliance checklist provided in **Attachment 2** must be completed and submitted with the development application.

2 Performance Criteria

2.1 Additional performance criteria for development in the E4 zone

The performance criteria for residential development provided in Section 2 under Part B of the draft WDCP applies to residential development in the E4 Environmental Living Zone. However, to provide for low-impact development, prevent overdevelopment of a site, and reduce the impacts of urban heat island effects, the following additional performance criteria apply.

2.1.1 Site area and lot dimensions

The site area and lot dimensions should:

- i. have regard to any unique topographical features and retention of established trees and vegetation that provide a continuous wildlife corridor, and any other natural features such as rock outcrops.

2.1.2 Setbacks

Setbacks should:

- i. be maintained from the street frontage and bushland having regard to established building lines of dwellings in the immediate vicinity
- ii. reinforce the streetscape and urban bushland character of the locality
- iii. maintain adequate separation between any new development and the canopy of established trees
- iv. be sufficient to allow adequate areas for deep soil zones

2.1.3 Design

The design should:

- i. integrate with the natural features of the locality and topography of the site
- ii. maintain view sharing to the foreshore, bushland and waterways from surrounding properties
- iii. not visually dominate the site due to height or bulk when viewed from waterways and public vantage points
- iv. ensure inclinator which can be seen from the foreshore:
 - a. have dense planting below and adjacent to the inclinator to reduce the visual impact of the rail alignment
 - b. do not cut through rock shelves or outcrops
 - c. do not result in the loss of significant trees
- v. ensure the type of materials for buildings and ancillary structures are sensitive to the character of the area when viewed from the street, waterways, and public open spaces
- vi. ensure two storey walls greater than 6m in length provide articulation to reduce the bulk of the building
- vii. ensure the external colour of buildings (including roofs) in areas adjacent to the foreshore and bushland use natural recessive colours with a minimum solar absorption of 0.55 in accordance with the Building Code of Australia (BCA)

2.1.4 Landscaping

Landscaped areas should:

- i. retain significant trees and natural features such as rock formations, watercourses, and cliff escarpments
- ii. provide adequate deep soil zones to accommodate large trees
- iii. retain and plant trees with wide tree canopies to reduce the impacts of urban heat island effects

2.1.5 Private open space

Private open space should:

- i. integrate with any natural features and topography of the site

2.1.6 Private recreation facilities

Private recreation facilities should:

- i. be constructed to integrate with the natural environment and topography of the land
- ii. ensure adjoining bushland and foreshore areas are not impacted by stormwater drainage
- iii. be suitably screened to ensure they are not visible from the foreshore, waterways, or other public vantage points

2.2 Controls

The floor space ratio (FSR) and the landscaped area controls under Clause 4.4A and Clause 6x, respectively, of draft WLEP 2020, and the required number of car parking spaces under Part F (Transport and Parking Management) of draft WDCP 2021, apply to all residential developments in the E4 zone.

Many of the controls under Part 3 of the Housing Code, Part 3B of the Low Rise Housing Diversity Code, and Part 4 the Housing Alterations Code of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*, have been adopted. Some notable exceptions include setback and landscaping controls. The controls for dwellings and ancillary structures are provided in the attached compliance checklist.

Any variation of the numerical controls must be justified and have regard to the performance criteria provided in Section 2 under Part B of the draft WDCP, and the additional performance criteria under Section 2.1 of this Part of the draft WDCP.

Notes:

- Detached dual occupancies are prohibited in the E4 zone under the draft WLEP 2020.
- Some minor works may be permitted in the E4 zone under the Housing Alterations Code (it is up to the proponent to be satisfied that any works or demolition fully comply with the relevant provisions of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*).

3 Heritage items and heritage conservation areas

A number of properties zoned E4 comprise a heritage item and/or are within a heritage conservation area. Draft WLEP 2020 and Part H of draft WDCP 2021 provide controls to ensure alterations and additions do not adversely impact on heritage items, and any new development is in keeping with the character of heritage conservation areas.

Any residential development in the heritage conservation areas must satisfy the provisions of this Part and Part H. Any inconsistency between this Part and Part H, the requirements under Part H prevail.

4 Aboriginal heritage

Council is committed to the protection and conservation of Aboriginal objects and Aboriginal places of heritage significance. Many of these objects and sites are located on land zoned E4, and on other adjoining environmentally sensitive land, particularly around the foreshore.

Draft WLEP 2020 does not identify Aboriginal objects or Aboriginal places of heritage significance. Therefore, if any development is likely to disturb any natural bushland or geological features, Council should be contacted to determine if a site comprises or is in proximity to an Aboriginal object or Aboriginal place of heritage significance. Applicants will then be advised if an archaeological assessment report is required to be submitted with the development application.

5 Development adjoining bushland

Clause 9 of *State Environmental Planning Policy No 19 – Bushland in Urban Areas* (Bushland SEPP) applies to development on land which adjoins 'bushland zoned or reserved for public open space purposes'. This provision applies to development on land adjoining land zoned E2 Environmental Conservation and RE1 Public Recreation under the draft WLEP 2020.

Applications to undertake works on land adjoining bushland should have regard to Chapter 5 (Urban Impacts) of the *Urban Bushland Plan of Management 2014*. The Plan of Management can be viewed on Council's website at:

<https://www.willoughby.nsw.gov.au/Environment/Bushland-and-Wildlife/Bushland-Management/Bushland-Management-Plans/Urban-Bushland-Plan-of-Management>

6 Foreshore building line

To ensure development does not detract from the natural topographical features of foreshore areas, including rock outcrops, escarpments and native vegetation, foreshore building lines (FBL) have been fixed on certain land which front a bay, river, creek, lake, lagoon or the harbour. FBL are indicated on the 'Foreshore Building Line' Maps accompanying the draft WLEP 2020.

Private properties with a frontage to the foreshore are identified as containing 'modified foreshore land'. The FBL on these properties has been placed to coincide with the general position of buildings and significant structures along the foreshore. The purpose of the FBL is to encourage the protection and regeneration of land within the foreshore and prevent new structures being built forward of the FBL.

Limited development is permissible in the foreshore area in accordance with Clause 6.4 of the draft WLEP 2020. The design and siting of any development permitted below the foreshore building line must:

- i. maintain the natural landscape character and features of the foreshore, including rock outcrops, bushland, and cliff faces
- ii. protect the visual amenity, including views from adjoining property
- iii. protect the scenic quality of the foreshore when viewed from waterways and the public domain
- iv. protect any habitat of threatened species
- v. protect water catchment quality

Notes:

- In accordance with Clause 6.4 of the draft WLEP 2020, the height of a building on land in the foreshore area (land between the foreshore building line and the water) must not exceed 3.5 metres above ground level (existing) on any part of the lot.
- Where land is situated within the boundary of the Sydney REP (Sydney Harbour Catchment) 2005, applications are required to be prepared in accordance with the requirements of Sydney REP (Sydney Harbour Catchment) 2005 and the Sydney Harbour Foreshores Area Development Control Plan.

7 Retaining and sea walls

The following additional controls apply to retaining walls and sea walls within the foreshore building line:

- unless it can be demonstrated that a retaining wall or sea wall is required to prevent landslip and/or erosion of the shoreline, retaining walls or sea walls should not be constructed within the foreshore building line
- retaining walls should generally be no more than 1m above natural ground level
- sea walls should generally be no more than 1m above the mean high water mark
- seawalls and retaining walls must be constructed in natural materials such as sandstone blocks or timber (unfinished concrete blocks are not permitted)

Note:

- Development consent is required to carry out development on any land below the mean high water mark of any body of water subject to tidal influence (including the bed of any such water).

8 Information to be submitted with a development applications (DA)

The development application process and information required to be submitted with a DA is provided in Part A of the draft WDCP. However, the following additional information may be required to be submitted with a DA for development in the E4 Environmental Living Zone:

- a flora and fauna assessment report may be required for properties containing and/or adjacent to significant areas of bushland (this report will determine if the provisions of the Threatened Species Conservation Act 1995 apply)
- an archaeological assessment report may be required for properties containing rock outcrops or overhanging rocks and/or located adjacent to identified or potential Aboriginal objects or Aboriginal places of heritage significance.

9 Controls for additional permitted land uses**9.1 Secondary dwellings and bed and breakfast accommodation**

Secondary dwellings and bed and breakfast accommodation are only permitted with consent under the draft WLEP 2020.

The performance criteria and relevant controls for residential development provided in Section 2 and 3 under Part B and the additional performance criteria provided in Section 2.1 under this Part of the draft WDCP apply to secondary dwellings and bed and breakfast accommodation in the E4 Environmental Living Zone.

9.1.1 Additional controls/provisions for a secondary dwelling

The maximum height of a detached secondary dwelling is 5.7m and the maximum floor area of an attached or detached secondary dwelling is 60m² or 10% of the total floor area of the principal dwelling, whichever is the greater. The minimum site area for a secondary dwelling is 450m² and a secondary dwelling cannot be subdivided from the principal dwelling.

9.1.2 Additional controls/provisions for bed and breakfast accommodation

Bed and breakfast accommodation can only be provided within the principal dwelling or an approved studio that does not contain any kitchen facilities.

An application for bed and breakfast accommodation will be assessed on the individual merits of the proposal, having particular regard to any likely impacts on the residential amenity of adjoining and nearby dwellings.

Note:

- The use of a dwelling as bed and breakfast accommodation will result in a change of building class for the dwelling under the Building Code of Australia; therefore, there will be new fire safety and access requirements.

9.2 Seniors housing

State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (Seniors Housing SEPP) provides design principles and planning controls that set aside any local planning controls that would prevent the development of housing for seniors or people with a disability that meets the development criteria and standards of this Policy.

The SEPP can be viewed at:

<https://www.legislation.nsw.gov.au/view/html/inforce/current/epi-2004-0143>

10 Controls for specific areas in the E4 zone

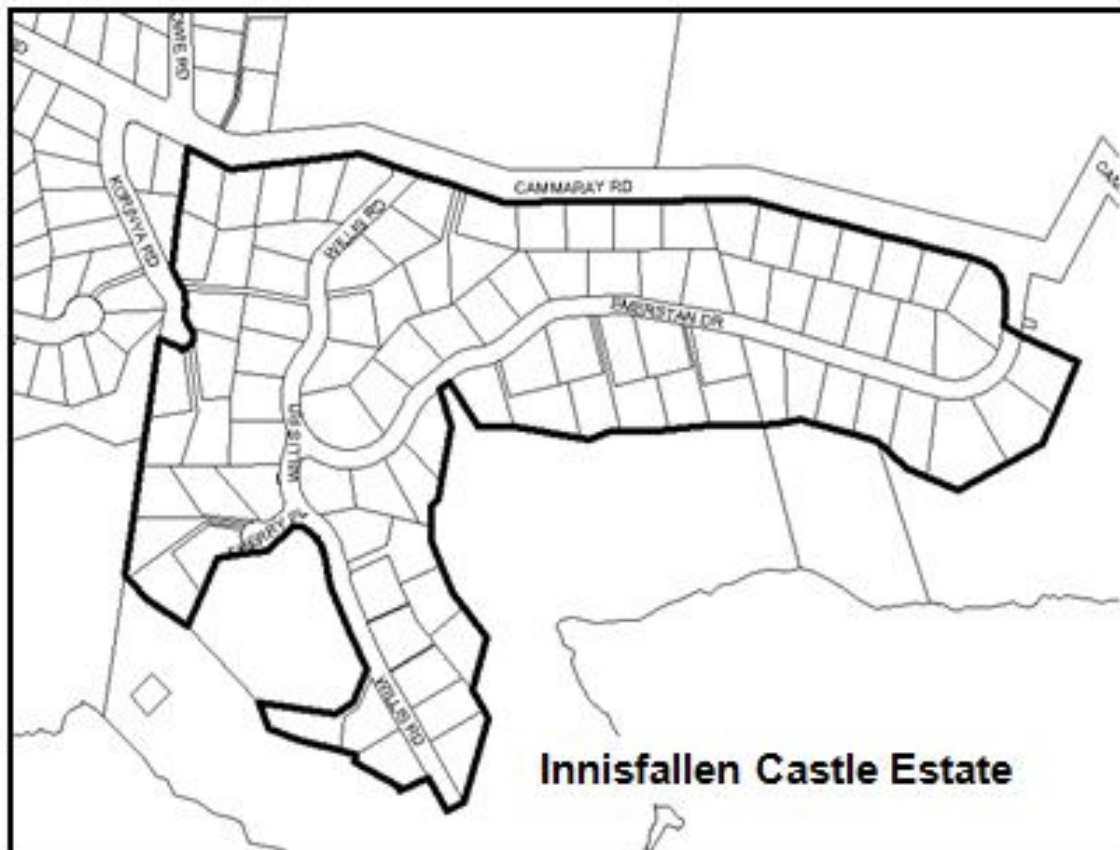
This section provides controls for any future development of specific sites and areas. These controls are in addition to other provisions of Part B and this Part of the draft WDCP. In the event of any inconsistency, these provisions prevail.

10.1 Innisfallen Castle Estate

The Innisfallen Castle Estate is located on the Castle Cove peninsula. No 14 Cherry Place comprises the 'Innisfallen Castle' which is a State significant item. The heritage values include the external fabric of the 'Castle' and curtilage, including surviving elements of the original gardens, lawns, driveway, stone edgings and wall.

Any development on adjoining or nearby properties must respect, and not impact on the heritage values of the site, including views to and from the 'Innesfallen Castle'.

Map 1: Innisfallen Castle Estate



The Innisfallen Castle Estate is surrounded by natural bushland reserves on the foreshore of Middle Harbour. Primary and secondary building areas and height limits are identified on each property to restrict development to allow appropriate view sharing of views to natural bushland reserves, and views over Middle Harbour.

The following requirements prevail over any other provisions of draft WDCP 2021.

10.1.1 Building footprint

The erection of any building is restricted to the primary building area. Swimming pools and other minor structures such as patios and pergolas, and landscaping structures are permitted in the secondary building area. Boundary fences and walls may be permitted outside the primary and secondary building areas with approval.

10.1.2 Height of buildings

No buildings are to be erected at a height above the reduced levels (RLs) specified for each individual lot, except for chimneys, television aerials, lift towers or service installations, which may extend an additional 600mm above the stated RLs levels of each allotment of land

The maximum permissible height of a development is based on a conventional pitched roof design; therefore:

- i. the maximum height of a parapet wall is to be 1.2m less than the reduced level as shown in respect of each main building area; and
- ii. no roof or part of the main building is to occupy more than 50% of the air space over the area of the highest floor of the building, between the maximum permissible height of the building and at a reduced level of 2.4m below the maximum permissible height plane.

The surface of a swimming pool or terraces is not to be constructed more than 1.5m above the natural finished ground level at any point.

Map 2: Building area and height limit



Note:

- Applicants are required to contact Council to obtain the exact location and setbacks of the primary and secondary building areas for individual lots.

10.1.3 Fencing

No fence, except safety fence enclosing a swimming pool, should be erected closer to the street than the building line of the dwelling or the building line identified for the secondary building area.

No fence consisting of rough-sawn, undressed, unpainted timber or timber in its natural state is to be erected on the land.

Except in exceptional circumstances, dividing fences must not exceed 1.8m above natural ground level.

Note:

- Both Council and adjacent property owners must agree in writing to any increase in the height of dividing fences.

10.1.4 Excavation and retaining walls

Major excavations outside the main and secondary building areas are to be kept to a minimum.

All retaining walls more than 600mm above or below the natural surface are to be contained within the main and secondary building areas of each site (except such walls that may be specifically approved by Council).

Any raising or lowering of the surface by more than 600mm will be subject to the following controls, with regard to be given to the preservation of existing trees in the case of any surface adjustments:

- retain and stabilise the face of an excavation adjacent to the external wall of the building of not more than 1.2m from the base of the embankment to the face of the building
- the embankment must be constructed with a slope not exceeding 4:1 and a maximum height of 3m from the base of the wall to the finished surface of the embankment
- retain any filling adjacent to the main building to provide essential pedestrian movement to and from the building; the area must not affect the amenity of adjacent properties and should not be in the form of a terrace outside the main and secondary building area
- the height of the surface level of the retained area is not to exceed 1.5m above natural ground level and is not to be greater than 1.5m from the face of the wall of the main building
- where, in Council's opinion, the raising or lowering of the surface level does not affect the amenity of adjacent lands, a retaining wall may be up to 1500mm in height from the natural ground level to the finished surface of the wall
- special exceptions may be granted to retaining walls for the support of excavation of fills for driveways, subject to all batters not to exceed 1:1 in cut other than rock, and 1:1.5 in fill

The erection of retaining walls to contain earth embankments at the street frontage is to be avoided. The only treatment permitted by Council is the protection and beautification of the batter. The following controls apply to the treatment of the street alignment of properties in cuttings:

The Bulwark		Height
Lot 32	No 7	88 AHD
Lot 31	No 9	84 AHD
Lot 30	No 11	84 AHD
Lot 29	No 13	86 AHD
Lot 28	No 15	84 AHD
Linden Way		
Lot 27	No 25	85 AHD
Lot 26	No 27	88 AHD

Note:

- Height where specified as an RL control means the RL AHD of the uppermost point of the building (not being a vent, lift tower, chimney or other service installation).

11 Site specific provisions for certain land within the Chatswood Golf Club (adjacent to 126 Beaconsfield Road, Chatswood)



11.1 Objectives

The objectives of the site-specific provisions are to ensure:

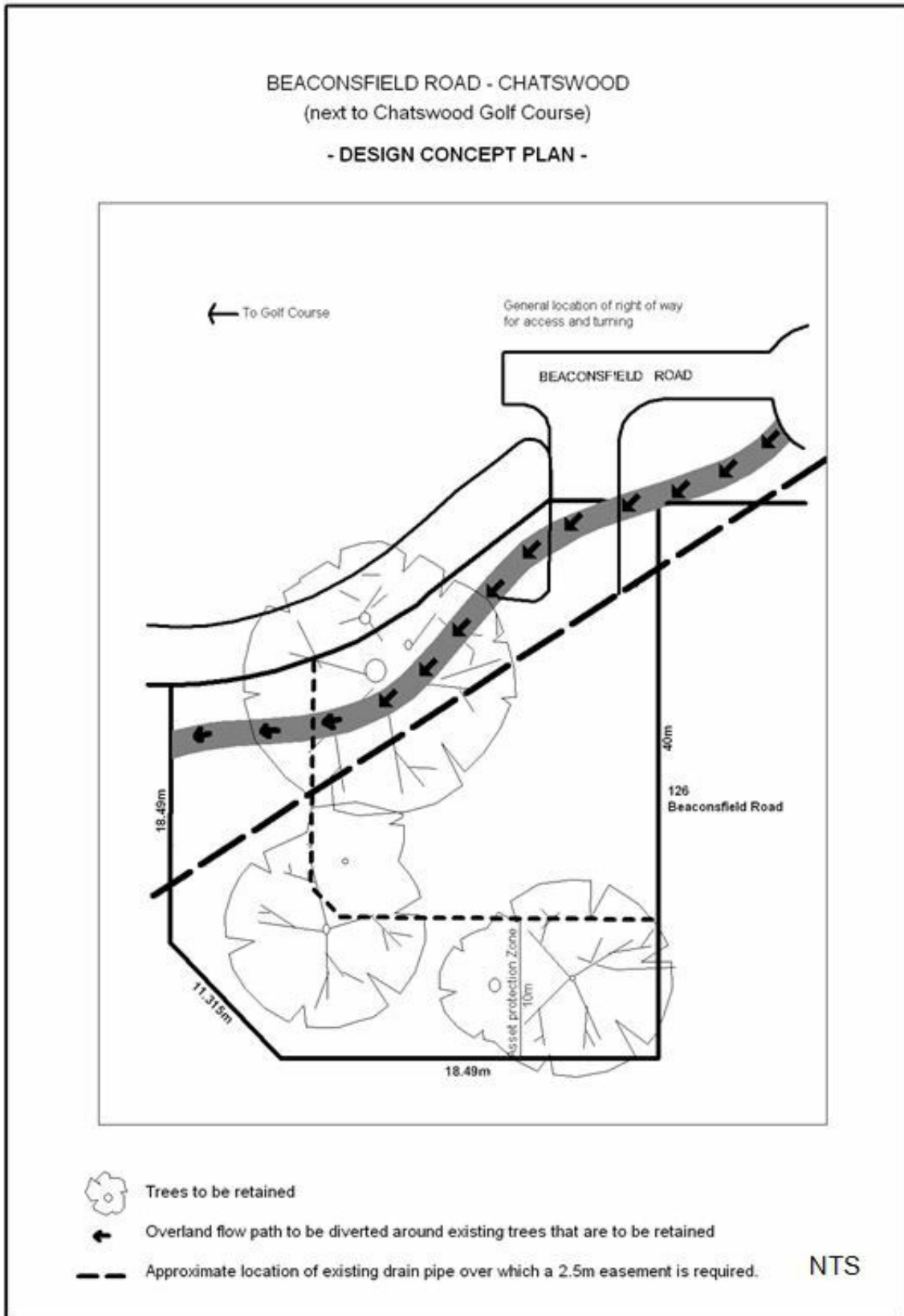
- that redevelopment does not impact on bushland within the site or the immediate locality, including loss of natural vegetation and significant geological features, disruption of drainage patterns, alterations to water tables and increased bushfire hazard potential
- the stability of the site for construction of a dwelling due to previous land fill
- potential site contamination is considered prior to any development of the site due to previous landfill
- that any asset protection zones are provided within the site

- v. the newly created subdivided site has access from the street and the appropriate utility services
- vi. a drainage easement is created over the existing reinforced concrete pipe in favour of Council.

11.2 Controls

The following controls apply to any residential development on the subject site.

- i. a geotechnical report is to be submitted at the time of consideration of any development application to confirm the stability of the site for construction of a dwelling
- ii. in the event of unidentified materials being uncovered during excavation and development of the site, contamination investigations shall be carried out in accordance with the *Contaminated Land Management Act 1997* and State Environmental Planning Policy No. 55
- iii. compliance with the requirements of the NSW Rural Fire Service (Council will not approve any part of the Asset Protection Zone to be located outside the subject site)
- iv. retention of trees as indicated on the Design Concept Plan
- v. the plan of subdivision is to include the following:
 - a. as indicated on the Design Concept Plan, a 5 metre wide right of access way across the Chatswood Golf Club land is to be provided for the benefit of the proposed residential property from the end of the Beaconsfield Road reserve to the front boundary of the proposed allotment so that vehicles can enter and exit the site in a forward direction
 - b. the extent of the existing 525mm diameter Reinforced Concrete Pipe (RCP) is to be surveyed and a drainage easement of 2.5m width provided over the existing RCP and along the allotment in favour of Council and dedicated at no cost to Council
 - c. the applicant shall provide underground utility services from the nearest pole to the boundary of the proposed property in accordance with the requirements of the relevant public utility authorities
- vi. an unobstructed overland flow path through the property will be required directing the flow from any proposed dwelling
- vii. any proposed construction (including driveway and pathway access) on the site must ensure safe passage of overland flow
- viii. full design details including soil erosion control, ratio of velocity and depth and preservation of trees indicated on the Design Concept Plan shall be incorporated into the design which is to be submitted with any application for the development of the site. The overland flow path shall be created without extensive fill under the drip lines of the protected trees



ATTACHMENT 1

Localities

The following information forms the basis for managing the process of change in certain localities by identifying important characteristics of these environmentally sensitive areas. The special qualities and attributes of these localities contribute to the pleasant living environment and amenity of the area. All proposals are required to have regard to the special qualities and attributes, and the desired future character of these localities in the preparation of a development application.

1 Castle Cove/Middle Cove

The localities of Castle Cove and Middle Cove extend from the gentle terrain of the inland residential areas generally east of Eastern Valley Way to the undulating terrain of the peninsula areas, which project into Middle Harbour.

Sandstone escarpments are common throughout the area, often extending some distance along the peninsula. Escarpments and sandstone tors are often visible from the harbour.

The pattern of subdivision and residential streets generally follow the contours of the land with allotments angled to obtain views of Middle Harbour and surrounding bushland. Allotments are generally large with wide frontages.

The escarpment areas are characterised by bands of dwellings with interposing layers of dense bushland vegetation contributing to the high scenic quality of the area. The character of the area is of buildings set within a natural landscape setting.

Dwellings are generally stepped to respond to the topography of the land. Traditionally, dwellings built on the low side of the street are not more than 1 storey above the roadway, and do not obstruct the views of dwellings located on the high side of the street or vistas of distant views from the roadway.

Dwellings on the high side of the street above the roadway obtain views over the dwellings below. These properties generally retain rock outcrops and natural landscaping along the street frontage.

The natural landscape comprises steeply wooded foreshore areas rising from Middle Harbour to the ridges and escarpments with species of Scribbly Gums, Red Bloodwood, Black She-Oak, Banksia; herbs and grasses are found on the ridgetops.

The fauna habitat of Harold Reid Reserve and the Explosives Reserve has been regarded to be of high quality. The adjoining bushland and rear yard areas, particularly along the foreshore areas, provides important corridors for fauna.

The following principles should be included in the design of a proposed development to achieve the desired future character of the Castle Cove/Middle Cove area:

- i. maintain the traditional pattern of setback from side boundaries to ensure good separation between dwellings and allow vistas from the roadway.
- ii. integrate dwellings and ensure the built form is subservient to the

- predominant natural landscaped areas on the site
- iii. ensure the built form relates to the topography of the site by following the contours of the land
 - iv. avoid dwelling heights and building elements which break the ridgeline of the peninsula areas, and ensure they are not prominent when viewed from waterways or other areas of the public domain

2 Castlecrag

Castlecrag is located partly on an undulating peninsula, which extends eastward into Middle Harbour. Large sandstone tors and overhangs are common along escarpments and are quite often visible from the harbour.

The pattern of subdivision and residential streets south of Edinburgh Road follow the contours of the land and is a legacy of Walter Burley Griffin's vision for a model residential garden suburb, designed to take full advantage of its topography and natural features. Roads are narrow and curvilinear, responding to the natural terrain with front boundaries following the curvature of the carriageway.

A central portion of the Castlecrag peninsula is the Griffin Conservation Area. Development within this area must also refer to the provisions under Part H of the draft WDCP 2021.

The residential area outside the Castlecrag Conservation Area comprises a variety of contemporary architectural and older style dwellings on allotments with wide frontages.

Due to the curvilinear nature of many of the streets, the front building alignment is variable, responding to the landform. The absence of kerb and gutters in many streets contributes to the almost semi-rural sense of houses sited in a bushland setting. Rocky street islands with native vegetation are a feature of the Griffin Conservation Area. The inland areas with a regular pattern of subdivision have moderately deep setback areas of informally landscaped gardens. Low masonry or palisade fencing, rockery or shrubs provide demarcation of the front boundary with the abutting grassed verges.

Traditionally, dwellings on the low side of the street are not more than 1 storey above the roadway and do not obstruct views of dwellings located on the high side or vistas of distant views from the roadway. The curvilinear residential streets following the topography of the land provide glimpses of water views and of the wooded hillsides and ridges beyond.

Dwellings are generally stepped down the site, responding to the topography of the land. The residential character of the area is generally low scale, using predominantly masonry or natural stone materials. Front gardens are informally landscaped with a predominance of native vegetation and tree cover in the area with private gardens merging into one another with minimal fences and walls fronting the street.

Remnant bushland is present along much of the Castlecrag foreshore, including the northern escarpment, providing an almost continuous stretch of bush which extends north through to Middle Cove and Castle Cove.

The vegetation in the locality is known as the Sydney Sandstone Complex. On

the slopes the structure is open forest/woodland in which the dominant canopy trees are Sydney Red Gum, Sydney Peppermint, Silver Top Ash and Red Bloodwood, with a tall understorey of Black She-Oak and Blueberry Ash. Common understorey plants include Christmas Bush, Old Man Banksia, Heath-leaved Banksia, Broadleaved and Pine-leaved Gum and Broad-leafed Hakea.

On the ridges, Sydney Sandstone ridgetop woodland is characterised by Scribbly Gum and Kunzea. In the deep gullies Sydney Red Gums form an emergent canopy over closed forest species, Tall Coachwood, Lilli Pilli and Black Wattle. Close to more exposed waterways, Coastal Banksia and beside Sugarloaf Bay, Swamp Oak are found.

The following principles should be included in the design of a proposed development to achieve the desired future character of the Castlecrag area:

- i. integrate dwellings and ensure the built form is subservient to the predominant natural landscaped areas on the site
- ii. ensure the built form relates to the topography of the site by following the contours of the land
- iii. site buildings to enhance amenity and privacy by using a variety of setbacks to create a varied rather than regular composition within the streetscape
- iv. avoid dwelling heights and building elements which break the ridgeline of the peninsula areas, and ensure they are not prominent when viewed from waterways or other areas of the public domain
- v. use of stone edging, low retaining walls and rockeries and a variety of native and exotic ground covers to landscaped gardens
- vi. ensure the siting and design of dwellings minimise the obstruction of views from neighbouring dwellings and vistas from roadways or public open spaces

3 Northbridge

Geologically, the peninsula area of Northbridge is Hawkesbury sandstone. The terrain slopes into Middle Harbour and is concave in form, becoming steeper as the slope recedes from the ridgeline. Large sandstone tors and overhangs are common along the escarpments, some of which are visible from Middle Harbour.

Recent development in Northbridge, particularly along foreshore properties, is characterised by more modern/contemporary dwellings. In many instances, these new dwellings have transformed the traditional character of building styles in the locality. Many of the newer dwellings are large and imposing, especially when viewed from the street and waterway.

Residential subdivisions and street patterns at the foreshore of the peninsula have been aligned to follow the contours of the land, angled to provide views of Middle Harbour and surrounding bushland. Allotments are larger with wide frontages of between 15-25m. The escarpment areas are characterised by bands of dwellings with interposing layers of bushland vegetation. Dwellings fronting the harbour are generally contemporary in style with many presenting as 2-3 stepped levels when viewed from the water.

Dwellings built on the low side of the street are generally set below the road level and do not obstruct the view of dwellings located on the high side of the street or vistas of distant views from the roadway.

The vegetation of the reserves and foreshore areas of the peninsula is remnant

bushland consisting of open forest/woodland structure. Dominant tree species include Sydney Peppermint, Red Bloodwood and Rusty Gum.

The banding of natural vegetation between the line of buildings on the south-facing escarpment of Northbridge from Tunks Park to Ulric Lane is a distinctive quality of the area.

The following principles should be included in the design of a proposed development to achieve the desired future character of the Northbridge area:

- i. integrate dwellings and ensure the built form is subservient to the predominant natural landscaped areas on the site
- ii. maintain adequate setback from side boundaries to ensure separation between dwellings and allow vistas from the roadway
- iii. provide low fencing and walls (including retaining walls) on the street frontage; avoid high fences, walls, unbroken double garages, and high gates, particularly along the streetscapes which have shallow setbacks
- iv. avoid dwelling heights and building elements which break the ridgeline of the peninsula areas, and ensure they are not prominent when viewed from waterways or other areas if the public domain

4 Chatswood West

The Chatswood West area is characterised by prolific and large expanses of natural landscaped reserves and creeks, comprising Blue Gum Creek and Reserve to the north, Mowbray Park Reserve to the west. The reserves along Swaines Creek of O.H. Reid Memorial Park, Ferndale Park, Campbell Park and Coolaroo Park also contribute to the environmental quality of the locality.

The pattern of subdivision is generally regular but follows the topography of the land. Dwellings comprise a mixture of styles, predominantly bungalows of 1920s-1960s period.

The western edge of the locality has an important link to the Lane Cove River in terms of open space reserves and potential impacts of development on water quality, foreshore, flora and fauna, as well as the scenic quality of the river area and its tributaries.

Dwellings located on gentle terrain are sited on subdivisions of regular grid patterns, having a consistent front building alignment with moderately deep front setback areas of informally landscaped well vegetated gardens with wide grassed verges, set behind low masonry or palisade fencing of not more than 1m in height. Setbacks from side boundaries are consistent, varying from 1-3m in width, with garages or carports located to the side of the dwelling.

The vegetation of the reserves is Sydney sandstone gully forest. At Blue Gum Reserve, species of Coachwood, Water Gum, Blackbutt and Turpentine are located to the eastern side and to the slopes north of Blue Gum Creek. Peppermint Gum, Angophora and Red Bloodwood are found to the south of Blue Gum Creek.

At O.H. Reid Reserve, the predominant species are peppermint gum and turpentine. At Ferndale Reserve, Campbell Park and Coolaroo Reserve are species of Blackbutt and Grey Ironbark. Species in Mowbray Park are peppermint gum and angophoras with areas of blackbutt and grey ironbark. Threatened

species in the area include the remnant Blue Gum High Forest.

There are stands of significant trees on private properties such as at the top of Edgar Street, which contribute to the vegetated character of the locality. In the Jenkins/Edgar Street area there are significant stands of Jacarandas which when in blossom create a blanket of mauve between the evergreen trees.

The Blue Gum Conservation Area is located in the Chatswood West locality. Development within this area must refer to the provisions under Part H of the draft WDCP 2021.

The following principles should be included in the design of a proposed development to achieve the desired future character of the Chatswood West area:

- i. maintain the pattern of the existing streetscape of moderately deep setbacks to the street and setbacks from side boundaries to ensure good separation between dwellings and to allow vistas from the roadway
- ii. ensure the built form relates to the topography and natural features of the site, such as rocky outcrops, significant trees, and natural vegetation
- iii. integrate infill development and additions (including contemporary styles) to ensure they are in harmony with the scale, form, massing, and external materials of surrounding dwellings in the streetscape
- iv. ensure the siting and design of dwellings minimise the obstruction of views from neighbouring dwellings and vistas from roadways or public open spaces to valley views and urban bushland, particularly on the low side of a street
- v. maintain a streetscape of low masonry or palisade fencing (including retaining walls) up to 1.2m in height to the street; avoid solid high fences, walls, gates, and double garages to the street, unless the dwelling has frontage to a busy road
- vi. avoid imposing building forms of high wall facades, particularly in proximity to the streetscape or high fencing to streets with shallow setbacks

ATTACHMENT 2

Controls for development in the E4 Environmental Living Zones

This component of the draft WDCP includes controls to achieve the specific aim of this Part to ensure residential and other permitted land uses will result in low impact developments in environmentally sensitive locations.

For any development with an estimated cost of \$50,000 or more, a suitably qualified person must certify the proposed development complies with all relevant provisions of the draft WLEP 2020 and the relevant numerical controls, including those adopted from Part 3, Part 3B (as it applies to dual occupancies) and Part 4 of the Exempt and Complying SEPP.

The table comprises the following sections:

1. Development standards under draft WLEP 2020.
2. General controls for dwellings, dual occupancies and attached development.
3. Amenity development standards.
4. Additional development controls for detached development.
5. Additional development controls for detached studios.
6. Development controls for swimming pools.
7. Development controls for fences.
8. Development controls for associated works (earthworks, retaining walls, drainage, protection of walls, and protection of trees)
9. Additional controls for dual occupancies.

Note:

- A suitably qualified person includes a practicing registered architect or a practicing qualified and accredited building designer or a registered Building Surveyor or a certified practicing planner (CPP).

1. Development standards under the draft WLEP 2020					
	Proposed	Control	Yes	No	N/A
i. Height of building (Clause 4.3)		8.5m			
ii. Maximum Floor Space Ratio (FSR) of all buildings (Clause xx) Max FSR in Area 2 of the FSR Map:					
Lot area					
Under 400m ²		0.50:1			
400m ² – 500m ²		0.44:1			
501m ² – 600m ²		0.40:1			
601m ² – 700m ²		0.37:1			
701m ² – 800m ²		0.35:1			
801m ² – 900m ²		0.32:1			
901m ² – 1000m ²		0.30:1			
1001m ² – 1100m ²		0.28:1			
1101m ² – 1200m ²		0.27:1			
1201m ² – 1300m ²		0.26:1			
Over 1300m ²		0.25:1			

Max FSR in Area 10 of the FSR Map:					
Lot area					
Under 400m ²		0.45:1			
400m ² – 500m ²		0.40:1			
501m ² – 600m ²		0.36:1			
601m ² – 700m ²		0.34:1			
701m ² – 800m ²		0.32:1			
801m ² – 900m ²		0.30:1			
901m ² – 1000m ²		0.28:1			
1001m ² – 1100m ²		0.26:1			
1101m ² – 1300m ²		0.25:1			
Over 1300m ²		0.24:1			
iii. Landscaped area (Clause 6x)					
Lot area:					
Under 400m ²		0.35 x site area			
400m ² – 600m ²		(0.5 x site area) – 60m ²			
601m ² – 1000m ²		(0.65 x site area) – 150m ²			
1001m ² – 1500m ²		(0.65 x site area) – 150m ²			
Over 1500m ²		(0.55 x site area)			
<i>Note: the landscaped area should include a minimum 30% deep soil zone. The remainder of the landscaped area may be 'soft' landscaping which must comprise a minimum depth of 600mm.</i>					
iv. Minimum lot size (Clause 6.10)					
Attached dual occupancy		700m ²			
Detached dual occupancy		900m ²			
2. General development controls for dwellings, dual occupancies and attached development					
<i>Notes:</i>					
<ul style="list-style-type: none"> A concept subdivision layout must be submitted with an application for dual occupancy development. The site area in the compliance checklist refers to the individual lot that may be created by subdivision for each dual occupancy dwelling. 					
	Proposed	Control	Yes	No	N/A
i. Construction of basement					
Lot width:					
6m-10m		Not exceed 25m ²			
> 10m ²		Not exceed 45m ²			
ii. Primary road setback					
Up to 1500m ²		Average of 2 adjoining			

		dwellings, otherwise: 7m			
>1500m ²		10m			
iii. Side setbacks					
• One storey		1.5m			
• Two or more storeys		2.5m			
iv. Setbacks to rear boundaries and the FBL (the rear setback applies to attached and detached structures)		Average of 2 adjoining dwellings, otherwise: a min of 15m			
v. Building envelope		Within 45° from a height of 3.5 above ground level (existing)			
vi. Secondary road setbacks for corner lots					
Lot size:					
Up to 600m ²		3m			
>600m ² -1500m ²		5m			
>1500m ²		8m			
vii. Min front setback to a classified road (including any detached development)		9m			
viii. Min setback to a public reserve (including any detached development)		3m			
ix. Front setback for battle axe lot		3m			
x. Min side and rear setbacks for aerials, awnings, air conditioners, and the like (min setbacks do not apply to downpipes, driveways, electricity or gas meters, gutters, and the like)		1m			
xi. Max height of balconies, decks, patios, terraces and verandahs attached to the side and rear of dwelling		Floor level above existing ground level			
Setback:					
>3m		2m			
3m-6m		3m			
>6m		4m			
xii. Total floor area of all attached side and rear balconies, decks, patios, terraces, and verandahs within 6m of the boundary and more than 2m above the existing ground level		12m ²			
xiii. Deep soil zones		Min 30% of the required landscaped area			

xiv. Min length and width of landscaped areas (including deep soil zones) <i>Note:</i> If the landscaped area does not meet the min dimension, that area is excluded from the min requirement)		2m			
xv. Min landscaped area behind the building line		50% of the total landscaped area 2/3 to comprise deep soil zone			
xvi. Min deep soil zone forward of the building line on a lot at least 18m wide		70% of the area forward of the building line			
xvii. Min deep soil zone forward of the building line on a lot less than 18m wide		50% of the area forward of the building line			
xviii. Min principal private open space		60m ²			
xix. Min length and width of principal private open space		3m			
xx. Max grade of principal private open space		1:50			
3. Amenity development standards					
<i>Note:</i>					
<ul style="list-style-type: none"> Building elements include: an entry feature or portico; a balcony, deck, pergola, terrace or verandah; a window box treatment; a bay window or similar feature; an awning or other feature over a window; a sun shading feature; and an eave. 					
			Yes	No	N/A
3.1 Building design (does not apply to a dwelling on a battle-axe lot)					
i. A dwelling must contain at least 1 door and 1 window to a habitable room at ground floor level facing the primary road.					
ii. A dwelling with a setback from a primary road of at least 3m may have an articulation zone that extends up to 1.5m forward of the minimum required setback from the primary road.					
iii. Building elements may be located within the articulation zone providing the maximum total area of all building elements in the articulation zone, (other than an awning or other feature over a window, a sun shading feature or an eave) must not comprise more than 25% of the area of the articulation zone.					
iv. A building element on a dwelling (other than an entry feature or portico that has the same pitch as the roof on the dwelling house) must not extend more than 1m above the gutter line of the eaves of a single storey dwelling house, or above the gutter line of the eaves of a 2 storey dwelling house.					
v. A dwelling on a corner lot must have a window to a habitable room with an area of at least 1m ² that faces and is visible from the secondary road.					

vi. A dwelling with a setback from a secondary road of not more than 4.5m must have at least one of the following building elements for a minimum length of 20% of the elevation of the walls that face the secondary road and that are within 4.5m of the secondary road:			
<ul style="list-style-type: none"> • an entry feature or portico • a balcony, deck, pergola, terrace or verandah • a bay window • a step of at least 600mm in depth 			
vii. Building elements listed above may be located in a secondary road articulation zone if the zone extends no more than 1m into the minimum required setback area and spans the length of the walls that face the secondary road, and if the building element comprises no more than 20% of the zone area.			
viii. Any part of a gable or hipped roof that overhangs walls that are within 4.5m of the secondary road boundary must include eaves that extend for the length of those walls and project at least 450mm, but not more than 1m from those walls.			
3.2 Privacy screens			
i. a privacy screen must be provided for any part of a window to a habitable room that is less than 1.5m above the finished floor level of that room if:			
<ul style="list-style-type: none"> • the window faces and is less than 3m from a side or rear boundary and the room has a finished floor level of more than 1m above ground level (existing), or • the window faces and is at least 3m, but not more than 6m, from a side or rear boundary and the room has a finished floor level of more than 3m above ground level (existing). 			
(does not apply to a bedroom window that has an area of not more than 2m ²)			
ii. a privacy screen of at least 1.7m, but not more than 2.2m, above the finished floor level of a balcony, deck, patio, terrace or verandah must be installed at the edge of that part of the balcony, deck, patio, terrace or verandah that is parallel to or faces towards the relevant side or rear boundary if the area of the balcony, deck, patio, terrace or verandah is at least 3m ² and:			
<ul style="list-style-type: none"> • that edge is less than 3m from a side or rear boundary and the balcony, deck, patio, terrace or verandah has a finished floor level of more than 1m above ground level (existing), or • that edge is at least 3m, but not more than 6m from a side or rear boundary and the balcony, deck, patio, terrace or verandah has a finished floor level of more than 2m above ground level (existing). 			
iii. a privacy screen must be provided for any part of a window in a detached studio that is less than 1.5m above the finished floor level of that room if the window faces and is less than 3m from a side or rear boundary and:			
<ul style="list-style-type: none"> • the room has a finished floor level more than 1m above ground level (existing), or • the window faces and is at least 3m, but not more than 6m from a side or rear boundary and the room has a finished floor level more than 3m above ground level (existing) 			

3.3 Car parking and access All car parking and vehicular access must comply with relevant provisions of Part F (Transport and car parking management) of draft WDCP 2021. The following specific controls apply to dwelling houses.					
i. The off-street car parking space for a battle-axe lot must be constructed so that vehicles can leave the lot in a forward direction.					
ii. An attached garage, carport or car parking space accessed from a primary road must have a minimum setback 5.5m if the dwelling is setback less than 4.5m or 1m behind the building line if the dwelling is setback 4.5m or more.					
iii. The maximum width of all garage door openings facing a primary or secondary road is 3.2m for a lot between 8m-12m and 6m for a lot greater than 12m.					
iv. Secondary road setback for garage or carport					
Up to 600m ²	2m				
600m ² -1500m ²	3m				
>1500m ²	5m				
v. Rear setback for garage or carport					
Up to 900m ²	900mm				
>900m ² -1500m ²	1.5m				
>1500m ²	2.5m				
4. Additional development controls for detached development					
<i>Notes:</i>					
<ul style="list-style-type: none"> Detached development includes: a deck, patio, pergola, terrace or verandah; a cabana, cubby house, fernery, garden shed, gazebo or greenhouse; a carport or garage, and a shed. The setback of detached development from a primary or secondary road (other than a detached garage or carport) must be located behind the building line of the dwelling. 					
	Proposed	Control	Yes	No	N/A
i. Max height above existing ground level		4.5m			
ii. Max GFA for all detached development:					
Lot size:					
Up to 300m ²		36m ²			
>300m ² -600m ²		45m ²			
>600m ² -900m ²		60m ²			
>900m ²		100m ²			
(the max overall GFA includes the dwelling, attached and detached buildings)					
iii. Side setbacks for all detached development, including above ground rainwater tanks and shade structures (additional side setbacks apply to detached studios):					

Lot width:					
Up to 18m		900mm			
>18m-24m		1.5m			
>24m		2.5m			
iv. Height above existing ground level and rear setbacks for detached decks, patios, pergolas, terraces and verandahs					
Max finished floor level		600mm			
Rear Setbacks:					
Lot size:					
Up to 900m ²		900mm			
>900m ² -1500m ²		1.5m			
>1500m ²		2.5m			
5. Additional development controls for detached studios					
	Proposed	Control	Yes	No	N/A
i. Height (within 900mm of a lane and above a garage)		6m			
ii. Rear setbacks					
Lot size:					
Up to 900m ²		900mm			
>900m ² -1500m ²		1.5m			
>1500m ²		2.5m			
iii. Max floor area					
Lot size:					
Up to 350m ²		20m ²			
>350m ²		36m ²			
(the max overall GFA includes detached studios)					
iv. Side and rear setbacks					
Lot width:					
Up to 18m		900mm			
>18m		1.5m			
6. Development controls for swimming pools					
			Yes	No	N/A
i. Coping around a swimming pool must not be more than 1.4m above ground level (existing), and 300mm wide if the coping is more than 600mm above ground level (existing).					
ii. Decking around a swimming pool must not be more than 600mm above ground level (existing).					
iii. A swimming pool must be located behind the building line of the dwelling house.					
iv. The swimming pool water line must have a setback of at least 1m from a side or rear boundary.					

7. Development controls for fences			
	Yes	No	N/A
i. A fence erected behind the building line (except on a secondary street frontage) must:			
• not be higher than 1.8m above ground level (existing)			
• if it includes an entrance gate, not have a gate that opens outward			
• if it is constructed of metal components, be of low reflective, factory pre-coloured materials			
• if it is on a sloping site and stepped to accommodate the fall in the land, be no higher than 2.2m above ground level (existing) at each step			
ii. A fence erected forward of the building line or on the boundary of the primary and secondary street frontage must:			
• not be higher than 1.2m above ground level (existing)			
• if it includes an entrance gate, not have a gate that opens outward			
• if it is constructed of metal components, be of low reflective, factory pre-coloured materials			
• be open for at least 20% of the area of the fence that is more than 400mm above ground level (existing), with any individual solid element of the fence above that height being no more than 350mm wide with a minimum aperture of 25mm			
• if it is on a sloping site and stepped to accommodate the fall in the land, be no higher than 1.6m above ground level (existing) at each step			
iii. Any fence must be designed so as not to restrict the flow of any floodwater.			
iv. A fence erected on bush fire prone land must be constructed of non-combustible materials.			
v. A solid fence located at the street alignment may be constructed up to a maximum height of 1.8m, where:			
• the dwelling is affected by excessive traffic volumes and noise from the street (6000 vehicles/day or 60dBA); or			
• the fence encloses the main private open space of the dwelling with length limited to 75% of the frontage; or			
• fencing incorporates openings or consists of vegetation with minimum 50% transparency.			
vi. Fences along the primary and secondary road frontages that are between 1.2m and 1.8m must to be setback a min 1m from the street alignment for the entire frontage with provision of low maintenance planting in the setback area.			
8. Development controls for associated works			
<i>Note:</i> Associated works include earthworks, retaining walls, drainage, protection of walls, and protection of trees.			
	Yes	No	N/A

i.	Excavation for the purposes of development must not exceed a maximum depth, measured from ground level (existing), of:			
	<ul style="list-style-type: none"> • 1m if located not more than 1m from any boundary • 2m if located more than 1m but not more than 1.5m from any boundary • 3m if located more than 1.5m from any boundary 			
ii.	Fill must not exceed a maximum height, measured from ground level (existing), of:			
	<ul style="list-style-type: none"> • 1m if the fill is for the purposes of the erection or alteration of, or an addition to, a dwelling house, or • 600mm if the fill is for any other purpose 			
	(the height of fill contained wholly within the footprint of a dwelling house or any attached development or detached development is not limited)			
iii.	Fill that is higher than 150mm above ground level (existing) and is not contained wholly within the footprint of a dwelling house or any attached development or detached development is limited to 50% of the landscaped area of the lot.			
iv.	The ground level (finished) of the fill must not be used to measure the height of any dwelling house or any attached development or detached development.			
v.	Support for earthworks more than 600mm above or below ground level (existing) must take the form of a retaining wall or other structural support that:			
	<ul style="list-style-type: none"> • a professional engineer has certified as structurally sound, including in relation to (but not limited to) the ability to withstand the forces of lateral soil load, and • has been designed so as not to redirect the flow of any surface water or ground water, or cause sediment to be transported, onto an adjoining property, and • has adequate drainage lines connected to the stormwater drainage system for the site, and • does not have a total height measured vertically from the base of the retaining wall or structural support to its uppermost portion that is more than the height of the associated excavation or fill, and • is separated from any other retaining wall or structural support on the site by at least 2m, measured horizontally, and • if it is an embankment or batter, has a toe or top that is more than 1m from any side or rear boundary. 			
vi.	Development must be at least 3m from all trees identified for retention on the site (measured from the base of the trunk of the tree).			
vii.	Development for the following structures may be located within 3m of a tree if works do not involve excavation or fill of more than 150mm below or above ground level (existing):			
	<ul style="list-style-type: none"> • an access ramp, • a driveway, pathway or paving, • an awning, blind or canopy, • a fence, screen, or child-resistant barrier associated with a swimming pool or spa pool. 			

9. Additional controls for dual occupancies					
	Proposed	Control	Yes	No	N/A
i. Dwelling configuration					
• Each dwelling must face a public road					
• Detached dual occupancies on a corner lot must be 3m from each other					
ii. Attached balconies, decks, patios terraces and verandahs to the side or rear of the dual occupancy					
• The max height of the floor level is 4m					
• If more than 2m above ground level (existing), must be setback a min 3m from the boundary					
• If above 2m above the ground level (existing), must not have a total area of more than 12m ²					
iii. The maximum width of all garage door openings facing a primary is 6m for a lot between 15m-20m, 9.2m for a lot greater than 20m-25m and 12m for a lot greater than 25m..					
iv. The maximum width of all garage door openings facing a secondary road is 3.2m for a lot between 12m-15m, 6m for a lot greater than 15m-20m, 9m for a lot greater than 20m-25 and 12m for a lot greater than 25m.					

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PART D - Commercial Development

1 Introduction

The Willoughby Local Government Area comprises a number of commercial zones, each of which have different functions that support local commercial/retail centres, and the strategic centres of St Leonards and Chatswood.

The Sydney Region Plan and North District Plan have confirmed Chatswood and St Leonards as two of Sydney's important strategic centres with significant economic and employment opportunities. Willoughby City Council is committed to maintaining and increasing the potential of these larger centres as well as our smaller local centres and creating a strong framework to guide future commercial and employment activity across the Willoughby area.

This Part of the draft *Willoughby Development Control Plan (WDCP) 2021* includes performance criteria and controls for all types of commercial development, including shop top housing and mixed use developments.

1.1 Aim

The specific aim of this Part is to ensure commercial development is carried out in a manner that sustains and enhances the economic and environmental qualities of Willoughby and surrounding Local Government Areas.

1.2 Objectives

The objectives of this Part are to:

- i. ensure controls do not inhibit economic development
- ii. ensure a high standard of urban design which makes a positive contribution to the streetscape and reinforces the importance of pedestrian areas
- iii. achieve energy efficient and sustainable buildings and developments that promote sustainable transport initiatives
- iv. ensures commercial development maximises thermal comfort and minimises urban heat impacts in the interests of health and wellbeing
- v. provide a satisfactory transition and minimises any adverse effects between commercial uses and adjacent residential areas
- vi. ensure development is carried out in accordance with planning strategies relating to local centres, and the strategic centres of Chatswood CBD and St Leonards.
- vii. ensure development is carried out in accordance with State plans, policies and guidelines

2 Strategies/Plans

Council has undertaken a number of studies and prepared several strategies and plans to set the direction for future commercial and residential development in key locations within the Willoughby LGA. As a result, Council has prepared several place based plans under Part L of the draft WDCP 2021. A brief description of the strategies adopted to inform these place-based plans is provided below.

2.1 Willoughby Local Centres Strategy 2036

Council at its meeting in December 2019 resolved to adopt the *Willoughby Local Centres Strategy (WLCS) 2036*. The WLCS aims to revitalise the local economy and provides the framework for future planning controls to achieve thriving, attractive and distinctive local centres. Those centres are:

i. Artarmon

The western side of the Artarmon local centre is situated on Hampden Road, adjacent to the Artarmon railway station. Wilkes Plaza, which is a pedestrian thoroughfare through an open space area, is located on the eastern side of the station. The centre is located within the Artarmon Heritage Conservation Area.

ii. Castlecrag

The Castlecrag local centre is situated on Edinburgh Road between Eastern Valley Way and Rutland Avenue/The Postern. The centre adjoins and is partly within the Griffin Heritage Conservation Area.

iii. North Willoughby

The North Willoughby local centre is located around the intersection of Penshurst Street and Victoria Avenue, extending south to Patrick Street.

iv. High Street

The major portion of the High Street local centre is on the eastern side, bounded by McClelland Street and Glover Street. Two properties within the centre are located on the north-western corner of High Street and Horsley Avenue.

v. Naremburn

The Naremburn local centre is on the western side of Willoughby Road, bounded by Quiamong Street, Bongalong Street and Glenmore Street. The centre includes two heritage items.

vi. Northbridge

The commercial precinct of Northbridge is located along the major arterial roads of Sailors Bay Road, Eastern Valley Way and Strathallen Avenue. Northbridge Plaza is located on the north-eastern corner of Eastern Valley Way and Sailors Bay Road. There is a large Council carpark located at the rear of the shopping complex.

vii. Penshurst Street

The Penshurst Street commercial centre is located along, and north of Mowbray Road. There is an eclectic mix of business premises, shop top housing, and a small retail shopping strip on the eastern side of Penshurst Street near Oakville Road.

viii. Willoughby South

The commercial area of the Willoughby South local centre predominantly fronts Willoughby Road with additional commercial areas branching off Frenchs Road. The Bridge View Hotel and the facades of the shops at 549-553 Willoughby Road are identified as local heritage items.

Specific performance criteria and controls for the local centres are provided in Part L of the draft WDCP 2021.

Note:

- The performance criteria and controls provided under this Part of the draft WDCP apply to the local commercial centres. However, any inconsistency between this Part and Part L, the controls under Part L prevail

To view the Willoughby Local Centres Strategy 2036, please refer to Council's website at:

<https://www.willoughby.nsw.gov.au/Development/Plan/Planning-Rules/Planning-Strategies#section-4>

2.2 Chatswood CBD Planning and Urban Design Strategy to 2036

Council at its meeting in June 2017 resolved to adopt the *Chatswood CBD Planning and Urban Design Strategy to 2036 (Chatswood CBD Strategy)*. The Chatswood CBD Strategy aims to guide future private and public development over the next 20 years. The CBD includes a large mix of land uses, including commercial/office buildings, civic buildings, library and performance facilities, major retail complexes, banking and other services, cafes, restaurants and private health facilities and schools.

Specific performance criteria and controls for the Chatswood CBD are provided in Part L of the draft WDCP 2021.

Note:

- The performance criteria and controls provided under this Part of the draft WDCP apply to the Chatswood CBD. However, any inconsistency between this Part and Part L, the controls under Part L prevail

To view the *Chatswood CBD Planning and Urban Design Strategy to 2036*, please refer to Council's website at:

<https://www.willoughby.nsw.gov.au/Development/Plan/Planning-Rules/Planning-Strategies#section-4>

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

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 includes provisions that affect commercial development.

The Exempt Development Codes allows certain structures, business and building identification signs and land uses to be carried out without approval, subject to prescribed development standards and other relevant provisions. The Commercial and Industrial Alterations Code under Part 5 of the SEPP also allows certain works and

change of use to be carried out as complying development. *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* can be viewed at:

<https://www.legislation.nsw.gov.au/#/view/EPI/2008/572>

Note:

- If a proposal does not satisfy all the criteria for either exempt or complying development under the SEPP, a development application (DA) is required.

3 Major developments

Major commercial developments include:

- i. the erection of a new buildings with a gross floor area exceeding 1,000m²
- ii. substantial redevelopment, refurbishment, or conversion of commercial premises with a gross floor area exceeding 1,000m²
- iii. shop top housing or mixed use developments that are three or more storeys and have four or more dwellings.

Notes:

- Redevelopment is generally regarded as 'substantial' if the proposal will result in more than a 10% increase in the 'gross floor area'.
- Depending on the size and scale, and any likely impacts, an Authorised Office may determine that a proposal is regarded as 'major' development.
- An Authorised Officer is a Council employee that has been granted delegated authority to make decisions on behalf of Council.
- In addition to the commercial zones, shop top housing is permissible in the R4 High Density Residential zone.
- Mixed use developments are only permissible in the B4 Mixed Use zone.

4 Performance criteria and controls

Generally, the street frontage of commercial development should maintain the pattern and spacing of adjoining buildings and create active street frontages to attract pedestrian traffic within the commercial precinct.

The performance criteria and controls apply to all commercial developments. Any variation of these controls must be justified and have regard to the following performance criteria.

4.1 Building design

- i. Performance criteria
 - a. the type and style of building should reflect the function of the commercial precinct and create quality urban design forms that enhance the character of the existing retail/commercial area
 - b. materials, colours, finishes, fenestration, proportion, and scale of development should create interest, and blend with the façade of existing retail shop fronts and other commercial uses
 - c. the location of vehicle access and manoeuvring areas must not dominate or detrimentally affect the continuity of building façades

- d. the design of buildings should create a balance between the amount of solid walls and openings of retail and commercial premise, and between the extent of horizontal and vertical elements to achieve visual interest at all levels
- e. new development should reinforce existing roof forms, building height and proportions of building elements, including any distinctive parapets, gables, or ridges
- f. ground level frontages shall be transparent to allow interaction with the public domain by observation of activity and/or products displayed internally
- g. the design should accentuate buildings on prominent corner sites and define the main points of entry to commercial/business centres; this may include a change in colours and materials, a partial additional storey, parapet extension, splayed setbacks and/or public art or landscape treatment, or other elements such as clock towers
- h. the design of new buildings or alterations and additions must retain the stylistic or architectural character of the commercial precinct, particularly in heritage conservation areas

ii. Controls

- a. use of roller shutters in lieu of glazed facades is not permissible unless a minimum 70% of the roller shutter is transparent
- b. any kind of internal security shutter, mesh gate or similar must be located a minimum of 1m behind the facade of the premises facing a public space or at the rear of any display window
- c. any plant, equipment or machinery should be suitably screened from the general public
- d. the above awning facades of two storey shop frontages should have a solid to void ratio of approximately 60:40
- e. developments should use materials with a low Solar Reflectance Index (SRI) and incorporate shade structures to reduce urban heat island effects
- f. the entire ground floor level of a shop top housing development must be used for retail/commercial purposes (this excludes car parking; however, loading/unloading facilities may be allowed)

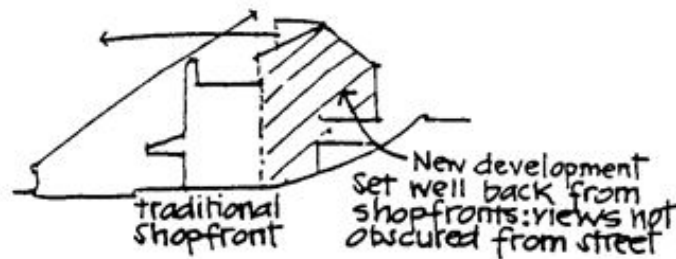
4.2 Design in heritage conservation areas

i. Performance criteria

- a. ensure the heritage significance and streetscape character of the heritage conservation area is maintained
- b. ensure views and vistas along streets and from public places of buildings of heritage significance are maintained

ii. Controls

- a. extensions and additions to buildings in conservation areas are to be designed to complement their style, form, proportions, materials, colours and overall heritage context of their setting
- b. early building names and any historical painted advertising signs are to be preserved
- c. the form and treatment of additions should have regard to sightlines when viewed from the street and public domain (see diagram below)



Development within conservation areas

Note:

- For further information relating to heritage conservation areas, please refer to Part H of the *draft WDCP 2021*.

4.3 Awnings

i. Performance criteria

- ensure awnings provide adequate shelter from rain and sun in locations of pedestrian activity
- retain, reinstate or provide appropriate awnings that are designed to match traditional patterns (particularly in heritage conservation areas)
- designed to allow tree planting at regular intervals

ii. Controls

- where the existing awning is a traditional suspended steel box section type, it should be retained; however, if a new awning is required it should match adjoining awnings and maintain the same alignment
- new awnings should:
 - be of opaque materials with glass inserts to allow light penetration to the footpath
 - be continuous for the entire site frontage, including any vehicular entrance
 - be setback 600mm from the footpath edge
 - have a recess or opening to accommodate the growth of street trees
 - have a height clearance above the footpath between 3m and 4.2m
 - maintain the horizontal alignment, stepping down at regular intervals to follow the topography of the site where the footpath is sloping
- entrances to large frontage developments can incorporate raised or arched canopy elements to highlight the entrance; however, it should be in scale with the building and compatible with the prevailing street awning character

Notes:

- No part of a building, including an awning, can project beyond the alignment of a road to which the building has a frontage; however, the *Roads Act, 1993*, enables Council as the road authority and owner of the road to grant approval to allow an awning to extend over a public road.
- Approval can be sought for an awning as part of a development application for a proposed development.

- If approval is only sought to erect an awning, a separate application for approval is required to be submitted under the *Roads Act, 1993*.

4.4 Frontages

i. Performance criteria

- a. ensure no site is isolated by development on an adjoining allotment
- b. provide adequate width for separation between vehicular driveways

ii. Controls

- a. a minimum width of 27m is required for developments that exceed 11m in height or where vehicular access is only available from the primary street frontage
- b. no more than 30% of the street frontage is to be used for vehicular and pedestrian access to lower and upper levels
- c. the bulk of new facades should be divided into units of equal proportions in the order of 6m to reflect traditional small retail shopping frontages
- d. allotments should be consolidated to reflect the general pattern of street frontages in the commercial precinct

Note:

- Development may be allowed on an existing lot that is isolated and cannot be consolidated with another lot or if written advice is provided to Council that adjoining landowners are not willing to consolidate their properties.

4.5 Streetscape

i. Performance criteria

- a. ensure the frontage of shops and business premises are consistent with the general pattern and spacing of buildings in the commercial precinct
- b. achieve attractive streetscapes that add visual interest and amenity to pedestrian areas
- c. reflect the function and character of the commercial precinct
- d. new development should be integrated into and not be in contrast with the streetscape character of established commercial areas

ii. Controls

- a. new developments or significant alterations and additions may be required to provide improvements to the quality of the public pedestrian domain (this may include construction of suitable paving and/or planting of street trees or landscaping)
- b. where shop frontages are predominantly built along the street alignment, new developments or significant alterations and additions may be required to provide improved pedestrian amenity at street level by the use of transparent interactive frontages (this may include outdoor seating and/or dining areas)

4.6 Car parking and vehicular access

i. Performance criteria

- a. adequate provision for customer/visitor and employee car parking on-site
- b. the provision of visitor bicycle spaces, and secure bicycle areas and end of trip facilities for employees
- c. adequate turning areas provided to enable all commercial vehicles and trucks, including access for waste disposal trucks, to enter and leave the site in a forward direction
- d. all vehicular access should be provided from a secondary street or laneway; if no alternative vehicular access is available, the entry/exit from the building and the footpath crossing must be designed to give priority to pedestrians

ii. Controls

- a. The width of the entry portal for a driveway providing access to a car parking area should not exceed 5m and the head clearance should not be more than 2.4m (if the access is also the entry to a loading dock, a head clearance of 3.6m may be allowed)
- b. the layout of car parking spaces must comply with AS/NZS 2890.1 and AS/NZS 2890.6 (details are to be shown on the architectural plans)
- c. the location, siting and grades of driveways, and driveway width must be in accordance with Australian Standard AS/NZS 2890.1
- d. all new developments and significant alterations and additions are required to provide accessible car parking spaces for people with a disability in accordance with Section D3.5 of the Building Code of Australia (BCA) under the National Construction Code (NCC)
- e. details of swept paths may be required to demonstrate all vehicles can enter and leave the site in a forward direction
- f. compliance with the provisions of Part F (Transport and Parking Management) of the draft WDCP 2021

4.7 Loading/unloading facilities

i. Performance criteria

- a. adequate provision for the safe loading and unloading of goods on-site without impacting pedestrian or vehicular traffic within the site or on adjacent streets

ii. Controls

- a. each commercial premises must have a separate loading facility provided off a secondary road or laneway
- b. if on-site loading facilities are not available, details are to be provided of the nearest on-street loading areas and the method of conveying goods in a safe and efficient manner to and from the premises
- c. all new commercial developments, and developments that involve significant demolition and/or alterations and additions with a floor area in excess of

1,000m² must make adequate provision for off-street loading and unloading facilities in accordance with Part F of the draft WDCP 2021.

4.8 Waste and recycling

i. Performance criteria

- a. improve environmental outcomes by reducing waste and increasing source separation of materials and management of waste and recyclable materials
- b. ensure adequate space is provided for the storage and access to waste and recyclable containers
- c. ensure safe and hygienic processes and practices are put in place for workers and contractors for the storage, handling and collection of waste and recycling materials
- d. ensure adequate facilities are provided for the disposal of hazardous, medical or any liquid waste which requires special licenses and/or storage and disposal arrangements with other Government agencies

ii. Controls

- a. all waste management facilities must comply with the Building Code of Australia (BCA) and relevant Australian Standards
- b. any compactors or mechanical devices must comply with Occupational Health and Safety requirements
- c. bin storages areas must:
 - be suitably screened from public areas and adjoining properties
 - located in areas to reduce the impacts of visual amenity, noise, and odour
- d. refrigerated garbage rooms are required where:
 - the waste generated contains 20% or more by weight or volume of seafood, poultry, or meat; or,
 - 50 litres or more of seafood, poultry or meat is generated in total per day, unless the waste is collected daily
- e. the on-site collection point must provide adequate space for garbage vehicles to enter and leave the site in a forward direction
- f. basement waste and recycling storage areas and access to these areas must have a minimum clearance height of 4.5m to accommodate waste and recycling collection vehicles
- g. a Resource Recovery and Waste Management Plan is required to be submitted with the development application (details to be submitted with the plan are provided in **Attachment 1**)

4.9 Pollution control

i. Performance criteria

- a. not cause air pollution, odour nuisance or unacceptable noise levels
- b. ensure appropriate measures are put in place to protect the environment and amenity of workers, and people living and other workers in the vicinity, who could be adversely affected by the operation of the development

ii. Controls

- a. depending on the type, scale, and location of development, an Acoustic report and/or other reports to address pollution control measures may need to be submitted with the development application
- b. depending on the type, scale, and location of construction works, a Site Management Plan may need to be submitted with the development application to address sediment and erosion control measures
- c. the discharge of any solid, liquid, or gaseous materials must comply with the relevant provisions of the Protection of the Environment Operations Act 1997
- d. where there is likely to be a need for the disposal of liquid waste to the sewer, Sydney Water should be contacted to obtain their requirements for the installation of grease arrestors
- e. new commercial buildings which include retail premises that allow café, restaurants or the like, must make adequate provision for the vertical discharge of exhaust from the lower floor levels
- f. the hours of operation may be restricted if a particular use is likely to interfere with the residential amenity of adjoining and nearby dwellings

Note:

- The hours of operation for other permissible uses in commercial areas, such as function centres, recreation facilities and sex services premises will be assessed on the individual merits of the proposal, having regard to any likely impacts on other commercial premises and/or adjoining and nearby dwellings.

4.10 Stormwater disposal and flooding

i. Performance criteria

- a. ensure the installation of on-site detention (OSD) systems make adequate provision for reuse and stormwater disposal
- b. ensure properties identified as flood prone land provide appropriate flood mitigation measures
- c. encourage Water Sensitive Urban Design (WSUD) measures to minimise impacts on the natural water cycle and foster ecological sustainability

ii. Controls

- a. depending on the type, scale, and location of development, a Stormwater Management Plan may need to be submitted with the development application
- b. development on flood prone land may need to submit a Flood Risk Assessment Report and/or a Flood Study with the development application
- c. new commercial developments on land exceeding 2,000m² are required to implement appropriate WSUD measures
- d. the application must demonstrate the proposal satisfies the objectives and controls under Part I (Stormwater Water Management) of the draft WDCP 2021

4.11 Sustainable development

i. Performance criteria

- a. the development will result in an environmentally sustainable building(s) and create energy efficient operations
- b. encourages alternative and sustainable transport strategies to reduce the use and reliance on motor vehicles as the principle mode of transport

ii. Controls

- a. depending on the type, scale and cost of development, a Sustainable Performance Statement, a Green Star rating report, and/or a National Australian Built Environment Rating Scheme (NABERS) must be submitted with the development application
- b. the application must demonstrate the proposal satisfies the objectives and controls under Part J (Building Sustainability) of the draft WDCP 2021
- c. for large developments exceeding 2,000m² a Travel Demand Management Plan (TDMP), often described as a 'Green Travel Plan', is required to be submitted with the development application; details shall include how the operation intends to modify travel decisions to and from the building so that more desirable modes of transport are used, such as bicycles, car-pooling, mini-bus pick-up/drop off, and provision of a car share spaces (more information is available in Part F of the draft WDCP 2021)

Note:

- The Commonwealth Government introduced the Commercial Building Disclosure Program which requires a NABERS Energy rating to be disclosed when office space of more than 2,000m² is offered for lease or sale.

4.12 Signage

i. Performance criteria

- a. the number of signs is limited to avoid cluttering, distraction, and unnecessary repetition
- b. corporate colours and signage on buildings do not have an adverse visual impact on adjoining and nearby properties and the public domain

ii. Controls

- a. the content must relate to the building and/or business on the site
- b. the size of signs must be in proportion with the building
- c. there must be an integrated and coordinated scheme for business identification signs for multi tenanted buildings
- d. there must be no glare or light spill from any signage onto adjoining properties

Notes:

- Signage, other than 'building identification signs' and 'business identification signs', are prohibited in the land use table for commercial zoned land.
- Many of these types of signs may be erected without approval under the relevant provisions of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.
- If any of the development standards relating to proposed 'building identification signs' or 'business identification signs' do not fully satisfy the exempt provisions of the SEPP, a development application (DA) is required.
- Third party advertising signage is prohibited in the land use table for commercial zoned land.

4.13 Safety by design

i. Performance criteria

- a. ensure appropriate safety and security measures are put in place to prevent criminal activity

ii. Controls

- a. the design should include high visibility to front entries, lighting of pathways or hidden spaces and where applicable, careful siting of shrubs and landscape elements

Note:

- Details of the design and safety measures incorporated into the design are to be submitted with the development application.

4.14 Utility facilities

i. Performance criteria

- a. ensure adequate provision is made and integrated into the design of the development for utility facilities such as substations, water main boosters, and the like

ii. Controls

- a. written advice is to be provided with the application from the energy provider and Sydney Water as to whether any such utility facilities are required to be provided for the development
- b. all facilities that are visible from the street or public domain must be suitably screened by landscaping
- c. substations should preferably be located below ground level or at the rear of the property if rear lane access is available

4.15 Undergrounding of services

i. Performance criteria

- a. to improve the visual amenity of the urban environment

ii. Controls

- a. all services for major developments exceeding 2,000m² are to be located underground (this includes publicly owned land immediately outside the development site)

Note:

- In some circumstances it may not be practical to provide undergrounding of services. Any proposed variation to this control must include a written request and supporting information to justify why this requirement cannot be satisfied.

5 Additional controls for the St Leonards strategic centre

The *St Leonards and Crows Nest 2036 Plan* was released by the NSW Department of Planning, Industry and Environment (DPIE) on 29 August 2020. The St Leonards and Crows Nest precinct includes parts of the Willoughby, North Sydney, and Lane Cove local government areas.

The purpose of the plan is to strengthen employment opportunities, improve social infrastructure, and take advantage of public transport connectivity in connection with construction of a new Metro station at Crows Nest.

With respect to the Willoughby LGA, the *draft WLEP 2020* has included an increase in the height and floor space for commercial development on specific sites to reflect those controls identified in the *St Leonards and Crows Nest 2036 Plan*. Council has also adopted the following additional controls for specific sites within the St Leonards strategic centre:

- i. 2-10 Chandos Street (known as the Alto Ford site): any new development on this site shall provide 4 storey wall heights.
- ii. 12 Chandos Street (College of Law building): any new development on this site shall provide 4 storey wall heights.
- iii. 110-120 Christie Street: any new development on these sites shall provide 2 storey wall heights.
- iv. 207 Pacific Highway: development on this site must provide a minimum 3m wide landscaped setback along the street frontage.

To view the *St Leonards and Crows Nest 2036 Plan 2036*, please refer to the DPIE website at:

<https://www.planning.nsw.gov.au/Plans-for-your-area/Priority-Growth-Areas-and-Precincts/St-Leonards-and-Crows-Nest/St-Leonards-and-Crows-Nest-2036-plan>

6 Shop top housing and Mixed use developments

The requirements under *State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development* and the design guidelines and controls under the *Apartment Design Guide, NSW Department of Planning and Environment, July 2015 (ADG)* apply to the residential component of buildings that have three or more storeys and four or more dwellings.

The relevant performance criteria provided in Section 2.1 and the controls in Section 4.2 under Part B of the draft WDCP 2021 apply to the residential components of shop top housing and mixed use developments. The following additional controls apply to shop top housing and mixed use developments:

6.1 Setbacks

6.1.1 Front setback

- i. the front (street) setback of the ground floor level may be set at the property boundary defining the street corridor with a continuous edge
- ii. the first floor level is required to be setback a min 2m from the street frontage
- iii. balconies are not to encroach into the required setback of the level below (see diagram 1)
- iv. the first floor level may have a zero setback if it comprises commercial uses and/or it is in keeping with established adjoining developments (see diagram 2)
- v. the third floor level and above is required to be setback 5m plus 1.2m for each level above the third level
- vi. the total required setback applies to all floors above the third floor (see diagram 3)

Diagram 1

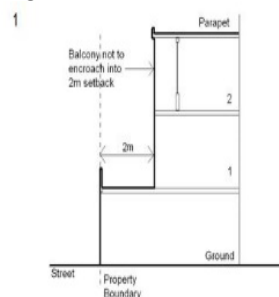


Diagram 2

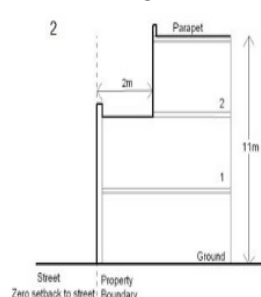
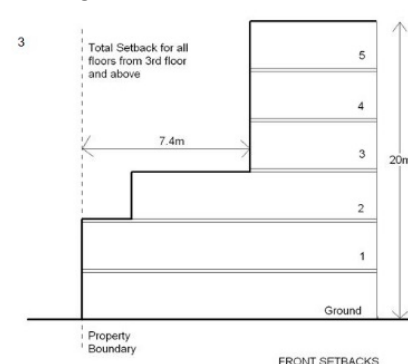


Diagram 3



6.1.2 Side setbacks

- i. the ground floor level may have a zero setback
- ii. the first and second floor level are required to have zero setback for a max of 50% of the length of the side boundary located within the front half of the site (see diagram 4)
- iii. the side boundary setbacks for the first and second floors for the remainder of the building are to comply with the building envelop determined by a line

- projected horizontally at 30° from the side boundary from half way along the boundary towards the rear of the site (see diagram 4)
- iv. the third floor and above is required to have a setback of 3m plus 1.2m for each level above the third level (see diagram 5)
- v. the total required setback applies to all floors above the third floor

Diagram 4

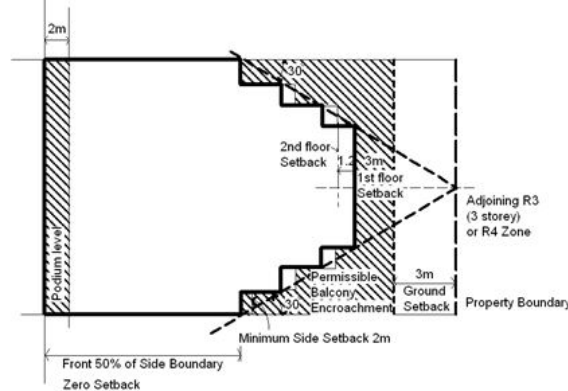
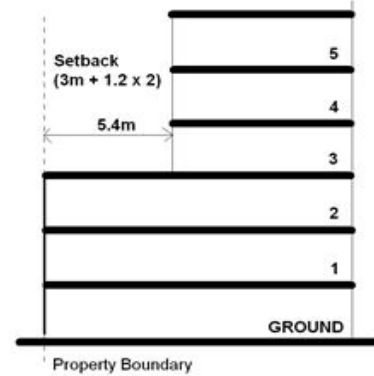


Diagram 5

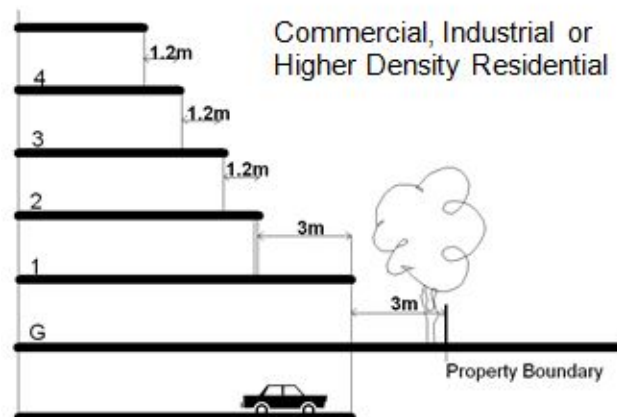


6.1.3 Rear setbacks adjoining commercial, industrial or high density residential zoned land

The following rear setbacks apply to developments adjoining commercial, industrial or high density residential zoned land:

- i. 3m from the ground floor level
- ii. plus 3m for the first floor level
- iii. plus 1.2m for each additional floor level

Diagram 6



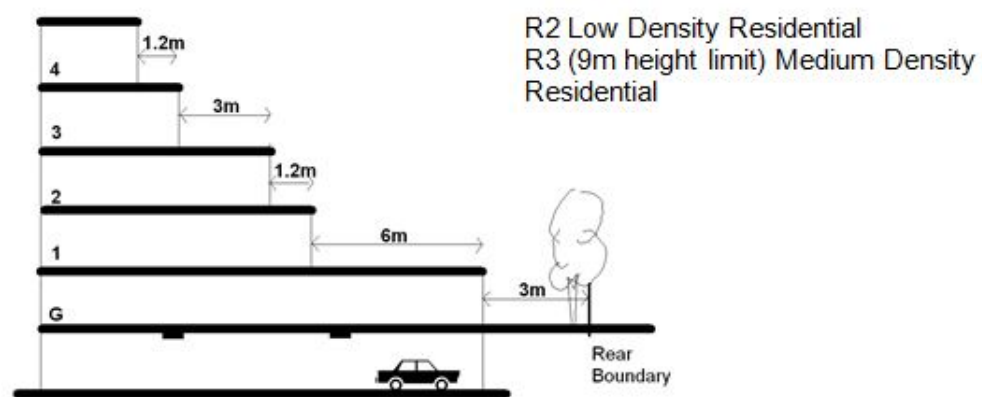
Rear Setbacks adjoining Commercial, Industrial, R3 (12m height limit) or R4 Zoned Land

6.1.4 Rear setbacks adjoining R2 or R3 zone land

The following rear setbacks apply to developments adjoining R2 or R3 zone land (height limit of 9m) whether or not the land is separated by a lane way.

- i. 3m from the ground floor level
- ii. plus 6m for the first floor level
- iii. plus 1.2m for the second floor level
- iv. plus 3m for the third floor level
- v. plus 1.2m for the fourth floor level
- vi. plus 3m for the fifth and each additional floor level

Diagram 7



Notes:

Consideration may be given to a variation of the side and rear side boundary setback requirements if:

- the boundary line is on the boundary of a secondary road, laneway or reserve
- the wall height and length matches an existing building on the adjoining side of the site

6.2 Landscaping

- i. a 3m wide deep soil zone must be provided along the rear boundary adjoining residential zoned land
- ii. the deep soil zones must be landscaped with trees that when mature, reach a minimum height of 15m and a minimum 3m wide tree canopy
- iii. a planter box with a minimum internal width of 1m must be provided along the edge of a balcony or terrace on the first floor level that faces low or medium density zoned land
- iv. a planter box with a minimum internal width of 400mm must be provided along the edge of a balcony or terrace on all other floors facing low or medium density zoned land (other than the street frontage)
- v. all planter boxes must not exceed 1m in height, have a minimum soil depth of 600mm, and landscaped with dense screen planting

- vi. a minimum of 20% of any podium and a minimum 20% of any rooftop open space must be landscaped
- vii. details of the type and height of shrubs and trees within the deep soil zones, planter boxes, podium and/or rooftop open space must be shown on the landscaped plans

6.3 Car Parking and access

- i. access to the residential car parking area must be separated from the commercial car parking and loading areas
- ii. shared car spaces may be provided for residential visitors and customers providing unimpeded access is available at all times
- iii. vehicular movements for loading and unloading must be separated from all car parking areas

6.4 Building mass and bulk

- i. buildings over 11m should have a defined podium level.

6.5 Signage

- ii. signage is restricted to shop fronts, awnings and under awning signs
- iii. any signage must have regard to the visual impact on residential occupants, particularly in terms of illumination and light spill

7 Specific Land Uses

7.1 Sex services premises

Sex service premises, commonly referred to as brothels, are not a prohibited land use in B2 Local Centre and B3 Commercial Core commercial zones. However, there are strict limitations on where they may be located.

A development application for a sex services premises must include the following information:

- i. number of sex workers and support staff, including any security personnel
- ii. hours of operation
- iii. name of the proprietor
- iv. floor plan showing the entry and exits from the premises, and number and description of rooms within the premises (e.g. reception/office, waiting or lounge area, and sex workers rooms)
- v. description of safety by design measures
- vi. site plan showing the location of places of public worship, schools, community facilities, child-care centres, parks, playgrounds, hospitals, medical centres, bus stops, dwellings or any place in the vicinity of the premises that may be regularly frequented by children within a 200m radius

The following controls apply to sex services premises:

- i. must not be located within public view from a place of public worship, school,

- community facility, child-care centre, hospital, medical centre, or any place in the vicinity of the premises that may be regularly frequented by children
- ii. must not form clusters within areas where brothels are permissible
 - iii. approval will not be granted for another sex services premises that is located within a 100m of another existing approved premises
 - iv. the operation is limited to not more than 10 sex worker rooms
 - v. owners, operators, managers and staff must be aware of and understand the *'Health and safety guidelines for sex service premises in NSW'*.

The *'Health and safety guidelines for sex service premises in NSW'* can be viewed on the [NSW Government SafeWork website](https://www.safework.nsw.gov.au/resource-library/other-services/health-and-safety-guidelines-for-sex-services-premises-in-nsw) at:

<https://www.safework.nsw.gov.au/resource-library/other-services/health-and-safety-guidelines-for-sex-services-premises-in-nsw>

Note:

- Council's Environmental Health Officers and authorised officers of the NSW Health Department and WorkCover have the powers to conduct regular inspections of all sex services premises without notice to determine whether the premises are complying with the required guidelines and health standards.

7.2 Outdoor dining areas

Outdoor dining areas can provide vitality to the streetscape in commercial precincts. Council encourages the use of footpaths and public space for outdoor dining areas in conjunction with a café or restaurant, providing they are established in appropriate locations.

Any application to lease a public footway from Council for an outdoor dining area must be associated with a 'food and drinks premises', café or restaurant. The following matters must be satisfied before approval may be granted:

- i. the minimum area for an outdoor dining area is 2m²
- ii. the public footway space must have a minimum width of 3.5m to the curb-line
- iii. an outdoor dining area should not be located adjacent to a bus stop, taxi rank, Australian Post mailbox, or automatic teller machine (ATM)
- iv. the outdoor area must not interfere with or prevent access to existing street elements such as street furniture, pedestrian crossings, traffic lights, street trees, planter boxes, and street or directional signage (a clear width of 2m should be maintained from these structures)
- v. the layout is consistent with other outdoor dining areas in the vicinity so that pedestrian circulation and flow is not obstructed
- vi. a minimum 900mm must be maintained between the curb-line and the outdoor dining area
- vii. the outdoor dining area must be immediately in front of the 'food and drinks premises', café or restaurant and not encroach on footpath space in front of adjoining premises unless written approval is provided by the owner or tenant of the adjoining premises (such approval must be provided if there is a change of tenant/owner or annually, whichever comes first)
- viii. if the premises is on a corner, the outdoor dining area may occupy both street

frontages subject to the same restrictions for a single fronted premises

The following information must be submitted with an application for an outdoor dining area:

- i. details of furniture demonstrating that it is of high standard, safe and strong, wind resistant, and able to maintain a quality presentation
- ii. details of the type and height of barriers (barriers must not be used to completely enclose the outdoor dining area)
- iii. details of any business identification signs on the furniture and barriers; no third party advertising is permitted unless it is associated with the operation of the premises, e.g. the brand of coffee used

Notes:

- The use of a building, including an outdoor dining area, cannot extend beyond the alignment of a road to which the building has a frontage; however, the *Roads Act, 1993*, enables Council as the road authority and owner of the road to grant approval to allow part of a footpath to be used as an outdoor dining area.
- Approval can be sought for an outdoor dining area as part of a development application for a proposed development; however, a separate approval to lease the land must be obtained from Council.
- If approval is only sought to use the footpath as an outdoor dining area, a separate application for approval is required to be submitted under the *Roads Act, 1993*.
- Furniture includes tables, chairs, umbrellas, bins, barriers, heating devices, and the like.
- No permanent structures are permissible, and all furniture must be removed if the business ceases to operate or there is a change of use or ownership, unless separate approval is obtained from Council.

7.3 Centre-based child care facilities

Centre-based child care facilities are permitted with consent in all commercial and residential zones. The meaning of a centre based child care facility is provided in the Dictionary under the draft WLEP 2020. It includes the use of a building or place that provides long day care, occasional child care, out-of-school-hours care (including vacation care), preschool care or an approved family day care venue.

Notes:

- An approved family day care venue is a place, other than a residence where an approved family day care service (within the meaning of *the Children (Education and Care Services) National Law (NSW)*) is provided.
- A centre-based child care facility does not include a building or place used for home-based child care or school-based child care.

A centre-based child care facility requires development consent from Council.

Notes:

- Development consent from Council will be conditional upon the appropriate licensing approval from the NSW Department of Education – Early Childhood Directorate.

- Any approval granted by Council will not necessarily result in the issue of a license from the NSW Department of Education – Early Childhood Directorate.
- Applicants are encouraged to contact Council’s Children’s Services division before lodging a development application to obtain further information about rules and regulations, and licensing and operational requirements.

7.3.1 Site suitability

The selection of a site must have regard to all potential environmental health hazards or safety risks, including:

i. Electromagnetic Fields

A child care centre should not be located within 300m of mobile phone towers and base stations, transmission line easements or other sources of significant electromagnetic radiation.

ii. Noise

Sufficient separation should be provided from busy roads and rail corridors to avoid adverse noise impacts. Conversely, a child care centre should be designed to mitigate any unreasonable noise impacts on adjoining and nearby properties. In this regard, the following controls apply:

- a. the use of the premises including indoor/outdoor play areas, traffic on site and mechanical plant shall not exceed the background noise level by more than 5dB at the most affected point on or within any receiving property boundary
- b. the internal noise levels within indoor play or sleeping areas of the centre, when it is operating at full capacity, shall not exceed an Leq,1hr 40 dB(A)
- c. the intrusive noise onto any outdoor play or activity area of the centre, when it is operating at full capacity shall not exceed an Leq,1hr 55 dB(A)

Note:

- An acoustic report prepared by a suitably qualified person must be submitted with the application demonstrating that compliance with these requirements can be achieved.

iii. Pollution and contamination

The location of child care centres, including outdoor play areas, should have regard to:

- a. pollution from vehicle fumes or any other air pollutants
- b. proximity to any water cooling/warming systems that may pose a risk of air-borne contamination
- c. proximity to land use activities that may cause contamination, such as service stations

7.3.2 Emergency Evacuation

An Emergency Evacuation Plan must be submitted with development applications for all child care centres. This plan must include, but not limited to, the following information:

- i. the mobility of children and how this is to be accommodated during an evacuation (including the use of emergency evacuation cots)
- ii. the location of a safe congregation area, away from the evacuated building, busy roads, other hazards and the evacuation points of other residents or tenants within the building or surrounding buildings
- iii. where the child care centre is part of a larger building or complex, that the Emergency Evacuation Plan is complementary and consistent with other emergency evacuation plans in place
- iv. the supervision of children during the evacuation and at the safe congregation area with regard to the capacity of the child care centre and the child to staff ratios

Notes:

- Centre-based child care facilities in commercial buildings must demonstrate that suitable access is available to designated play areas, and effective emergency evacuation procedures can be provided for centres located above the ground floor level.
- Off-street car parking must be provided in accordance with the requirements of *Part F (Transport and Car Parking Management) of draft WDCP 2021*.

7.3.3 Specific controls for child care facility in residential areas

- i. a minimum 20m frontage is required to ensure the site is compatible with surrounding residential properties, and adequate access is available for vehicles to enter and leave the site in a forward direction
- ii. to ensure good access is available for emergency vehicles and evacuation options/routes, child care centres should not be located in a cul-de-sacs or no through roads, except where more than one street access and egress is available to the site, and the centre has adequate parking and pickup/drop off spaces
- iii. unless otherwise approved, the hours of operation must not extend beyond 7.00am to 7.00pm Monday to Friday. Any application for extended hours of operation will have regard to any likely impacts on adjoining and nearby residents
- iv. a landscape plan prepared by a suitably qualified person must be submitted with the application; landscaping of the site must have regard to the relevant performance criteria under Section 2.1.5 (Landscaping) of Part B of the draft WDCP 2021
- v. a site used as both a dwelling and a child care centre must provide the minimum required outdoor children's play area, and it must be separate to any outdoor areas associated with the use of the dwelling.

ATTACHMENT 1**Resource Recovery and Waste Management Plan**

The Resource Recovery and Management Plan must include, but not limited to the following information:

1. Type and estimated quantity of garbage generated, and number of collections per week.
2. Type and estimated quantity of recycling materials generated, and number of collections per week.
3. Estimate of any garden or organic waste generated per week, and number of collections, if any, per week.
4. Describe the size and number of Mobile Garbage Bins (MGB) and/or bulk bins to be used to manage garbage collection.
5. Describe the type, size and number of recycling containers and any associated equipment to be used to manage recyclable materials.
6. Describe the type, size and number of containers and any associated equipment, including any composting facilities, to be used to manage garden or organic materials.
7. Provide details of the location, size and access to garbage and recycling spaces/rooms.
8. Details of any refrigerated garbage rooms required for the disposal of seafood, poultry, meat, or other organic materials.
9. Describe waste management arrangements, including safe and hygienic access to garbage and recycling spaces/rooms by employees and contractors. This should include the following details:
 - i. details of contractor
 - ii. times days and frequency to collect recyclable and general waste materials
 - iii. type and size of waste and recyclable collection vehicles to be used in the operation
 - iv. measures to achieve source separation of garbage and recyclable materials
 - v. display of signage to ensure source separation and correct use of bins
 - vi. access to water and provision of high pressure hose for washing bins and bin storage, and drainage to sewer
 - vii. person or persons responsible for cleaning bins and bin storage areas
 - viii. ventilation for bin storage areas
 - ix. features to prevent vermin entering into bin storage areas
 - x. method, distance, and grade of pathway to wheel MGB to collection points
 - xi. driveway access to ensure vehicles can enter and leave in a forward direction
 - xii. education and any incentives to encourage correct waste management

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Part E Industrial Development

1 Introduction

The Willoughby Local Government Area comprises three industrial areas located in Artarmon, East Chatswood, and Lane Cove North. Artarmon and East Chatswood are the two main industrial areas.

Various studies and analysis have identified that Willoughby comprises a critical part of the already low level of industrial and urban services land in Greater Sydney; making those areas in Willoughby particularly important to *'retain and manage'* for the future.

This Part of *Draft Willoughby Development Control Plan* (WDCP) includes guidelines and controls for industrial development and other appropriate land uses which produce a range of goods and services to meet the current and future needs of a growing population.

Willoughby City Council is committed to maintaining and increasing the potential of existing industrial service hubs, and consequently increasing employment opportunities. In this regard, Council has adopted the recommendation of the *Willoughby Industrial Lands Strategy 2036* to increase the floor space provision in certain localities. Appropriate changes have been included in the *draft Willoughby Local Environmental Plan 2020*.

Note:

- The additional floor areas will not come into effect until and if the Department of Planning Industry and Environment (DPIE) allows the proposed changes to *draft WLEP 2020*.

1.1 Aim

The specific aim of this Part is to ensure development is carried out in a manner that sustains and enhances the economic and environmental qualities of Willoughby and surrounding Local Government Areas.

1.2 Objectives

The objectives of this Part are to:

- i. ensure controls do not inhibit economic development
- ii. improve the design of buildings and aesthetic quality of streetscapes, and ensure any land uses conform to environmental and hazard reduction guidelines
- iii. achieve energy efficient and sustainable buildings and developments that promote sustainable transport initiatives
- iv. ensures developments maximises thermal comfort and minimises urban heat impacts in the interests of health and wellbeing
- v. include appropriate controls to ensure industrial development does not pollute or adversely affect adjoining land
- vi. protect the viability of business zones by limiting the size of ancillary offices and showrooms used in conjunction with industrial premises
- vii. accommodate other permissible land uses because of their specific building or site requirements or operational characteristics
- viii. preclude activities which are incompatible or inappropriate for industrial zones, and should otherwise be located in established residential or commercial zones

- ix. ensure adequate provision is made for off-street carparking and loading/loading facilities
- x. optimise the efficiency and effectiveness of freight handling and logistic networks
- xi. minimises adverse effects of industrial activity on adjoining or nearby residential properties

2 Strategies/Plans

2.1 Willoughby Industrial Lands Strategy 2036

Following consideration of submissions in 2020 the *Willoughby Industrial Lands Strategy (WILS) 2036* was endorsed by Council.

The WILS states that any loss of existing industrial zoned land would further compromise the local and regional economies of the North Shore area. The study also found that it is vitally important to protect the integrity of the industrial areas to ensure that uses carried out are related to the core intent of the industrial zones.

This Part of the *draft WDCP 2021* is aligned with the principles and intent of the WILS. To view the strategy, please refer to Council's website at:

<https://www.willoughby.nsw.gov.au/Development/Plan/Planning-Rules/Planning-Strategies#section-4>

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

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 includes provisions that affect industrial development.

The Exempt Development Codes allows certain structures, business and building identification signs and land uses to be carried out without approval, subject to prescribed development standards and other relevant provisions. The Commercial and Industrial Alterations Code under Part 5 of the SEPP also allows certain works and change of use to be carried out as complying development. *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* can be viewed at:

<https://www.legislation.nsw.gov.au/#/view/EPI/2008/572>

Note:

- If a proposal does not satisfy all the criteria for either exempt or complying development under the SEPP, a development application (DA) is required.

3 Major developments

Major industrial developments include:

- i. the erection of a new buildings with a gross floor area exceeding 2,000m²
- ii. substantial redevelopment, refurbishment, or conversion of buildings with a gross floor area exceeding 2,000m²

Notes:

- Redevelopment is generally regarded as 'substantial' if the proposal will result in more than a 10% increase in the 'gross floor area'.

- Depending on the size and scale, and any likely impacts, an Authorised Office may determine that a proposal is regarded as 'major' development.
- An Authorised Officer is a Council employee that has been granted delegated authority to make decisions on behalf of Council.

4 Performance criteria and controls

Whilst it is important to maintain clusters of traditional industrial activities and retain the integrity of existing industrial areas, it is equally important to allow a level of flexibility to accommodate emerging high technology and allied health related industries.

There is no minimum lot size for industrial development; however, the area and dimensions of the lot, and the internal layout of buildings, must be suitable for the intended use.

The general performance criteria and controls apply to all industrial developments. Any variation of these controls must be justified and have regard to the following general performance criteria.

4.1 Design

i. Performance criteria

- provide a flexible building design such as large spans, adaptable floor plates and adequately sized and appropriately located loading facilities
- provide adequate natural lighting and ventilation to create a safe and healthy work environment
- avoid bulky roof forms and blank facades (the façade should be modulated and articulated to reduce the bulk)
- use variations in materials, colours, and textures to improve the visual appearance of the development and contribute to the aesthetic quality of the streetscape

ii. Controls

- open storage areas, truck parking areas, and any activities likely to generate emissions, are to be suitably screened and located no closer than 10m from the boundary of any dwellings within a residential zone
- exposed blank walls are to be finished to a high standard to minimise the potential for graffiti
- glazing must avoid glare to occupants of adjoining and nearby buildings, pedestrians, and motorists
- rooftop parking and structures such as plant rooms, air conditioning, exhaust systems and the like are to be suitably screened from public view
- any new development or alterations and additions must not decrease solar access to primary living areas and private open space of adjoining residential properties by more than 20% (this may require increased setbacks, reorientation and/or lowering the building height)
- office and staff facilities should not be in proximity to intrusive noise, vibration, fumes, or any other pollution sources such as heavy machinery, industrial equipment and loading docks
- development on corner lots must address both street frontages in terms of façade treatment, articulation of elevations and landscaping

4.2 Safety by design

i. Performance criteria

- a. ensure appropriate safety and security measures are put in place to prevent criminal activity
- b. provide a clear definition of entry points when viewed from the street for staff and visitors which are linked to car parking areas and pedestrian paths

ii. Controls

- a. the design should include high visibility to front entries, lighting of pathways or hidden spaces and careful siting of shrubs and landscape elements

Note:

- Details of the design and safety measures incorporated into the design are to be submitted with the development application.

4.3 Fences

i. Performance criteria

- a. front fences should contribute to an attractive setting for the development when viewed from adjoining properties and the public domain
- b. any fencing should complement the development and not impact on the visual quality of the streetscape

ii. Controls

- a. all fencing, except for dwarf walls up to a maximum height of 1m above the footpath level must be setback and provide a minimum 2m wide landscaped area
- b. no front fencing shall exceed a maximum of height of 1.8m

4.4 Paving and External Hard Stand Areas

i. Performance criteria

- a. paving and hard stand area must be suitably drained to prevent stormwater runoff into adjoining properties

ii. Controls

- a. all hard stand areas used for outdoor storage, parking, loading and/or manoeuvring vehicles must be sealed and drained to an appropriate on-site detention system

4.5 Setbacks

i. Performance criteria

- a. provide adequate area for landscaping, solar access to adjoining properties and minimise overshadowing
- b. provide adequate separation between incompatible land uses such as dwellings

- c. increase progressively as wall heights increase to reduce the bulk and scale of building
 - d. car parking areas forward of the building line should be setback to ensure they do not dominate the street frontage
- ii. Controls
- a. in East Chatswood, the front boundary setback is a minimum 4.5m
 - b. in Artarmon, the front setback is:
 - a minimum 4m for properties facing the Pacific Highway
 - a minimum 12m along the western side of Herbert Street
 - a minimum 10m from the Royal North Shore Hospital, on the southern boundary of the land being part Lot 1 D.P. 591747, Herbert Street Artarmon
 - a minimum 9m along the rear of 1, 5,7,9,10 and 11 George Place
 - 3m elsewhere
 - c. in Lane Cove North (Epping Road), the front setback is to be a minimum of 15m
 - d. where located on a corner lot, boundary setbacks on side street are to be a minimum of 2m
 - e. a rear setback of 3 metres is to be provided on properties backing on to major roads, access streets, rear lanes, railway lines, and public places
 - f. development abutting residential properties or residentially zoned land must have a minimum setback of 3 metres; this distance shall be increased by 1.2m for each 3.5m by which the height of the building exceeds 3.5m
 - g. setbacks on corner blocks must enable sufficient sightlines for traffic in accordance with the relevant Australian Standard. (AS 2890)
 - h. all setback areas are to be landscaped to Council's satisfaction; no car parking, storage of materials, garbage facilities or the like is to occur within the setback area, and any security fencing must be screened and located behind the setback area

Note:

- setbacks along the western side of Herbert St, St Leonards are to provide for substantial street tree planting, footpath paving and widening to create a boulevard style gateway entry to Willoughby City through the industrial area (Council Resolution 99/538 26 July 1999)

4.6 Landscaping

- i. Performance criteria
 - a. retain any existing significant trees and vegetation
 - b. the type of landscaping should be sensitive to the site attributes such as streetscape, land capability, microclimate, natural landform, existing vegetation and, vistas and views to and from the site
 - c. provide adequate open space for employees
 - d. maximise absorption for on-site infiltration of stormwater
 - e. contribute to improving the streetscape character of the locality

ii. Controls

- a. all front, side and rear setbacks are to comprise deep soil zones with a minimum width of 2m
- b. all other landscaped areas must have a minimum width of 2m and a minimum depth of 600mm
- c. all existing trees are to be shown on the landscape plans and details provided on how trees to be retained are to be protected during construction
- d. a minimum setback of 4m from the outside of the trunk of existing trees is required from any building structure
- e. planter boxes are to be integrated into the building structure and have a minimum internal width of 600mm
- f. all landscaped areas (including planter boxes) are to be planted with indigenous low maintenance species and provided with automatic watering systems and suitably drained
- g. for sites that exceed 1500m², a minimum 10m² of outdoor eating and sitting area is to be provided for staff in a suitably landscaped area that receives adequate sunlight between 12 and 2.00pm
- h. any new development or significant alterations and additions may be required to provide additional street trees along the street frontage
- i. a minimum 2m wide deep soil zone is required at the rear of any site that abuts an access street, service road, railway line, public place, residential property, or residentially zoned land
- j. plant trees with wide tree canopies within deep soil zones to reduce the impacts of urban heat island effects
- k. the deep soil zones must be landscaped with trees that when mature, reach a minimum height of 15m and a minimum 3m wide tree canopy
- l. any electrical substation required to be provided on the site must be shown on the landscape plans and suitable screened from public view

4.7 Car parking and vehicular access

i. Performance criteria

- a. adequate provision for visitor and employee car and bicycle parking on-site
- b. adequate turning areas provided to enable all commercial vehicles and trucks, including waste disposal trucks, to enter and leave the site in a forward direction
- c. access and location of car parking areas, loading bays and manoeuvring areas should not unreasonably impact on adjoining or nearby residential properties

ii. Controls

- a. the layout of car parking spaces must comply with AS/NZS 2890.1 and AS/NZS 2890.6 (details are to be shown on the architectural plans)
- b. the location, siting and grades of driveways, and driveway width must be in accordance with Australian Standard AS/NZS 2890.1
- c. all new developments and significant alterations and additions are required to provide accessible car parking spaces for people with a disability in accordance with Section D3.5 of the Building Code of Australia (BCA) under the National Construction Code (NCC)
- d. details of swept paths may be required to demonstrate all vehicles can enter and leave the site in a forward direction

- e. any dedicated truck parking areas are to be suitably screened and located no closer than 10m from the boundary of any dwellings within a residential zone
- f. all visitor carparking for industrial unit complexes is to be provided in a common car parking area
- g. compliance with the provisions of Part F (Car parking and Transport Management) of the *draft WDCP 2021*

4.8 Loading/unloading facilities

i. Performance criteria

- a. adequate provision for the safe loading and unloading of goods on-site without impacting pedestrian or vehicular traffic within the site or on adjacent streets
- b. not unreasonably impact on adjoining or nearby residential properties

ii. Controls

- a. each tenancy must have a separate loading facility
- b. all loading and unloading areas must not be located closer than 10m from the boundary of any dwellings within a residential zone
- c. all new industrial developments, and developments that involve significant demolition and/or alterations and additions must make adequate provision for off-street loading and unloading facilities in accordance with Part F of the *draft WDCP 2021*

4.9 Access and mobility

i. Performance criteria

- a. ensure there is a 'continuous accessible path of travel' for people with a mobility, vision, hearing, or intellectual disability
- b. provide measures to assist people with a disability to access facilities independently, equitably and with dignity

ii. Controls

- a. details are to be submitted with the development application to demonstrate the development will comply with the Disability (Access to Premises – Building) Standards 2010 under the Disability Discrimination Act 1992
- b. include ramps and toilets for people who use a wheelchair; appropriate lighting and colour contrast for people with a visual impairment; tactile surface indicators for people who are blind; and, any other appropriate measures to assist people with a disability

4.10 Waste and recycling

i. Performance criteria

- a. improve environmental outcomes by reducing waste and increasing source separation of materials and management of waste and recyclable materials
- b. ensure adequate space is provided for the storage and access to waste and recyclable containers
- c. ensure safe and hygienic processes and practices are put in place for workers and contractors for the storage, handling and collection of waste and recycling materials

- d. ensure adequate facilities are provided for the disposal of hazardous, medical or any liquid waste which requires special licences and/or storage and disposal arrangements with other Government agencies
- ii. Controls
 - a. all waste management facilities must comply with the Building Code of Australia (BCA) and relevant Australian Standards
 - b. any compactors or mechanical devices must comply with Occupational Health and Safety requirements
 - c. bin storages areas must:
 - be suitably screened from public areas and adjoining properties
 - located in areas to reduce the impacts of visual amenity, noise, and odour
 - d. refrigerated garbage rooms are required where:
 - the waste generated contains 20% or more by weight or volume of seafood, poultry, or meat; or,
 - 50 litres or more of seafood, poultry or meat is generated in total per day, unless the waste is collected daily
 - e. the on-site collection point must provide adequate space for garbage vehicles to enter and leave the site in a forward direction
 - f. basement waste and recycling storage areas and access to these areas must have a minimum clearance height of 4.5m to accommodate waste and recycling collection vehicles
 - g. a Resource Recovery and Waste Management Plan must be submitted with the development application (details required to be submitted with the plan is provided in **Attachment 1**)

4.11 Pollution control

- i. Performance criteria
 - a. not cause air pollution, water pollution, odour nuisance or unacceptable noise levels
 - b. appropriate measures are put in place to protect the environment and amenity of workers, and people living and other workers in the vicinity, who could be adversely affected by the operation of the development
- ii. Controls
 - a. depending on the type, scale, and location of development, an Acoustic report and/or other reports to address pollution control measures may need to be submitted with the development application
 - b. depending on the type, scale, and location of construction works, a Site Management Plan may need to be submitted with the development application to address sediment and erosion control measures
 - c. the hours of operation may be restricted to 7am to 6pm Monday to Saturday (no work to be carried out on Sundays) for industrial premises that are likely to interfere with the residential amenity of adjoining and nearby dwellings
 - d. details of loading and unloading times (including waste collection), vehicle movements and their routes will need to be submitted with the development

application if such activities are likely to interfere with any adjoining or surrounding residential properties

- e. the discharge of any solid, liquid, or gaseous materials must comply with the relevant provisions of the Protection of the Environment Operations Act 1997
- f. where there is likely to be a need for the disposal of liquid waste to the sewer, Sydney Water should be contacted to obtain their requirements for the installation of grease arrestors
- g. appropriate pollution control measures must be installed to prevent stormwater pollution

Note:

- The hours of operation for other permissible uses in industrial areas, such as places of public worship, recreation facilities and sex services premises will be assessed on a case by case bases.

4.12 Stormwater disposal and flooding

i. Performance criteria

- a. ensure the installation of on-site detention (OSD) systems make adequate provision for reuse and stormwater disposal
- b. ensure properties identified as flood prone land provide appropriate flood mitigation measures
- c. encourage Water Sensitive Urban Design (WSUD) measures to minimise impacts on the natural water cycle and foster ecological sustainability

ii. Controls

- a. depending on the type, scale, and location of development, a Stormwater Management Plan may need to be submitted with the development application
- b. development on flood prone land may need to submit a Flood Risk Assessment Report and/or a Flood Study with the development application
- c. new industrial development on land exceeding 2,000m² are required to implement appropriate WSUD measures
- d. the application must demonstrate the proposal satisfies the objectives and controls of Part I (Stormwater Management) under the draft WDCP 2021

4.13 Sustainable development

i. Performance criteria

- a. the development will result in environmentally sustainable buildings and create energy efficient operations
- b. encourages alternative and sustainable transport strategies to reduce the use and reliance on motor vehicles as the principle mode of transport

ii. Controls

- a. depending on the type, scale and cost of development, a Sustainable Performance Statement, a Green Star rating report, a National Australian Built Environment Rating Scheme (NABERS) Commitment Agreement and/or details of compliance with National Construction Code (NCC) must be submitted with the development application
- b. the application must demonstrate the proposal satisfies the objectives and controls under Part J (Building Sustainability) of the *draft WDCP 2021*

- c. major developments must submit a Travel Demand Management Plan (TDMP), often described as a '*Green Travel Plan*', that includes details on how the operation intends to modify travel decisions to and from the industrial premises so that more desirable modes of transport are used, such as bicycles, car-pooling, mini-bus pick-up/drop off, and provision of a car share spaces (more information is available in Part F of the *draft WDCP 2021*)

4.14 Signage

i. Performance criteria

- a. the number of signs is limited to avoid cluttering, distraction, and unnecessary repetition
- b. corporate colours and signage on buildings do not have an adverse visual impact on adjoining and nearby properties and the public domain

ii. Controls

- a. the content must relate to the building and/or business on the site
- b. the size of signs must be in proportion with the building
- c. there must be an integrated and coordinated scheme for business identification signs for multi tenanted complexes
- d. there must be no glare or light spill from any signage onto adjoining properties
- e. directory boards identifying tenants must be located adjacent to the entrance of the complex and not impact on landscaped areas or access points to adjoining properties

Notes:

- Signage, other than '*building identification signs*' and '*business identification signs*', is prohibited in the land use table for IN1 and IN2 zoned land.
- Many of these types of signs may be erected without approval under the relevant provisions of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.
- If any of the development standards relating to proposed '*building identification signs*' or '*business identification signs*' do not fully satisfy the exempt provisions of the SEPP, a development application (DA) is required.
- Third party advertising signage is prohibited in the land use table for industrial zoned land.

4.15 Utility facilities

i. Performance criteria

- a. ensure adequate provision is made and integrated into the design of the development for utility facilities such as substations, water main boosters, and the like

ii. Controls

- a. written advice is to be provided with the application from the energy provider and Sydney Water as to whether any such facilities are required to be provided for the development
- b. all utility facilities that are visible from the street or public domain must be suitably screened by landscaping

- c. substations should preferably be located below ground level or at the rear of the property if rear lane access is available

4.16 Undergrounding of services

- i. Performance criteria

- a. to improve the visual amenity of the urban environment

- ii. Controls

- a. all services for major developments exceeding 2,000m² are to be located underground (this includes publicly owned land immediately outside the development site)

Note:

- In some circumstances it may not be practical to provide undergrounding of services. Any proposed variation to this control must include a written request and supporting information to justify why this requirement cannot be satisfied.

5 Specific Land Uses

5.1 High Technology Industries

Council encourages high technology industries, particularly where there is a significant component of 'research and development' associated with the operation. However, these types of 'clean' industries must not occupy industrial zoned land if the predominant use is more likely to be a commercial/business type of activity that may be better suited to an office environment in a commercial zone.

A development application for a high technology industry must include the following information:

- i. an outline of the operation, including the core business activity
- ii. information on the end products
- iii. details of the internal layout showing each component of the operation, including 'research and development' areas, production, assembly, packaging, warehouse, ancillary office and/or laboratories
- iv. the number and type of staff

If the application demonstrates the operation is a bona fide high technology industry that is best located in an industrial area because of its predominant manufacture or assembly of products, high storage requirements or any other factors, Council may allow more office space, providing it does not exceed 50% of the total gross floor area.

5.2 Ancillary office and showrooms

Generally, office and showrooms should only be a relatively minor component of an industrial use that relates to the service activity, manufacture, assembly or warehousing of goods.

The total combined office/showroom of an industrial premises must not exceed 20% of the total gross floor area. However, the following exceptions apply to industrial activities on land zoned IN1 and IN2 bounded by Campbell Street, Cleg Street, Herbert Street, the Gore Hill Freeway, and the Pacific Highway:

- i. if the development is on land fronting the Pacific Highway, the maximum floor area to be used for ancillary office and/or showroom space is 50% of the total gross floor area
- ii. if the development is not on land fronting the Pacific Highway, the maximum floor area to be used for ancillary office and/or showroom space is 30% of the total gross floor area

Notes:

- Training rooms will be calculated as part of the maximum permissible office/showroom area.
- Filing compactus will not be considered as warehouse space and those areas will be calculated as part of the maximum permissible office/showroom area.
- A clear delineation must be maintained between the office/showroom areas and the production, warehouse, and other industrial areas of the premises.

5.3 Vehicle repair stations and vehicle body repair workshops

A vehicle repair station or vehicle body repair workshop must comply with the following controls:

- i. all vehicles waiting for repair or any other vehicles associated with the business are to be stored within the building or on-site in dedicated car parking spaces
- ii. one separate visitor car space per two 'work bays' is required for vehicles waiting to be serviced
- iii. a mechanical workshop bay, spray painting booth or car oven drying bay are deemed to be 'work bays'
- iv. in the absence of any defined 'work bays', one separate visitor car space is required for every 36m² of factory floor area for vehicles waiting to be serviced
- v. any additional visitor car parking spaces may be used for vehicles waiting to be serviced
- vi. adequate area must be provided to ensure vehicles (including tow trucks) can enter and leave the site in a forward direction
- vii. water discharged from a car wash bay must comply with any trade waste agreement with Sydney Water

Notes:

- all vehicles brought to the premises for servicing must not stand or parking in adjacent or nearby streets whilst unattended by the owner of that vehicle or whilst it is under the control of the manager or staff of the premises
- generally, these types of uses will not be granted approval if they are adjoining or adjacent to dwellings or residential zoned land

5.4 Specialised retail premises

'*Specialised retail premises*' are a type of '*retail premises*' under the definition of '*commercial premises*' which is a prohibited land use in the industrial zones. However, '*specialised retail premises*' are an additional permitted use for certain industrial land under Schedule 1 of the *draft WLEP 2020*. Any application for this type of development must demonstrate the proposed use satisfies the definition of '*specialised retail premises*' under the *draft WLEP 2020*.

5.5 Sex services premises

Sex service premises, commonly referred to as brothels, are not a prohibited land use in industrial zones. However, there are strict limitations on where they may be located.

A development application for a sex services premises must include the following information:

- i. number of sex workers and support staff, including any security personnel
- ii. hours of operation
- iii. name of the proprietor
- iv. floor plan showing the entry and exits from the premises, and number and description of rooms within the premises (e.g. reception/office, waiting or lounge area, and sex workers rooms)
- v. description of safety by design measures
- vi. site plan showing the location of places of public worship, schools, community facilities, child-care centres, parks, playgrounds, hospitals, medical centres, bus stops, dwellings or any place in the vicinity of the premises that may be regularly frequented by children within a 200m radius

The following controls apply to sex services premises:

- i. must not be located within public view from a place of public worship, school, community facility, child-care centre, hospital, medical centre, or any place in the vicinity of the premises that may be regularly frequented by children
- ii. must not form clusters within areas where brothels are permissible
- iii. approval will not be granted for another sex services premises that is located within a 100m of another existing approved premises
- iv. the operation is limited to not more than 10 sex worker rooms
- v. owners, operators, managers, and staff must be aware and understand the *'Health and safety guidelines for sex service premises in NSW'*.

The *'Health and safety guidelines for sex service premises in NSW'* can be viewed on the NSW Government SafeWork website at:

<https://www.safework.nsw.gov.au/resource-library/other-services/health-and-safety-guidelines-for-sex-services-premises-in-nsw>

Note:

- Council's Environmental Health Officers and authorised officers of the NSW Health Department and WorkCover have the powers to conduct regular inspections of all sex services premises without notice to determine whether the premises are complying with the required guidelines and health standards.

ATTACHMENT 1 - Resource Recovery and Waste Management Plan

The Resource Recovery and Management Plan must include, but not limited to the following information:

1. Type and estimated quantity of garbage generated, and number of collections per week.
2. Type and estimated quantity of recycling materials generated, and number of collections per week.
3. Estimate of any garden or organic waste generated per week, and number of collections, if any, per week.
4. Describe the size and number of Mobile Garbage Bins (MGB) and/or bulk bins to be used to manage garbage collection.
5. Describe the type, size and number of recycling containers and any associated equipment to be used to manage recyclable materials.
6. Describe the type, size and number of containers and any associated equipment, including any composting facilities, to be used to manage garden or organic materials.
7. Provide details of the location, size and access to garbage and recycling spaces/rooms.
8. Details of any refrigerated garbage rooms required for the disposal of seafood, poultry, meat, or other organic materials.
9. Describe waste management arrangements, including safe and hygienic access to garbage and recycling spaces/rooms by employees and contractors. This should include the following details:
 - i. details of contractor
 - ii. times days and frequency to collect recyclable and general waste materials
 - iii. type and size of waste and recyclable collection vehicles to be used in the operation
 - iv. measures to achieve source separation of garbage and recyclable materials
 - v. display of signage to ensure source separation and correct use of bins
 - vi. access to water and provision of high pressure hose for washing bins and bin storage, and drainage to sewer
 - vii. person or persons responsible for cleaning bins and bin storage areas
 - viii. ventilation for bin storage areas
 - ix. features to prevent vermin entering into bin storage areas
 - x. method, distance, and grade of pathway to wheel MGB to collection points
 - xi. driveway access to ensure vehicles can enter and leave in a forward direction
 - xii. education and any incentives to encourage correct waste management

PART F - Transport and Parking Management

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PART F - Transport and Parking Management

1 Introduction

Willoughby City Council is committed to minimising the adverse effects of car usage in a manner that sustains and enhances the economic and environmental qualities of the Willoughby Local Government Area.

Increasing the supply of car parking can often induce a greater number of vehicular trips which increases congestion, impacting negatively on the city environment. Therefore, careful consideration needs to be exercised in how much and where off-street car parking should be allocated for developments.

This Part of the draft WDCP 2021 outlines the transport requirements relating to off-street car parking, bicycle parking and end of trip facilities, loading/unloading facilities, and provisions for alternative transport modes.

1.1 Aim

The specific aim of this Part is to reduce and manage the demand for car usage and associated parking, and encourage the use of public transport and other alternative modes of transport.

1.2 Objectives

The objectives of this Part are to:

- i. ensure developments make adequate provision for a reasonable number of off-street car parking spaces, including accessible (disabled) spaces
- ii. ensure developments make adequate provision for parking and end of trip facilities for bicycles
- iii. ensure developments make adequate provision for electric and autonomous vehicles, car share spaces, and other alternative modes of transport
- iv. provide controls for the safe, convenient, and efficient movement of pedestrians, bicycles and vehicles for developments
- v. ensure the access and design of car parking areas contribute positively to the public domain
- vi. reduce the demand for private car use and off-street car parking by employing the principle of travel demand management (TDM).

2 Strategies/Studies

2.1 Willoughby Integrated Transport Strategy 2036

Council in August 2020 resolved to adopt the *Willoughby Integrated Transport Strategy* (Willoughby ITS) 2036. This Part of the draft WDCP is aligned with the principles and intent of the Willoughby ITS. To view the strategy please refer to Council's website at:

<https://www.willoughby.nsw.gov.au/Development/Plan/Planning-Rules/Planning-Strategies#section>

2.2 Review of Parking Rates, prepared by Cardno (Traffic Consultants) dated 9 February 2021

To ensure the most up to date data and information was available to inform this Part of the draft WDCP, Cardno (Traffic Consultants) were engaged to review the current parking rates, including bicycle parking and end of trip facilities.

The 'Review of Parking Rates' report (the Cardno report) states:

'It is imperative that parking policies reflect the true need for parking across all of the different types and uses and recognise that an oversupply of parking is just as undesirable as an undersupply.'

The Cardno report recommends that, in some cases, no car parking should be required for retail and business premises in the Chatswood CBD and the St Leonards precinct, and the number of car parking spaces in the Artarmon railway precinct should be reduced. It was also suggested that some reductions could apply to developments within a Major Public Transport Route (MPTR).

The report recommends that parking rates may be reduced by employing the principles of travel demand management. This would generally need to be supported by a Travel Demand Management Plan (see section 6 of this Part).

3 Parking provisions

3.1 Car parking

The demand for car parking will vary from one development to another and in different locations. Therefore, a reduction in the car parking rates applies to developments within the Chatswood CBD, the St Leonards precinct and within a 500m radius of the Artarmon railway station. The parking requirements within these areas are maximum rates.

The parking rates outside of these areas, including MPTR, are 'target' rates. These rates are neither maximum nor minimum. However, any proposal to vary the number of spaces must be justified, having regard to the location and parking demand generated by the development.

Consideration will be given to a reduction of the target rate for developments along and within 200m of a MPTR, providing the development is in proximity to a regular bus service. MPTR are identified as:

Pacific Highway south of Albert Avenue; Victoria Avenue west of Penshurst Street; Willoughby Road; Strathallen Avenue; Penshurst Street south of Victoria Avenue; Sailors Bay Road (for land zoned B2 Local Centre); Eastern Valley Way; Smith Street; High Street; and Mowbray Road

Notes:

- Where part of a property falls within the 500m radius of the Artarmon railway precinct or within 200m of a MPTR, the whole of that property is considered to be within the railway precinct or MPTR.
- A parking survey may be required to support a proposal to increase or decrease the target rates.

- See Sections 5.3 and 5.4 of this Part for details relating to visitor and accessible car parking.
- Unless otherwise stated, where the total number of car spaces is not a whole number, the number of spaces required should be rounded down.
- Any additional car spaces that may be allowed by Council will be included in the calculation of the gross floor area.
- Where development comprises an extension/modification to an existing development, car parking is only required to be provided for any additional demands that may arise by increasing the floor area.

The car parking requirements are provided in **Table 1**.

Maps indicating the Chatswood CBD, the St Leonards precinct and the Artarmon railway precinct are provided in **Attachments 1, 2 and 3**.

3.2 Motorcycle parking

Adequate provision must be made for motorcycle parking for all new developments, and wherever practicable, provided for alterations and additions, and change of uses. All motorcycle parking requirements are minimum rates.

As a minimum, one space for residents and one visitor space is required for residential development comprising 10 or more dwellings, and one space for employees and one visitor space is required for commercial, retail, industrial and other non-residential buildings exceeding 500m².

Notes:

- Where the total number of spaces is not a whole number, the number of spaces required must be rounded up.
- Motorcycle spaces must have a minimum dimension of 1.2m x 3m.

The required number of motorcycle spaces is provided in **Table 2**.

3.3 Bicycle parking and end of trip facilities

The social, economic, and environmental benefits of bicycle use have resulted in a greater emphasis on promoting and prioritising bicycle parking facilities.

The Cardno report recommends a minimum bicycle parking rate that is greater than existing demand to support ongoing and future shifts towards more sustainable mode share targets.

Research has found that an increase in quality end of trip facilities is correlated with increased bicycle use. The provision of showers, personal lockers and change rooms also has the benefit of accommodating other people who walk or exercise regularly.

All new developments and wherever practicable, bicycle parking and end of trip facilities should be provided for alterations and additions and change of uses.

The bicycle parking and end of trip facilities are minimum requirements. As a minimum, all developments should provide 2 bicycle parking spaces to ensure at least a small amount of parking is provided at all destinations.

The requirements for bicycle parking and end of trip facilities are provided in **Table 3**.

3.4 The layout, design, and security of bicycle parking facilities

The layout, design and security of bicycle parking facilities must comply with the minimum requirements under the provisions of Australian Standard (AS) 2890.3 (2015). The AS classifies bicycle parking facilities by the level of security provided. The three Classification levels are:

- vii. Class A: is a space within an individual bicycle locker that provides a high security locking system.
- viii. Class B: is a space within a secure room or structure that is accessed with devices such as keys, codes or swipe cards for communal areas. (chain mesh fencing is not considered a suitable material for Class B facilities)
- ix. Class C: is a space that allows a bicycle frame and wheels to be locked to a 'Bicycle Parking Device' using the cyclists own 'Locking Device'.

Notes:

- Class A & B bicycle parking facilities are intended for use by residents/employees of the development and therefore must be provided within a secured area that is not accessible to the general public.
- Class C bicycle parking facilities are intended for use by visitors to the building and therefore must be located in visible publicly accessible locations.
- AS2890.3 (2015) defines a Bicycle Parking Device (BPD) as 'a construction made of high security material designed to provide stability to bicycles placed in or against the device'.
- Bicycle racks and rails are examples of a 'Bicycle Parking Device'.
- End of trip facilities include personal lockers for clothes, showers and change rooms.
- Where the total number of bicycle spaces and end of trip facilities is not a whole number, the number of spaces and/or facilities required must be rounded up.

4 Car parking and driveway design

4.1 Car parking

The following controls apply to all car parking and access arrangements:

- i. the layout of car parking spaces must comply with AS/NZS 2890.1 and AS/NZS 2890.6
- ii. column locations must comply with AS/NZS 2890.1 (columns shall not be located within circulation aisles)
- iii. the headroom for an accessible (disabled) car space must comply with the requirements of AS 2890.6
- iv. car parking space accessed from a rear lane must provide a minimum setback of 1 metre with a 1 metre splay to the rear boundary
- v. except for assigned residential parking spaces, the length of any blind aisle shall not exceed the width of six 90° parking spaces plus 1m
- vi. one way aisles/access handles may only be used for areas where there is no general public access, there are less than 6 parking spaces and where appropriate measures are provided to allow vehicles to pass within the site
- vii. ventilation must be provided in accordance with the relevant standards for basement car parking areas
- viii. for developments with vehicular access from a main road frontage (Pacific Highway, Eastern Valley Way, Strathallen Avenue, Willoughby Road and Boundary

Street) vehicle must be able to turn around within the site to ensure they can enter and leave the site in a forward direction

4.2 Vehicle crossing/driveways

A new vehicle crossing will be required if the proposal involves a change to the vehicle access arrangements and/or car parking spaces (excluding proposed structures such as pergolas or open carports over an existing hard stand area), and the existing vehicle crossing comprises any of the following features:

- i. is in a dilapidated condition with multiple cracks
- ii. is a trip hazard to pedestrians along the footpath alignment
- iii. the road/laneway shows evidence of significant damage from scraping
- iv. is incomplete or has been constructed with non-approved materials
- v. the crossing is unsafe due to its alignment with the proposed driveway or car parking space(s)
- vi. is in an unsafe location and there is a better alternative location for a new driveway
- vii. is proposed to be replaced as part of the development application

Prior to construction, a separate vehicle crossing permit (construction of crossover on Council's property) must be obtained from Council. A new driveway crossing must comply with the following controls:

- i. the location, siting and grades of driveways, and driveway width must be in accordance with Australian Standard AS/NZS 2890.1
- ii. crossings must be separated from each other at the kerb and must be located a minimum of 600mm from the side boundary for residential properties and 1.2m for other developments
- iii. the distance between adjacent crossings must be less than 1.5m or greater than 6m to deter vehicles from attempting to park between driveways
- iv. driveways must not be located closer than:
 - a. 2m from a street tree or 1.5m from any other tree or as otherwise directed by Council
 - b. 1m from a power pole
 - c. 1m from a Council stormwater pit
- v. where there is parking on site for more than 6 vehicles, the driveway width shall be sufficient to allow two vehicles to pass within the site
- vi. sight distance requirements at the property boundary shall be provided in accordance with AS/NZS 2890.1
- vii. for single dwellings, only 1 crossing is permitted per property to improve streetscape, maximise on-street parking and reduce the number of conflict points between vehicles and pedestrians
- viii. dual occupancy developments may be permitted to have two vehicle crossings, providing the overall width of the two crossings does not exceed 30% of the property frontage
- viii. to maximise pedestrian safety, vehicles are to be at 90degrees to the boundary when leaving the site (where parking spaces are not in-line with the vehicle crossing, swept path diagrams will be required to demonstrate this requirement)

Note:

- Council does not generally support the removal of street trees to construct a new crossing; approval to remove a tree will only be granted in exceptional circumstances.

4.3 Access handle

For any access handle for battle-axe allotments serving two or more dwellings, the following requirements apply:

- i. the minimum width of the access handle is 4.8m
- ii. reciprocal rights of way are to be provided over each separate access strip
- iii. a passing bay in accordance with AS/NZS 2890.1 is required for access handles greater than 30m
- iv. on an arterial or sub-arterial road, the access driveway for the first 6m from the property boundary shall be 5.5m wide

4.4 Mechanical car parking systems and turntables

Council does not generally support mechanical car parking systems, and under no circumstances will they be allowed for accessible or visitor car parking.

An applicant must demonstrate there is no other reasonable car parking arrangement available, and ensure that safety, emergency and noise issues relating to the ongoing operation of a mechanical car parking system and/or turntable have been addressed to Council's satisfaction.

Mechanical systems and turntables must satisfy all of the following requirements:

- i. the site is constrained by existing conditions
- ii. only used to access spaces assigned to a particular dwelling/unit/tenant/business
- iii. adequate standing space is provided within the site for vehicles waiting to use the system

4.5 Electric Vehicles

As more and more households transition to owning electric vehicles in coming years it is required that all new dwellings and significant alterations and additions to dwellings and dual occupancies install a 3 –phase electricity supply to make provision for a dedicated EV charger.

Provision must also be made for EV charging to be available within individual car spaces and garages of all other new developments, including residential flat buildings, shop top housing and mixed use developments.

5 Major Development

For the purpose of this Part of the draft WDCP, 'major' developments include:

- i. new residential developments for attached dwellings, multi dwelling housing, residential flat buildings, seniors housing, boarding houses and hostels exceeding 300m² and 12 persons, shop top housing and mixed use developments
- ii. the erection of new buildings exceeding 1,000m², including commercial, industrial, institutional and other non residential buildings

- iii. substantial redevelopment, refurbishment, or conversion of an existing building

Notes:

- Redevelopment is generally regarded as ‘substantial’ if the proposal will result in more than a 10% increase in the ‘gross floor area’.
- Depending on the size and scale, and any likely impacts, an Authorised Office may determine that a proposal is regarded as ‘major’ development.
- An Authorised Officer is a Council employee that has been granted delegated authority to make decisions on behalf of Council
- Institutional and non-residential buildings include; health service facilities, recreation facilities, centre-based child care facilities, community facilities, a place of public worship, and any other miscellaneous developments.

5.1 Parking and traffic studies

All new major developments and developments that involve substantial alterations and additions are required to submit a Parking and Traffic Impact Assessment report with the development application. A Parking and Traffic Impact Assessment report may also be required for a change of use which is likely to have adverse traffic and/or on-street parking impacts.

The report is required to assess the parking and traffic impacts of the development on the surrounding arterial and local road network, and identify any external infrastructure requirements for the proposed development.

Note:

- Any traffic or parking counts undertaken for a Parking and Traffic Impact Assessment report shall not be carried out during school holiday periods.

5.2 Off-street loading/unloading facilities

All new major commercial, retail and industrial developments, and developments that involve substantial redevelopment with a floor area in excess of 500m² for commercial/retail developments and 1,000m² for industrial developments, are required to make adequate provision for off-street loading and unloading facilities. A loading/unloading bay/dock for these types of developments must comply with the following controls:

- i. loading bay dimensions must conform with AS 2890.2
- ii. on-site turning areas must be provided to ensure service and delivery vehicles can enter and leave the site in a forward direction (the swept path design templates shown in AS 2890.2 must be used to determine the layout of service areas)
- iii. minimum headroom shall be in accordance with the requirements of AS 2890.2
- iv. adequate provision must be made for garbage compactor units
- v. internal waste collection areas must have a headroom clearance of at least 6.6m
- vi. splays must be provided to the loading bay areas and at the driveway to ensure adequate sight distances for pedestrians

For other existing or smaller commercial, retail and industrial developments, including change of use, the size and number of loading bays/docks will depend on the type, size and scale of the proposed development, having regard to: frequency of deliveries; size and bulk of goods; size of truck; availability of on-street loading zones; and, intended use of the commercial, retail or industrial premises. As a minimum, provision should be made for a small rigid vehicle (SRV) to access the site.

Note:

- The Statement of Environmental Effects or the Parking and Traffic Impact Assessment Report must include details of the anticipated volume and frequency of deliveries, and the size of vehicles necessary to service the proposed development.

5.3 Visitor car parking

The visitor car parking rates in the Chatswood CBD, St Leonards precinct and the Artarmon railway precinct are maximum rates. Visitor car parking spaces outside these areas, including MPTR, are target rates.

All visitor car parking spaces must be grouped together, sign posted and provided in a convenient and readily accessible location.

5.4 Accessible car parking for people with a disability

All new developments and significant alterations and additions to major developments must, as a minimum, provide accessible car parking spaces for people with a disability in accordance with Section D3.5 of the Building Code of Australia (BCA) under the National Construction Code (NCC).

For Class 2 buildings which contain two or more sole occupancy units, the required number of accessible spaces is calculated on the number of adaptable units required for that development (please refer to Section 4.2.8 under Part B of the draft WDCP 2021 to determine the number of adaptable units required for medium and high-density housing).

The NCC identifies the class of building for different types of development. A guide to the Building Classifications is provided in **Attachment 4**.

The required number of accessible car parking spaces is provided in **Table 4**.

Accessible spaces must be clearly marked and provided in a communal car parking area. These spaces are not to be allocated to any individual unit or tenant.

There must be a continuous accessible path of travel from all accessible parking spaces to the entrance of the premises. In basement car parking areas, lifts are required to provide access to all levels.

Notes:

- If no parking is proposed, the minimum number of accessible spaces should be provided in accordance with Table 1.
- Accessible car parking spaces must comply with the design requirements of AS/NZS 2890.6.
- Where the total number of accessible spaces is not a whole number, the number of spaces required is to be rounded up.
- The required number of accessible car spaces for unspecified developments will be assessed on the individual merits of the proposal, having regard to the nature and scale of the proposed development.
- Wherever practicable, accessible car parking spaces should be provided for all developments, including a change of use.

5.5 Stack car parking

Stack or tandem car parking describes the situation where one or more vehicles are required to be moved to allow another vehicle to enter or exit a car space. Such car parking shall only be permitted if the affected vehicles are allocated to the same owner or tenant of residential, commercial, retail or industrial premises, providing there are no safety issues and not more than 25% of vehicles are provided in a stacked parking arrangement.

Notes:

- Stack or tandem car parking will generally only be considered for employee vehicles associated with low turnover commercial, retail and industrial uses having less than a total of 12 car parking spaces.
- Stack or tandem car parking is not permitted for accessible or visitor car parking.
- Adequate area to manoeuvre vehicles in a stacked parking arrangement must be available on site for all major residential, commercial, retail and industrial developments.

5.6 Electric vehicles

There are a limited number of public electric vehicle charging stations, however as demand for such stations is set to increase, Council is committed to extending this infrastructure as suitable locations are identified. At the same time, it is also necessary to make provision for electric vehicle charging on private properties and as such, all new major developments or significant alterations and additions to major developments will be required to deliver the capacity for all parking spaces to have EV charging.

Two types of electric vehicle charging levels have been considered:

- 'Level 1' consisting of a regular single phase power point and
- 'Level 2' consisting of a single or three-phase power point with a power range of 7kW. As defined by the NSW Electric and Hybrid Vehicle Plan, Future Transport 2056 (January 2019). 'Level 2' electric vehicle charging provides a faster more stable charging option.

The controls will require all types of residential and non-residential development to be designed and constructed with appropriate electrical infrastructure to allow for the future installation of EV charging points.

Electric circuitry to accommodate 'Level 2' electric vehicle charging points must be integrated into all off-street parking in new residential and non-residential development to ensure that 100% of car spaces can install EV Charging points in the future. This must include:

- Adequate electrical capacity and infrastructure for the EV charging point system; and
- Providing either underground cables or cable trays sufficient to accommodate electric circuitry to each car space.

Minimum electric circuitry for a 'Level 2' electric vehicle charging point is required to be:

- For privately available spaces: 'Level 2' slow – single phase with 7kW power; and

- For publicly available spaces: 'Level 2' fast – three-phase with 11-22kW power.

The installation of a 'Level 2' EV charging point is encouraged for all new dwelling houses and dual occupancies.

All new residential and non-residential development (other than dwelling houses or dual occupancies) must provide 1 parking space or 10% of all parking spaces – whichever is greater – to have a 'Level 2' EV charging point installed.

5.7 Car share spaces

There is a growing trend for individuals and businesses to use private car share vehicles as an economical alternative to car ownership. Car share schemes are generally more viable in locations where private car ownership is discouraged, such as the Chatswood CBD, St Leonards precinct and the Artarmon railway precinct. Therefore, there may be opportunities to provide dedicated on-site parking spaces for car share spaces for large developments.

At this stage Council does not require a dedicated car share space to be provided for a new development. However, if a dedicated car share space is nominated on the site as part of a proposed development, Council may allow a further reduction in the number of car parking spaces required for that development. The reduction in the actual number of car spaces will be assessed on the individual merits of the application.

Note:

- Details will need to be included in a Travel Demand Management Plan and include information such as, strata levies for dedicated spaces for the exclusive use of building occupiers or easements to allow access to car share spaces by the general public.

5.8 Autonomous vehicles

The use of autonomous vehicles is a reality in the foreseeable future. Production and active testing is currently underway in major cities around the world to ensure the safe and efficient operation of these vehicles. Therefore, appropriate infrastructure to support the use of autonomous vehicles needs to be put in place for new developments.

Autonomous vehicles rely on the internet to operate. Therefore, internet access must be made available to all car parking areas, including basement car parking areas.

Note:

- As new technology evolves, additional requirements may be required to support the safe and efficient operation of autonomous vehicles

5.9 Additional controls for medium and high-density residential accommodation

The following additional controls apply to attached dwellings exceeding 2 storeys, multi dwelling housing, residential flat buildings, seniors housing, boarding houses and hostels exceeding 300m² and 12 persons, shop top housing, and mixed use developments comprising residential units:

- i. visitor parking must be suitably grouped, clearly marked and conveniently located
- ii. visitor parking is to be designed to comply with Class 2 Medium Term parking in accordance with AS/NZS2890.1

- iii. any security for residents' vehicles must be installed to ensure that it does not impede access to visitor spaces
- iv. visitor car parking may be located forward of the building line providing it does not detrimentally impact on the streetscape
- v. all above ground car parking areas must be well landscaped and include the use of absorptive surfaces such as pavers, 'grasscrete' etc. to soften the appearance of these areas
- vi. resident visitor car parking spaces must be available at all times for shop top housing and mixed use developments
- vii. the provision of car wash bays is not encouraged; however, where a car wash bay is proposed, the space must be connected to the sewer and serviced by recycled or tank stored water (hydraulic details are required to be provided with the development application)
- viii. provision must be made for removalist vans to park, load and unload onsite for all developments having in excess of 12 units or where no kerbside parking is available in front of the site on a classified road
- ix. pedestrian access to dwellings should be separate from vehicular access to the site
- x. for residential accommodation comprising between 6 and 18 units, bulk waste storage bins are required to be provided on the site and adequate provision must be made for garbage vehicles to enter and leave the site in a forward direction
- xi. for residential accommodation comprising 4 or more storeys or 18 or more units with basement car parking, bulk waste storage bins are required to be provided in the basement with adequate height and provision for garbage vehicles to enter and leave the site in a forward direction

5.10 Additional controls for a centre-based child care facility

A centre-based child care facility includes a building or place that provides long day care, occasional child care, out of hours school care, preschool or an approved family day care venue.

The following additional controls apply to all types of child care centres:

- i. access driveways widths are to be in accordance with AS/NZS 2890.1
- ii. car parking is to be provided on site for setting down and picking up children
- iii. vehicles must enter and leave the site in a forward direction
- iv. vehicle parking must be separated from any outdoor play areas to ensure safety and vehicle emissions do not affect children
- v. pedestrian access must be separated from the access and manoeuvring of vehicles in the driveway and car parking areas

The following controls apply to pre-school and long day care centres in residential areas outside the Chatswood CBD:

- i. a minimum 20m frontage is required or a corner block location in all residential areas to allow for a one-way drive through entry and exist
- ii. a drive-through drop-off and pick-up area is required at the rate of 1 car space per 10 children within the driveway
- iii. the width of the driveway must allow for a vehicle exiting the site to pass a parked vehicle

The following controls apply to child care centres in the Chatswood CBD

- i. staff parking is to be clearly marked to reflect that they are for the exclusive use of staff associated with the operation of the Child Care Centre between 7am and 7pm
- ii. a vehicle drop-off/pick-up area is to be provided at the rate of one space per 8 children
- iii. if the drop-off/pick-up area is in a basement car park area, it must be located within 20 metres of a lift providing direct access to the child care centre
- iv. where the drop-off/pick-up area is not provided on-site, the matter will be referred to Council's Traffic Committee for consideration
- v. the drop-off/pick-up area should be clearly marked to reflect that they are for the exclusive use of the childcare users between the peak am and pm hours of the centre (generally between 7.00am-9.30am and 4.00pm-6.30pm)

Note:

- Depending on the size, scale, and location of the child care centre in a commercial area outside of the Chatswood CBD, the number of car spaces and any other controls will be considered on the individual merits of the proposed development.

6 Alternative and sustainable transport strategies

Council encourages alternative and sustainable transport strategies to reduce the use and reliance on motor vehicles as the principle mode of transport.

Alternative transport strategies can be achieved by incorporating a Travel Demand Management Plan (TDMP) in the business operation. This plan is often described as a '*Green Travel Plan*'.

A TDMP provides details on how to modify travel decisions to and from a business premises so that more desirable modes of transport are used, such as bicycles, car-pooling, mini-bus pick-up/drop off, provision of a car share space; and in doing so, reduce the adverse impacts of car travel.

Some strategies that may be incorporated into a TDMP include:

- i. providing information to staff on public transport options available
- ii. providing staff with a discount or subsidy on public transport costs
- iii. providing a bus to pick up and drop off staff to the nearest railway station
- iv. providing staff with cycling allowances, loans and/or insurance
- v. provide secure bicycle storage, and shower and change room facilities
- vi. introduce a staff car sharing scheme for fleet vehicles
- vii. use private transport services or public transport for work related journeys
- viii. create a car pool scheme to and from work and provide priority parking for staff who car pool with 2 or more passengers

Subject to a written agreement and conditions of consent to implement a TDMP, Council may reduce the required number of car parking spaces for a development.

7 Laneway widening

Increased urban development often requires the local road network to be upgraded to cope with additional traffic and improve access and traffic circulation. Council has identified a number of laneways that need to be widened to accommodate future

commercial and residential developments. Affected properties are required to dedicate a portion of land when redevelopment occurs.

The affected properties are identified in **Attachment 5**.

Notes:

- Redevelopment of many properties has already resulted in the dedication of land for future lane widening purposes.
- Additional road works may be required to mitigate associated traffic impacts arising from a proposed development.
- The '*gross floor area*' or '*floor space ratio*' is calculated on the existing site area (prior to dedication of land).

TABLE 1: PARKING REQUIREMENTS

<i>Notes:</i>			
	<ul style="list-style-type: none"> If a specific land use is not included in the table below, the car parking requirements will be assessed on the merits of the application (a parking and traffic impact assessment report may need to be submitted to determine the number of car spaces required to be provided). All requirements shown in m² are 'gross floor areas' in accordance with the definition under the dictionary of draft WLEP 2021. 		
Land use category	Chatswood CBD and St Leonards precinct (maximum rates)	Artarmon railway precinct (maximum rates)	All other areas, including MPTR (target rates)
Residential			
a. dwelling houses, attached and detached dual occupancies	1 space/dwelling	1 space/dwelling	1 space/dwelling with 2 bedrooms or less 2 spaces/dwelling with 3 bedrooms or more
b. manor houses, attached dwellings and multi dwelling housing not exceeding 2 storeys or more than 4 dwellings in the R3 zone	0.5 space per studio and 1, 2, 3 or more bedroom units 1 visitor space per 7 dwellings	0.5 space per studio and 1 and 2 bedroom units 1 space per 3+ units 1 visitor space per 7 dwellings	0.5 space per studio and 1 bedroom unit 1 space per 2 and 3 or more bedroom units 1 visitor space per 7 dwellings
c. affordable housing, including boarding houses and group homes	the minimum number of car parking spaces shall comply with the provisions of <i>State Environmental Planning Policy (Affordable Rental Housing) 2009</i>		
d. seniors housing, including residential care facility, hostels and self-contained dwellings	the minimum number of car parking spaces shall be provided in accordance with provisions of <i>State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004</i>		
e. multi dwelling housing, residential flat buildings and attached dwellings with more than 2 storeys and 4 or more dwellings	0.5 space per studio and 1, 2, 3 or more bedroom units 1 visitor space per 7 dwellings	0.5 space per studio and 1 and 2 bedroom units 1 space per 3+ units	0.5 space per studio and 1 bedroom unit 1 space per 2 and 3 or more bedroom units

		1 visitor space per 7 dwellings	1 visitor space per 7 dwellings
f. dwellings in shop top housing and mixed-use developments (Note: additional car parking for the commercial component shall be provided in accordance with the requirements for commercial and retail premises)	0.5 space per studio and 1, 2, 3 or more bedroom units 1 visitor space per 7 dwellings	0.5 space per studio and 1 and 2 bedroom units 1 space per 3+ units 1 visitor space per 7 dwellings	0.5 space per studio and 1 bedroom unit 1 space per 2 and 3 or more bedroom units 1 visitor space per 7 dwellings
Casual residential			
a. hotels, motels and serviced apartments (Note: If a restaurant or function room is included, the parking rates for that use is to be in accordance with the relevant parking rate)	0.25 space/room	0.75 space per room	0.75 space per room
b. bed and breakfast accommodation	the minimum number of car parking spaces shall comply with the provisions of <i>State Environmental Planning Policy (Exempt and Complying Development Codes) 2008</i>		
Office/Business/Retail			
a. Office and business premises	1 space/400m ²	1 space/75m ²	1 space/60m ²
b. retail premises (including supermarkets)	1 space/70m ²	1 space/50m ²	1 space/33m ²
c. specialised retail premises (Note: these controls apply to garden centre, plant nursery, hardware and building supplies, landscaping material supplies, timber yards and the like)	1 space/150m ² of showroom and outdoor areas accessible to the public	1 space/125m ² of showroom and outdoor areas accessible to the public	1 space/100m ² of showroom and outdoor areas accessible to the public
d. wholesale supplies (in a business zone)	1 space/70m ²	1 space/50m ²	1 space/33m ²

Motor vehicle services			
a. service stations	5 holding bays per service/workshop bay; plus office and retail space to be provided in accordance with the office and retail rates		
b. vehicle repair stations	5 holding bays per service/workshop bay; plus office space to be provided in accordance with the office rates		
c. vehicle sales and hire premises	1 space per 200m ² of display area for customer parking; plus 5 holding bays per service/workshop bay; plus office space to be provided in accordance with the office rates		
Child care centres			
a. long day centres	1 space/20m ²	1 space/20m ²	1 space/20m ²
b. pre-school child care centres	1 space/66m ²	1 space/66m ²	1 space/32.5m ²
c. occasional care and out-of-school care centres	1 space/26m ²	1 space/26m ²	1 space/20m ²
Food and beverage			
a. food and drinks premises (Note: includes restaurant, café and take away food and drinks premise)	1 space/50m ²	1 space/50m ²	1 space/33m ²
b. pubs	1 space/50m ²	1 space/50m ²	1 space/33m ²
Health and community services			
a. hospitals	3 spaces per bed		
b. medical centres (Note: includes consulting rooms, medical centres and veterinary hospitals/clinics)	2 spaces per consulting room		
Industrial			
a. industrial activity, including high technology industries	1 space/100m ² of factory floor area (including any storage areas); plus 1 space/60m ² of office area and showroom area accessible to the public		
b. self-storage units	1 space/60m ² office space plus 2 visitor spaces provided at the front if the premises in a publicly accessible area.		
c. warehouse, distribution centres, and wholesale supplies (in an industrial zone)	1/300m ² of internal and external storage areas plus 1 space per 60m ² of office space		

Other land uses	
a. sex service premises	2 spaces per room
b. funeral home or chapel	1 space per 10 seats

TABLE 2: MOTORBIKE PARKING

<i>Notes:</i>		
<ul style="list-style-type: none"> • Motorcycle for land uses not included in the table below will be assessed on the merits of the application • As a minimum, one space for residents and one visitor space is required for residential development comprising 10 or more dwellings • As a minimum, one space for employees and one visitor space is required for commercial, retail, industrial and other non-residential buildings exceeding 500m² • Visitor spaces are included in the total number of spaces required 		
	Chatswood CBD, St Leonards precinct and the Artarmon railway precinct	All other areas, including MPTR
Business Zones	1 space per 20 car parking spaces 1 visitor space per 10 motorcycle spaces	1 space per 30 car parking spaces 1 space per 15 motorcycle spaces
Industrial zones	1 space per 20 car parking spaces 1 visitor space per 10 motorcycle spaces	1 space per 30 car parking spaces 1 space per 15 motorcycle spaces
Residential zones and the residential components of shop top and mixed-use developments	1 space per 20 car parking spaces 1 space per 10 motorcycle space	1 space per 20 car parking spaces 1 space per 10 motorcycle spaces

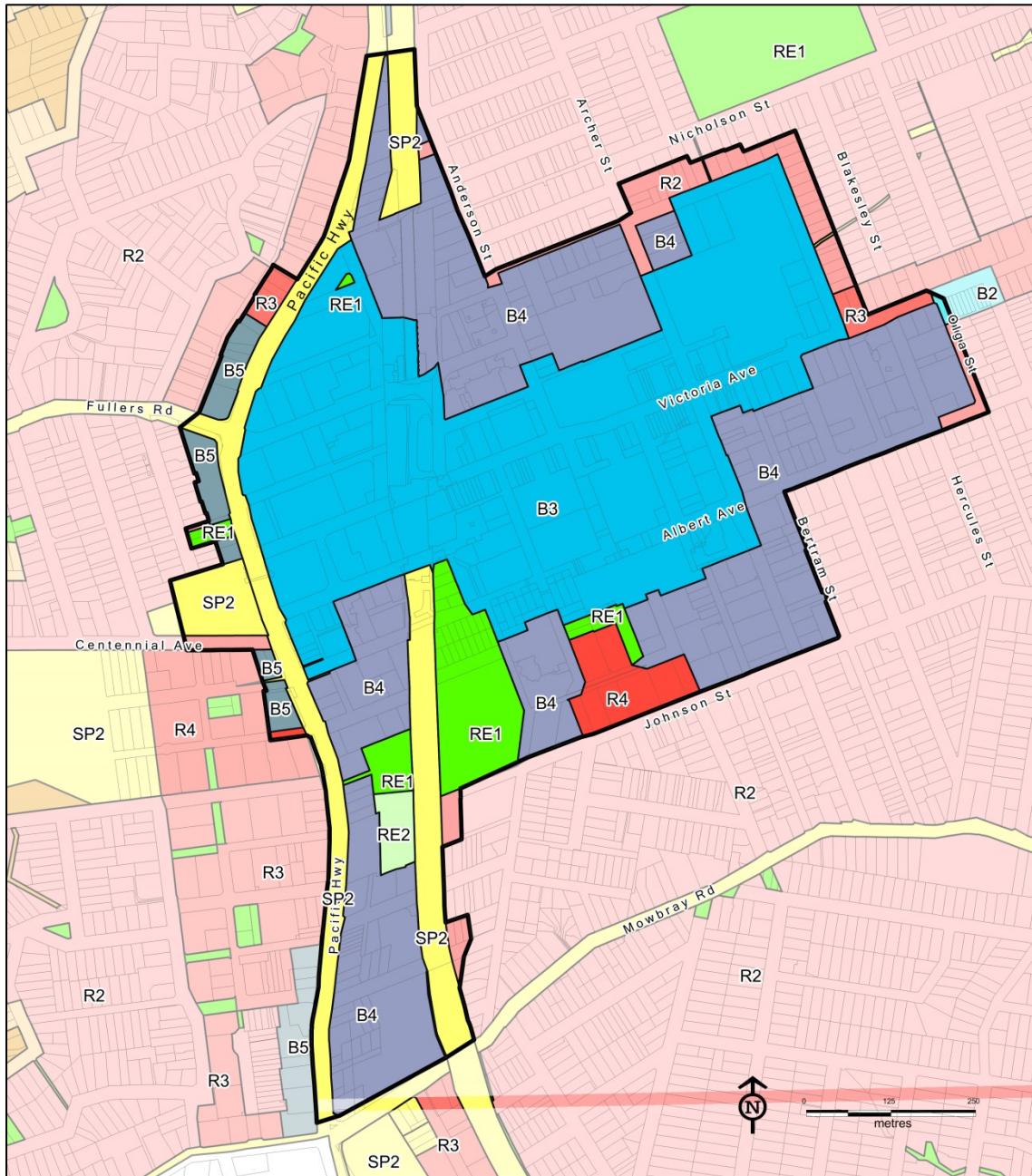
TABLE 3: BICYCLE PARKING AND END OF TRIP FACILITIES

<i>Note:</i>		
<ul style="list-style-type: none"> All bicycle parking and end of trip facilities for land uses not included in the table below will be assessed on the merits of the application. If no car parking or reduced car parking is provided in the Chatswood CBD, St Leonards precinct or the Artarmon railway precinct, bicycle parking and end of trip facilities must be provided and calculated on the maximum number of car parking spaces that would otherwise be required. 		
a. BICYCLE PARKING		
	Chatswood CBD, St Leonards precinct and the Artarmon railway precinct	All other areas, including MPTR
Business Zones	1 Class A or B bicycle space per 10 car parking spaces Min 1 Class C bicycle space or 1 space per 10 Class A or B bicycle spaces, whichever is the greater	1 Class A or B bicycle space per 20 car parking spaces Min 1 Class C bicycle space or 1 space per 20 Class A or B bicycle spaces, whichever is the greater
Industrial zones	Min 1 Class A or B bicycle space or 1 space per 10 car parking spaces, whichever is the greater Min 1 Class C bicycle space or 1 space per 10 Class A or B bicycle spaces, whichever is the greater	Min 1 Class A or B bicycle space or 1 space per 20 car parking spaces, whichever is the greater Min 1 Class C bicycle space or 1 space per 20 Class A or B bicycle spaces, whichever is the greater
Residential zones and the residential components of shop top and mixed-use developments	1 Class A or B parking spaces per 10 units 1 Class C (rails/racks) per 10 apartments for visitors	1 Class A or B parking spaces per 20 units 1 Class C (rails/racks) per 20 apartments for visitors
b. END OF TRIP FACILITIES		
<ul style="list-style-type: none"> For non-residential developments: one shower per 5 bicycle parking spaces (Class A or B); one change room per shower; and two personal lockers per bicycle space. Where more than one shower or change room is required, separate male and female facilities must be provided 		

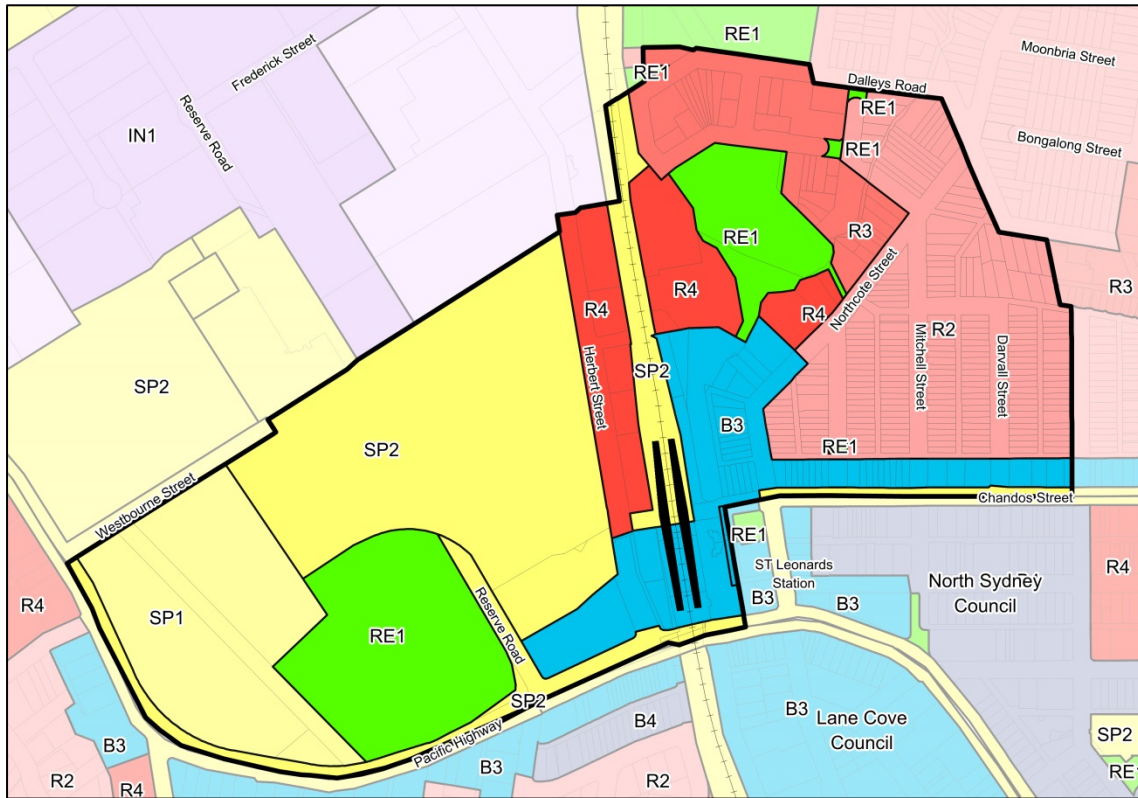
TABLE 4: ACCESSIBLE CAR PARKING

<i>Notes:</i>	
<ul style="list-style-type: none"> • Accessible parking is included in the total number of car parking spaces required; however, if no parking is required, the minimum number of employee/resident and visitor spaces must be provided. • Additional accessible car parking spaces may be required in accordance with Section D3.5 of the BCA under the NCC. • If the requirements for accessible parking in accordance with Section D3.5 of the BCA under the NCC change, the accessible car parking controls under this Part of the draft WDCP also change accordingly. • Applicants may apply a 'Performance Solution' under the BCA to satisfy the provision of accessible car parking in lieu of the 'Deemed-to-Satisfy Solution' requirements. 	
Class of building	Number of accessible spaces
Class 1a	Nil
Class 1b	1 space for each accessible or adaptable unit
Class 2	Whichever is the greater: <ul style="list-style-type: none"> a. Min 1 resident and 1 visitor space for developments comprising 10 or more units b. 1 space/4 accessible or adaptable units + 1 visitor space for developments comprising 50 or more car parking spaces
Class 3	Whichever is the greater: <ul style="list-style-type: none"> a. Min 1 resident and 1 visitor space for developments exceeding 300m² and 12 persons b. 1 space for each accessible or adaptable unit (10% of spaces must be provided as a visitor space) c. 3% of the total car parking spaces(10% of spaces must be provided as a visitor space)
Class 4	1 accessible space
Class 5, 6, and 8	In parking areas with 5 or more spaces, whichever is the greater: <ul style="list-style-type: none"> a. 1 employee and 1 visitor space b. 3% of the total car parking spaces (10% of spaces must be provided as a visitor space)
Class 7 & 9b	In parking areas with 5 or more spaces, whichever is the greater: <ul style="list-style-type: none"> a. 1 space b. 3% of the total car parking spaces
Class 9a	Whichever is the greater: <ul style="list-style-type: none"> a. 1 employee and 1 visitor space b. 4% of the total car parking spaces (10% of spaces must be provided as a visitor space)

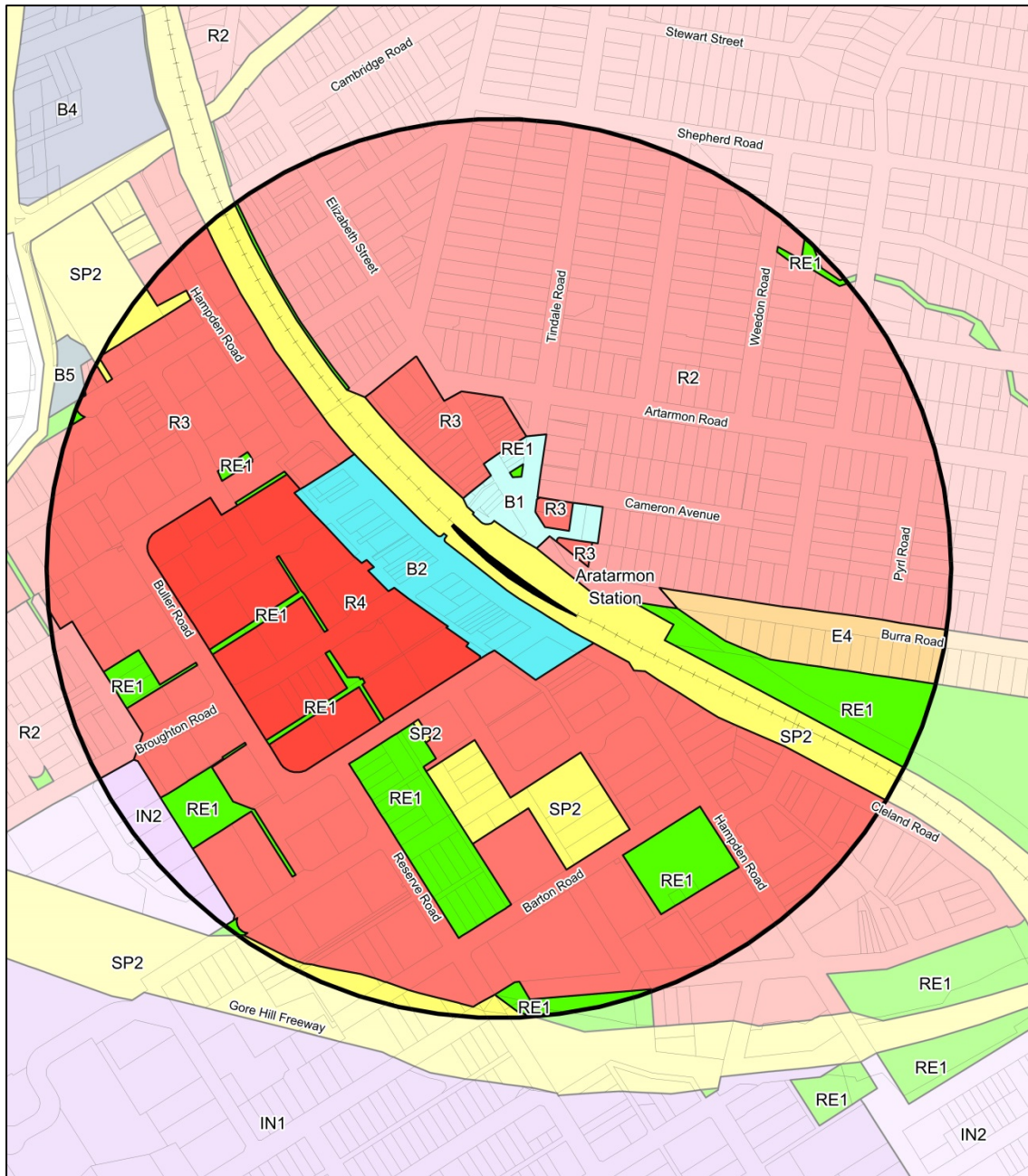
ATTACHMENT 1: CHATSWOOD CBD



ATTACHMENT 2: ST LEONARDS PRECINCT



ATTACHMENT 3: ARTARMON RAILWAY PRECINCT



ATTACHMENT 4: BCA BUILDING CLASSIFICATIONS

The following table identifies the class of building and the different types of development:

Class of Building	Types of development
Class 1a	Single dwellings. This includes a detached house or semi-detached dwellings, semi-detached dual occupancies, terraces, townhouses and villa units with fire resisting walls and no basement carpark.
Class 1b	Boarding house, guest house, hostel, or the like, not exceeding 300m ² and not more than 12 residents.
Class 2	Building containing two or more sole occupancy units. This includes dual occupancies/duplexes (where one unit is above the other), serviced apartments with a kitchen, apartments in shop-top housing, and residential flat buildings.
Class 3	A residential building, other than a Class 1 or 2 building, including; boarding house, hostel, backpackers accommodation, and retirement villages.
Class 4	A single dwelling within a class 5, 6, 7, 8 or 9 building.
Class 5	An office building used for professional or commercial purposes, excluding Class 6, 7, 8 or 9 buildings.
Class 6	Shops and buildings used for supply of services directly to the public, including; café, restaurant, hairdresser's shop, public laundry, showroom, and service station.
Class 7a	A carpark.
Class 7b	Warehouses, storage/display of goods for sale by wholesale.
Class 8	A laboratory or building (factory) for the production, assembly, altering, repairing, packing, finishing or cleaning of goods for trade, sale or gain.
Class 9a	Healthcare building.
Class 9b	Assembly building including halls, libraries, schools, early childhood centres, church, theatre, nightclub/disco, cinema, and the like.
Class 9c	Aged care building.
Class 10a	Non habitable building such as private garage, carport, shed or the like.
Class 10b	Non habitable structures such as fences, retaining walls, swimming pools, or the like.

Further information can be found at:

<https://www.abcb.gov.au/Resources/Publications/Education-Training/Building-classifications>

ATTACHMENT 5: LANEWAY WIDENINGS

Lane/ Road name	Properties affected	Suburb	Widening required (in relation to laneway)
George Brain Lane	<ul style="list-style-type: none"> • 327-341 Penshurst Street • 72 Victoria Avenue • 72-80 and 92-96 Victoria Avenue 	Chatswood	<ul style="list-style-type: none"> • 1.2m from west side of west leg • 1.2m from west side of east leg • 2m from north side of southern leg
Stirling Lane	202-212, 218-224 Sydney Street, 334-348 and 352 Penshurst Street	Chatswood	2m from east side
Thomas Lane	73 Albert Avenue and 2 Thomas Street	Chatswood	3m widening on western side
View Lane, between Leplastrier Lane and Fullers Road	734, 754, 760, and 772-778 Pacific Highway 1-7 and 25 View Street	Chatswood	2m from both sides
View Lane, north of Leplastrier Lane	786, 794, 812A-832 Pacific Highway, 49 View Street and 8-10 View Lane	Chatswood	2m from east side
Whitton Road between Moriarty and Fehon Roads	2 Fehon Road (Lot 3 DP 171741)	Chatswood	3m from east side
Burke Lane, between Waters Road and Station Street	25 Station Street, 36A-40 Park Road and 54-56 Waters Road	Naremburn	1.2m from north side
Kershaw Lane, parallel to Willoughby Road and Wheatleigh Street	141 and 155 Willoughby Road	Naremburn	1.2m from west side
Lawson Lane west of Oxley Street	2, 4 and 6 Lawson Lane	Naremburn	1.2m from north side
Appleton Lane, between Euroka and Bellambi Streets	157-173 and 179-181 Sailors Bay Road, 10 Kiola Road and Lot 1 DP 1048708	Northbridge	6 metre continuation of existing laneway between Euroka and Bellambi Streets
Jeffery Lane, east of Woonoona Road	288-294 Sailors Bay Road	Northbridge	1.2m from north side
Wagschall Lane	262-278 Sailors Bay Road	Northbridge	1.2m from north side
Dougherty Lane	40-44 Forsyth Street	North Willoughby	1.2m from north side
Iceworks Lane, between Alexander Ave and McClelland Street	181-195 High Street	North Willoughby	1.2m from west side
Adamson Lane, between Hudson Ave and Harris Street	569-593 Willoughby Road	Willoughby	1.2m from west side
Harris Lane, between Harris Street and Frenchs Road	12 Harris Street, 525-535, 545-547 and 553 Willoughby Road	Willoughby	2m from west side
Nathan Lane	449, 453- 465 and 485 Willoughby Road	Willoughby	1m from west side
Osborn Lane, off Harris Lane	6-8A Harris Street	Willoughby	1.2m from north side
Tulloh Lane, west of Tulloh Street	46-52 Frenchs Road and 68 Tulloh Street	Willoughby	2m from north side
Tulloh Lane, east of Tulloh Street	30-42 Frenchs Road	Willoughby	1.2m from north side

PART G – Vegetation Management

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PART G – Vegetation Management

1 Introduction

This component of *Willoughby Development Control Plan (WDCP)* is made under Part 3 of *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 (Vegetation SEPP)*. It is supported by the *Vegetation Management Guidelines* which can be viewed on Council's web site.

1.1 Aim

The specific aims of this plan are to:

- i. declare vegetation that requires a landholder to seek a permit for removal under Clause 9 and 10 of the Vegetation SEPP
- ii. promote best practice and sustainable vegetation management on development sites

1.2 Objectives

The objectives of this plan are to:

- i. provide safe and enjoyable living spaces for residents and visitors
- ii. prevent unnecessary damage or removal of trees and other vegetation
- iii. maintain and enhance the urban landscape
- iv. recognise and protect vegetation considered significant due to heritage, cultural, social and ecological criteria
- v. enhance species diversity, connectivity and recovery of fragmented habitat
- vi. increase tree canopy to mitigate urban heat island effects
- vii. facilitate the removal of undesirable exotic plants, noxious weeds, and any other inappropriate plantings, and replace with suitable vegetation species
- viii. provide a consistent framework to assess applications that require a permit for clearing vegetation and pruning or removal of trees
- ix. provide a consistent framework to assess development applications for development sites that require clearing vegetation and pruning or removal of trees

2 Permit required for clearing of vegetation

2.1 Application for permit

A permit from Council is required to clear vegetation and prune or remove a tree if:

- i. the tree has the following dimensions:
 - a. a height exceeding 4 metres, or
 - b. a trunk girth (circumference) exceeding 600 millimetres measured at 1.4 metres above ground level, or
 - c. a crown spread exceeding 3 metres
- ii. the tree is a locally indigenous species that is representative of the original vegetation of the area
- iii. any vegetation that is located within a defined wildlife corridor or has known wildlife habitat value

- iv. the tree is visually prominent from the street or surrounding properties and makes a positive contribution to the visual character of the locality

Note:

- a copy of the approval permit must be held on site during the course of works, and shall be produced by the person carrying out the works on request by a Council Officer
- a permit cannot be granted to clear native vegetation that exceeds the biodiversity offsets scheme threshold (see Clause 10(2) of the Vegetation SEPP)

2.2 Permit not allowed

A permit cannot allow the clearing of vegetation, pruning or removal of a tree if:

- i. the vegetation forms part of a heritage item listed in Schedule 5 under Part 1 of *Draft Willoughby Local Environment Plan 2020*
- ii. the vegetation is within a heritage conservation area listed in Schedule 5 under Part 2 of *Draft Willoughby Local Environment Plan 2020*
- iii. the vegetation forms part of an Aboriginal object or is within an Aboriginal place of heritage significance
- iv. the vegetation is listed as an item under the *Willoughby Natural Heritage Register*

3 Permit required for clearing of vegetation

A development application is required to be submitted for Council's consideration under Part 4 of the *Environmental Planning and Assessment Act 1979* to clear vegetation, prune or remove a tree if a permit is not allowed under Clause 9.2.2, unless otherwise exempt under Clause 9.4 of this plan.

4 Exemptions

4.1 Permit of development application not required

A permit or development application to carry out clearing of vegetation, pruning or removal of a tree is not required if:

- i. Council is satisfied that the vegetation or tree is dying or dead and is not required as habitat for native animals
- ii. Council is satisfied that the tree is a risk to human life or property
- iii. Council is satisfied that the proposed activity is of a minor nature or is for the maintenance of the heritage item, Aboriginal object, Aboriginal place of heritage significance or heritage conservation area, and any such clearing, pruning or removal of a tree will not adversely affect the heritage significance of the heritage item, Aboriginal object, Aboriginal place of heritage significance or heritage conservation area

Notes:

- notwithstanding the above, evidence that a tree is dying or dead, is a risk to human life or property, is of a minor nature or required for the maintenance of a heritage item, Aboriginal object, Aboriginal place of heritage significance or heritage conservation area is required
- in exceptional circumstances a permit will not be required to remove a tree where Council is satisfied that the risk to human life or property is imminent

4.2 Other Exemptions

A permit or development application for clearing vegetation, pruning or removal of a tree is not required in the following circumstances:

- i. the vegetation or tree does not fall into any of the criteria listed in Clause 9.2.1 of this plan
- ii. selective pruning for up to a total of 10% of an individual tree's crown over a 5-year period
- iii. any vegetation declared a weed under the *Biosecurity Act 2015*
- iv. pruning or removal of recognised horticultural varieties of fruit trees grown for fruit production
- v. clearing of any vegetation or removal of trees lawfully conducted in accordance with the bushfire 10/50 rules, as per the requirements of the NSW Rural Fire Service found at <https://www.rfs.nsw.gov.au/plan-and-prepare/1050-vegetation-clearing/tool>
- vi. pruning or removal of the species listed in Attachment 1 (Undesirable species exempt from permit approval)
- vii. the clearing of vegetation, pruning or removal of a tree is on land under the care, control or management of Council and Council is completing the work
- viii. the clearing of vegetation, pruning or removal of trees due to development that requires a consent under Part 4.2 of the *Environmental Planning and Assessment Act 1979* (please refer to Section 9.5 of this plan) '
 - a. *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*
 - b. *Biodiversity Conservation Act 2016*
 - c. *Rural Fires Act 1997*
 - d. *Electricity Supply Act 1995*
(trees on public land affecting power lines are managed by Ausgrid and works must only be carried out by Ausgrid and cannot be carried out by residents or arborists not engaged by Ausgrid. For further information call 13 13 65, or visit <https://www.ausgrid.com.au/In-your-community/Tree-trimming>)
 - e. *State Emergency Services Act 1989*
 - f. *Water Management Act 2000*
 - g. *Roads Act 1993*
- ix. the clearing of vegetation, pruning or removal of trees authorised under other legislation, including:

Notes:

- exemptions for clearing vegetation, pruning and removal of trees only apply to private land
- the written consent of the property owner is required if the applicant is not the owner
- it is recommended that any removal or pruning of trees is carried out by a suitably qualified arborist (there are significant penalties for wrongful removal or excessive pruning of trees)

4.3 Controls for pruning

Pruning works allowed in accordance with Clause 9.4.2(ii) of this plan must comply with Australian Standard AS 4373, and shall only consist of the following pruning classes:

- i. crown lifting: removal of the lower branches
- ii. crown thinning: selective removal of branches that does not alter the overall size of the tree
- iii. deadwooding: removal of dead branches
- iv. formative pruning: pruning of young and established trees with the general aim of directing plant growth and/or developing a sound structure
- v. pollarding: a specialised pruning technique that establishes branches ending in a pollard head of buds and vigorous shoots
- vi. reduction pruning: the removal of the ends of branches to lower internal lateral branches or stems in order to reduce the height and/or spread of the tree
- vii. remedial (restorative) pruning: the removal of damaged, diseased or lopped branches back to undamaged tissue in order to induce the production of shoots from latent or adventitious buds, from which a new crown will be established

5 Development Applications under Part 4.2 of the Environmental Planning and Assessment Act 1979

5.1 Development Applications

The clearing of vegetation, pruning or removal of trees due to development that requires a consent must be assessed as part of the development application.

Notes:

- 'development' includes:
- use of land,
- subdivision of land,
- the erection of a building,
- the carrying out of a work,
- the demolition of a building or work, and
- any other act, matter or thing that may be controlled by *Draft Willoughby Local Environmental Plan 2020*

5.2 Controls for development sites

The following controls apply to clearing vegetation, pruning or removal of trees:

- i. unless the clearing of vegetation or the pruning and removal of trees is exempt under Clause 9.4 of this plan, no vegetation or trees shall be cleared, pruned or removed until consent is obtained for the proposed development
- ii. the proposed development is to be sited and designed to retain and minimise the impact on any trees or any other significant vegetation
- iii. where an applicant demonstrates to Council's satisfaction that there is no other reasonable alternative design and removal of trees and vegetation is warranted, suitable replacement planting may be required
- iv. the landscape and/or architectural plans must identify the type and species of trees and vegetation to be retained or proposed to be removed, including those on adjoining sites within 5m of the boundary

- v. an arborist report prepared by a suitably qualified Arborist may be required to justify clearing vegetation, pruning or removal of trees (the report must include the condition of all trees and vegetation on the site)
- vi. where trees and vegetation proposed to be retained may be affected by construction works, including any trees or vegetation on public land, a Tree Protection Plan must be submitted with the development application

Note:

- for additional landscaping controls relating to heritage conservation areas and specific land uses such as residential accommodation, commercial, industrial, recreational or institutional developments, please refer to the relevant landscaping provisions of WDCP (institutional development includes child care centres, place of public worship and the like)

6 Replacement Trees

Where Council consents to the removal of an existing tree it will require the replanting of trees at a rate of 3:1.

Replacement trees are to be cared for by the land owner until established to a size which is covered by the vegetation controls.

If tree replacement is not possible, the applicant may be able to enter into a deed of agreement with Council for offset planting of trees on public land. The offset planting will require payment of a fee for each tree not replanted on the subject site.

The fee payable to Council is listed in its publication 'Fees and Charges'.

7 Vegetation Management Guidelines

This plan is supported by the *Vegetation Management Guidelines* (guidelines). The guidelines provide additional information that may assist applicants and their consultants to provide the appropriate level of information to satisfy the aims and objectives of this plan.

The guidelines can be viewed on Council's website at:

<https://www.willoughby.nsw.gov.au/Residents/Trees/Tree-and-vegetation-management>

ATTACHMENT 1 - Undesirable species exempt from permit approval

Common Name	Botanical Name	Restrictions
Cootamundra Wattle	<i>Acacia baileyana</i>	
Golden Wattle	<i>Acacia siligna</i>	
Box Elder Maple	<i>Acer negundo</i>	
Tree of Heaven	<i>Ailanthus altissima</i>	
Evergreen Alder	<i>Alnus jorullensis</i>	
Nettle Berry	<i>Celtis spp.</i>	
Camphor Laurel	<i>Cinnamon camphora</i>	Only if less than 10m in height
Cotoneaster (all species)	<i>Cotoneaster spp.</i>	
Leighton Cypress	<i>Cupressocyparis, leylandii</i> "Leighton Green"	
Loquat tree	<i>Eriobotrya japonica</i>	
Coral Tree	<i>Erythrina spp.</i>	
Rubber tree	<i>Ficus elastia and cvs.</i>	
Honey Locust	<i>Gleditsia triacanthos</i>	
Silky Oak	<i>Grevillea robusta</i>	
Privet (all species)	<i>Ligustrum spp.</i>	
Liquidambar	<i>Liquidambar styraciflua</i>	
African Olive	<i>Olea europaea var. africana</i>	
Canary Island Date Palm	<i>Phoenix canariensis</i>	Only if trunk is less than 7m in height
Poplar (all species)	<i>Populus spp.</i>	
Willow (all species)	<i>Salix spp.</i>	
Cocos Palm	<i>Syagrus romanzoffianum</i>	
Robinia	<i>Robina pseudocacia</i>	
Frangipani	<i>Plumeria spp.</i>	
Narrow-leaved Black Peppermint/Willow Peppermint	<i>Eucalyptus nicholii</i>	
Pyramid Tree/Sally Wood/Itchy Bomb Tree/Cow Itch Tree	<i>Lagunaria petersonia</i>	
Oleander	<i>Nerium oleander</i>	
Narrow-leaved Black Peppermint/Willow Peppermint	<i>Eucalyptus nicholii</i>	
Chinese Tallow	<i>Triadica sebifera</i>	
Umbrella Tree	<i>Schefflera spp.</i>	
Evergreen Ash	<i>Fraxinus griffithii</i>	

Part H: Heritage Items and Heritage Conservation Areas

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Part H: Heritage Items and Heritage Conservation Areas

1 Introduction

This Part applies to properties, places and heritage conservation areas subject to the provisions of Clause 5.10 Heritage Conservation of *Willoughby Local Environmental Plan (WLEP) 2012*. A list of heritage items and heritage conservation areas is in Schedule 5 of WLEP 2012 and each heritage item and heritage conservation area is identified on the Heritage Map of WLEP 2012.

These properties and places, because of their associations, their history, or their intrinsic qualities - their heritage significance – are required to be appropriately managed and respected when planning for new development.

Part H of this Plan seeks to control development to ensure that heritage significance is retained.

Conservation is the process of retaining these significant qualities. It involves the processes of Maintenance, Preservation, Restoration, Reconstruction and Adaptation. Conservation aims at preserving the significant fabric of a Heritage Item or Heritage Conservation Area.

Part H of this Plan should be read in conjunction with the “Design Principles for the Conservation of Environmental Heritage” at Attachment 1.

1.1 Aims

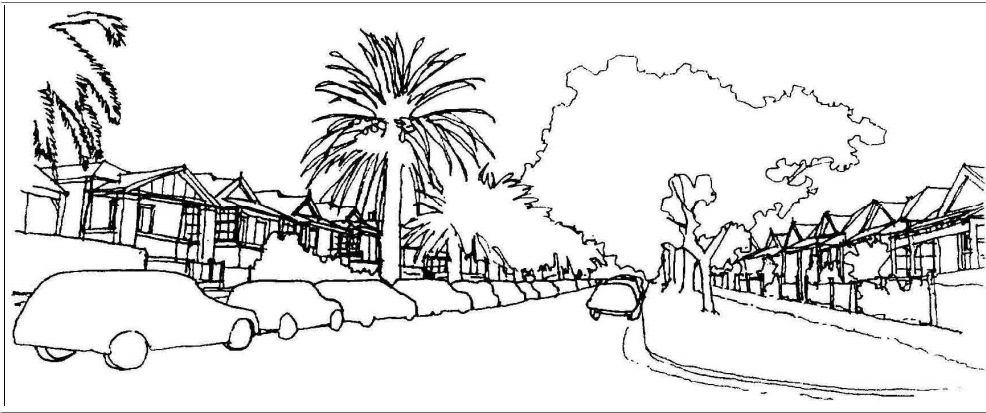
The specific aims of this part is to protect and conserve heritage items, archaeological sites, Aboriginal objects and Aboriginal places of heritage significance and, ensure any new development is sympathetic to the heritage item, and in keeping with the heritage values and character of the Heritage Conservation Areas:

- i. to guide future development within a framework of conservation;
- ii. to ensure that the significance of Heritage Items is identified and retained;
- iii. to ensure that the heritage significance, special streetscape and landscape character of Heritage Conservation Areas is maintained;
- iv. to ensure that alterations and extensions to existing buildings respect those buildings and do not compromise the significance and character of the individual heritage items or of the Heritage Conservation Areas;
- v. to ensure that new sustainable development respects the context and is sympathetic in terms of form, scale, character, bulk, orientation and setback, fabric, colours and textures and does not mimic or adversely affect the significance of Heritage Items and Heritage Conservation Areas and their settings;
- vi. to encourage a sustainable high quality of design for any new development in achieving compatibility with the heritage significance of individual Heritage Items and Heritage Conservation Areas;
- vii. to provide controls for the development of land within the vicinity of Heritage Items and Heritage Conservation Areas.

Council is committed to the protection and conservation of Aboriginal objects and Aboriginal places of heritage significance. Many of these objects and sites are located on environmentally sensitive land. Particularly around the foreshore.

Draft *WLEP 2021* does not identify Aboriginal objects or Aboriginal places of heritage significance. Council should be contacted to determine if the site comprises or is in proximity to an Aboriginal object or Aboriginal place of heritage significance.

This document is not intended to inhibit genuinely innovative design solutions that meet the above aims and objectives and comply with the Design Principles of Part H of this Plan. If there is any inconsistency between these heritage controls (in Part H) and other guidelines in this Plan, the heritage controls will prevail.



1.2 Information Requirements

The Willoughby LEP 2012 identifies heritage items and heritage conservation areas and any proposed development to or in the vicinity of these places is subject to the provisions of Clause 5.10 of the LEP. In addition to the development application requirements discussed in Part B of this Plan, the following information is required to be submitted with development applications for properties subject to WLEP 2012 Clause 5.10 and Part H of this Plan:

- i. a Heritage Impact Statement and/ or Heritage Conservation Management Plan or Heritage Conservation Management Strategy (see below);
- ii. a site plan to scale, showing the location of the Heritage Item or component of a Heritage Conservation Area, contours and heights being Relative Levels to Australian Height Datum, and any other features affected by the proposal (e.g. streetscape, neighbouring structures, outbuildings, significant landscape features, views and vistas);
- iii. in the case of development in Heritage Conservation Areas, an elevation of the principal façade to the primary streetscape(s) showing adjoining buildings;
- iv. proposed new works should be clearly distinguished by means of diagrams, drawings and photographs from the existing original building or work and other improvements, including landscaping, where these are affected;
- v. schedules and samples of external materials, finishes and colour schemes.

1.2.1 Heritage Impact Statement

WLEP 2012 requires the submission of a satisfactory Heritage Impact Statement for heritage items, or land in the vicinity of a heritage item or for a building, work, relic, site or place within a Heritage Conservation Area before Council grants development consent.

A Heritage Impact Statement identifies the heritage significance of an item, place or area, the impacts of any changes being proposed to it and how any impacts arising from the changes will be mitigated.

The length of a heritage impact statement will vary depending on the scale and complexity of the proposal. A brief account included in the Statement of Environmental Effects may be sufficient for minor work that will have little impact on the significance of a heritage item or heritage conservation area. A more extensive report would be required for more complex proposals or those that will have a major impact on the item.

- Applicants should demonstrate that consideration has been given to the conservation and heritage of the item or component of a heritage conservation area in accordance with Part H of the WDCP.
- When Preparing a Statement of Heritage Impact, applicants should refer to the Office of Environment & Heritage, Department of Premier & Cabinet Guidelines for Statements of Heritage Impact (www.heritage.nsw.gov.au) and Council's Development Application Checklist – Supplementary Information.

1.2.2 Heritage Conservation Management Plan

Council may require the submission of a Heritage Conservation Management Plan (WLEP 2012 clause 5.10.6) in accordance with the guidelines prepared by the Office of Environment & Heritage, Department of Premier & Cabinet (www.heritage.nsw.gov.au) for proposals for change to individually listed Heritage Items.

A Heritage Conservation Management Plan can be an important tool in caring for a heritage item. As this document will provide a guide to future care and use of the item, including any new development as it *'sets out what is significant in a place and, consequently, what policies are appropriate to enable that significance to be retained in its future use and development'* (J S Kerr, *The Conservation Plan*, National Trust NSW, 2000).

A Heritage Conservation Management Plan must be prepared by suitably qualified heritage professionals and may be required:

- To accompany an application for approval under the *Heritage Act 1977* (refer to the *Office of Environment & Heritage, Department of Premier & Cabinet Local Government Heritage Guidelines Chapter 7 : Determining Applications for work to Heritage Items*, available on www.heritage.nsw.gov.au).
- To support an application for site-specific exemptions from the *Heritage Act 1977* approvals (refer to the Heritage Council of NSW Heritage Information Series: Standard Exemptions for works requiring Heritage Council Approval, available on www.heritage.nsw.gov.au).

- As a framework for an agreed-upon management approach to a heritage item.

1.2.3 Heritage Conservation Management Strategy

An alternative to a full Heritage Conservation Management Plan is a Heritage Conservation Management Strategy. A Heritage Conservation Management Strategy is a briefer version of a Heritage Conservation Management Plan that will provide a broad overview of conservation approaches and management guidance.

A Heritage Conservation Management Strategy must be prepared by suitably qualified heritage professionals and may be required:

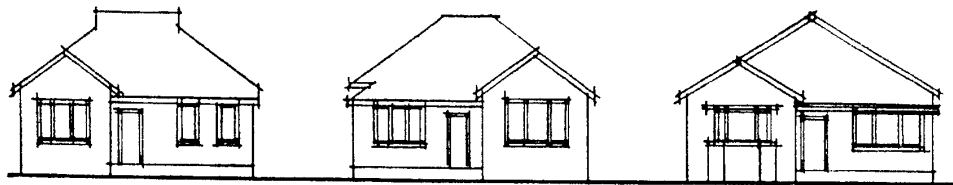
- For use with items of local significance;
- For use with items of State significance for which no major changes or interventions are planned in the short to medium term that have the potential to materially affect the item;
- As an interim planning document for State Heritage Register items pending the preparation of a standard heritage conservation management plan.

Refer to the Office of Environment & Heritage, Department of Premier & Cabinet (www.heritage.nsw.gov.au) for the guidelines for preparing a Conservation Management Strategy.

2 General Conservation Controls

SPECIAL NOTE: Specific requirements are applicable to the twelve individual heritage conservation areas as set out in Part H.3, which are the overriding controls.

2.1 Planning and Design Principles



To ensure that new development respects and enhances the heritage significance of its context, the following requirements will apply to all development covered by Part H of this Plan.

Council will not consent to the alteration, extension or erection of a building or other works which alter the existing improvements on land that is either listed as a Heritage Item or is located within a Heritage Conservation Area without considering:

- Setting
- Scale
- Massing and Form
- Proportion
- Detail

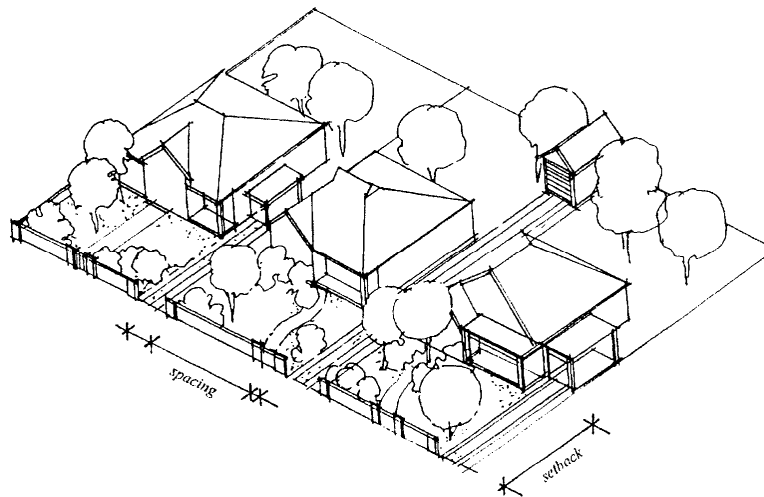
A. Setting

Objectives

1. To provide an appropriate visual setting for heritage items and buildings within heritage conservation areas, including landscaping, fencing and carparking;
2. To maintain and enhance the existing heritage significance of the streetscape and the vicinity; and
3. To ensure that new development respects the established patterns in the streetscape, including setbacks, siting, landscaped settings, carparking and fencing.

Requirements

- i. The side and front setbacks are to be typical of the spacing of buildings both from each other and from the street in the particular locality, such that the rhythm of buildings in the streetscape is retained;
- ii. Except as allowed by “car parking” and “fences” in Clause H.2.2 below, no new structures should be built forward of the established street building line;
- iii. An adequate curtilage including landscaping, fencing and any significant trees, are to be retained;
- iv. The established landscape character of the locality including height of canopy and density of boundary landscape plantings should be retained in any new development;
- v. Development in the vicinity of a Heritage Item or a Heritage Conservation Area should respect the visual curtilage of that Item;
- vi. New developments must respect the existing significance of the streetscape and the vicinity;
- vii. The amenity and privacy of back gardens should be retained; and
- viii. View protection of vistas.



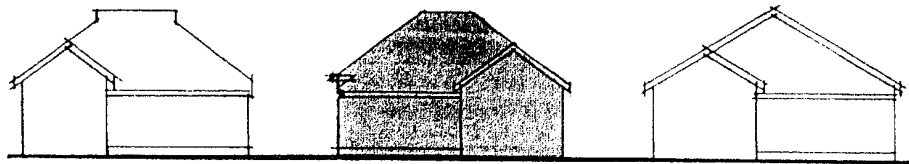
B. Scale

Objective

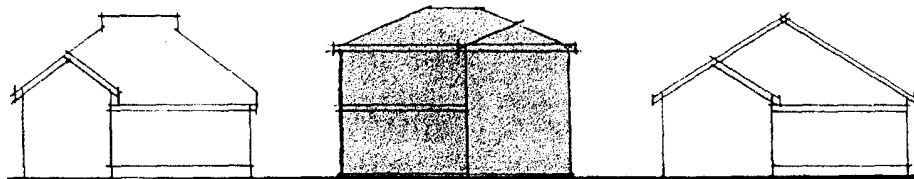
To ensure that the scale of new development is in harmony with the streetscape and does not dominate or compete with existing heritage items, nor reduce their contribution and importance to their context, nor destroy an existing pattern of development.

Requirements

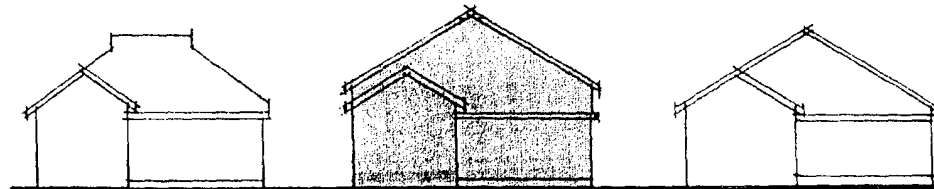
- i. The scale (including height, bulk, density and number of storeys) of the new work must relate visually to the scale of adjacent buildings which are Heritage Items or are located in a Heritage Conservation Area. In this regard, unless it can be clearly demonstrated that greater scale would be appropriate in the individual circumstances, new buildings and additions are to be of the same scale as the surrounding development;
- ii. Extensions must not visually dominate or compete with the original scale of the existing buildings to which they are added or altered; and
- iii. New buildings must not visually dominate, compete with or be incompatible with the scale of existing buildings of heritage significance or contributory value either on the site or in the vicinity of the proposal.



A pattern of harmonious scale (height, bulk and number of storeys are consistent with surrounding development).



New 2 storey development ignores the established pattern of scale and dominates surrounding buildings (while the height is consistent, the bulk of the new development and the number of storeys does not respect the surrounding development).



New 1.5 storey development is harmonious with the scale of surrounding buildings (while the height is similar to the 2 storey example above, in this case the second storey is reduced in bulk, and the house retains a single storey character).

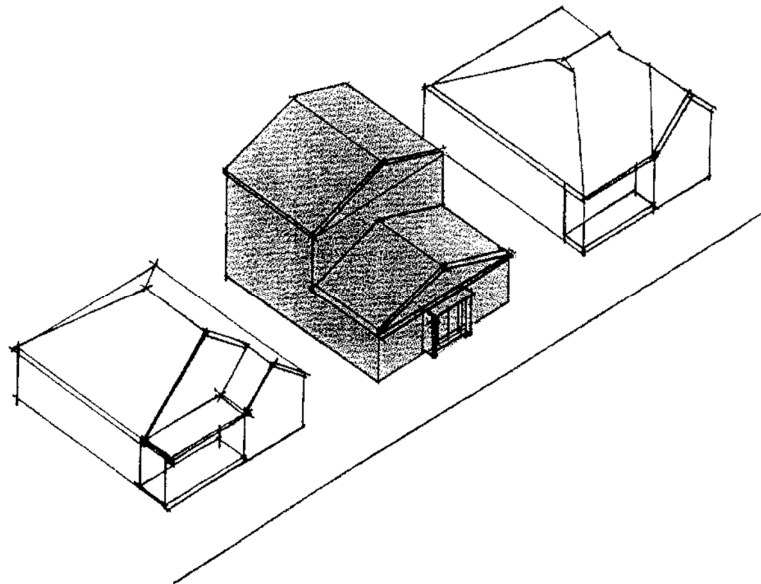
C. Massing and Form

Objectives

- To ensure that new development acknowledges dominant massing and form of the Heritage Item or Heritage Conservation Area, and is in harmony with existing significant fabric and form, and with the surrounding streetscape; and
- To ensure that the form of new development is compatible with or complements the heritage significance of its context.

Requirements

- i. Extensions should not visually dominate or compete with the original form of the existing buildings which they alter;
- ii. New buildings should not visually dominate, compete with or be incompatible with the form of existing buildings of heritage significance or contributory value either on the site or in the vicinity of the proposal; and
- iii. New buildings and extensions should have a similar massing, form and arrangement of parts to existing buildings of heritage significance in any Heritage Conservation Area.
- iv. Maximum wall heights of any extension should be the same as the existing house.



In this example, new development does not respect the massing and form of surrounding buildings which are characterised by:

- a dominant hipped and gabled primary roof form;
- an offset projecting gabled bay; and
- an offset verandah with recessed entry.
- Wall height of the extension is greater than the existing house

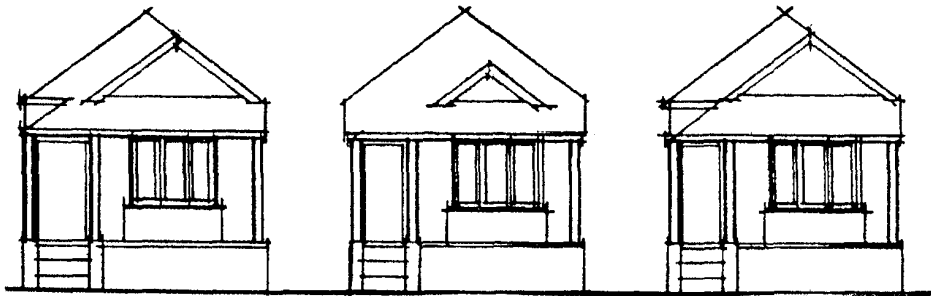
D. Proportion

Objectives

- To ensure that new development respects the proportions of elements of existing heritage fabric; and
- To ensure that new development has regard to the architectural character and style of the Heritage Item or Heritage Conservation Area setting.

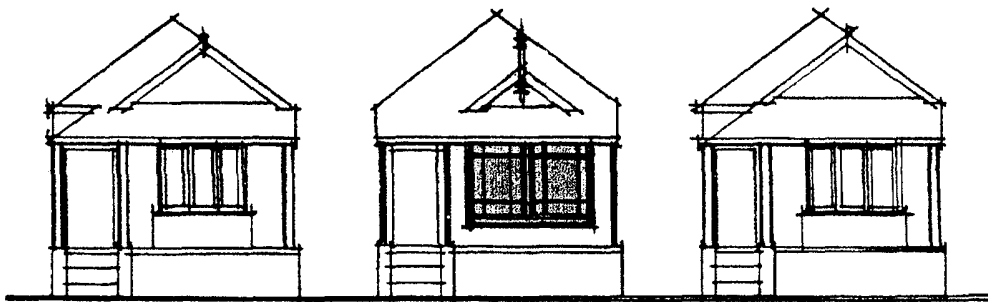
Requirements

New work and extensions should respect the proportions of major elements of significant existing fabric including doors, windows, openings and verandahs.



Existing patterns of:

- simple vertically proportioned windows in groups of three;
- simple bargeboard detail to gable end; and
- robust timber verandah posts.



New development does not respect existing patterns by selecting:

- multipaned square proportioned windows in a group of two;
- an over scaled finial to gable end; and
- slender steel verandah posts.

E. Details

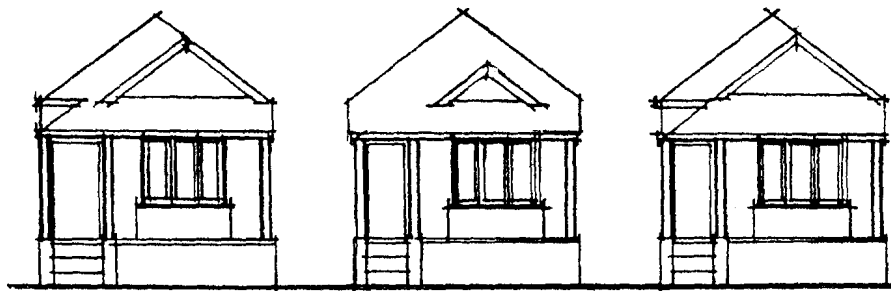
Objectives

- To ensure that new development has a level of detail which is appropriate to its context; and

- To ensure that new development has regard to the architectural character and style of the Heritage Item or Heritage Conservation Area setting but does not incorporate elaborate new detailing in a period style that would prevent interpretation of what is original and what is new.

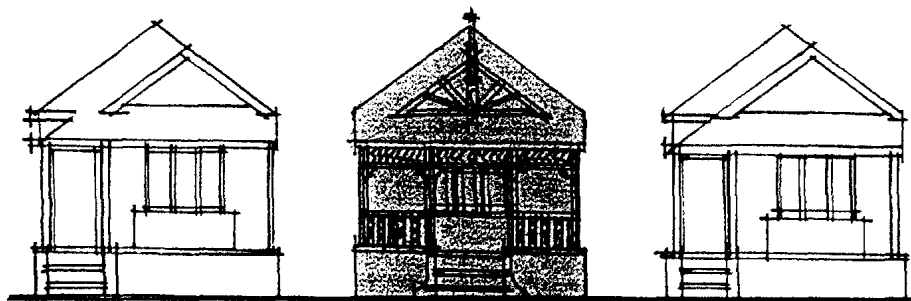
Requirements

- New work and extensions in Heritage Conservation Areas should have a level of detail that is similar to and complements that of surrounding heritage fabric; and
- New work should adopt a simple character which uses external finishes, colours and textures which complement the heritage fabric, rather than mimic inappropriate heritage decoration and/ or detailing.



Existing patterns of:

- simple verandah detailing;
- simple timber bargeboards with roughcast gable infill; and
- simple timber casement windows.



New development does not respect existing patterns by using:

- elaborate timber fretwork balustrade and valance to verandah;
- elaborate gable end detail; and
- multipaned aluminium windows.

2.2 Design Elements

Alterations and extensions to Heritage Items or components of Heritage Conservation Areas and new infill development in all Heritage Conservation Areas (with the exception of the Griffin Heritage Conservation Area) must conform with the following provisions with respect to individual elements of the buildings and settings.

A. Roofs

Objective

To retain the characteristic scale and massing of roof forms within the Heritage Conservation Area, and retain the characteristic scale and massing of significant roof forms of Heritage Items.

Requirements

- i. Roofs of extensions are to match the existing roof in form, pitch and eaves, and be in proportion with the existing building;
- ii. Attic rooms are to use existing roof forms which retain the streetscape appearance of the existing building;
- iii. New buildings must have roofs that reflect the size, shape, pitch, eaves and ridge heights, and bulk of existing roofs in the locality, and be in proportion with the proposed building;
- iv. Roof elements such as dormers and skylights shall not be located where visually dominant and must be kept below the ridge line;
- v. Skylights must not be used on the front plane of roofs;
- vi. Retention of chimneys is required;
- vii. The location of attic room extensions must not adversely affect significant views or vistas; and
- viii. Where possible, structures attached to the exterior roof should avoid being located where visible from the street on the principal elevations of buildings.

B. Façades

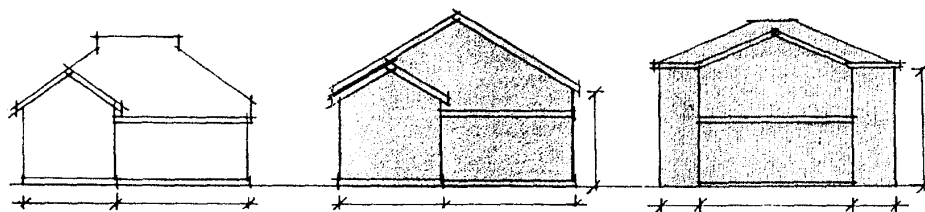
Objectives

- To retain the existing façade, fabric, scale and massing and character of original development, in terms of the proportions of façades;
- To ensure that new development does not disturb or reduce the importance of original verandahs; and
- To ensure new verandahs do not conflict with the heritage significance or significance of the place or building.

Requirements

Two storey façades must only be used where surrounding development is of a predominantly two storey scale;

- i. Limit bay widths to match those of surrounding significant development;
- ii. Alteration of the form and materials of principal elevations is not appropriate. Removal of the external skin or rendering of exterior walls is not appropriate unless associated with acceptable reconstruction works;
- iii. In altering existing houses, original sunhoods, blinds, awnings and skirts to principal elevations should be retained and repaired. Authentic construction or reconstruction is supported;
- iv. In altering existing buildings, original verandahs are to be retained and restored. Infilling of verandahs is not supported. Additional verandahs must not compete with the importance of the original and must be simple in design, and based on existing detail or an understanding of appropriate designs for each period or style;
- v. New buildings must take into account the significance and design of verandahs in the locality, the methods of their incorporation in building designs and their harmonising role in streetscapes;
- vi. Alteration to original façades which are of heritage significance is not supported;
- vii. The proposed works are to be sympathetic to and/or not detract from the style, character and interest of the building and place. Designs, whose massing, details, materials and colours reflect the type of façade historically used in each locality, without insistence upon replication, are encouraged; and
- viii. Balconies on front façades are not appropriate, unless consistent with the original architectural style.



Existing pattern of single storey scale and stepped massing.

New development respects existing patterns through the control of wall heights and bay widths.

New development ignores existing patterns using uncharacteristic wall heights and bay widths.

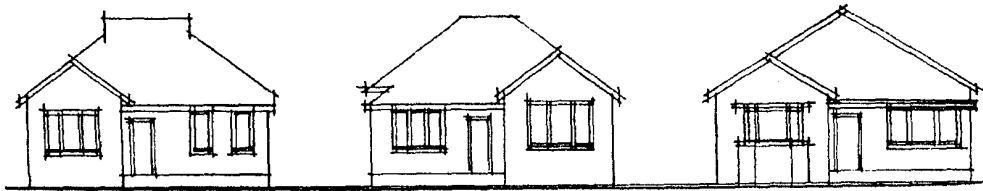
C. Doors and Windows

Objective

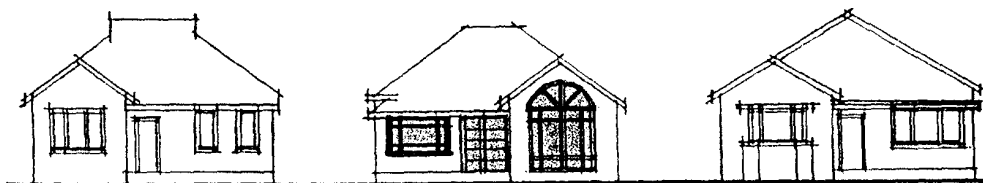
To ensure that original elements are retained and where new elements occur that the character and patterns of door and window openings and their construction is clearly related to the proportions, placement and scale of fenestration patterns of the existing heritage fabric.

Requirements

- i. Retain and repair/restore original doors and windows to principal elevations. Authentic reconstruction is encouraged. Original leadlight and coloured glass panes should be kept;
- ii. New doors and windows in additions are to be compatible with the proportions, position, size and detailing of existing doors and windows; and
- iii. Doors and windows in new buildings are to be compatible with the proportions, position and size of those typical of the locality.



Existing pattern of simple vertically proportioned timber casement windows in bays of three, and single leaf doors



New development ignores existing patterns and uses an elaborate horizontally proportioned aluminium window and an uncharacteristically large arched window, and a double leaf door

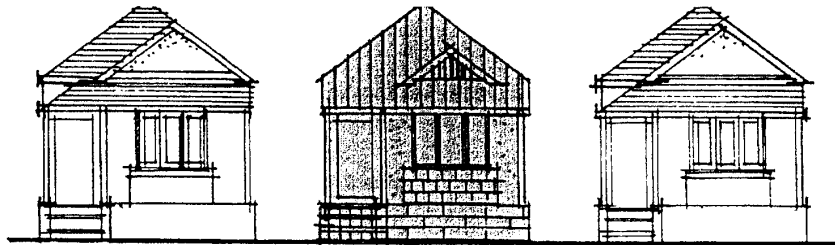
D. Materials and Colours

Objective

To ensure that the selection of materials and colours is based on an understanding of the original finishes. Finishes employed in new development should be selected with regard to the significance and character of the Heritage Item or of development in the street or Heritage Conservation Area, and the likely impact of that proposed work.

Requirements

- i) Roofs - New or replacement roof materials are to match existing materials or use approved alternative materials appropriate to the style and location.
- ii) Façades - Matching materials should be used in repairing the fabric of external surfaces. New development should use materials similar to or compatible with that of original buildings in the locality. In the case of new face brickwork, the colour and texture of the brick, the type of jointing, and mortar colour should be carefully matched. Original unpainted brickwork, sandstone and blockwork must not be rendered or painted. New buildings and additions in Heritage Conservation Areas should employ colour schemes which do not detract from traditional colour schemes in the locality.
- iii) Doors and Windows - Original doors and windows are to be retained in existing buildings. New doors and windows must be of design materials and finishes to match the original or an approved alternative that fits in with the characteristics of the locality. Wide section aluminium windows may be considered as an alternative for timber windows in new development.
- iv) Fences - Front fencing must be of materials characteristic to the locality and particular to the street.
- v) Paving and Driveways - materials for paving of pathways may include tessellated tiles for Federation and Victorian styles, or suitably textured and coloured finishes: plain or stencilled concrete is not acceptable. Preferred materials for driveways include wheel strips, brick paving or gravel.



New development should reflect surrounding buildings in the selection of external materials and finishes – roof materials and wall surfaces are particularly critical.

E. Carparking

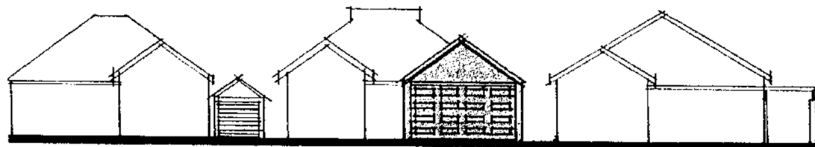
Objectives

- To allow for reasonable on site carparking while retaining the character and significance of the Heritage Conservation Area or Heritage Item;
- To ensure that car parking facilities do not have any adverse visual impact upon heritage streetscapes; and
- To ensure that garages, carports and driveways are visually discreet.

Requirements

- i) Access
 - Existing rear lane access is to be utilised in preference to front access
 - Existing side vehicular access is to be utilised

- Driveways are to be to side boundaries and not central; and
- Development which removes existing access must not preclude future carports or garages behind the building line
- ii) Location
 - Open stand car spaces may be provided forward of the building line
 - Garages and carports are to be located behind the building alignment wherever physically possible; and
 - Where no alternative exists and the frontage of the property is of a sufficient width, a single carport located forward of the building line, set back from the street and offset to side boundary may be considered.
- iii) Scale
 - Maximum width of a driveway at street frontage is to be 3.5m;
 - Garages and carports are to occupy no more than 20% of street frontages;
 - Carparking structures should be diminutive in scale in relation to the residence; and
 - Structures forward of the building line must be designed to minimise their bulk with a maximum eaves height of 2400mm. Flat roof structures of sympathetic materials and detail are acceptable.
- iv) Appearance
 - Materials, form and details of carparking structures are to harmonise with and be subservient to the residence;
 - A similarity in colour of garage doors and wall surfaces may reduce impact to street and therefore is favoured:
 - Structures forward of the building line must be screened with vegetation; and
 - Garage doors and structures are to be recessed behind the primary façade to create a shadow line.



Double garages and carports forward of the building alignment can dominate and destroy the significance of a heritage streetscape

F. Fences

Objective

To provide fencing that reinstates the original form of fencing, that is consistent with and does not detract from the established patterns of the street.

Requirements

- i) Front Fencing (including side fencing forward of building line)

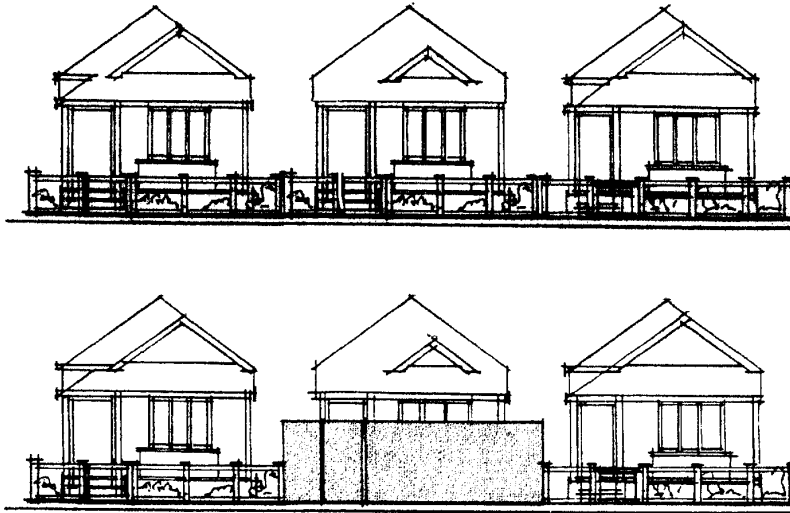
Scale consistent with existing streetscape, generally:

- Masonry fencing to 700mm maximum;
- Open fencing (such as pickets or palisade) to 1200mm maximum;
- Hedging to 1200mm maximum; and

- Lapped and capped timber fencing on side boundary to 1200mm maximum.
- Retain original fences where practical;
- Modifications should match original where possible; and
- Fencing must be simple with a level of detail compatible with house.

Griffin Heritage Conservation Area- no fencing, or low fencing to 300mm max (see H.3.2 C4 for specific controls on Griffin Heritage Conservation Area).

- ii) Acoustic fencing - where properties front State or Regional roads (e.g. Mowbray Rd, Penshurst St), a solid wall to 1600mm high set 1m behind a low front fence is acceptable provided screen hedge planting is installed and maintained.



High solid fencing destroys the harmony of the streetscape, and prevents views of the dwellings and gardens

G. Garden elements, including Paving and Driveways

Objective

Retain or reinstate landscaped settings for Heritage Items and components of Heritage Conservation Areas.

Requirements

- Hard surfaces are to be kept to a minimum. As a guide, 70% of the area forward of the building line are to be soft landscaped;
- Screening of hard surfaced areas with vegetation is encouraged; and
- Garden structures are to be appropriate to primary buildings in terms of scale, style, and materials.

H. Outbuildings

Objective

To ensure that out buildings do not detract from the heritage significance of the Heritage Item or Heritage Conservation Area through inappropriate siting, or excessive scale, bulk or visibility.

Requirements

- i) In considering any application for permission to erect a garden shed or store, Council will consider:
 - the location of the proposed structure in relation to the principal building, boundaries and other details of the site;
 - the proposed form, scale, materials and colours of the structure; in this regard colours and materials should be recessive, and height should not exceed 2200mm;
 - the relative prominence and visibility of the proposed structure from the street frontage or frontages of the site and neighbouring properties and the need for, landscaping such as screening or planting to ensure that the proposed structure is well integrated with its intended site; and the retention of any significant outbuildings which form part of a historical curtilage.

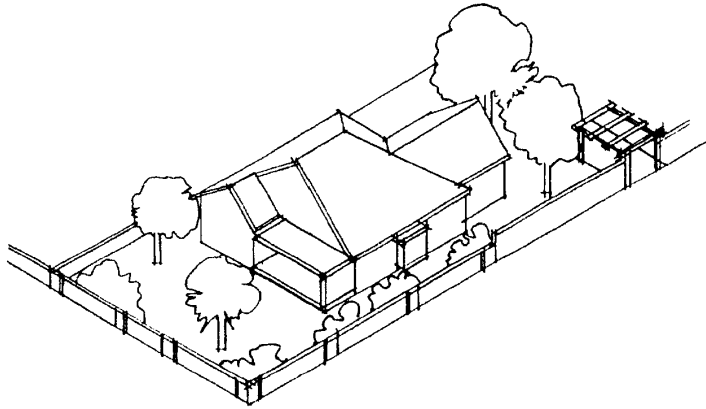
2.3 Development of Corner Allotments within Heritage Conservation Areas

Objective

The corner block has more significance in defining the character of the area because it is visible from two streets and it is an important component in distant vistas. Therefore, additional specific guidelines are required to ensure that the characteristics of the Heritage Conservation Area are considered from both streets.

Requirements

- i) The significant parts of the original house must be retained which include its main frontage and side frontage. Non sympathetic rear additions generally do not require retention;
- ii) The scale of additions and alterations are to respect the existing ridge or eaves heights;
- iii) Where additions are attached, detailing (including finishes and materials) are to be appropriate to the original;
- iv) Where additions are detached or infill development is proposed, contemporary solutions which respect the scale, bulk and detailing of the original without mimicry are preferred;
- v) Carparking must be located to the rear of the side frontage. Double garages forward of the building line are not acceptable;
- vi) Fencing to the side frontage must not exceed 1800mm in height;
- vii) Landscaping is required to both street boundaries, and a landscaping concept is required with the submission of a Development Application; and
- viii) New development or additions must be located to minimise impact on existing prominent trees.



Both street fronting elevations must be considered on corner blocks.

2.4 Demolition

Objectives

To conserve both individually listed Heritage Items and the general building stock which contributes to the significance of the Heritage Conservation Area and to ensure that replacement development enhances the significance of the Heritage Conservation Area.

Requirements

In considering applications for the total or partial demolition of buildings or works which are either listed Heritage Items or occupy sites within Heritage Conservation Areas, Council will assess:

1. The heritage significance of the building or work, including its contribution to the streetscape in Heritage Conservation Areas; and
2. The opportunities for adaptation and whether the building or work would be incapable of reasonable or economic use; and
3. Whether the building or work constitutes a danger to its users or occupiers or to the public; and
4. Whether, in the case of an application for total demolition, redevelopment is a reasonable alternative to retention.

Where demolition of a Heritage Item is proposed, Council may refer the application to the National Trust of Australia (NSW) or any other relevant bodies prior to determination of the application.

Where demolition of a Heritage Item of State Significance is proposed, in accordance with the provisions of WLEP 2012 Council will notify the Heritage Council of NSW.

Council may require reconstruction following any unauthorised removal of detail or significant decorative elements.

Council will not grant consent for demolition in a heritage conservation area unless it has considered the future development of the site.

Information required

All development applications for total or partial demolition should be supported by a justification for the proposed demolition, which will consist of:

- i. A report from a structural engineer specialising in work on heritage buildings or structures detailing the structural condition (if you are proposing that it is beyond repair), and evidence that stabilisation and/or the retention of the building or structure is unreasonable; and/or
- ii. A Heritage Impact Statement and/or Heritage Conservation Management Plan or Heritage Conservation Management Strategy where applicable detailing the heritage significance of the building or structure. If located in a Heritage Conservation Area its contribution to the Heritage Conservation Area; and
- iii. Other professional reports where relevant, e.g. archaeologist or historian.

Council may engage an independent expert to review these reports.

If an application for demolition of a Heritage Item or a component of a Heritage Conservation Area is made, the preparation of an Archival Record of the existing building and grounds (in accordance with the Office of Environment & Heritage, Department of Premier & Cabinet Guidelines) may be required to be submitted if consent is granted.

Any infill or replacement development would need to respect the heritage values and significance of the area and comply with WLEP 2012 and WEDP H2.6.

2.5 Subdivision

Objectives

- To retain the development and subdivision pattern of heritage conservation areas including their characteristic rhythm and spacing of built form;
- To retain significant curtilages, views and vistas and landscape elements associated with individual Heritage Items; and
- To retain the Griffins original subdivision pattern in the Griffin Heritage Conservation Area.

Requirements

Subdivision of land must comply with the minimum allotment size requirements of WLEP 2012 and with the design guidelines for infill development. Subdivision applications for land either in the vicinity of or on which Heritage Items are situated or in Heritage Conservation Areas are required to be accompanied by adequate plans, showing the building envelopes, siting and setbacks of the proposed buildings, that must demonstrate to Council's satisfaction that:

- i. the allotment and building spacing, i.e., frontage widths, side and front boundary setbacks, are typical so that:
 - the rhythm of buildings in the streetscape of Heritage Conservation Areas is retained;

- vistas and views to and of Heritage Items and significant buildings, especially the principal elevations of buildings, are not interrupted or obscured;
 - the landscape quality of the streetscape in Heritage Conservation Areas is retained;
 - the setting of the Heritage Item and a satisfactory curtilage, including important landscape and garden elements, are retained;
- ii. the scale and form of proposed new construction or buildings is compatible with and does not detract from the significant dominant heritage elements of either the streetscape in Heritage Conservation Areas or of the individual heritage items;
 - iii. the essential qualities of the streetscape and building style(s) on which the locality's heritage depends, are preserved in the new development. Where new or more recent development in the vicinity of the proposal varies older development standards and the essential heritage characteristics of a locality, the proposal is to ignore these recently introduced characteristics, e.g. two storeys in an otherwise single storey locality, in favour of using the prevailing predominantly original development as a guide to desired character for further development;
 - iv. the subdivision will not require demolition of existing building stock or re-arranged vehicular access and carparking (on or off the site of the proposal), that would adversely affect the streetscape in Heritage Conservation Areas or the principal elevations of Heritage Items; and
 - v. The contours and any natural features of the site have been retained and respected.

2.6 Infill Development

Objectives

- To ensure that infill development achieves a sympathetic relationship with either nearby Heritage Items or the Heritage Conservation Area of which it is a part in terms of its scale, massing, character, setback, orientation, materials and detailing.
- To ensure that infill development respects the established streetscape, and the patterns of development, including setbacks, siting, landscape settings, carparking, height, dominant ridge line and building envelope. Infill needs to display architectural "good manners" by respecting the significant characteristics of nearby and adjoining development.

Requirements

- i. Infill can be contemporary in design however, the scale, form and detail of the infill must not detract from the scale, form, unity, cohesion and predominant character of the building and development (i.e. streetscape/landscape elements) around it;
- ii. Infill development in the vicinity of a Heritage Item must respect the visual curtilage of that item;
- iii. Infill development must not visually dominate, compete with or be incompatible with the scale (size, height and bulk) of existing buildings either on the site or in the vicinity of the proposal;

- iv. Infill development must be sited to correspond with the existing pattern of relationships between buildings and their sites. Front boundary setbacks are to be equivalent to those of neighbouring buildings. Side setbacks must be consistent with existing patterns;
- v. Infill design is to be integrated into the established character of the area and heritage buildings. Incorporating basic design elements such as the characteristic roof form and massing of the original development, proportions of windows, doors and verandahs;
- vi. Infill design must not visually dominate, compete with or be incompatible with the form of existing buildings of significance, either on the site or in the vicinity of heritage items;
- vii. New development must use materials and colours similar to or compatible with that of original buildings in the locality;
- viii. Contemporary kit/project designs which purport to be “heritage homes” are generally poorly integrated mixtures of design elements from different eras and do not fulfil the objectives for infill development in heritage conservation areas or adjacent to heritage items; and
- ix. For infill development in the Griffin Heritage Conservation Area the Management Policies and Controls for that Area are to apply, in particular the Griffin design principle of subordinating buildings to the natural landscape.

2.7 Secondary Dwellings

Controls for secondary dwellings in heritage conservation areas or on sites occupied by heritage items refer to Part D1: Dwelling Houses, Dual Occupancies and Secondary Dwellings and must comply with the controls set out in Part H ‘Controls for Heritage Items and Heritage Conservation Areas’ including, compliance with:

- Floor Space Ratio (FSR)
- Setbacks
- Proportion
- Massing and Form
- Setting
- Details
- Materials and Finishes
- Specific requirements for individual conservation areas

2.8 Semi-detached Dwellings

There are a number of semi-detached dwellings within the Willoughby Local Government Area and they incorporate a number of architectural styles developed between the 1880's and the 1930's. A number of significant examples of these styles are included as individual heritage items or within conservation areas listed in the LEP. Applicants should be conscious of the significance of these styles before considering any alterations and additions to semidetached dwellings.

Objectives

1. To have the concept of the semi-detached dwelling as one of a pair or group of dwellings retained, maintaining traditional scale, character and established streetscape values.
2. To have alterations and additions to a semi-detached dwelling which are appropriate to the established scale and building envelope of the original building and to the predominant development in the vicinity.

3. To have alterations and additions to a semidetached dwelling seen as an extension of the general form of the existing building envelope, appropriately related in form and detail to the adjoining semi-detached dwelling.
4. To have potential for complementary development of an adjoining semi-detached dwelling.

Requirements

- i. Any alteration to an individual semi should recognise it as being one of a pair or group of similar, identical or complementary buildings. In this regard, any extension should be carefully integrated with the building to which it is attached, both in its present form and on the assumption that the adjoining owner may wish to undertake extensions in the future.
- ii. Applicants should demonstrate how the adjoining semi-detached dwelling could be treated to maintain character.
- iii. Any first floor addition should be set back from the principal street frontage of the building in order to maintain unaltered a substantial portion of the existing roof over the front of the building and to locate the bulk of new development towards the rear. Additions should be located behind the main gable or hipped feature of the street frontage.
- iv. The style, pitch, material, profile and colour of the proposed roof should match, complement and extend the existing roof form of the building.
- v. Characteristic features of the existing roofscape should be identified and where appropriate incorporated into the proposed extension. The positioning and proportion of gables, the use of parapets and gambrel and dormer roof forms should be considered in the context of the surrounding original development.
- vi. Flat roofed areas should only be contemplated where they are not seen from the street or other important viewing positions in the vicinity of the building. Uncharacteristic roof forms and details will not be considered appropriate if they impinge on the street character of the adjoining or nearby semis.
- vii. Roof forms, which contribute excessively to the visual bulk of the building, such as Mansard roof extensions will not be permitted. Contemporary roof form additions to the rear of traditional semis may be acceptable if the visual impact to the street is minimised.
- viii. Where extensions are proposed to only one half of a pair of semis, consideration should be given to the roof design as an extension of the established roof lines of the undeveloped semi. This may involve the concurrence of the adjoining owner but will avoid the appearance of a blank dividing wall and will conceal changes to the roof line.
- ix. The roof design is to prevent stormwater spillover onto the adjoining semi.
- x. Dormer roofs shall be used in a manner that is characteristic of the particular style of the subject semi.
- xi. New roofing should maintain or replace the original roofing of the building in material, profile and colour. Where the roofs of adjoining semis are currently

different from each other, the new roof finish should match the adjoining dwelling as closely as possible, unless it can be demonstrated that such a finish is of undesirable architectural merit.

- xii. Council will only allow dormer windows, balconies, skylights and solar panels on the front façade where they will not have an adverse streetscape impact.
- xiii. Unpainted surfaces should be remain unpainted.
- xiv. Wherever possible it is preferable that both semis forming a pair propose comprehensive and matching additions to be carried out at the same time. However, it is possible to design alterations and additions to one semi of a pair or terrace group which does not detract unreasonably from the architectural integrity of the pair or group. The design approach will vary depending on the form of the semi design. Where symmetry is the dominant characteristic it should be respected, where asymmetry gives the appearance of a single building this should be respectfully acknowledged in the design to maintain that character.

3 Heritage Conservation Areas

3.1 Introduction

For each of the City's Heritage Conservation Areas, this section provides:

- **History**, which outlines the historical context of the area, and significant characteristics of the individual Heritage Conservation Areas, to enable an understanding of the heritage significance of the Area;
- **Description**, which outlines the significant characteristics of the individual area to enable an understanding of the heritage significance of the area;
- **Statement of Significance**, which states why the area is significant;
- **Management Policies**, which set out controls to ensure that this heritage significance is retained in any new development; and
- **Controls for future development** table, which outlines specific requirements so that the design of new development is compatible with the existing significance to be conserved and assists in achieving the desired future character.
- **Map** of the Heritage Conservation Areas under WLEP 2012.

Heritage Conservation Areas are representative of particular phases in the development of the City of Willoughby. They have distinctive historic, stylistic and streetscape values that are essential to retaining the heritage of Willoughby. Components which contribute to this significance are to be retained, and new development must reflect and reinforce this character.

The special characteristics required for retention are summarised below for each area, together with specific policies and development controls for achieving this.

The intent of these controls is not to inhibit genuinely innovative design solutions but

for grazing. In 1810, Governor Macquarie granted 150 acres to the General- Provost Arthur Gore. Gore then bought out his neighbours and by 1815, he owned most of the land as far west as the Pacific Highway. Gore named his farm “Ardthelmon” after his home in Ireland. This period of prosperity was short lived and by 1818, Gore had lost all but a small portion of land on which he built Artarmon House (the site of the current TAFE and Institute of Technology).

The Artarmon Heritage Conservation Area was developed in two stages. The major streets, such as Artarmon Road and the western precinct closest to the station, such as Muttama Road, were partially developed prior to World War I and consequently are characterised to a greater degree than other streets by development from the Federation era. There are also some grand villas and houses of this period on the eastern edge along early transport routes, such as Sydney Road. The remainder and bulk of the area was developed in the 1920's and 1930's and is predominantly bungalow development with a few semi-detached cottages on the eastern edge. Some two storey flat buildings, dating from the 1930's, are located closer to the station.

The National Trust of Australia (NSW) recognised the importance of the area by classifying it as an Urban Conservation Area in 1989.

Description

A rectilinear subdivision pattern has been superimposed on a hilly area of moderate slopes. The regularity of the lot layout is interrupted by several well vegetated drainage reserves flowing across to the remnant bushland of Artarmon Reserve.

The original subdivision pattern of narrow carriageways and wide grassy verges (usually planted with mature street trees, such as brush box and jacaranda) prevails, except for Artarmon and Sydney Roads, which have wider carriageways taking the main traffic volumes to and from Artarmon Station and shopping centre.

The combination of undulating landform, well established street trees and other vegetation (including mature trees behind houses, remnant bushland in the drainage reserves and the pattern of usually generous lot sizes) creates vistas of leafy ridges and valleys and a wide range of interesting streetscapes with houses stepped down the terrain.

Houses are either unpainted red-brown brick and unglazed terracotta tile Federation styles or a rich variety of 1920's to 1930's bungalows. The latter range from typical California Bungalow styles to the transitional 1930's Interwar bungalows of unpainted brown to liver brick with red or brown tiled roofs. The character is predominantly single storey other than the small number of Interwar flats and relatively few second storey additions. Good individual examples including some of the older flat buildings, with Art Deco or Spanish Mission characteristics, also occur.

The denser pattern of settlement near Artarmon Station is a good example of Interwar flat development providing comfortable housing that is well integrated with nearby public transport and commercial opportunities. The well proportioned flat buildings form a cohesive residential precinct of generally consistent two storey scale, of similar materials and with shared modest embellishments, including decorative brickwork. Such characteristics enhance their unity with the earlier group of Edwardian commercial buildings at Wilkes Plaza.

Statement of Significance

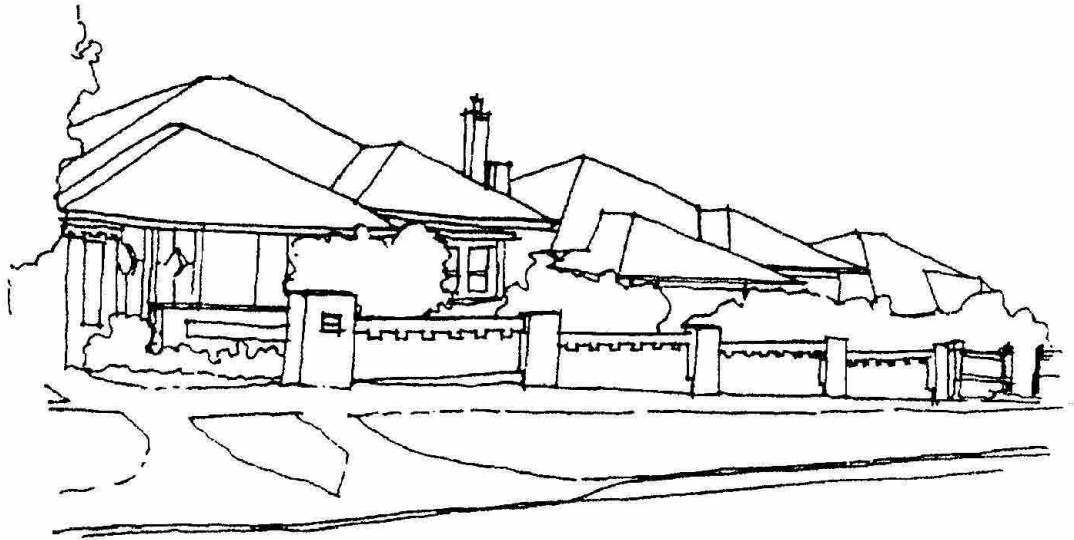
The Heritage Conservation Area is outstanding for its intactness, with few unsympathetic intrusions occurring. The wide range of largely intact California and Interwar bungalows as well as Federation housing in generally good condition, occur in either groupings of consistent styles or subtle blends of successive periods to produce a mix of interesting and varied streetscapes. The area is significant as a harmonious and unified 1910 – 1920's lower North Shore residential area whose development relates to the development of the railway.

Key Period of Significance

1900-1940

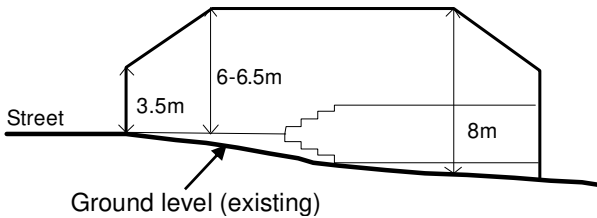
Management policies

- i. Retain and enhance the original form, scale and detail of existing buildings which contribute to the character of streetscapes and the heritage significance of the area;
- ii. Retain single storey character of the area;
- iii. Retain characteristic palette of materials of the area, particularly the use of unpainted dark monotone face brick, sandstone bases, painted timber trim and unglazed terracotta roof tiles;
- iv. Retain intactness of area by controlling alterations and additions, which should be set at the rear and not be visible from the street;
- v. Additions must not result in excessive changes in scale, or bulk, or the introduction of visually intrusive and dissimilar materials particularly on prominent sites, including corner sites;
- vi. Two storey development and second storey additions are inappropriate unless the original streetscape appearance of the building is retained, or in areas adjacent to original two storey flats. Sloping sites may enable two storey additions to the rear, which must preserve the predominantly single storey scale of the detached housing and must not offend the individual building's roof shape or interrupt the streetscape, unified by similarly patterned roofs;
- vii. New front fences must reconstruct original details or repeat the pattern of low unpainted masonry fences and dense boundary plantings;
- viii. Retain existing side driveways and rear car parking facilities;
- ix. The site cover and siting of new development must not result in the loss of significant landscaping either on-site or in verges. In this regard driveways are to be minimal with wheel strips being the preferred solution;
- x. Protect mature trees in rear gardens which form a backdrop to the streetscapes;
- xi. Street plantings and reserve vegetation must be maintained and encouraged, particularly in lesser vegetated streets. Where a site is bushfire prone land landscaping should conform with the performance requirements of the NSW Rural Fire Service 'Planning for Bushfire Protection';
- xii. Existing vistas resulting from the undulating topography must be maintained; and
- xiii. The character and significance of the railway station and the Hampden Road shops as historic elements and as a buffer to the high rise development of West Artarmon must be respected in any new development.



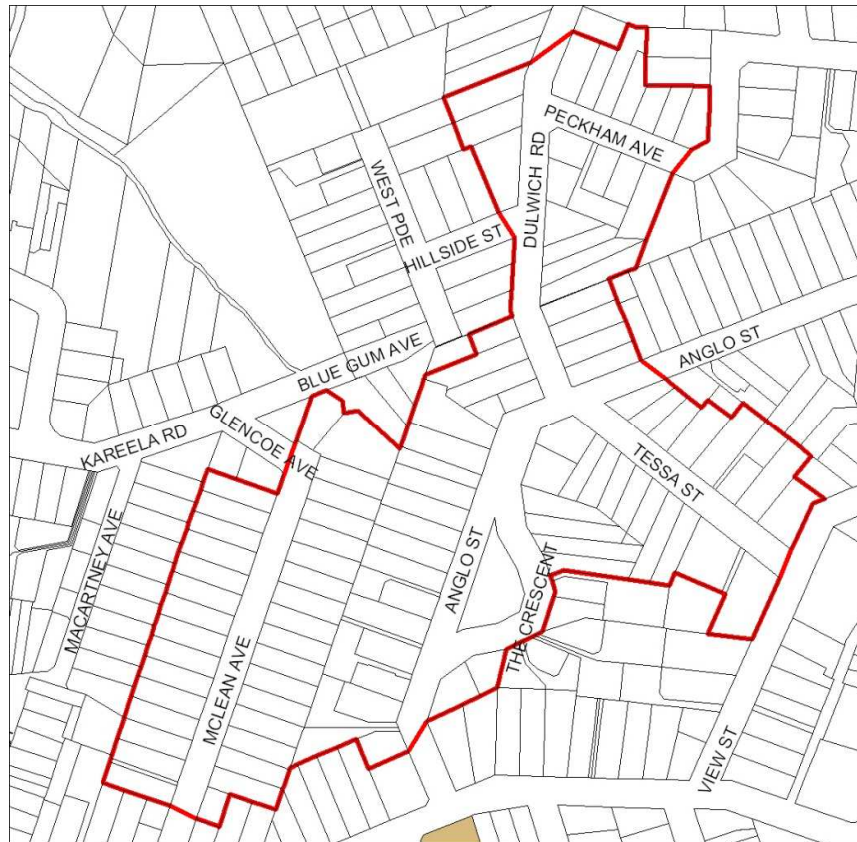
Controls for future development – Artarmon: R2 Residential



3.2.1 Scale	Generally:	Uniform low scale, detached bungalows, few semi-detached cottages and flat buildings at station.
	i. Storeys:	1 (2nd storey within roof forms or basement acceptable).
	ii. FSR:	0.4:1: This figure represents an upper limit to FSR. It takes the existing pattern of development into account and provides for some additional floor area without compromising the significance of the Heritage Conservation Area. Refer to Clause 4.4 (Floor space ratio) of WLEP 2012.
3.2.2 Setting/ Subdivision	Generally:	Rectilinear subdivision superimposed on moderate slopes, Average 675m ² 15m (12.5 m min) frontages. Uniform setbacks within streets or within groups of houses. Generous well landscaped front and rear yards, mature native & exotic plantings, trees to rear gardens.
	i. Setbacks:	Side: 0.9- 2.5m (driveway).
	ii. Carparking:	Single garage to side or rear of dwelling, or part of basement.
	iii. Front Fencing:	Low unpainted face brick.
3.2.3 Form/Massing		

	i. Roof:	Simple, mainly hipped with some gabled forms.
	ii. Façade:	Symmetrical or asymmetrical, generally stepped massing, incorporating porch or verandah.
	iii. Building Envelope:	<p>Roof pitch: 25-30° Eaves height: 3.5m from floor level Ridge height: 6-6.5m from floor level Building height 8m from natural ground level to the vertical distance between ground level (existing) and to the highest point of the building in accordance with Clause 4.3 (Height of buildings) of WLEP 2012.</p> 
3.2.4 Materials/ Details		
	i. Roof:	Unglazed terracotta Marseilles tile Strapwork or shingle gable end details.
	ii. Walls:	Red brown, brown or liver smooth face brick: all unpainted face brick to be retained, roughcast to upper wall surfaces.
	iii. Windows and Doors:	Timber casement or sash windows, some leadlight, timber glazed & panelled entry doors.
	iv. Joinery and Decoration:	Decorative brickwork, use of sandstone/ render trim, robust verandah detailing.

3.3 Blue Gum Heritage Conservation Area: C2

Location



	Heritage Conservation Area		Heritage Items - General
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History

John McMillan was granted 60 acres by the Crown in 1840. This grant extended south from Corona Avenue to Isaac Nicholls' 1805 Crown Grant known as "Kings Plains". Originally heavily timbered, the proposed Conservation Area has a history of timber felling followed by orchards and small farms. A dairy was known to have been operated in nearby Kareela Road. McMillan's Farm Subdivision was up for sale in 1897, with properties offered along Gordon Road (now Pacific Highway) between Wyvern and Corona Avenues. A number of substantial residences were already built in Wyvern and Findlay Avenues at that time.

The Anglo Park Estate which included residential allotments fronting Anglo, View, Tessa, Fullers and Gordons Roads and larger allotments fronting The Crescent and Tessa St (south side) were offered for sale in 1906. The Anglo Park Estate was developed by the Anglo Australian Assets Company. This subdivision represents the second wave of residential development in the area.

The last major wave of residential development occurred in the period 1913 - 1920,

and is represented in the following streets West Parade, Hillside Street, Dulwich Road (1913), Peckham Avenue (1914), and McLean Avenue (1918) and Macartney Avenue (1922). The McLean Estate was formerly a seven and a half acre orchard worked by Duncan McLean, and leased to Chinese market gardeners. McLean Avenue was formed in 1917. Allotments in McLean Avenue were up for sale as the “Elerslie Estate” in 1919. Kareela Road, Blue Gum Road, Kooba Avenue and Glencoe Avenue are later developments.

Description

The area is dominated by Interwar housing, predominantly 1920’s and 1930’s bungalows. The streets close to the Pacific Highway (such as Tessa Street) include several fine Federation houses. Both Federation and Interwar cottages harmonise in their form, single storey scale, palette of materials (red/brown face brick, terracotta roof tiles) and garden settings. The undulating topography, irregular street layout, wide grass verges, mature street trees, and well-vegetated reserves with remnant Blue Gum High Forest (an identified Threatened Species) complement the well established private gardens to create a verdant bushland feel.

Statement of Significance

The area is representative of residential development of the late Federation and Interwar periods. Many streetscapes within the area have a uniformity of housing style including form materials and detailing that gives the area a harmonious appearance. The predominance of the 1920’s bungalow type illustrates the important influence of American housing ideals and styles on Australia. The precinct has a strong physical and historical connections with the Blue Gum Forest and the topography.

Key Period of Significance

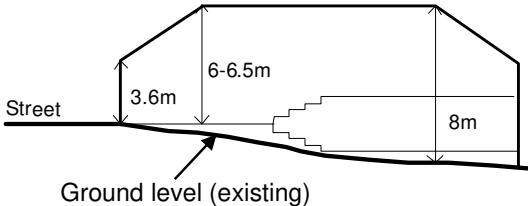
1906 – 1920.

Management policies

- i. Retain and enhance the original form, scale and detail of existing buildings and the individual significance of the streetscapes;
- ii. Retain single storey character of the area. Sloping sites may enable two storey additions to the rear, which must preserve the predominantly single storey scale of the detached housing and must not interrupt the streetscape;
- iii. Retain characteristic palette of materials of the area, particularly the use of dark monotone face brick, sandstone bases, painted timber trim and terracotta roof tiles;
- iv. Retain intactness of area by carefully controlling alterations and additions, which must be set at the rear or where not visible from the street;
- v. Additions should not result in excessive changes in scale, or bulk, or the introduction of visually intrusive and dissimilar materials particularly on prominent sites, including corner sites;
- vi. Retain the pattern of low masonry fences and landscaped front gardens;
- vii. Retain existing side driveways and rear car parking facilities;
- viii. The siting of new development must not result in the loss of significant landscaping either on-site or in verges. In this regard driveways should be minimal with wheel strips being the preferred solution;
- ix. Protect mature trees in rear gardens which form a backdrop to the streetscapes. Protect remnants of the Blue Gum High Forest;

- x. Where a site is bushfire prone land, landscaping should conform with the performance requirements of the NSW Rural Fire Service 'Planning for Bushfire Protection'; and
- xi. Street plantings and reserve vegetation must be maintained and encouraged. Retain and enhance remnants of Blue Gum High Forest.

Controls for future development – Blue Gum

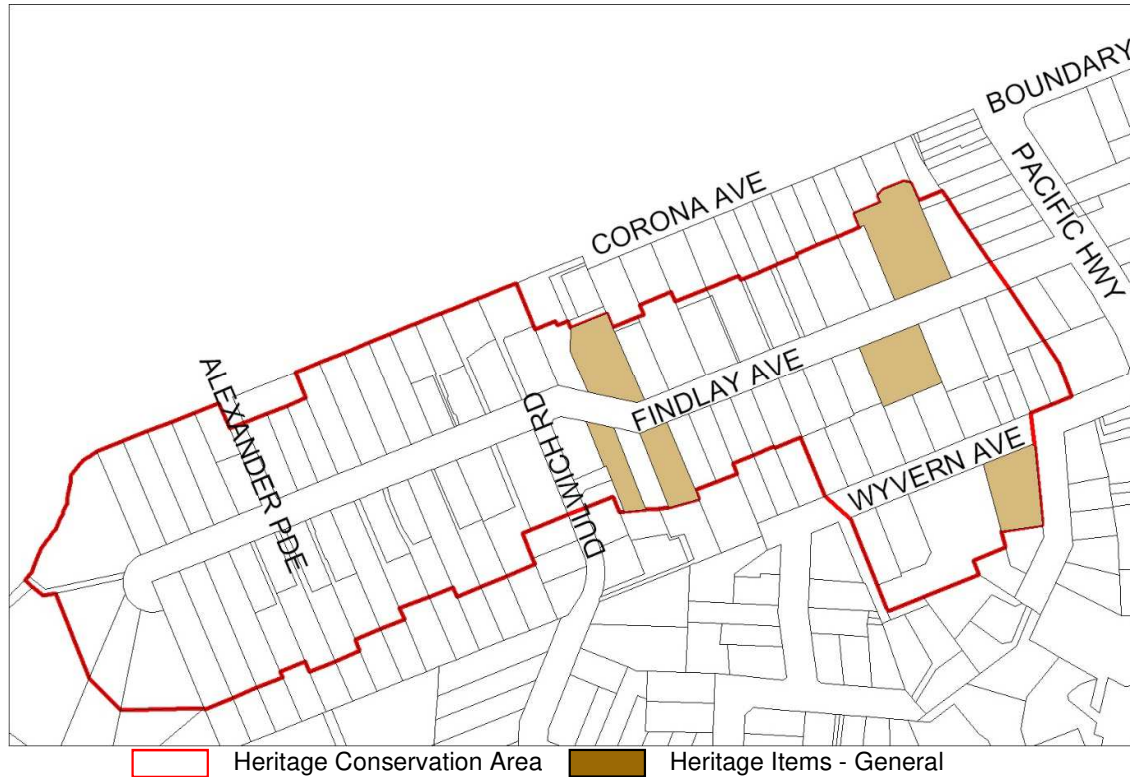
3.3.1 Scale	Generally:	Medium domestic scale, detached residences.
	i. Storeys:	Generally 1 (2nd storey within roof forms and basements where topography dictates).
	ii. FSR:	0.4:1: This figure represents an upper limit to FSR. It takes the existing pattern of development into account and provides for some additional floor area without compromising the character of the Heritage Conservation Area. Refer to Clause 4.4 (Floor space ratio) of WLEP 2012.
3.3.2 Setting/ Subdivisions	Generally:	Irregular, many large allotments.
	i. Setbacks:	Variable front & side setbacks consistent within groups of houses.
	ii. Landscaping:	Well established informal gardens with fairly dense shrubbery and mature trees, including some remnant Blue Gum High Forest. (Refer Management Policies).
	iii. Carparking:	Side driveways to rear/ side parking.
	iv. Front Fencing:	Low unpainted face brick or timber picket.
3.3.3 Form/Massing	i. Roof:	Generally dominant hipped and gabled roof forms.
	ii. Façade:	Stepped massing with protruding verandahs/ entry porches and bays.
	iii. Typical Building Envelope:	<p>Roof pitch: 25-35° Eaves height 3.6m from floor level Ridge height: 6-6.5m from floor level Building height 8m from natural ground level to the vertical distance between ground level (existing) and to the highest point of the building in accordance with Clause 4.3 (Height of buildings) of WLEP 2012.</p> 
3.3.4 Materials/	i. Roof:	Unglazed terracotta Marseilles pattern tile.

Details	ii. Walls:	Generally red or brown smooth face brick: all unpainted face brick to be retained.
	iii. Windows and Doors:	Timber casement sash windows often in groups of 3 in bays to front façade. Single or double leaf panelled & glazed entry doors.
	iv. Joinery and Decoration:	Heavy masonry verandah columns with stone or render capping, stone base coursing, simple gable ends.



3.4 Findlay & Wyvern Avenues Heritage Conservation Area: C3

Location



History

Findlay and Wyvern Avenues formed a part of a Crown land grant to John McMillan in 1840, and was later bought up by Richard Hayes Harnett. Findlay Avenue dates from around 1898, and was named after Miss Findlay, who married Frederick White, an early landholder who lived in this street. Findlay Avenue was home to the first Chatswood Public School. Wyvern Avenue developed at around the same time, and is thought to have been named by Harnett.

Description

This area can be broadly divided into two localities which reflect the pattern and timing of development, through the dominant Federation and Interwar Bungalow styles.

The flatter sections near the Pacific Highway have a variety of Federation era housing, including gracious Queen Anne style grand villas, imposing two storey mansions in spacious gardens, plus a pair of unusual two storey semi-detached houses in the Arts and Crafts style (Wyvern Avenue). These occupy larger sites, though some original lots have been subdivided to intersperse a few California and 1930's Bungalows. Wide verges with mature, usually brush box, street trees complement the well established original gardens to create an attractive avenue effect. Most houses are intact with a wealth of original decoration and detailing and notable architectural features, including graceful slate roofs. The significance of this locality lies in its largely coherent Federation character, which is richly expressed in an array of individually interesting and surprisingly varied buildings.

The sloping sections are generally subdivided into smaller, narrower fronted lots. The street frontages are occupied by a mix of California and 1930's bungalows, interspersed with the occasional Federation bungalow and, furthest from the Highway, a few more recent unsympathetic developments (Findlay Avenue). About a third of the lots have been re-subdivided enabling battle-axe development which generally does not disrupt the streetscape. Most houses are single storey, with the few two storey buildings in Findlay Avenue being set well below the roadway or on very large allotments. The streetscape presents a generally consistent single storey scale, however it is more remarkable for the mix of largely intact original buildings (some of which occur in harmonious groups of similar or related styles) than for its uniformity.

Statement of Significance

The area possesses a streetscape integrity due to the development during one period and the excellent state of preservation of the houses and their garden settings. The area has a uniformity of housing style including form materials and detailing that gives the area an harmonious appearance. The predominance of the 1920's bungalow type illustrates the important influence of American housing ideals and styles on Australia.

Key Period of Significance

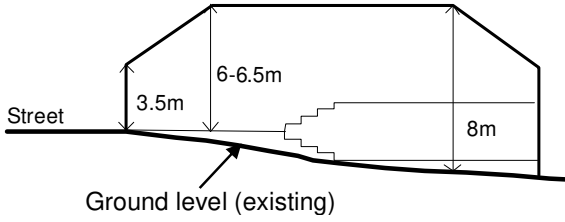
1898 – 1940

Management policies

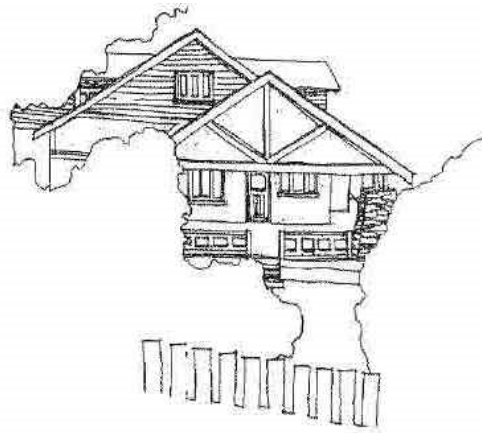
- i. Retain and enhance the original form, scale and detail of existing buildings;
- ii. Maintain the individual character of streetscapes which are of heritage significance, particularly as seen in harmonious or consistent groupings of buildings;
- iii. Ensure that any re-subdivision and infill development on larger sites is well integrated with the individual character of existing original buildings, the local streetscape and the setting of important Heritage Items;
- iv. Retain the balance between built and landscaped elements by maintaining street trees and encouraging the retention of private gardens; and
- v. Where a site is bushfire prone land landscaping should comply with the performance requirements of the NSW Rural Fire Service 'Planning for Bushfire Protection'.



Controls for future development – Findlay & Wyvern Avenue

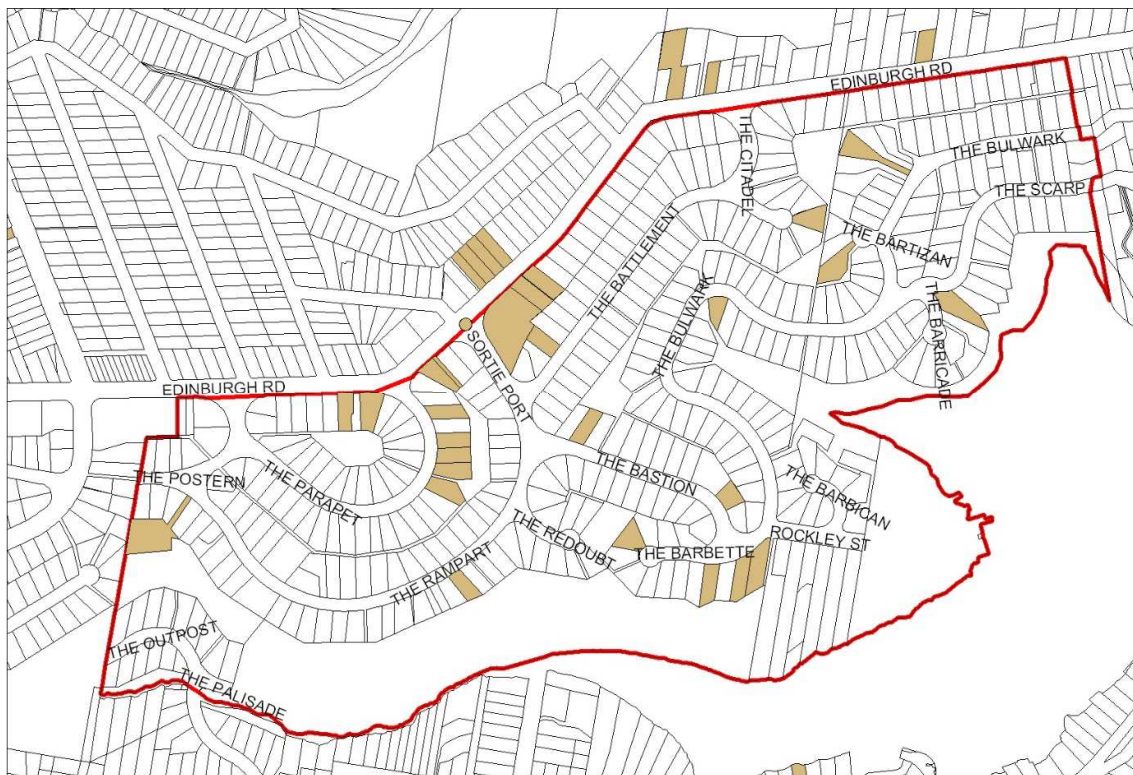
3.4.1 Scale	Generally:	Medium / large domestic scale.
	i. Storeys:	Generally 1 (2nd storey within roof forms acceptable), 2 storey on large allotments.
	ii. FSR:	0.4:1: for land zoned R2 Residential. This figure represents an upper limit to FSR. It takes the existing pattern of development into account and provides for some additional floor area without compromising the significance of the Heritage Conservation Area. Refer to Clause 4.4 (Floor space ratio) of WLEP 2012. For land at 52 – 84 Findlay Avenue zoned E4 Environmental Living refer to WLEP 2012, Clause 4.4 Floor Space Ratio, including the table for Maximum FSR in Area 2.
3.4.2 Setting/ Subdivisions	Generally:	Irregular, many large allotments, several have been subdivided to create battle axe blocks.
	i. Setbacks:	Variable front & side setbacks consistent within groups of houses.
	ii. Landscaping:	Well established gardens with fairly dense shrubbery and mature trees. (Refer to Management Policies).
	iii. Carparking:	Side driveways to rear/ side parking.
	iv. Front Fencing:	low unpainted face brick or timber picket.
3.4.3 Form/Massing	i. Roof:	Generally dominant hipped and gabled roof forms.
	ii. Façade:	Generally stepped massing with protruding verandahs/ entry porches.
	iii. Typical Building Envelope:	<p>Roof pitch: 25-30° Eaves height 3.5m from floor level Ridge height: 6-6.5m from floor level Building height 8m from natural ground level to the vertical distance between ground level (existing) and the highest point of the building in accordance with Clause 4.3 (Height of buildings) of WLEP 2012.</p> 



3.4.4 Materials/ Details	i. Roof:	Unglazed terracotta Marseilles tile and slate.
	ii. Walls:	Generally red or liver smooth face brick: all unpainted face brick to be retained.
	iii. Windows and Doors:	Timber casement sash windows often in groups of 3 in bays to front façade, single or double leaf panelled & glazed entry doors.
	iv. Joinery and Decoration:	Heavy masonry verandah columns with stone or render capping, stone base coursing, simple gable ends.



3.5 Griffin Heritage Conservation Area: C4

Location



 Heritage Conservation Area  Heritage Items - General

History

The purpose of the WDCP controls for the Griffin Heritage Conservation Area at Castlecrag is to conserve the basic principles for the area of which the most significant aspect is the subordination of buildings to the landscape. The aim is to encourage development that upholds these principles by ensuring that new developments respect the predominant scale and form of the area and in particular, are sympathetic to any original houses designed by the Griffins or their associates.

History

Walter Burley Griffin and his architect wife Marion Mahony Griffin founded the Greater Sydney Development Association (GSDA) in 1920, and set about establishing a residential development that was sympathetic with the natural environment, and in sharp contrast to the red roofs and grid streets that characterised Sydney at the time.

In 1921, the GSDA purchased 650 acres at Middle Harbour, including the south west part of Castlecrag. Griffin designed the Castlecrag Estate, as it became known, in sympathy with the natural environment, creating bushland reserves that preserved the major landforms and rock outcrops; foreshore reserves; a delightful network of walkways; and roads that followed the contours and respected the landforms.

In 1926 Walter and Marion Griffin bought, in their own names, two portions that adjoined the eastern boundary of the Castlecrag Estate. This they called the Haven Estate. Griffin extended the same principle of contoured road design, reserves etc. to the subdivision of this land.

The houses were designed to harmonise with the landscape and were built of sandstone quarried from the site and/or Knitlock, a concrete building block patented by Griffin that had a crushed sandstone finish. Many sites had a house plan attached and the houses were carefully located on the sites with stepped setbacks from the road to respect the views and privacy of other houses. Most houses had flat roofs to maximise the retention of views and covenants controlled all development.

Fourteen houses designed by Griffin were built at Castlecrag but evidence of over forty house designs exists. GSDA exercised control of design and siting of buildings through covenants affecting the construction materials used, number of buildings on the site, setbacks, design of fences, advertising signs, and required contribution to upkeep of public reserves, to safeguard the general high class residential character of the area. Eric Nicholls varied the covenants to allow pitched roofs and brick walls etc. Council is not bound to enforce these covenants but they may be enforced by owners of properties within the estate that comply with the covenants.

The National Trust of Australia (NSW) recognised the importance of the area by classifying it as an Urban Conservation Area in 1981.

Description

Within residential properties, the lack of front fences and separate garages retain the transition from street to reserve that Griffin intended by minimal building within the first 10m zone of the property. The intent was that the house was to exist in the bush landscape without the artificiality of property boundaries.

Griffin's main aims in designing the Estate were to get away from the traditional suburb with its rectangular grid street pattern, imposed upon the landscape without thought for topography, and to demonstrate that architecture could be subordinate to and harmonious with the landscape. To Griffin, architecture, the site planning, town planning and landscape design were inseparable. Any structure had to fit into the overall landscape of the area - being harmonious rather than obtrusive. He achieved this integration through his design philosophy - narrow winding roads following contours, linked open space networks, lack of fences, unobtrusive houses, retention of bushland in the reserves, walkways, nature strips and road islands. Roads are unobtrusive because of the proliferation of natural vegetation, their winding nature, the grass and bushland verges, the sandstone kerbs and narrow widths. All these aspects, the natural landforms of rock outcrops, cliffs, gullies etc. and the rock cuttings for the road and also the culverts are extremely important and of great significance in the Griffin Heritage Conservation Area.

The form of houses proposed by Griffin was single storey, or in rare cases two storey buildings based on a series of projecting wings radiating from the central area and fireplace. The elevational treatment tended towards strong horizontals because of a design intention to integrate with the landscape. This is reinforced by the use of masonry blocks with strong horizontal window lintels and flat roofs. The finishes tended toward natural materials such as stone and the use of colours which reflect the bushland setting.

Statement of Significance

The Castlecrag and Haven Estates are outstanding early examples of subdivision which respected the landscape character of an area, created community environments and provided shared views. This process was initiated by Walter Burley Griffin and Marion Mahony Griffin who were influential architects in the United States and Australia, and were known for their appreciation of the opportunities provided by landscape which was embodied in their plan for Canberra. The significance of the estates is heightened by the extant works of the Griffins which are nationally and internationally recognised.

The estates are a larger more complete demonstration of principles Griffins had developed in the United States and their first seven years in Australia. These innovative principles involved subdivision, contoured roads embedded in the sandstone topography and engineering processes that were aimed at conserving the sandstone terrain, stream systems, indigenous bushland and harbour foreshore, and provided extensive reserves and walkways through the estates that created an integrated open space network. The distinctive nomenclature the Griffins gave to the reserves and roads expresses the castle-like quality of the Castlecrag peninsula.

The estates embody the sense of community and social connection from the Griffins, the first investors and the Griffins' friends to a continuing community with a strong sense of connection to the place. Long established community facilities include the Haven Amphitheatre, Community Centre, Griffin shops, tennis courts, reserves and walkways.

The estates are unique in their application of small lots in a spectacular harbour setting with public vistas and filtered views providing the suburban ideal subordinated to the landscape.

Key Period of Significance

1921 – 1935

Management policies

- i. Retain and where possible reinstate the original subdivision pattern and linked system of public reserves and pedestrian pathways. Retain road islands, rock cuttings, sandstone retaining walls, kerb and guttering, grass road verges and bushland nature strips;
- ii. Maintain and where possible reinstate natural topography, landforms, the natural ecology/drainage ways and ponding areas, and vegetation types;
- iii. Buildings should be placed to respect natural features which historically has resulted in a variety of setbacks. This principle should be adhered to in new development.
- iv. Permit new development which fits in with the original subdivision pattern, and which blends with and preserves as much as possible of the natural landscape, its remnant bushland and rocky terrain;
- v. New development must carefully follow the contours of the land to minimise bulk, and cutting and infilling;
- vi. The height, scale, bulk, massing and proportion, site cover, location and visibility of new development must be such that:
 - built forms are subordinate to the natural landscape;
 - the spacing between buildings and rhythms of the streetscapes are retained, or opened up to create vistas of the natural landscape;

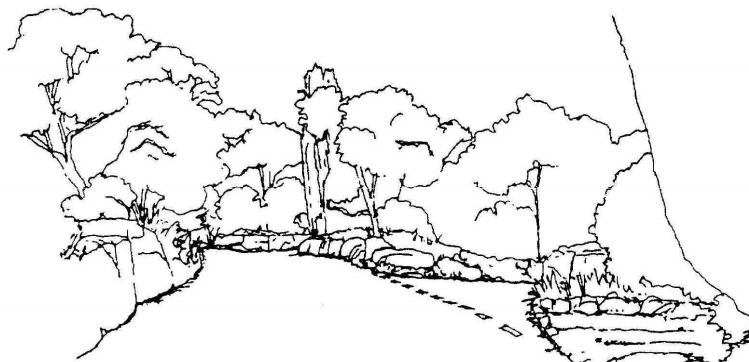
- primary views from nearby and adjoining dwellings and public reserves, roadways, pathways and drainage reserves are not obstructed;
 - undercroft areas are not visually intrusive in the landscape when viewed from the water or the land;
 - buildings are highly articulated in plan and elevation; and
 - amenity of public reserves is maintained as public open space.
- vii. Materials and colours must blend inconspicuously with the predominant colours of the local bushland;
- viii. Significant heritage items including landscape must not be encroached upon;
- ix. Carparking, including garages are to be designed and sited to retain the unique character of the usually well vegetated narrow winding roadways and public open spaces;
- x. No fences, screens or gates other than very low fencing (300mm in height) forward of the building line;
- xi. No fences or screens adjoining public reserves and pathways:
 - indigenous vegetation to be used to achieve privacy; and
 - where special security requirements can be demonstrated, fencing to a maximum of 1200mm may be permitted to be constructed of timber posts or metal frame posts with light weight open mesh infill. Acceptable styles include arris rail or piped rail and diagonal mesh, horse wire or childproof weldmesh in unpainted galvanised finish. Where bushfire prone land is identified non-combustible materials must be used;
- xii. Locally indigenous vegetation is to be used for landscaped areas, including private open space adjoining Griffin walkways, reserves and public open space; and
- xiii. Where a site is bushfire prone land, landscaping should conform with the performance requirements of the NSW Rural Fire Service 'Planning for Bushfire Protection'.

Controls for future development – Griffin: E4 Environmental Living

3.5.1 Scale	Generally:	Low scale, maintain and reinstate predominance of native landscape over built form. Ensure no encroachment by new buildings into public vistas.												
	i. Storeys:	Generally 1- 1.5, maximum 2.												
	ii. FSR	<p>The maximum gross floor area (GFA) of a building on land that is in the Griffin Heritage Conservation Area is the GFA specified in column 2 of the table. This figure represents an upper limit to GFA. It takes the existing pattern of development into account and provides for some additional floor area without compromising the significance of the Heritage Conservation Area.</p> <table border="1"> <thead> <tr> <th>Column 1</th> <th>Column 2</th> </tr> <tr> <th>Site area (square metres)</th> <th>Floor space ratio (:1)</th> </tr> </thead> <tbody> <tr> <td>Under 400</td> <td>0.45</td> </tr> <tr> <td>400–500</td> <td>0.40</td> </tr> <tr> <td>501–600</td> <td>0.36</td> </tr> <tr> <td>601–700</td> <td>0.34</td> </tr> </tbody> </table>	Column 1	Column 2	Site area (square metres)	Floor space ratio (:1)	Under 400	0.45	400–500	0.40	501–600	0.36	601–700	0.34
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Site area (square metres)	Floor space ratio (:1)													
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601–700	0.34													

		<table border="1"> <tr> <td>701–800</td> <td>0.32</td> </tr> <tr> <td>801–900</td> <td>0.30</td> </tr> <tr> <td>901–1,000</td> <td>0.28</td> </tr> <tr> <td>1,001–1,100</td> <td>0.26</td> </tr> <tr> <td>1,101–1,300</td> <td>0.25</td> </tr> <tr> <td>Over 1,300</td> <td>0.24</td> </tr> </table>	701–800	0.32	801–900	0.30	901–1,000	0.28	1,001–1,100	0.26	1,101–1,300	0.25	Over 1,300	0.24
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1,101–1,300	0.25													
Over 1,300	0.24													
		Refer to Clause 4.4A (Exceptions to Floor space ratio) of WLEP 2012.												
	iii. Massing	The scale and massing of new development is to respect the Griffins' objective to have all built forms subservient to the landscape. Development in the vicinity of Heritage Items shall respect the scale and massing of those items and ensure public view corridors to them.												
3.5.2 Setting/ Subdivision	Generally:	Retain and enhance original Griffin subdivision and its intention with emphasis on the natural qualities, views and topography of the site.												
	i. Setbacks:	Natural features, public walkways, or existing heritage buildings: 3m. Street: variable, typically 6-10m. Public reserves: min 10m from the rear boundary with reserve. One side: 3m. Façades visible to pathways or reserves are to incorporate setbacks stepped in plan to create articulation and reduce visual bulk.												
	ii. Landscaping:	Informal, heavily landscaped front gardens dominated by indigenous shrubs and trees. Maintain, enhance and protect indigenous landscape, natural features, landforms & vegetation (For bushfire prone land refer to Management Policies).												
	iii. Carparking:	Small scale, carparking behind building line where possible, else 5m setback for carports. Reduce impact of cars through the use of lightweight open carports and absorbent surface materials (not interfering with public view from street). Open hard stand parking spaces or lightweight open sided carports, with absorbent ground surface materials preferred rather than enclosed garages to reduce the impact of cars.												
	iv. Preservation of views from public places:	Retain public views of waterways and other significant outlooks.												
	v. Fencing:	(Refer to Management Policies).												

	vi. Gates behind Building alignment	Behind building alignment, no gate or “see through”/open mesh form gates to maximum 1200mm is preferred. Gates permitted on boundaries adjoining public pathways and reserves. (Refer to Management Policies).
3.5.3 Form/Massing	i. Roof:	Simple flat roofs or low pitched hipped roof forms in recessive neutral colours.
	ii. Façade:	Stepped, well articulated elevations, projecting bays asymmetrical building forms, horizontal emphasis. Avoid use of strong vertical elements such as fenestration or columns.
	iii. Building Envelope:	Roof pitch max. 22.5°, Height: 8m max in accordance with Clause 4.3 (Height of buildings) of WLEP 2012. Ground floor plane: follow contours of landforms. Heights relative to ground level (existing)
	iv. Substantial Alterations:	Development involving substantial alterations is to achieve side boundary setbacks that open up vistas or views between houses.
3.5.4 Materials/Details	i. Roof:	Bitumen, corrugated metal sheet, terracotta tile or concrete tile in recessive neutral colours.
	ii. Walls:	Stone, render or timber in recessive neutral colours which blend inconspicuously with the predominant colours of the local bushland. Materials used to enhance horizontal emphasis.
	iii. Windows and Doors:	Horizontal emphasis to groups of windows.
	iv. Joinery and Decoration:	Horizontal emphasis.



3.6 Harwood Avenue Heritage Conservation Area: C5

Location



History

Harwood Avenue is a short street of identical, average sized lots on gently sloping land that was developed in the 1920's. Originally part of John Street, the Avenue was renamed in 1921 after George Harwood who owned the nearby Harwood Estate. The first rate assessment in Harwood Avenue was in 1921.

Description

The housing is almost entirely fairly modest 1920's California or transitional bungalow styles that are typical of much of Willoughby. The street is unified by the consistent use of face brick and Marseilles pattern terracotta tile as well as a consistency in building form, scale and setbacks. Façades feature some leadlight windows generally in groupings of three, rough face sandstone base coursing, and limited use of timber shingles, vertical battens and roughcast to gable ends and window skirts. Carparking is located behind the building alignment and front gardens are open and well landscaped with low fencing, providing an appropriate setting for the bungalows. The street is enhanced by its closure at Penshurst Street and by the mature, consistent brush box street tree planting.

Statement of Significance

This is an outstanding example of a 1920's residential development in near original condition. Very few additions or irreversible alterations have occurred to the original housing stock, and its coherent character is retained. The area possesses a streetscape integrity due to the development during one period and the excellent state of preservation of the houses and their garden settings. The area has a uniformity of

housing style and setting including form materials, detailing, fencing and setbacks that gives the area an harmonious appearance. The predominance of the 1920's bungalow type illustrates the important influence of American housing ideals and styles on Australia.

Key Period of Significance

1921 – 1930

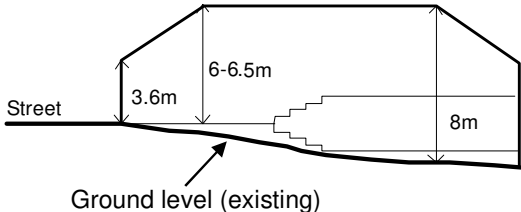
Management policies

- i. Retain the dominant Bungalow character of the street by maintaining all original 1920's-1930's buildings and their consistency in scale, style, detailing, spacing, setbacks and subdivision pattern.
- ii. Any new development (including carparking structures) must retain the principal elevations of the bungalows and be set back behind the main body of the original building envelope. Additional floor space may be achieved within the roof space at the rear of houses.
- iii. Maintain the avenue character by retaining the original brushbox street trees and largely original style front gardens. Any street tree renewal should replace with brushbox.



Controls for future development – Harwood Avenue

3.6.1 Scale	Generally:	Uniform low domestic scale, detached bungalows.
	i. Storeys:	1 (2nd storey within roof forms acceptable).
	ii. FSR:	0.4:1: This figure represents an upper limit to FSR. It takes the existing pattern of development into account and provides for some additional floor area without compromising the significance of the Heritage Conservation Area. Refer to Clause 4.4 (Floor space ratio) of WLEP 2012.
3.6.2 Setting/ Subdivision	Generally:	Consistent grid layout, lots average 565sqm, 15.24m frontages.
	i. Setbacks:	Uniform front setbacks: 6m

		Variable side setbacks: 0.9-3m.
	ii. Landscaping:	Open front gardens with lawns and low exotic shrubbery.
	iii. Carparking:	Single low scale rear or side garages accessed by side driveways.
	iv. Front Fencing:	Low unpainted brick, timber & wire fencing.
3.6.3 Form/Massing	i. Roof:	Dominant broad simple low roof, 2-3 gables facing street, hipped to rear, some single gables; with cross gable; flat roofed porches and verandahs to street.
	ii. Façade:	Typically asymmetrical stepped façades, with protruding bays, recessed porches and verandahs.
	iii. Building Envelope:	<p>Roof pitch: 25-30° Eaves height: 3.6m from floor level Ridge height: 6-6.5m from floor level Building height 8m from natural ground level to the vertical distance between ground level (existing) and the highest point of the building in accordance with Clause 4.3 (Height of buildings) of WLEP 2012.</p> 
3.6.4 Materials /Details	i. Roof:	Unglazed terracotta Marseilles tiles, exposed eaves.
	ii. Walls:	Liver or red smooth face brick: all unpainted face brick to be retained, render or sandstone base coursing, rough cast to upper wall surfaces.
	iii. Windows and Doors:	Large bays/boxed timber casement windows in groups of 3 to street with skirts and awnings, single leaf timber panelled glazed entry doors.
	iv. Joinery and Decoration:	Simple lattice or shingles and /or vertical battering to gable ends, simple ventilators, massive battered verandah columns in brick, stone or roughcast.

3.7 Hollywood Crescent Heritage Conservation Area: C6

Location



History

The area of Hollywood Crescent was originally a part of the Higgins Estate, and was at one time cultivated by Chinese market gardeners. It is believed that Higgins received an inheritance from a relative in USA with connections in Hollywood, prompting the development of the estate in 1926-8 by Cramer Bros., Real Estate Agents of Crows Nest, prominent local business men and politicians, who assumed trusteeship for Higgins Buildings Limited. Cramer Bros named the Crescent and decided to build Californian bungalows.

Description

Hollywood Crescent's winding horse-shoe shape is a rare and marked contrast to the grid pattern of the bulk of Willoughby's streets of this era and is reminiscent of the "prime garden" suburb layouts found in the Appian Way, Haberfield or the early South Sydney suburb of Daceyville. The grassy verges and regular plantings of brush box enhance the garden suburb vision.

The subdivision pattern is most unusual, including radial divisions with all lots facing the 'U' shaped road. Consequently, the lots are extremely varied in shape and frontages. The northern boundary of the Heritage Conservation Area is partially formed by the alignment of Sugarloaf Creek.

Housing in the area consists predominantly of 1920's bungalows on medium sized lots. The street is unified by the consistent use of face brick and terracotta tile as well as uniformity in building form, scale and setbacks. The mature regular street tree plantings, changing orientation of bungalows, landscaped front gardens and curving

street layout, creates a picturesque sequence of vistas along the Crescent.

Statement of Significance

This is a rare local example of a curving tree-lined residential development of the 1920's. The area possesses a streetscape integrity due to the development during one period and the excellent state of preservation of the houses and their garden settings, and the consistent and mature street plantings. The area has a uniformity of housing style and setting including form, materials, detailing, setbacks and fencing that gives the area an harmonious appearance. The predominance of the 1920's bungalow type illustrates the important influence of American housing ideals and styles on Australia.

Key Period of Significance

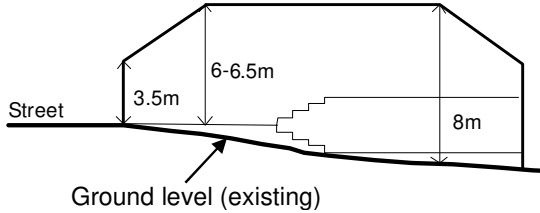
1926 – 1935

Management policies

- i. Retain and enhance the open garden suburb character and dominant Bungalow style of the streetscape;
- ii. Retain the style, scale, setbacks and spacing of the original buildings;
- iii. Second storey additions to be designed to integrate into roof forms, and maintain the scale and character of the original bungalows;
- iv. Encourage low fencing and open front gardens;
- v. Maintain the existing Brush Box street trees and wide grassy verges;
- vi. Reinstate Brush Box street trees where other species have been planted;
- vii. Retain existing access to rear/side carparking facilities; and
- viii. Ensure that the scale of development in the vicinity of Hollywood Crescent does not impact upon the significance of the streetscape, or upon vistas into the Crescent.



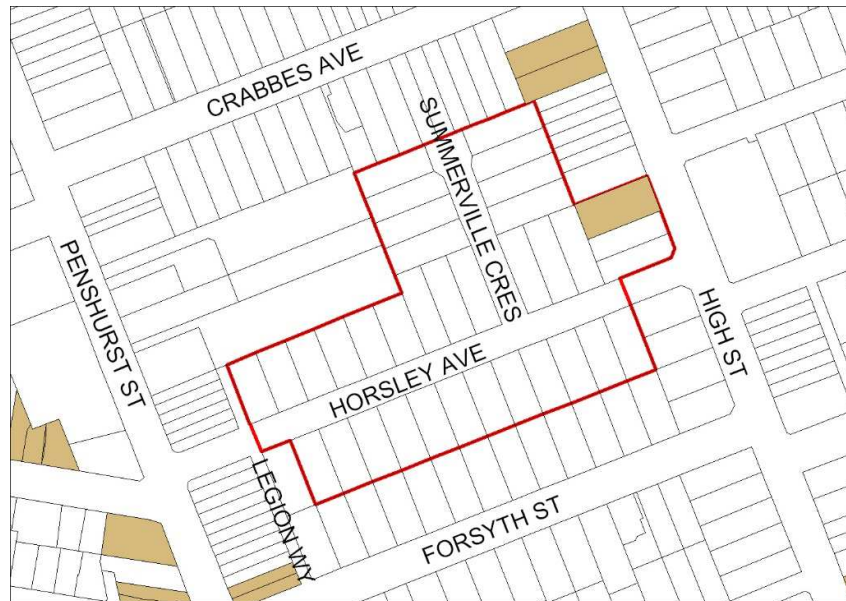
Controls for future development – Hollywood Crescent

3.7.1 Scale	Generally:	Uniform low domestic scale, detached bungalows.
	i. Storeys:	1 (2nd storey additional roof forms in sympathetic style acceptable refer to Management Policies).
	ii. FSR:	0.4:1: This figure represents an upper limit to FSR. It takes the existing pattern of development into account and provides for some additional floor area without compromising the significance of the Heritage Conservation Area. Refer to Clause 4.4 (Floor space ratio) of WLEP 2012.
3.7.2 Setting/ Subdivisions	Generally:	Rare patterns of vegetation and radical lots fronting 'U shaped' road, variable lot sizes and frontages.
	i. Setbacks:	Front setbacks follow curve of street front: 6-7m, variable side: 0.9-3m.
	ii. Landscaping:	Established open garden to street, lawn with mixed exotic shrubs.
	iii. Carparking:	Simple, low scale single garages to rear or side accessed by side driveways.
	iv. Front Fencing:	Low unpainted face brick, timber and unpainted brick, or sandstone.
3.7.3 Form/Massing	i. Roof:	Broad dominant gables (2-3) fronting street, hipped to rear, low pitch or flat roofed verandahs.
	ii. Façade:	Bold stepped massing with projecting bays and porches, typically asymmetrical, recessed verandahs to street.
	iii. Building Envelope:	<p>Roof pitch: 25-30° Eaves height: 3.5 m from floor level Maximum ridge height: 6-6.5 m from floor level Building height 8m from natural ground level to the vertical distance between ground level (existing) and to the highest point of the building in accordance with Clause 4.3 (Height of buildings) of WLEP 2012.</p> 

3.7.4 Materials/ Details	i. Roof:	Unglazed terracotta Marseilles tiles Exposed eaves, fibre cement gable infill's.
	ii. Walls:	Red/liver smooth face brick: all unpainted face brick to be retained, stucco to upper wall surfaces & sandstone base courses.
	iii. Windows and Doors:	Bay/boxed timber casement windows in groups of 2, 3 or 4 with shingled skirts/awnings to street, single leaf semi glazed entry doors.
	iv. Joinery and Decoration:	Battened or shingled gable ends, squat masonry columns & timber posts to verandahs.

3.8 Horsley Avenue Heritage Conservation Area: C7

Location



Heritage Conservation Area Heritage Items - General

History

Part of Richard Archbold's original grant of 1825, later granted to John Stirling (Chairman of the Bank of Australia) in 1850. These grants comprised 600 acres bounded by Victoria Ave, High St, Mowbray Rd to almost Stanley St and continuing parallel with that street to Victoria Avenue. Stirling sold the entire 600 acres to William Lithgow four years later. Lithgow subdivided immediately into lots of varying sizes ranging from small farms of 25 acres to housing lots, and put the whole area up for public auction with little success. In 1858, Richard Horsley bought an 8 acre portion of Lithgow's Estate and settled in Willoughby. Horsley, a pioneer orchardist and gardener, had arrived in the colony with his wife in 1857 on board the "Plantagenet".

Horsley's land was bounded by Penshurst St (east side), High Street (west side) and Forsyth Street (north side), and extended half way to Crabbes Avenue. Horsley established a successful orchard on this site growing vegetables, flowers and operating a small farm. The family home "Seaview" was on the east side of Penshurst Street (now demolished). Richard's oldest son William bought "Kianga" at 190 High Street in 1911 for a family home. It later became a convent and then the Catholic Education Office. Richard died at "Seaview" in 1915, and the farm passed to his youngest son Francis. Francis, built a house and boat shed at Sugarloaf Bay and leased the farm to Chinese market gardeners. After Francis' death, the property was subdivided as the "Heart of Willoughby Estate", and sold in 1926 and 1928. This subdivision included allotments fronting Horsley Avenue, the north side of Forsyth Street, and sections of High Street and Penshurst Street.

Summerville Crescent was developed by Cramer Bros. estate agents of Crows Nest in 1935. Charles Irving Cramer and John Oscar Cramer were very successful businessmen; John later became Mayor of North Sydney, and a formative member of the Liberal Party.

Description

Horsley Avenue is a narrow street with consistent street plantings of Crepe Myrtle. The eastern end is dominated by St Thomas' School and Church, and the western corner features Interwar cottages and flats. The houses are Interwar bungalows built of dark red/brown and liver brick with rough face sandstone base courses and detailing. The roof forms are predominantly hipped with vertically battened gables. Many houses feature leadlight windows in the street facing façades. The low face brick fencing, consistent setbacks, side or rear carparking arrangements and well vegetated front gardens create a streetscape impression that is consistent with the heritage values of the housing.

Summerville Crescent is a short cul-de-sac lined with small-scale bungalows, which appear to have been speculatively developed. The bungalows have glazed terracotta tiled hipped roofs, some with parapeted gables, and are distinguished by idiosyncratic contrasting brick detailing. This detailing is reflected in front fencing. Carports are located to the side and rear of the houses.

Statement of Significance

Summerville Crescent is a rare example of a street speculatively developed in the 1930's, that has a strong sense of unity and aesthetic harmony due to the close stylistic relationships of the cottages. Collectively the houses are important as a group of modest bungalows reflecting popular taste of the late Interwar period with a high degree of consistency in form and fabric, and displaying fine brick detailing. The Crescent is an example of a cul-de-sac subdivision, a popular form of subdivision for capitalising on larger remnant allotments during the later Interwar period.

Horsley Avenue is an intact example of a late 1920's residential development in near original condition. Few additions or irreversible alterations have occurred to the original housing stock, and its coherent character is retained. The area has a uniformity of housing style and setting including form, materials, detailing, fencing and setbacks that gives the area an harmonious appearance. The predominance of the 1920's bungalow type illustrates the important influence of American housing ideals and styles on Australia.

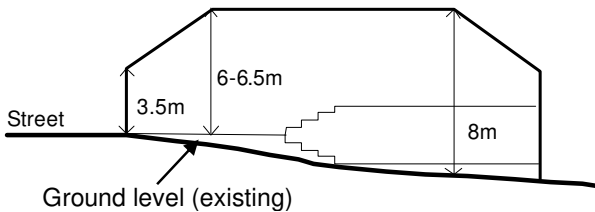
Key Period of Significance

1926-1940

Management policies

- i. Retain the dominant Bungalow character of Horsley Avenue by maintaining all original 1920's-1930's buildings and their consistency in scale, style, detailing, spacing, setbacks and subdivision pattern;
- ii. Retain the individual character of Summerville Crescent by retaining original face brick bungalows with their individual brick detailing. Any future development must take the form of single storey additions to the rear or side which do not dominate the original building stock;
- iii. Any new development (including carparking structures) must retain the principal elevations of the bungalows and be set back behind the main body of the original building envelope; and
- iv. Maintain the avenue character by retaining the street trees and largely original style front gardens.

Controls for future development – Horsley Avenue

3.8.1 Scale	Generally:	Uniform low domestic scale, detached bungalows.
	i. Storeys:	1 (attic within roof forms acceptable).
	ii. FSR:	0.4:1: This figure represents an upper limit to FSR. It takes the existing pattern of development into account and provides for some additional floor area without compromising the significance of the Heritage Conservation Area. Refer to Clause 4.4 (Floor space ratio) of WLEP 2012.
3.8.2 Setting/ Subdivision	Generally:	consistent grid layout, lots average 550sqm, 15m frontages.
	i. Setbacks:	Uniform front setbacks: 6m. Variable side setbacks: 0.9-3m.
	ii. Landscaping:	Open well vegetated informal front gardens with lawns and low exotic shrubbery.
	iii. Carparking:	Single low scale rear or side garages accessed by side driveways.
	iv. Front Fencing:	Low unpainted face brick fencing.
3.8.3 Form/Massing	i. Roof:	Dominant broad simple low roof, predominantly hipped, some street facing gables and parapeted gables.
	ii. Façade:	Typically asymmetrical stepped façades, with protruding bays, recessed porches and verandahs.
	iii. Building Envelope:	<p>Roof pitch: 25-30° Eaves height: 3.5m from floor level Ridge height: 6-6.5m from floor level Building height 8m from natural ground level to the vertical distance between ground level (existing) and to the highest point of the building in accordance with Clause 4.3 (Height of buildings) of WLEP 2012.</p> 
3.8.4 Materials/ Details	i. Roof:	Terracotta Marseilles pattern tiles, exposed eaves.

	ii. Walls:	Liver or dark red/brown smooth face brick: all unpainted face brick to be retained, render or sandstone base coursing.
	iii. Windows and Doors:	Large bays/boxed timber casement windows in groups of 3 to street with skirts and awnings, single leaf timber panelled glazed entry doors, some leadlight to the street façades.
	iv. Joinery and Decoration:	Simple vertical battening to gable ends, decorative brick detailing to street façades, some sandstone trim, massive battered verandah columns in brick, stone or roughcast.

3.9 Naremburn Heritage Conservation Area: C8

Location



Heritage Conservation Area Heritage Items - General

History

The Naremburn Heritage Conservation Area lies on land previously belonging to Thomas Broughton. Broughton's Estate was developed after his death in 1901. Many of the streets in the locality are named after friends of Thomas Broughton including John Bayley Darvall and Sir James Martin. The extension of the tramline along Willoughby Road to Willoughby in 1898 prompted the development of the area.

The area was subdivided in 1903 and was known as the "Crows Nest Subdivision". The subdivision set out a uniform grid pattern of very small, narrow frontage allotments of about 250 square metres in area. The area developed quickly, largely because of its proximity to the city of Sydney, which at that time was reached by tram and ferry.

The suburb boomed until the 1930's from which point a decline set in. By the 1950's the entire Heritage Conservation Area and land south of Chandos Street was zoned light industrial for redevelopment in the County of Cumberland Planning Scheme, reflecting low community esteem for the area. Redevelopment did not occur and the subsequent 30 years saw a complete turnaround in the status and public perception of the area with the National Trust of Australia (NSW) recognising the importance of the area by classifying it as an Urban Conservation Area in 1983.

Description

The nature of this development is reflected in the consistency of the building stock which primarily comprises rare, single fronted, detached Federation style brick cottages. Wider fronted cottages (though still small) on amalgamated lots, and some timber construction can be found scattered throughout the otherwise homogeneous area.

The cottages directly address the street from narrow front setbacks behind small front garden plots. Individual streetscapes vary in the blending of built and landscaped elements. Martin Street's wider level carriageway and the general lack of street tree planting creates an urban landscape, dominated by buildings. In Plunkett, Darvall and Oxley Streets, established street trees in generally wider verges, often complemented by more densely planted garden plots and more sloping landforms, attractively blend buildings and vegetation. Darvall Street's rows of towering mature *Phoenix canariensis* palms provide a dramatic and decorative setting for the tiny cottages. Rear service lanes originally used for sanitary collection now provide vehicular access.

Statement of Significance

This is a unique, cohesive and generally intact Federation era suburb which has remained so largely because of the small size of the cottages and the restrictive subdivision pattern. The closely spaced cottages create a set of similarly patterned and cohesive streetscapes - uninterrupted vistas of almost uniform roof shapes and similarly massed façades in original materials. These small buildings have aesthetic significance for their shared Federation style characteristics and the individual expression of these in a wealth of original detailing, generally in good repair. Their turned and fretted woodwork, strapwork, shingled and pebbledash gable infills and coloured glazing distinguishes them individually and further integrates the group. The area has historic and aesthetic significance as a highly intact precinct of working class cottages of the Federation period, that developed in response to the extension of the tramline to Willoughby.

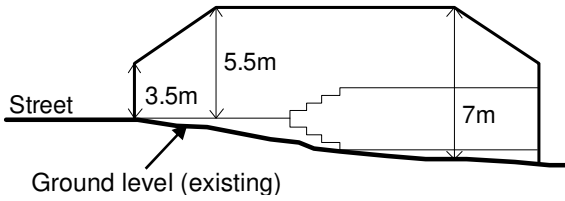
Key Period of Significance

1903 – 1915

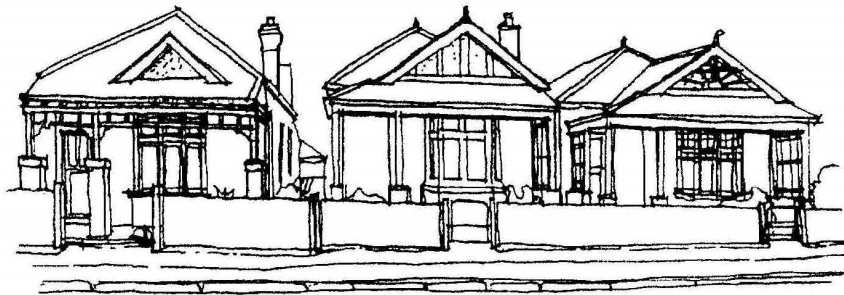
Management policies

- i. Retain the original building stock;
- ii. Retain the homogeneous Federation streetscape characterised by uniform small, low domestic scale single fronted cottages, with regular setbacks and spacing;
- iii. Alterations, additions and infill development must not result in excessive site cover that eliminates all useable landscaped area and private open space between the main dwelling and the rear lane or rear boundary;
- iv. Second storey additions are inappropriate, and attic rooms will only be permitted at the rear of existing cottages where the original principal elevations can be maintained;
- v. Rear lane vehicular access must be retained by any alterations and additions;
- vi. Infill development must retain the predominant cottage forms on the street elevations; and
- vii. Any new development which abuts the Heritage Conservation Area must provide an appropriate interface between the commercial and residential precincts through its scale, form, materials and landscaping.

Controls for future development – Naremburn

3.9.1 Scale	Generally:	Uniform low scale detached cottages.
	i. Storeys:	1 (attic only where streetscape appearance unaltered).
	ii. FSR:	0.65:1: This figure represents an upper limit to FSR. It takes the existing pattern of development into account and provides for some additional floor area without compromising the significance of the Heritage Conservation Area. Refer to Clause 4.4 (Floor space ratio) of WLEP 2012
3.9.2 Setting/ Subdivision	Generally:	Homogenous narrow fronted lots Average: 250sqm.
	i. Setbacks:	Uniform, front: 2.5-4m side: 0.9-3m
	ii. Landscaping:	Small front garden plots.
	iii. Carparking:	Rear lane access only.
	iv. Front Fencing:	Low unpainted face brick, timber picket.
3.9.3 Form/ Massing	i. Roof:	Simple hipped roof forms with single offset gable or gablet to street.
	ii. Façade:	Simple, single fronted, narrow verandah Offset entry, some offset projecting gabled bays.
	iii. Building Envelope:	Roof pitch: 30-35° Eaves height: 3.5m from floor level Ridge height: 5.5m from floor level Building height: 7m from natural ground level to the vertical distance between ground level (existing) and to the highest point of the building in accordance with Clause 4.3 (Height of buildings) of WLEP 2012.
		
3.9.4 Materials/ Details	i. Windows and Doors:	Simple narrow timber casements or double hung, may include coloured glazing. Half glazed panelled timber doors with coloured glass high lights.

	ii. Roof:	Unglazed terracotta Marseilles tiles, corrugated metal sheet, or slate; exposed eaves.
	iii. Walls:	Red smooth face brick: all unpainted face brick to be retained, painted weatherboard, roughcast or shingle gable infill.
	iv. Joinery and Decoration:	Simply patterned timber bargeboards, finials, verandah posts, gable brackets, decorative gable infills may include "sunburst" motif.



3.10 Naremburn Central Township Heritage Conservation Area: C9

Location



Heritage Conservation Area
 Heritage Items - General

History

Naremburn Central Township comprised two Crown Grants of about six acres each, made in 1853 and 1854 to a Dugald MacPherson. The original Central Township was bounded by Brook Street, Garland Road, Central Street and Adolphus Street East, although properties on the northern side of Slade Street were also included in the early development. Residential development on Adolphus Street occurred concurrently with this commercial development. As the first settlement in the Naremburn area, the township was expected to become the commercial centre of the north side. The development of this area can be attributed to its close proximity to the city, which at that time was reached by ferry. In the early 1880's, Market Street had a number of shops, including a cabinet factory, post office, newsagent, butcher and a market site, several of which survive. Many small businesses and home industries thrived until 1898 when the tramline from Crows Nest to Willoughby took trade elsewhere. Since the construction of the Warringah Freeway in the 1970's, Naremburn Central Township has been isolated from the rest of the suburb.

Description

None of the earliest housing of wattle and daub or bark remains, but some stone construction and many simple Georgian and Victorian weatherboard cottages from the 1880's-1900's survive. The streetscapes are now dominated by modest Federation cottages, California Bungalows and semis, interspersed with a few grand late Victorian 2 storey residences. There are some Interwar flat buildings on the corner of Central and Slade Street.

Situated on a gently sloping plateau that falls away steeply to the north and east, the subdivision pattern is fairly irregular with many narrow allotments to Slade, Adolphus, Market and Probate Streets and larger allotments to Garland and Central Streets.

Statement of Significance

The subdivision pattern, together with the wide range of architectural styles represented, reflects the continuing incremental growth of the township from the mid-1800's through to the 1930's and has created a mixed yet harmonious streetscape character. The area has retained its historical and social significance as the oldest commercial development on the North Shore and as an early working class residential area. The wide range of buildings, including some shops and the modest streetscape character are evidence of this.

Key Period of Significance

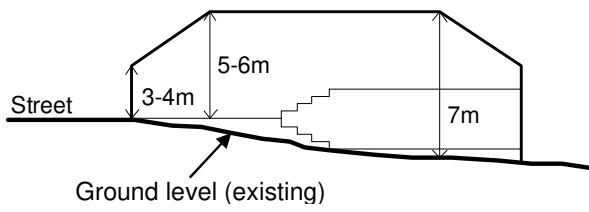
1880 – 1930

Management policies

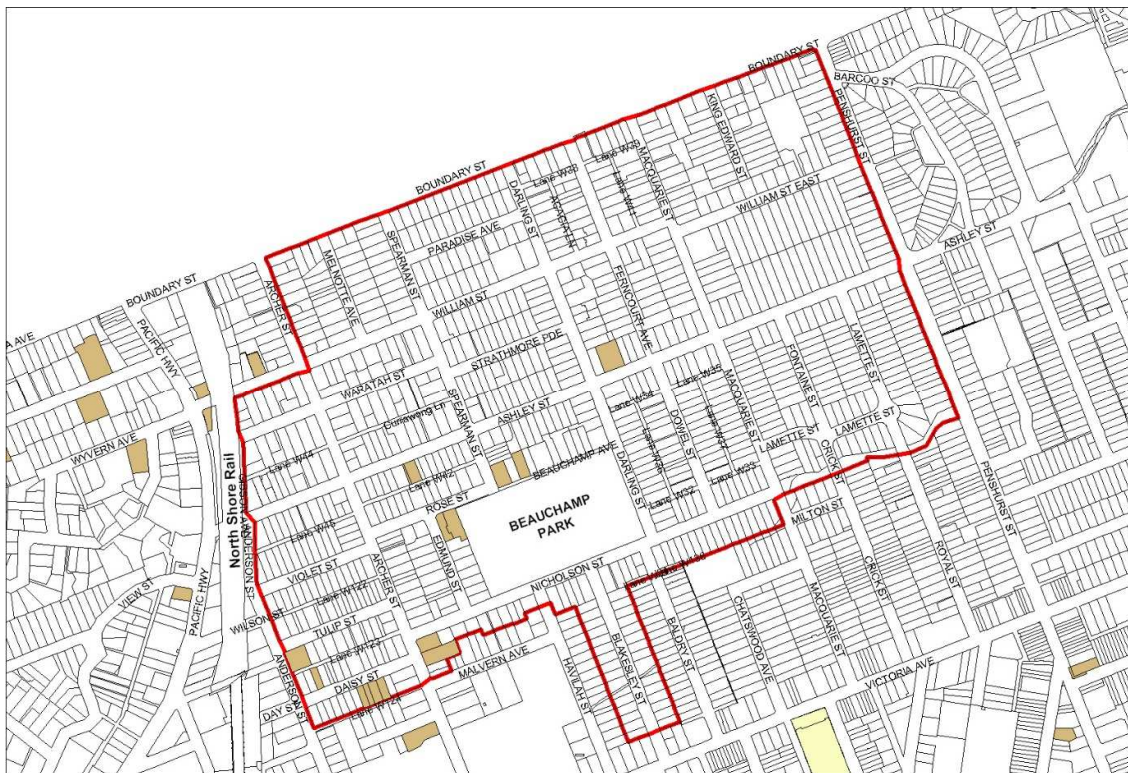
- i. Retain the historical and social significance of the area as an early commercial centre and working class residential area by retaining the existing streetscape character and contributory individual buildings;
- ii. Examples of early residences and places of business are to be retained;
- iii. Additions must respect the scale and form of existing buildings, and the modest character of the general development;
- iv. Infill development must respect the existing development patterns and modest character of the Heritage Conservation Area, in terms of typical lot size, dominant building setbacks, scale, character and form; and
- v. Carparking structures must not be dominant in the streetscape.

Controls for future development – Naremburn Central Township: R2 Residential

3.10.1 Scale	Generally:	Small domestic scale cottages, semi-detached and terraces, (some flat buildings).
	i. Storeys:	1 (2nd storey located within roof) 2 storey flat buildings in established locations.
	ii. FSR:	0.5:1: This figure represents an upper limit to FSR. It takes the existing pattern of development into account and provides for some additional floor area without compromising the significance of the Heritage Conservation Area. Refer to Clause 4.4 (Floor space ratio) of WLEP 2012.
3.10.2 Setting/	Generally:	Fairly irregular, generally narrow allotments, with

Subdivision		large lots to Garland Rd and Central St.
	i. Setbacks:	Variable, consistent within groups of houses.
	ii. Landscaping:	Small front gardens with low shrubbery.
	iii. Carparking :	Generally on street.
	iv. Front Fencing:	Low unpainted face brick, timber picket, & timber and wire.
3.10.3 Form/Massing	i. Roof:	Simple hipped and gabled roof forms.
	ii. Façade:	Mostly simple asymmetrical stepped façades.
	iii. Typical Building Envelope:	<p>Roof pitch: 25-35 Eaves height: 3-4m from floor level Ridge height: 5-6m from floor level Building height: 7m from natural ground level to the vertical distance between ground level (existing) and to the highest point of the building in accordance with Clause 4.3 (Height of buildings) of WLEP 2012.</p> 
Materials/Details	i. Roof:	Unglazed terracotta Marseilles tile, corrugated metal sheet.
	ii. Walls:	Rendered masonry, weatherboard, or face brick: (all unpainted face brick to be retained), often with stone or render base courses.
	iii. Windows & Doors:	Timber casement or sash, Single leaf timber panelled entry door.
	iv. Joinery and Decoration:	Simple and modest.

3.11 North Chatswood Heritage Conservation Area: C10

Location

- | | |
|---|---|
| Heritage Conservation Area | Heritage Items - General |
| | Archaeological Site |

History

In 1825, Richard Archbold was granted 600 acres of Crown land approximately bounded by Victoria Avenue, Boundary Street, Anderson Street and High Street. The land reverted to the Crown and lay dormant until 1850 when it was sold to John Stirling of the Bank of Australasia. William Lithgow, retired Auditor General of Colonial Accounts and a shareholder of the Bank, purchased and subdivided the land, and put 400 acres up for sale in 1854 as part of the “Township of North Sydney” plan. Sales were slow and it was not until the later decades of the nineteenth century, with news of the railway line, that development took off.

The 1880’s was a decade of vigorous land subdivision in Chatswood, and with the arrival of the railway in 1890, high class building activity flourished in the area. Beauchamp Park was proclaimed in 1899, and was named after the Governor of NSW, William Lygon, the 7th Earl of Beauchamp. After World War 1, a further wave of subdivisions and building activity added to this stock of grand Federation homes set on large allotments.

In the 1950’s Boundary Road was realigned and properties fronting the road were reduced. At this time the Chatswood CBD was proposed to extend east to Neridah Street and north almost to the alignment of Kirk Street. The National Trust of Australia

(NSW) recognised the importance of the area by classifying it as an Urban Conservation Area in 1982.

Description

North Chatswood's original dwelling stock is predominantly single storey detached housing in Federation or Interwar bungalow styles. However, there are a few two storey Federation mansions, the occasional late Victorian house and some semidetached "bungalows".

Lot sizes vary, although most streets have similar width frontages. Buildings are usually consistently spaced and of similar scale and bulk within each streetscape even where this is composed of varied styles. Mature landscaped gardens are an important quality of this area.

The grid pattern subdivision is laid over gentle to moderate slopes. Most streets have well-established street trees, notably brush box and canary island palms, which enhance the high residential amenity of the orderly streetscapes. The "square" formed by Beauchamp Park is a focus in the townscape.

The form of original development in streetscapes near Chatswood CBD is generally maintained where rear lanes accommodate separate access to off-street car parking. Otherwise, on-site parking facilities are usually unobtrusive, since the spacing of houses typically allows side access to rear parking.

Statement of Significance

North Chatswood Heritage Conservation Area is a good example of early North Shore residential development. The housing stock describes the progressive overlays of development taking place over half a century. The essential scale, form and spacing of the original dwellings is predominant, even where original architectural detailing has been lost, though much of this is still intact in fine residential buildings and as a general townscape impression.

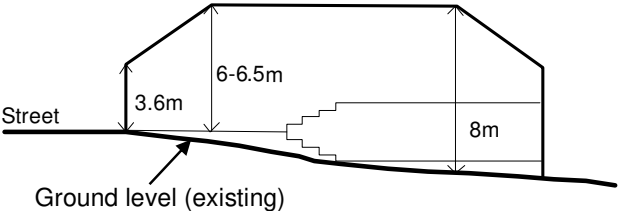
Key Period of Significance

1880 – 1930

Management policies

- i) Retain the scale, form, massing and detailing of original buildings and the typical scale, rhythm and character of individual streetscapes;
- ii) Retain the predominant single storey scale of the Heritage Conservation Area by preventing visible two storey additions or intrusive two storey infill development;
- iii) Retain landscaped settings by minimising hard surfaces forward of the building line, locating carparking structures behind the building alignment, and maintaining the existing patterns of low/semi-transparent fencing to the street;
- iv) Infill development must respect existing patterns of development including the spacing, rhythm and siting of built forms, the landscaped settings, and the scale massing, form and materials of the general development.

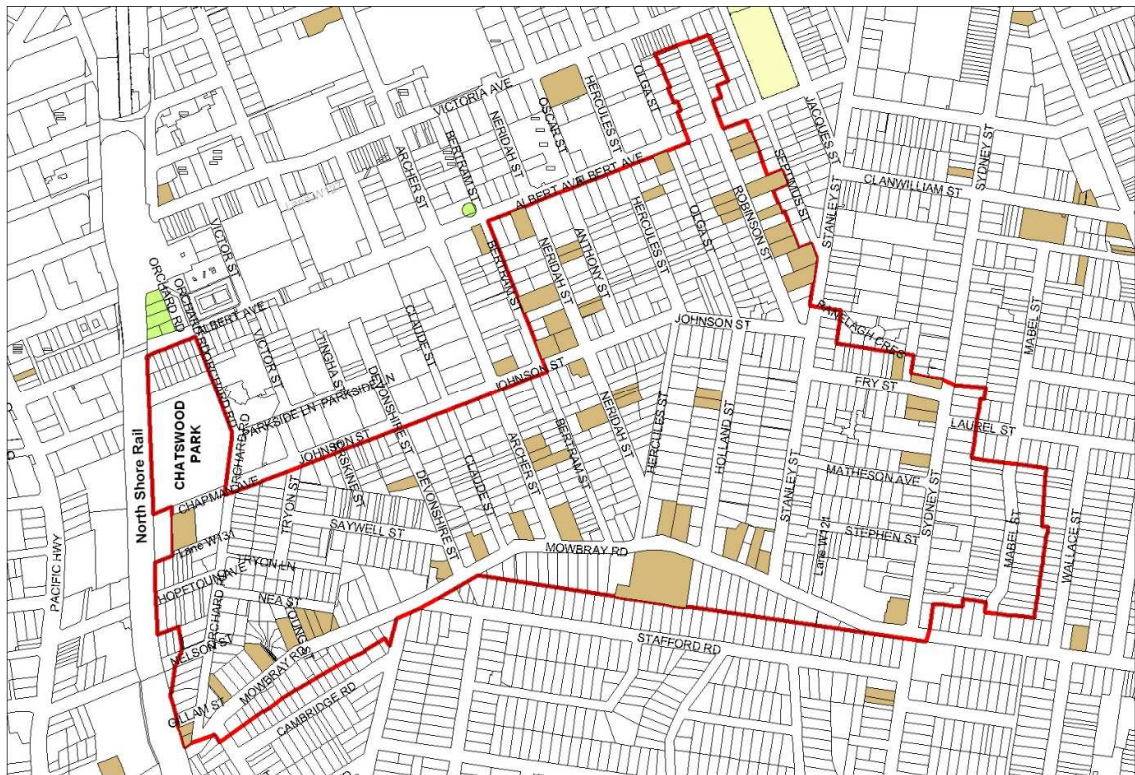
Controls for future development – North Chatswood: R2 Residential

3.11.1 Scale:	Generally:	Low/medium residential scale, detached.
	i. Storeys:	Generally 1 (2nd storey within roof forms acceptable).
	ii. FSR:	0.4:1: This figure represents an upper limit to FSR. It takes the existing pattern of development into account and provides for some additional floor area without compromising the significance of the Heritage Conservation Area. Refer to Clause 4.4 (Floor space ratio) of WLEP 2012.
3.11.2 Setting/ Subdivision	Generally:	Variable lot sizes, but mostly similar frontages.
	i. Setbacks:	Consistent with patterns of individual streetscape.
	ii. Landscaping :	Mature well vegetated front garden with exotic shrubs & trees.
	iii. Carparking:	Rear lane accessed garaging, or carports to side of dwellings behind the building alignment, else single open stand area forward of building line.
	iv. Front Fencing:	Low unpainted masonry or timber picket, palisade or timber & wire.
3.11.3 Form/Massing	i. Roof:	Dominant hipped and gabled roof forms with flat low/pitch or integral verandas.
	ii. Façade:	Predominantly stepped massing, usually asymmetrical with projecting bays & porches.
	iii. Building Envelope:	Roof pitch: 25-35° Eaves height: 3.6m from floor level Ridge height: 6-6.5m from floor level Building height 8m from natural ground level to the vertical distance between ground level (existing) and to the highest point of the building in accordance with Clause 4.3 (Height of buildings) of WLEP 2012. 
3.11.4 Materials/ Details	i. Roof:	<u>Un glazed terracotta</u> Marseilles tile, slate.
	ii. Walls:	Red/ brown monotone smooth face brick: all unpainted face brick to be retained, render/ stucco to upper surfaces, render/stone to base course.

	iii. Windows and Doors:	Simple painted timber casement or sash windows often in bay groupings to street façade
	iv. Joinery and Decoration:	Varied; simple timber verandah and gable end decoration.



3.12 South Chatswood Heritage Conservation Area: C11

Location

Heritage Conservation Area
 Heritage Items - General

History

In 1840, Governor Sir George Gipps proclaimed a grant of 160 acres to James Blackett and Richard Read, in trust for Maria Brown. This land was bounded roughly by the Artarmon Estate to the south, Victoria Avenue to the north, Stanley Street to the east and Devonshire Street to the west. The area east of Stanley Street was part of an earlier 1825 Crown Grant to Richard Archbold. This land was bought and subdivided by William Lithgow and put up for sale in 1854 with limited success.

Urban development commenced in earnest in the 1870's. With the news of the impending arrival of the railway, the 1880's was a decade of vigorous land subdivision in Chatswood. High class building activity flourished in the area. Richard Hayes Harnett's "Willoughby Park" Estate which extended from Mowbray Road to Victoria Avenue and from Devonshire Street to Stanley Street was offered for sale in 1884. Development occurred on a succession of major streets crossing Johnson Street: Devonshire, Archer, Neridah, Hercules, and Robinson. The allotments were divided into generous blocks, and were developed with residences in the late Victorian, Federation and California Bungalow styles. The lesser streets in between (Claude, Bertram, Anthony, Oscar, Olga, and Septimus) provided service and rear lane access.

The area west of Devonshire Street included “Mackenzie's Subdivision” (Nea and Orchard Road), “Orchard Road Estate” (Orchard Road, Tryon, and Johnson Street) and Saywell's “Willoughby Heights Estate” which were all subdivided in the 1880's.

After World War 1, a further wave of building activity added to this stock of grand Federation homes set on large allotments. Bales Park, formerly Central Park, is an important focus for the South Chatswood precinct. Planned by Council in 1928 on the site of a Chinese market garden, land was resumed for the park in 1930 and in the 1950's. In the 1940's and 1950's many rear gardens were subdivided and developed. In the 1950's, the town centre was proposed to extend east to Neridah Street and south to Albert Avenue.

The National Trust of Australia (NSW) recognised the importance of the area by classifying it as an Urban Conservation Area in 1982.

Description

As a whole, South Chatswood has a mixed character: styles range up to California and Interwar bungalows, which are interwoven among the dominant Federation and late Victorian era buildings through the progressive resubdivision of what were often originally generous and gracious early estates.

As well as a few modest Victorian cottages, South Chatswood is remarkable for its concentration of imposing late Victorian mansions. Along Mowbray Road, their location on a prominent ridgeline and their well established gardens (including tall, highly visible exotic species), add to the landmark qualities of the more palatial buildings.

These typically two storey mansions and many later Federation grand villas, are usually listed as individual Heritage Items. They also have considerable significance in their own right in addition to the distinctive qualities they impart to the streetscapes.

There is great variety in the predominant Federation style from single storey semidetached cottages to rambling grand villas and rare two storey architect-designed mansions. Some streetscapes, as in Robinson and Neridah Streets, display a highly consistent Federation character, even where the scale and siting of buildings varies.

The streetscapes of South Chatswood are unified by the generous landscaped settings of both the modest cottages and mansions. These gardens are characterised by mature exotic shrubbery and lawns, and low fencing allowing leafy vistas to and from the houses.

Statement of Significance

South Chatswood Heritage Conservation Area is a good example of early North Shore residential development. Much of the dwelling stock retains its original detailing and distinctive architectural features. Most retain the original scale and basic form, which, apart from the two storey mansions, is predominantly single storey. The Mowbray Road streetscape is significant as one of Willoughby's earliest streets and most important routes, and because of this significance it displays a range of substantial and high quality residences from the early phase of development of the area, complemented by later development of the Interwar Period. The Heritage Conservation Area displays a high level of amenity and originality in its development as an early residential suburb up to the Second World War.

Key Period of Significance

1880 – 1930



Management policies

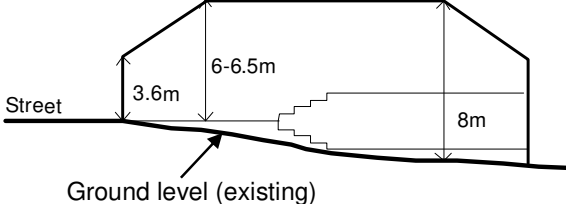
- i. Retain the scale, form, massing and detailing of original buildings and the typical scale, rhythm and character of individual streetscapes;
- ii. Retain the predominant single storey scale of the Heritage Conservation Area by preventing visible two storey additions or intrusive two storey infill development;
- iii. Retain landscaped settings by minimising hard surfaces forward of the building line, locating carparking structures behind the building alignment, and maintaining the existing patterns of low/semi transparent fencing to the street;
- iv. Infill development must respect existing patterns of development including the spacing, rhythm and siting of built forms, the landscaped settings, and the scale massing, form and materials of the general development; and
- v. Protect the special significance of the Mowbray Road streetscape by retaining the fabric and enhancing the landscaped settings of the original development, and by ensuring that new development does not dominate or detract from this significance.

Development in the minor streets (Bertram, Claude, Anthony & Olga) are to be designed to be compatible with the South Chatswood Heritage Conservation Area in relation to:

- The spacing of buildings and driveways;
- Proportion of primary façade elements;
- Form and pitch of roof elements;
- The scale of the building form;
- Massing of new building forms (particularly asymmetrical forms and room in roof forms);
- Single carport structures;
- Use of materials in roofing front and side façades;
- Height and materials of front fencing; and
- Predominantly soft landscaped front yard areas.

In these streets, the intent of this plan is that over time development will more closely reflect the historic character of the South Chatswood Heritage Conservation Area. The existing controls for future development guidelines apply to all streets in the Heritage Conservation Area.

Controls for future development – South Chatswood

3.12.1 Scale	Generally:	Low/medium residential scale.
	i. Storeys:	1 (2nd storey within roof forms acceptable)
	ii. FSR:	0.4:1: This figure represents an upper limit to FSR. It takes the existing pattern of development into account and provides for some additional floor area without compromising the significance of the Heritage Conservation Area. Refer to Clause 4.4 (Floor space ratio) of WLEP 2012.
.12.2 Setting/ Subdivision	Generally:	Variable lot sizes.
	i. Setbacks:	Consistent with patterns of individual streetscapes.
	ii. Landscaping :	Mature well vegetated front gardens with exotic trees and shrubs.
	iii. Carparking:	Use rear lane access or side access to garages and carports behind building line, open stand forward of building line.
	iv. Front Fencing:	Low unpainted masonry, timber picket, palisade or timber and wire.
3.12.3 Form/ Massing	i. Roof:	Dominant hipped and gabled roof forms, verandahs to front elevations.
	ii. Façade:	Generally stepped massing with projecting bays, some simple symmetrical forms.
	iii. Building Envelope:	<p>Roof pitch: 25-35° Eaves height: 3.6m from floor level Ridge height: 6-6.5m from floor level Building height 8m from natural ground level to the vertical distance between ground level (existing) and to the highest point of the building in accordance with Clause 4.3 (Height of buildings) of WLEP 2012.</p> 
3.12.4 Materials/ Details	i. Roof:	Unglazed terracotta Marseilles tile, slate, corrugated metal sheet.
	ii. Walls:	Red/brown monotone smooth face brick: all unpainted face brick to be retained, render or stucco to upper surfaces, stone/render to base.

	iii. Windows and Doors:	Timber casement & sash windows often grouped in bays to street elevation.
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3.13 Willoughby Park Heritage Conservation Area: C12

Location

Heritage Conservation Area
 Heritage Items - General

History

The Willoughby Park Heritage Conservation Area is situated on crown grants to Edward Henry Herring (1858), James Harris French (1857), James William Bligh (1857). James Forsyth set up "Rosewall Tannery", Willoughby's first tannery in Stan Street Willoughby in 1869. The site was suitable as there was a wattle grove where tanners were able to source wattlebark for their industry and creek providing water. James left the business to his sons Robert and Thomas in 1882. Robert and Thomas bought up the land in the vicinity of their tannery in the 1880's, and leased much of it to Chinese market gardeners, who cultivated the land along Sugarloaf Creek. The creek now runs in concrete pipes. The Forsyth family sold the tannery to Broomham Brothers in 1907. The NSW Government resumed the site in 1957 for use as a bus depot.

In 1907 the site of Willoughby Park was purchased for a park, following representations

by ratepayers regarding the scarcity of parkland in the Ward. The park is a focus for the local community. The entrance gates came from “Penshurst” the home of William Muston in Penshurst Street. “Greenacre” now in Second Avenue but originally accessed from Edinburgh Road, was built in 1904 as a home for Professor Pitt Cobbett, first Professor of Law at the University of Sydney. Cobbett left Willoughby in 1910-11, and Tresillian was established in “Greenacre” in 1927. The land was subdivided and sold as the Greenacre, Thompson’s, Sunnybank, Forsyth’s and the Tyneside Estates.

The construction of the Eastern Valley Way as a relief project for the unemployed in the 1930’s coinciding with the rebuilding of the Northbridge Suspension Bridge and the completion of the Harbour Bridge opened up the area for further residential development.

Description

The Willoughby Park precinct displays a consistency in housing stock and setting creating a community focus of great visual harmony. The housing comprises single storey bungalows most with one or two gables fronting the street, constructed in unpainted red brown face brickwork modulated by the use of areas of roughcast or shingles, and terracotta Marseilles pattern roof tiles. The houses are set in landscaped gardens with low fencing, allowing pleasant leafy vistas up and down the streetscapes and views to houses.

Statement of Significance

The core of the Willoughby Park Precinct is an area of high amenity and visual harmony as well as historic and social value that provides an important community focus. Established in 1907, the Park has been the centre of many important community activities since the 1920’s. The Interwar housing stock that surrounds the Park provides an appropriate setting. The rows of consistently pitched gabled roof forms set along these gently sloping streets create pleasant, rhythmic vistas, which, together with their consistent setbacks, the wide grassy verges and mature street trees and gardens creates a sense of spaciousness and design harmony. Parts of the area possess a streetscape integrity due to the development during one period and the excellent state of preservation of the houses and their garden settings. A uniformity of housing style including form, materials and detailing gives these streetscapes an harmonious appearance. The predominance of the 1920’s bungalow type illustrates the important influence of American housing ideals and styles on Australia.

Key Period of Significance

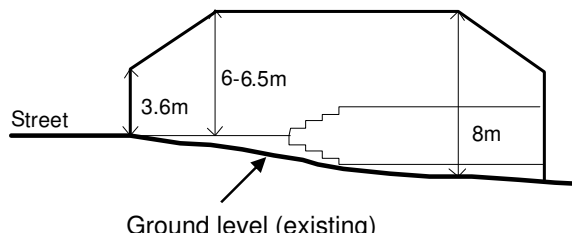
1907 – 1930

Management policies

- i. Retain the coherent low scale California Bungalow style streetscape;
- ii. Preserve the outlook to Willoughby Park;
- iii. Retain Interwar buildings: original detailing should be retained or reinstated;
- iv. New development must be limited to extensions to the rear, and development predominantly contained within the original building envelope as seen on principal elevations;
- v. Retain existing side and rear parking spaces;

- vi. Where parking cannot be provided to the rear or side of the house, facilities are to be limited to single open stand areas, or lightly framed carports, designed and sited to be subordinate to the main building; and
- vii. Retain the garden settings of the housing by retaining low front fencing and landscaped front gardens.

Controls for future development – Willoughby Park

3.13.1 Scale	Generally:	Medium/ low domestic scale detached bungalows.
	i. Storeys:	1 (attic within roof forms acceptable).
	ii. FSR:	0.4:1: This figure represents an upper limit to FSR. It takes the existing pattern of development into account and provides for some additional floor area without compromising the significance of the Heritage Conservation Area. Refer to Clause 4.4 (Floor space ratio) of WLEP 2012.
3.13.2 Setting/ Subdivision	Generally:	Consistent, generally small frontages of 12.5 m, lots average 560m ² .
	i. Setbacks:	Uniform front setback to 6.5m, side setbacks allow driveway or 900m.
	ii. Landscaping:	Small open front gardens, generally lawn with shrubs.
	iii. Carparking:	Side access where possible, single open spaces forward of building line.
	iv. Front Fencing :	Low unpainted brick, sandstone, or timber and wire.
3.13.3 Form/Massing	i. Roof:	Dominant broad simple gables (1 - 3) fronting street, hipped to rear.
	ii. Façade:	Large flat unadorned planes, simple asymmetrical massing with verandah and protruding gables to street façade.
	iii. Building Envelope:	<p>Roof pitch: 23-30° Eaves height: 3.6m from floor level Ridge height: 6-6.5m from floor level Building height 8m from natural ground level to the vertical distance between ground level (existing) and the highest point of the building in accordance with Clause 4.3 (Height of buildings) of WLEP 2012.</p> 

3.13.4 Materials/ Details	i. Roof:	Unglazed terracotta Marseilles tile, metal or bitumen on flat roofed areas, exposed eaves.
	ii. Walls:	Dark red or liver face brick: all unpainted face brick to be retained, rough cast to upper wall surfaces.
	iii. Windows and Doors:	Casement windows typically in groups of 3, some boxed frames with skirts or awnings, single panelled or glazed entry doors.
	iv. Joinery and Decoration:	Simple strapwork and timber shingle gable infill's, heavy brick/timber verandah detailing, some roughcast/ contrasting brick trim.



ATTACHMENT 1

Design Principles for the Conservation of Environmental Heritage

The following guidelines outline the design principles for the conservation of environmental heritage, and forms supplementary information to the provisions of WLEP 2012 and WDCP, Part H: Controls for Heritage Items and Heritage Conservation Areas.

1. Conservation Principles

The fundamental objectives applying to all heritage items and heritage conservation areas are to ensure that:

- the fabric which makes a place significant is conserved, and
- new development is sympathetic.

In simple terms, conservation is all about extending the existence or usefulness of resources and thoughtful maintenance is a key to successful conservation.

The approach to conservation is based on principles set out in a document known as the "Burra Charter". (This Charter establishes the nationally accepted standard for the Conservation of places of cultural significance). These principles assist in deciding what is significant, and what works are appropriate. Article 1 of the Burra Charter defines conservation as:

"all the processes of looking after a place so as to retain its cultural significance. It includes maintenance and may according to circumstance include reconstruction and adaptation and will be commonly a combination of more than one of these."

1.1 The Importance of Fabric

The "fabric" of a building or heritage conservation area refers to the physical material of which it is comprised. To varying degrees the fabric represents and expresses the history and significance of the place. Thus when original fabric is removed from a heritage building or a heritage conservation area, the significance of that place is diminished.

Careful judgement is also needed to avoid damaging external wall surfaces by trying to reverse old changes; some of these may also prove to be valuable evidence of a building's history. For example, while it would be appropriate and relatively easy to remove an unsympathetic 1960's verandah enclosure comprising aluminium windows and fibro construction from a standard 1920's California Bungalow, an earlier verandah enclosure with 1930's detailing, such as leadlight windows and more solid construction, may be significant and could be worth retaining.

Beware of irreversible changes to the fabric of a building such as painting brickwork. Such changes diminish the value of the property (as people become more aware of what is authentic and what is not and are often willing to pay for the more intact original property) and often lead to long term increased maintenance. More appropriate ways of reviving the appearance of a building are generally possible.

The three preliminary steps to be taken before beginning any conservation work are:

- Research;
- Professional Advice; and
- Attention to Detail.

1.1.1 Step 1: Research

In the case of older buildings, knowing what not to do is as important as knowing about what has to be done.

Looking at similar buildings in your locality can help in working out why things were done the way they were or seeing what decayed or missing parts of a building may have looked like.

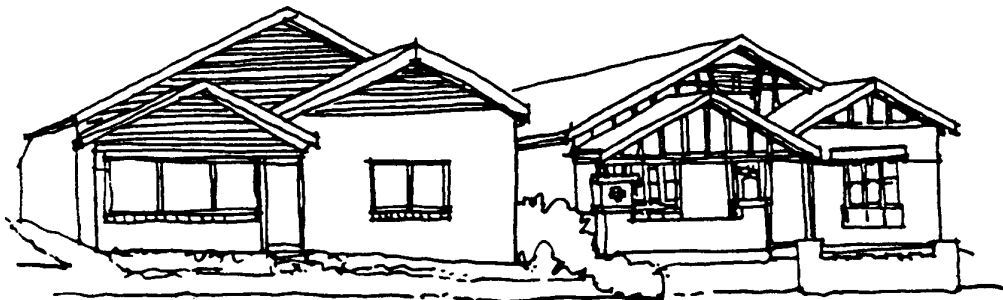
Careful inspection of the building itself can reveal evidence of original detailing. For example, a verandah may have been removed, holes in walls may indicate a former handrail, and paint lines may reveal the profile of a moulding or the shape of a former corrugated iron roof and nail holes may show the sites of cast iron brackets or timber friezes. Carefully scraping protected or difficult-to-paint areas, (such as under window sills and in tight corners,) can reveal original colour schemes.

Part 3 *Useful Publications / References* – provides a sample of publications and websites which can help owners of buildings to learn about their design and significance, construction materials and methods, and conservation techniques.

Documentary research through archives, such as historical societies or Council's records, may locate an old photograph, title deeds may indicate the building's layout over time, or approaches to previous owners can also help in seeing what is original and identifying the significant building fabric.

Maintenance, repair and restoration work can then be carried out with the objective of conserving the maximum possible amount of this fabric.

Remember – retaining the original is preferable to replacement with reproduction.



1.1.2 Step 2: Professional Advice

Obtain advice from suitably qualified professionals, who are skilled in heritage work. Don't rely on guesswork- seek professional advice whenever you have any real doubt. A project which involves considerable expenditure and effort should start with sound research and advice and conclude with confident and competent execution.

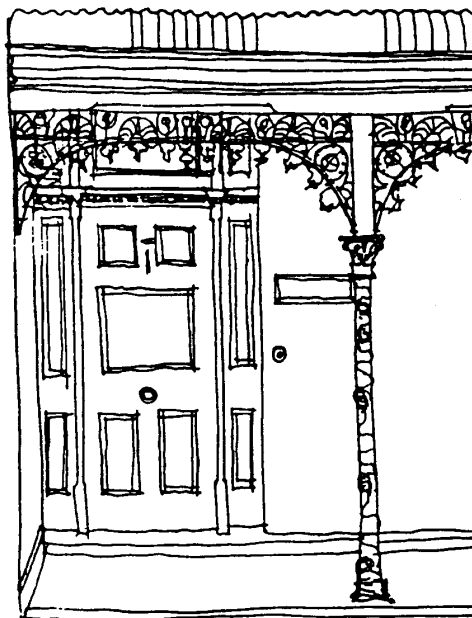
The Office of Environment & Heritage, Department of Premier & Cabinet has a 'Heritage Consultants Directory' which is available on www.heritage.nsw.gov.au

1.1.3 Step 3: Detail

A building is designed with a consistent approach to detail, and it is important to first understand this approach. New work should be relevant to the design of the building or place; it is not appropriate to imitate something from another era, place or site.

Maintain existing features. Adding decorative elements such as false shutters, aluminium lace, etc. detracts from the significance and value of the property. Remember the original absence of decorative elements can be distinguishing, e.g. on Georgian buildings or austere inter-war bungalows.

Wherever possible, reinstate missing components, such as joinery, verandahs, chimneys and the like but do not add what was never there. A 1910 wooden picket fence is not appropriate to a 1930's house: this sort of detail diminishes the significance and value of both the individual item and of the streetscape.



1.2 Maintenance and Restoration

The first principle of conservation is **Maintenance** – that is, simply looking after buildings and places as and when they need it. Maintenance and repairs assist in ensuring the ongoing significance of a building and enhances its longevity. Appropriate maintenance is perhaps the most influential aspect of conservation.

Regular maintenance should be an important part of every building owner's approach to their property management: it means that problems such as water penetration or termite infestation, which could lead to severe deterioration in buildings, do not get out of hand. Maintenance should have priority over restoration or reconstruction.

Restoration and **Reconstruction** both mean returning the existing fabric of a building or work to a known earlier state. Restoration may involve removing insignificant accretions or reassembling existing components without the introduction of new materials, while reconstruction introduces materials – new or old – into the fabric to replace missing elements.

Maintenance, restoration and reconstruction should aim at compatibility with the original design and materials: this often means using original materials for structural as well as aesthetic reasons. Original materials should be matched with suitable second-hand materials if possible.

Mixing modern and traditional materials without careful consideration can be problematic. The long life of traditional materials and methods testifies to their practicality. Substitute materials such as aluminium windows instead of timber framed or concrete tiles for original unglazed terracotta will not have the same aesthetic qualities as the original. Bear in mind also that older building components of 'imperial' dimensions are larger than their metric equivalents when replacement is unavoidable.

The following principles regarding traditional methods and materials are a general guide. The information provided needs to suit the subtleties of the particular maintenance, restoration or reconstruction case.

1.2.1 Roofs

Roofs of older style buildings are usually a very dominant element of their design. Certain roofing materials relate to particular styles of houses. Because the roof is so dominant, its shape and cladding material are often major unifying factors in the heritage conservation areas.

The repair of slate roofs of some Victorian and Federation buildings is a job for a skilled tradesperson. Problems usually result from delamination of the slates, requiring replacement, or loose fixings, perhaps requiring new fixing battens and re-fixing with copper nails.

Patching with recycled slate is practical but, without sufficient care, a "patch work" roof can result. If necessary, concentrate on the front elevation, using slates from rearward facing slopes. Use second-hand slate to patch the less important faces, or use corrugated iron on an inner slope that is not visible to the street.

Some of the many types of modern roof slate now available are unsuitable being too thick, with too rough a texture and may also be too heavy for the original roof structure. Asbestos or fibre cement imitation slates are not recommended as a substitute for real slate.

The use of bituminous paper or plastic sarking may enable the TV antenna to be placed inside the roof space, although many slaters prefer not to use sarking so that leaks can be readily located. TV aerials should not be attached to chimneys.

If unglazed terracotta "Marseilles" tiles on Federation houses need replacing, sound second-hand tiles or new similar tiles of the correct Imperial size should be used. Avoid concrete and glazed tiles, which do not have the subtle colour and texture of the older-style Federation tiles, though these may be suitable on some later Bungalow styles.

Where the original roof fabric has been replaced with a modern material, re-roofing in the appropriate style will enhance the appearance of the house. If you cannot afford to replace the authentic slate roof on Federation or Victorian cottages, then corrugated iron (now galvanised steel or zincalume) also often used at this time, could be a sympathetic alternative.

A natural finish or a dull prefinished grey colour which most resembles natural weathered iron is preferred, unless the roof has always been painted, when a colourbond finish in period colours could be considered in lieu of repainting. Corrugated iron is suitable for subsidiary roofs on Victorian and Federation houses, such as rear skillions or back verandahs, which were often treated with less substantial materials than the main roof structure.

Using the correct gutter shape such as ogee, half round or quad profiles and the round downpipes common until the early twentieth century is important for a thorough finish: where original gutter profiles are evident, consider their reinstatement. Regular cleaning to remove leaves, which produce corrosive acids on decomposing, and painting their insides with bituminous or tax-epoxy paints, can prolong the life of gutters.



half-round guttering

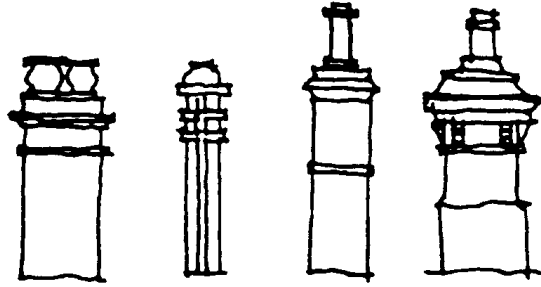


ogee guttering

Damaged or missing decorative tile trimmings and chimney pots found on Federation houses can be replaced either from demolition saleyards or by new products. When fitting ridge crests and finials, the bedding mortar should be stained with red oxide pigment to match the tile colour.

Do not block roof or rafter ventilation holes as good ventilation reduces the likelihood of rot in roof timbers and soffits.

Chimneys add scale and character to buildings of all periods. Chimneys should not be removed when roofs are re-clad, the flashings need replacing, or the chimneys themselves need repair. While acids, derived from soot and smoke, attack the mortar pointing of chimneys and loose pots or bricks and flaunching (the mortar weathering on top) are dangerous and allow moisture penetration, these can be repaired by an experienced tradesperson. Reconstruction of chimneys, a distinctive feature of Victorian and Federation houses, is also possible and desirable.



Chimneys are a distinctive feature of Victorian and Federation houses

For further advice refer to the information sheets provided by the Office of Environment & Heritage, Department of Premier & Cabinet which are available on www.heritage.nsw.gov.au. In particular:

- Slating, tiling and roof plumbing
- Corrugated roofing
- Metalwork

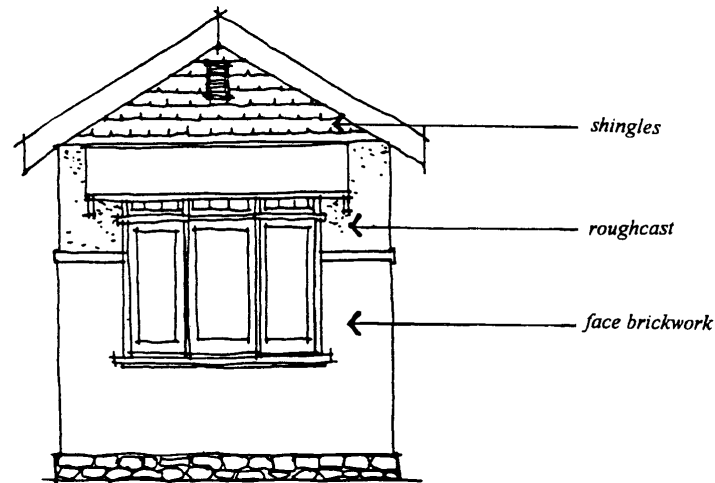
1.2.2 Walls

The coating of render, or stucco, often applied to Victorian houses, protected their exterior walls: it should not be removed to expose the original sandstock brickwork. This destroys the character and significance of the building and allows the destructive entry of moisture: soft, porous sandstock bricks decay and crumble on removal of their protective render. A solid sandstone wall without stucco protection also soaks up moisture which passes through to destroy internal finishes. Cracked or chipped render should be replaced with a similar compatible render (not cement) and usually painted over.

The old face bricks of Federation and Bungalow styles, however, should not be painted. Many Federation houses have a pattern of pressed red brick or red-ochre dressed front elevations, with tuck pointing and contrasting blues or buffs for arched lintels and string courses. Cheaper, variable common bricks were used for the lesser elevations. Any repair work should maintain the distinction between front and sides, which also occurs in standard California Bungalows, though these tend more towards liver brick shades. The textured clinker brick, sometimes in variegated red brown colours with herringbone patterning of 1930's bungalows, should also be retained as a distinctive feature of this period.

Paint can be chemically removed from brickwork by skilled tradespeople. Sandblasting is an extremely dangerous process for old buildings, as it removes the outer burnt skin of the brickwork, leaving it exposed to weathering with a pock-marked ragged appearance.

Mortars for repointing and repair should match the colour, texture and mix of the original. Old mortars were usually a mixture of lime, putty and sand. Professional skills are often needed in selection of mortar mixes for fragile older buildings. Lime mortar can accommodate some movement, while harder inflexible cement mortars cannot, thus causing cracking in the brickwork. Badly rusted and swollen lintel bars should be replaced to prevent walls cracking.



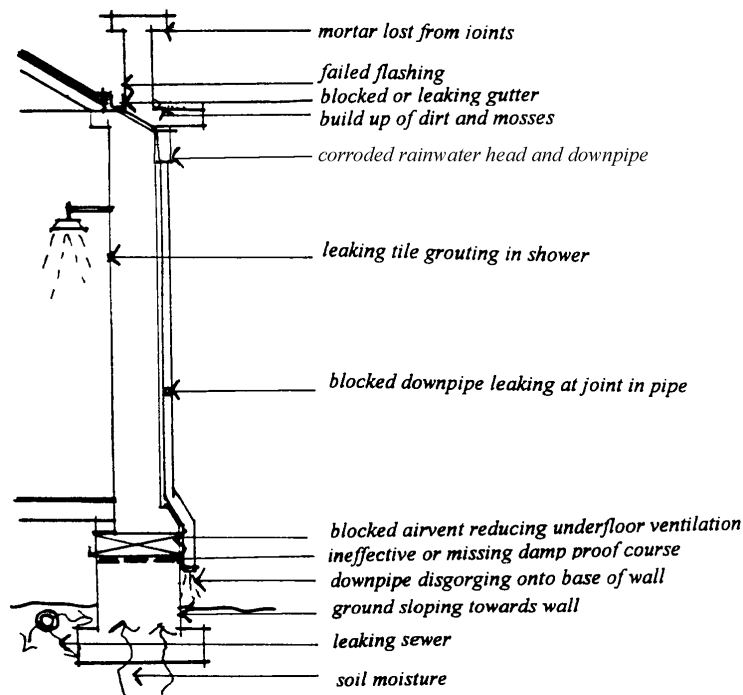
Rising or falling damp may be present: its cause may be simple or very complex. Leaking gutters and drains may saturate adjoining ground; cement floors inside or outside may force ground water to rise up walls. It is not always necessary to introduce or replace a damp course to stop rising damp. Improved ventilation and the elimination of water sources may solve the problem but specialist advice, sometimes from a number of sources, should be obtained and compared before deciding on suitable action.

In replacing deteriorated timber shingles, for example on gable ends or bay windows, any pattern in the arrangement or variations in size and depth of courses should be matched to retain the original texture. Compatible soaker flashings and sarking should be used in fixing.

Gable ends and bay windows in Federation and early bungalow houses may be clad with pebble-dash or rough cast on timber or metal lathes or fibre cement sheet with vertical battens concealing joints. Replacement of lathing when it fails through rot or rust is essential to prevent moisture penetration: if correctly applied, the vertical surfaces should bell out towards the bottom to shed rainwater. Modern "metal" weatherboards are not suitable for replacing timber weatherboards in rear extensions or early houses.

For further advice refer to the information sheets provided by the Office of Environment & Heritage, Department of Premier & Cabinet which are available on www.heritage.nsw.gov.au. In particular:

- Rising Damp
- Salt attack and rising damp
- Sodium bicarbonate to remove paint from historic buildings
- Treating biological growths on historic masonry
- Cracking of buildings due to shrink/swell in clay soils
- Drought – related cracking to buildings
- Repointing lime mortar joints – some important points



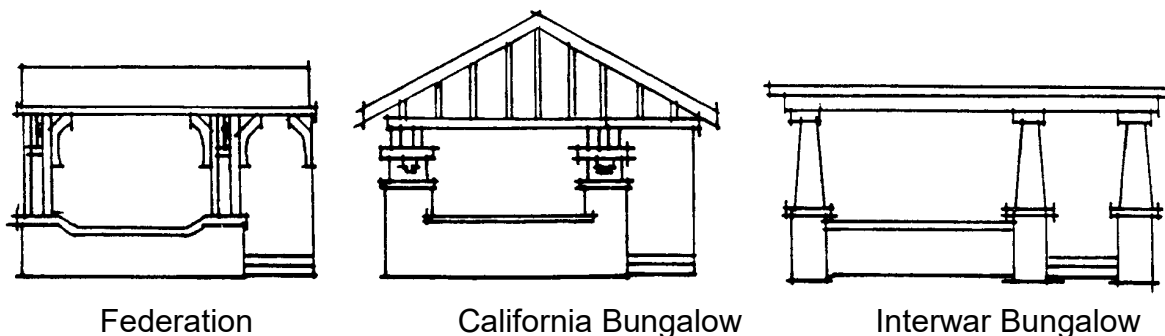
(extracted from "Rising Damp" an information sheet prepared by the Office of Environment & Heritage, Department of Premier & Cabinet)

1.2.3 Verandahs

Verandahs, balconies and porches are often distinctive architectural features, whose detailing, materials and proportions are important stylistic elements to be carefully maintained and repaired.

The removal of windows and other enclosures to verandahs and balconies, where these detract from the heritage significance of an individual building or break the rhythm of a whole street of similar buildings, is encouraged. However, the value of retaining such enclosures needs to be carefully considered in terms of both their architectural contribution and whether the added amenity they provide would assist the long-term conservation of the building.

When verandahs are restored, the original walls and structures should be carefully inspected for evidence of earlier detailing, which can usually be reproduced.



1.2.4 Windows, Doors and Decorative Joinery

Inadequate maintenance often shows first in deterioration of timber work. Experienced joinery contractors can copy subtle details where replacement is needed because of the condition of the original fabric. Inappropriate replacement of doors and windows amounts to defacing a building. It is also important to recognise that repair of joinery is a job for experts.

Where it has been damaged, the wide vocabulary of detail in the turned and lattice woodwork of Federation and other significant houses should be copied carefully. Wherever possible, handrails, balustrades and verandah posts should be reinstated in the original style. Any recycled materials must be consistent with the building's design. Similar interior joinery including skirting boards, picture rails and architraves, should be reinstated in the original style where possible.

Timber windows, doors and shopfronts were generally painted externally, not stripped back and varnished. Apart from looking wrong, externally applied varnish usually breaks down quickly, leaving timber unprotected.

Modern acrylic paints are easier to apply and recoat and generally more durable than the older oil-based paints. However, acrylic paints are more thermoplastic and difficult to remove, so are often less suited to door and window frames than for other external paintwork. Be careful that thick paint coatings built up over time do not distort door and window frames, making closure tight and difficult: if necessary, strip paint back. Modern mastic sealants (silicon) can help seal joints between joinery and brickwork, particularly where movement has widened gaps between masonry and timber framework.

The wide variety of leadlights and figured or coloured glass panes found up to the Second World War may be virtually irreplaceable today. Beware of amateur leadlight repairers: appropriately trained professionals should be entrusted with repairs so that there is minimum disruption of valuable original pieces.

Door and window hardware items, such as casement fasteners, handles and stays, were often decorative items in older houses: generally these can be cleaned and rendered operable.

Steel hinges and fastenings (screws) are generally incompatible with the American redwood used for joinery such as door and window frames in Federation houses and as rust can accelerate timber decay, these are often better replaced by brass fittings.

For further advice refer to the information sheets provided by the Office of Environment & Heritage, Department of Premier & Cabinet which are available on www.heritage.nsw.au. In particular:

- Paint finishes
- Timber repairs

1.2.5 Shopfronts

It is a common misconception that the maintenance of old shopfronts is too costly and often shop owners do not appreciate the contribution that older shopfronts can make to their business. With simple maintenance and appropriate signage, old shopfronts can be conserved to create effective marketing images of great value to the individual business and the broader business community, especially where groups of shops of consistent or

harmonious design give a distinctive identity to the commercial centre. This identity contributes to shopping ambience that encourages and promotes business.

Signage should be carefully designed so that it is integrated with and does not overwhelm the building's form – its facade massing, proportion and fenestration can suggest suitable signage opportunities.

1.2.6 Colour Schemes and Finishes

The reintroduction of traditional colour schemes has become popular, with several commercial ranges of "heritage" colours and well researched reference texts available to assist building owners in choosing authentic exterior and interior period colour schemes. The tones of old photographs (including black and white) can indicate varying colours and the relative intensity of shades on different elements of a building to assist in selecting an appropriate colour scheme. Paint scrapings may enable building owners to approximate early or sequential colour schemes.

While reinstating original or authentic colour schemes helps reinforce the character of a house, 'over-restoring' buildings to an elaborate appearance that they never possessed is not appropriate. The patina of age can give an appealing visual quality to a street or area.

An understanding of traditional colour schemes appropriate to a particular building or area will promote an approach which can then be employed to produce a sympathetic contemporary colour scheme which reinforces the character of the area.

Though these guidelines are mostly concerned with the exterior of buildings, interior details are important and can influence the resale value of buildings.

Lime plaster which is a common lining material in houses of Federation and earlier eras should be patched or replaced with matching material (not cement which is too hard and unyielding). Damaged cornices and ceiling roses can be replicated in fibrous plaster.

Patient work on interiors may occasionally reveal intact decorative paint features such as dado stripes, stencilling or wallpapers. While sometimes old decoration can be seen on the surface under oblique light, often it is not, so razor blades or scalpels should be used carefully where owners are keen to expose earlier finishes and recreate these.

For further advice refer to the information sheets provided by the Office of Environment & Heritage, Department of Premier & Cabinet which are available on www.heritage.nsw.gov.au. In particular:

- Paint finishes
- Plaster finishes

1.2.7 Landscaping, Fences and Gates

Fences, gates and landscaping have a large impact on the streetscape. Planting consistent with the established garden character can enhance the architecture and may even hide previous unsympathetic alterations. The maintenance or restoration of a garden suited to the taste and style of the era adds to the authentic restoration of a house.

In some cases, garden beds, trees and other landscaping elements, such as paths of paving bricks or tessellated ceramic tiles, have their own heritage value, for example, the well established gardens with their landmark trees which provide remarkable settings for some Victorian mansions along the Mowbray Road ridgeline and, on the other hand, the bushland settings of the Griffin houses in Castlecrag are each integral elements of their particular styles.

Be aware of changing taste and fashion in landscaping as much as buildings. In general, early Victorian and Federation era gardens were based on traditional English designs, using introduced plantings in ordered and symmetrical patterns. Federation gardens introduced curving garden paths and beds and combined exotic and native species but a strong trend toward indigenous species developed with the California Bungalow.

If you are reinstating or adding to an authentic garden design for your house, consider not only the historical examples, but "try to consider your garden from all angles: from the street, as an entrance to your home and from the inside looking out to maximise all your efforts".

Because of their proximity to the street, fences have a strong visual impact: fences and gates sympathetic to the style of the house can maintain and unify the character of both the individual item and the street, just as inappropriate fencing can destroy it. Keep surviving original fences in good condition, where deteriorated, save and repair as much as possible before using new, closely matching elements to replace what has been lost. Be cautious about using reproductions when the originals can be maintained.

Traditionally, the finest and most elaborate fences were placed towards the street, with rough sawn paling fences on the rear and sides of properties: sometimes a tall latticed fence and gate separated front and rear gardens.

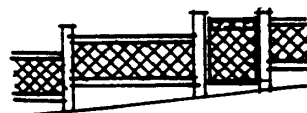
In Willoughby, many streetscapes are distinguished by their low fences (for example, the Artarmon Heritage Conservation Area), or the absence of fencing (for example, the Griffin Heritage Conservation Area) and these qualities should be retained where this is characteristic of the streetscape and does not compromise the amenity of individual properties.

For further advice refer to the information sheets provided by the Office of Environment & Heritage, Department of Premier & Cabinet which are available on www.heritage.nsw.gov.au. In particular:

- Heritage gardens and grounds



Federation



California Bungalow



Inter-war Bungalow

1.2.8 Installing Modern Services

Install new services (ductwork, pipework, wiring conduits, air conditioners and TV antennae, etc) inconspicuously to cause least damage to the fabric. Consider using sub-floor or roof

spaces or bury them underground. Pull cord switches are a viable alternative to chasing electrical wiring. Floor mounted power points are an alternative to damaging skirtings.

Fittings should be unobtrusive. Historical re-creations should be avoided unless there is evidence for such designs being used in the original building.

Avoid powerful heating and cooling systems, which may cause dryness and cracking or internal condensation. Supplementary humidity control may be appropriate.

Solar Panels and Hot Water Systems

Solar panels should be sensitively located and designed in a manner that does not intrude on the heritage item or cohesiveness of the heritage conservation area. Placement will pose a problem for those properties with north facing main elevations as there will be potential for an adverse impact on a building's heritage values. Placement on the side or rear elevations reduces the impact. Placement to the rear, particularly for solar hot water systems or mounted solar systems reduces the impact further.

Where an alternative exists solar panels are not to be located on the primary frontage and are to be located to limit visibility from the street.

Where no alternative is possible solar panels may be located on the primary frontage after justification has been provided that there is no suitable alternate location.

The quantity of solar panels located on the primary street frontage or in a highly visible location are to be limited to the amount that services the house.

The impact on heritage significance may be greater where the collector is mounted on a stand at angle to the roof plane, or roof top tanks are installed.

Where possible, the mounting of collectors on stands should be avoided unless the installation is very discreetly located. The tank should be installed inside the roof space or on ground within near proximity of the solar collector.

Ensure that the weight of the new equipment can be borne by the heritage building supporting structure (e.g. roof rafters). The supplier or installer will have information on the weight of the equipment.

To minimise damage over the long term, use the minimum number of fixing holes. As solar collectors have a finite lifespan, minimising fixture points will assist with future removal and replacement. Also limit the number of holes made into the loft space for pipework and cabling.

Meters should be positioned such that they are not immediately obvious from the street.

When maintenance is carried out there is the potential for foot traffic to damage any fragile roof cladding. Discuss with the installer how often equipment will need routine maintenance and how it will be accessed.

1.3 Alterations and Additions

Alterations and additions to buildings should be made to their less prominent areas – to the rear or set back from their principal elevations – and carefully scaled and designed to enable the heritage character of the building to be maintained. This approach accepts that many buildings are changed during their lives – to better satisfy their original purpose, adaptation for some new use, or to make them more attractive to their occupants. Poorly designed and built alterations and additions might provide functional solutions but can ruin any building, marring its appearance and detracting from its value.

Any project to alter or add to a building should start by carefully assessing the heritage significance of the building involved and its context, to suggest what changes can be made. While it is considered that additions should reflect their time, it requires considerable skill to make changes appear as a subtle and natural amendment to the building rather than to create an architectural tour-de-force which overpowers and diminishes the significance of the original building.

1.3.1 Sympathetic Development

All new development affecting heritage items and properties in a heritage conservation area - whether alterations, additions or infill- should acknowledge the heritage values of the existing place or building and respond to the established heritage significance of the building, place and neighbouring area by seeking to avoid any reduction in its value or any undesirable intrusion into the streetscape.

The degree to which additions or changes to heritage items and properties in a heritage conservation area, should reflect the style of the significant fabric- whether the new work should blend in, be imperceptible, or be clearly distinguishable as new work- will be determined by the interplay of two basic considerations as these apply to the particular case. An alteration or extension must have regard to:

- the architectural character and style of the building concerned; and
- the characteristics of development in the locality.

The proposed size, siting and function of the addition or alteration and the significance, intactness and features of the building and its setting or locality all interact in determining the most suitable solution to a sympathetic form for the new development.

Alterations or additions to a building should be carried out in a similar manner to the original structure, avoiding the destruction of important elements such as chimneys, windows and gables. Unsympathetic alterations, which may include the use of modern roofing and other materials, the removal of chimneys and verandah joinery, and the enclosure of verandahs, detract not only from the house itself but may damage the significance of neighbouring houses and the streetscape.

A sympathetic alteration or addition will blend and harmonise with the building. Even where the new work is suitably intended to be distinct from the original, it will fulfil the essential criterion of "belonging" to the building, in terms of scale, proportion and massing.

1.3.2 Principles

The following principles apply:

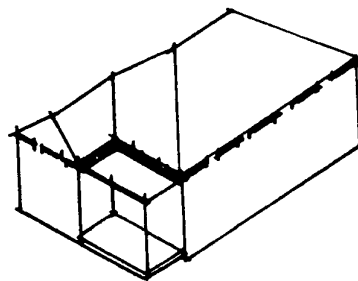
a) *Scale*

Scale refers to size. Don't overwhelm the original. An alteration or extension should not be of a size or scale that dominates the original building, challenging or destroying its identity, or changing its contribution and importance in a significant context.

For example, cottages cannot be turned into large houses or mansions without major changes of character that are inconsistent with the conservation of their significance as small-scale cottages. Major changes in scale to individual buildings, which are components of a heritage conservation area, can also destroy the consistency, unity and cohesiveness of a group or a streetscape.

Height and bulk are critical in determining scale. In this respect, the building envelopes identified for specific heritage areas and generic building types are a guide to the desirable height and bulk.

Maintain consistent levels. In houses, the main wall plate height, which determines the external wall height and the point from which the roof structure and form springs, should be consistent throughout a building or otherwise this may conform with the pattern of a consistent plate height throughout the main rooms, with a lower roof area and plate height to the rear for less important rooms or service areas.



Main wall plate (eaves height)

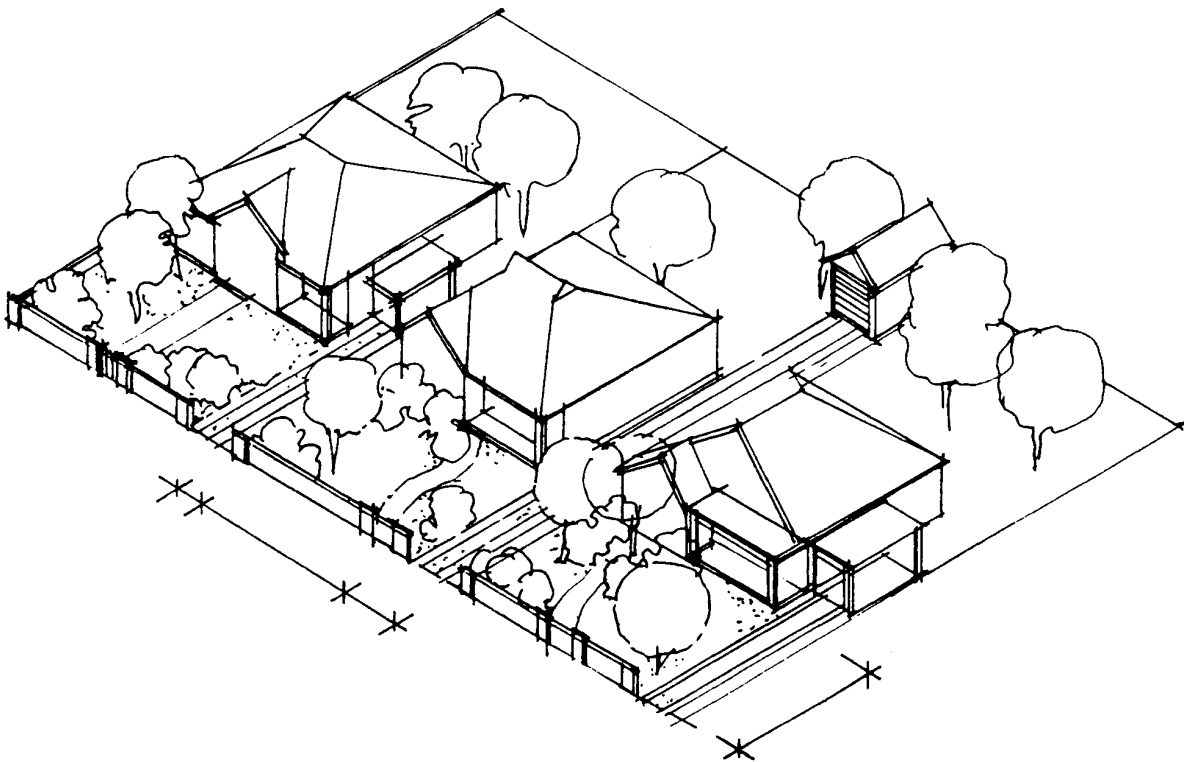
b) Form and massing

Form and massing refers to the shape of building elements and the arrangement of these elements. Where an addition is proposed, the characteristic form and massing of the existing building or of the locality should be observed and reflected in the new work.

The massing of a building may be symmetrical or asymmetrical: the distinctive qualities of many buildings depend on the balance between the symmetry or asymmetry of its various elements. For example, small Victorian cottages usually have windows symmetrically positioned on either side of the central entry door on their front facade. Small Federation cottages typically have asymmetrical massing with a projecting gabled bay almost always placed to one side of the street facade.

c) Siting

Additions are usually best sited to the rear or side, to allow the significance of the original building to be maintained. Avoid alterations to the street facade to minimise the impact of change.



d) *Design and Proportion*

Proportion refers to the relative size of distinct parts. Respect the existing built form; roof type and pitch; verandah support spacing; the proportion and groupings of doors and windows; the ratio of solid to voids. Roof form and pitch should closely match the existing, whilst the repetition of eaves and gable projections and details can help tie in new to old. The size, proportion and position of existing openings should be respected.

e) *Materials*

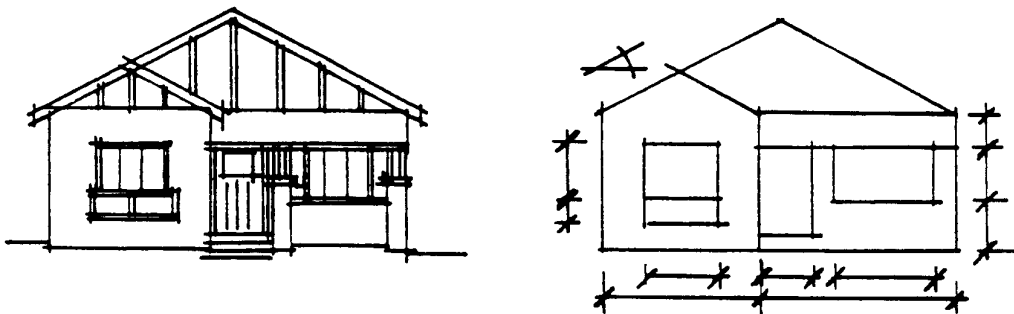
Use materials that reflect and harmonise with original materials to maintain the significance of the building. The use of materials such as aluminium windows, flush faced doors, non decorative posts or columns, quarry tiled or slate floors, painted face brickwork, arched brick colonnades and modern cladding materials should be avoided, where they do not respond to the original palette of materials in the locality.

f) *Consistency*

Be consistent with the original. Observe the massing, scale, proportion, character and details of the existing fabric when blending new with old. Consider traditional solutions – it is easier to successfully add in a traditional manner than in a contemporary idiom, although modern designs can be an acceptable solution if well designed and executed.

g) *Intactness*

When adding to an existing building keep the original fabric intact and distinct, whilst subtly yet clearly distinguishing new work, to avoid confusion in reading the history of the building.



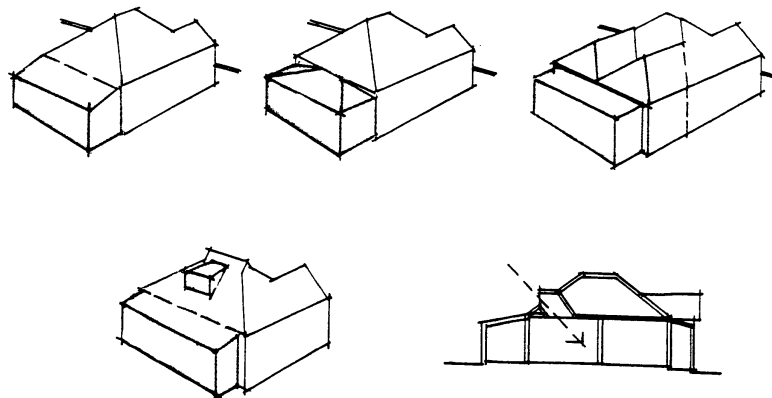
1.3.3 Types of Additions to Houses

Certain design approaches are more suitable to the building's significance, architectural style, siting, the accommodation needs and the proposed use. Flat-roofed extensions and extensions which rely on 'Cape Cod', "pop-ups" A-frame and mansard roofs, are not suitable for most traditional houses.

a) *Simple "Lean-To"*

This is usually the cheapest form of addition and can be used extensively with a variety of styles. Preferably sited at the rear of the house, this type of addition can also be used to form a new verandah or in combination with a wing. The use of a verandah addition, either at the rear or the side, may be a means of sympathetically relating a new extension with the existing house.

Where the addition links into an existing roof the materials should be matched. Where the lean-to addition is constructed at the rear and not visible from the street, materials need not match the original. Depending on the land's slope, the size of a lean-to addition will be limited by the need to provide adequate head height. (A wing addition overcomes this difficulty). Light access can be improved with a lean-to addition by adding gablets or skylights to the rear face of the roof.

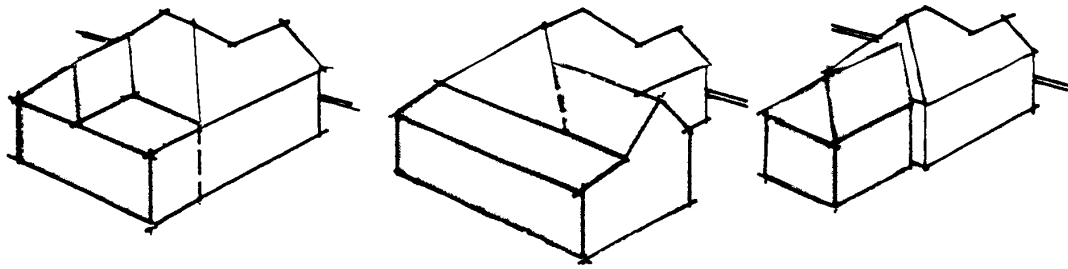


b) *Wing Additions*

Wing additions should be made at the side or rear of the building to minimise disruption to the main elevation and the streetscape. The size and slope of the land and the form of the house will dictate the location of the wing, which is generally better suited to asymmetrical buildings.

Where the original design produced a picturesquely irregular plan and roof shape, an additional wing, gablet or dormer to one side may reinforce this theme. However, it should not dominate and should not be located in the same elevational plane as the original work. This can be achieved by stepping the extension back. Side additions should not remove the possibility of car access to the rear of the site unless there is alternative rear lane access.

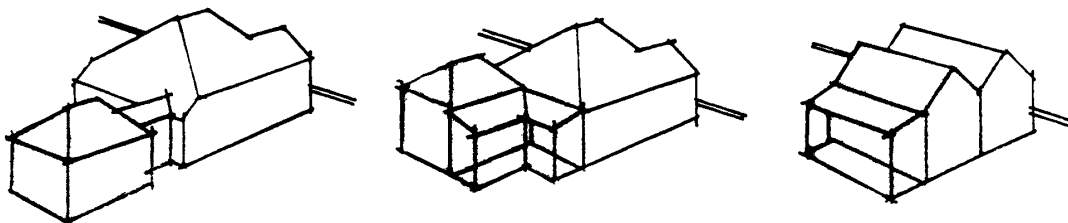
The existing roof form and pitch can be repeated and new detailing should reflect the gables, hips, eaves, ventilation, window hoods and other projections of the main roof.



c) *Pavilion*

The pavilion solution involves constructing a separate block element which may repeat the general form of the original house. It is particularly appropriate where the architectural proportions, scale, symmetry or detailing of the main house would be adversely affected by another type of addition. For example, a pavilion addition could be used where the original design would be upset by a lean-to or wing addition, or where the use of either of these would result in the loss of natural light or views.

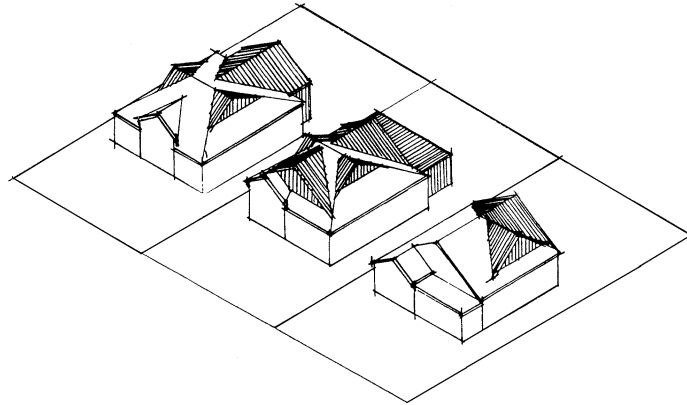
Pavilions may be connected to the main building by a breezeway or small utility area, such as laundry or bathroom. Pavilions may be the best solution for long deep allotments and can also be functionally integrated with landscaping to provide internal courtyards.



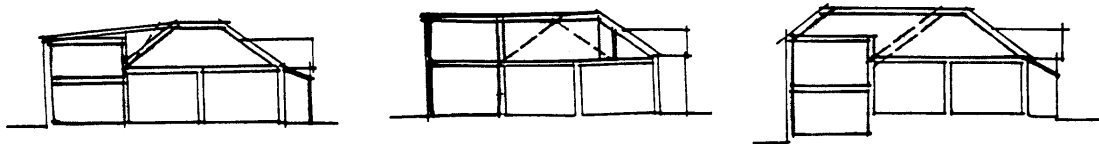
d) *Roof*

Providing the existing roof volume is sufficiently large and the roof profile is generally maintained, one or more habitable attic rooms may be created. Dormer windows should not dominate the original composition of roof elements through excessive scale and should be located to the rear.

The roofs of Federation-style houses are characterised by multi-hipped and gabled roofs. Additions to the roofs of these houses should be in a traditional gabled, hipped or lean-to form, matching the materials and roof pitch of the original structure



Roof additions should be confined to the rear of the existing building and should not alter the essential form and character of single storey buildings, for example, simple, modest Federation cottages should not be transformed into elaborate two storey "Queen Anne" style mansions.

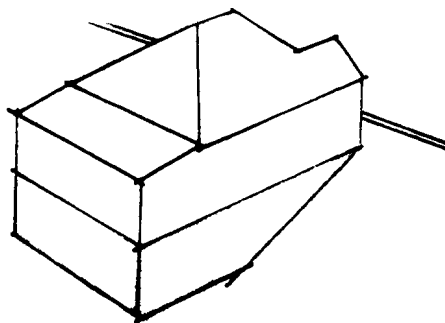


e) *Basement*

A basement addition is created by constructing rooms within the foundation area of an existing house. Houses built on sloping sites may possess a large underfloor area which can often be excavated to provide additional living space.

Before initiating this form of construction, carefully consider the type of materials to be removed, access for machinery and equipment, the removal of piers and installation of alternative support structures, drainage and the possible need for retaining walls. Care must be exercised to ensure adequate underfloor cross ventilation and to avoid water seepage or rising damp. Engineering advice is recommended and will probably be required.

Additional considerations include the placement of stairs and their effect on other areas of the house, the appearance of new windows and exterior doors which should be designed in terms of the overall appearance of the building and retention of most of the original foundation materials, such as sandstone. Garages can often be successfully accommodated in undercroft areas.



1.3.4 Car Parking and Access

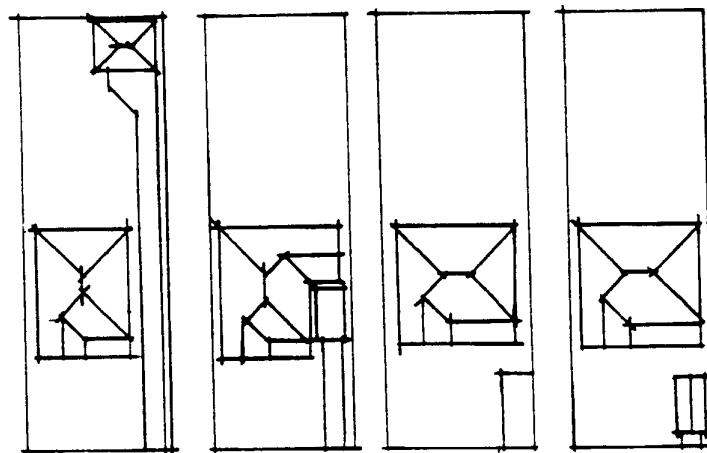
Garages and carports should preferably be located to the rear of the house and not dominate the streetscape. Priorities for accommodating the car are:

- locate at rear, with access from rear lane;
- locate at rear, with access from the front;
- locate at side of house, setback behind house alignment; or
- provide an uncovered, paved parking space at the front.

Rear lane access should be used wherever available in preference to interrupting the street facade and setting with additional driveways and parking facilities.

Extensions and additions should not sever the possibility for car access alongside the dwelling to the rear of the site. Where new garages at the rear of the site behind the house would be seen from the street, their design should not detract from the qualities of the house. The horizontal proportions of many roller shutter doors are generally unsuitable, and tiltadoors clad with vertical panels may be more appropriate.

Single car openings are preferred to double garages and stacked parking of cars may be encouraged to minimise the width of the structure as seen on the street frontage. Garages should have simple hipped, gabled or skillion roof forms of the smallest practicable scale in a given situation: the use of lean-to or skillion roofs over any attached to the main part of the structure will help minimise scale.



Where car parking is to be provided beside the building, it should preferably be uncovered. If one covered space is needed, a simple, unobtrusive lean-to carport would generally be preferred to a more elaborate structure. Great care is needed to ensure that any attached structure fits in with the main horizontal lines of the building such as the eaves line or top plate and that it does not obscure major features such as windows, doorways or verandahs. Side carports should be set behind the building alignment.

Garages may be incorporated unobtrusively in the undercroft of a building or provided by excavation of the front alignment on sloping sites but only in cases where these options have been "traditional" solutions in that locality.

Car parking facilities forward of the main building should be open stand areas.

Simple, open, lightly framed, pergola-like structures are preferred to elaborate carports, even where these emulate elements of the main building design. The open pergola type can complement Federation or California Bungalows without competing with, obscuring or overwhelming the main building in the way that elaborate structures, particularly with heavy tiled, visually dominant, gabled or hipped roofs, tend to do.

Where a carport is designed to emulate elements of the main building, great care is needed to ensure that its siting, scale, materials and visual complexity are appropriate, and that it complements rather than competing with or obscuring the main building: out-of-scale details can visually detract from the more sophisticated contours of early buildings.

1.3.5 Pools and Outbuildings

Major structures such as sheds, swimming pools and barbecue areas should be designed and sited carefully. These are best sited to the rear, or otherwise where lot width allows, beside the house. As with other extensions and additions, these will not be acceptable where access to existing or likely future car parking facilities at the rear of the site is cut off, and would necessitate the introduction of new, obtrusive car parking facilities.

Inground pools are less conspicuous than above-ground types. The pool and its surrounds should be designed with the aesthetics of the period in mind to harmonise with the house and its landscaped setting.

The use of close-jointed brick paving or stone flagging, with internal finishes in subdued tones such as deep greens, blues or browns, is highly compatible with Victorian and Federation sites, pebble aggregate, quarry tile or mosaic tile aprons are equally suitable for some later bungalow and functionalist styles.

Changing rooms, equipment stores, plant rooms or garden sheds will be less obtrusive if built as simple sheds, similar to modest early garage designs or as pavilions repeating some of the design elements of the house, provided that these are of modest scale and not over elaborate.

1.4 Infill Development

1.4.1 "Filling in the Gaps"

Infill development must achieve a sympathetic relationship with either nearby heritage items or the heritage conservation area. Infill needs to display architectural "good manners" by respecting the significant characteristics of nearby and adjoining development.

For the purposes of this document, infill development includes new development on the site of a heritage item (i.e. not an alteration or addition, but a new structure not attached to the heritage item), on a vacant or newly subdivided allotment in a heritage conservation area, or on sites which are in the vicinity of heritage items or heritage conservation areas. Similar principles underlie successful infill development as apply to alterations and additions.

1.4.2 Imitation vs Sympathetic Design

New buildings in heritage conservation areas should understand the characteristics of the past as these resulted from specific historic parameters. Reinterpreting these characteristics in a way appropriate to the present allows one to appreciate the original work in its context, and not confuse the old with the new.

The preferred approach is to design in a sympathetic but openly contemporary fashion to recognise existing patterns and to interpret them in a manner appropriate to the current social situation. Infill presents design constraints which often need special skill and ingenuity to be both contemporary and compatible.

Infill can be openly contemporary in design when it is well integrated with and relates harmoniously to its older original neighbours. It is essential that the scale, form and detail of the infill does not detract from the scale, form, unity, cohesion and predominant character of the building and development (i.e. streetscape/landscape elements) around it: the particular sensitivity of the whole setting must be respected.

Many contemporary kit/project home designs which purport to be "heritage homes" are in fact poorly integrated mixtures of design elements from different eras- a pastiche of older styles and materials, often of a completely different scale to the original older buildings and badly proportioned. These infill developments are intrusive elements which detract from the cohesiveness and amenity of the heritage conservation areas, and clearly offend the essential underlying principle of sympathetic development.

The preferred approach with infill development is:

- Keep it simple. Do not try to copy a mixture of design elements from different eras.
- Incorporate basic design elements such as the characteristic roof forms and massing of the original development to help integrate the new work.
- Do not assume that contemporary project home "heritage" designs will automatically suit any site or setting. Carefully observe and respect local nuances of design to ascertain if they are suitable.

1.4.3 Principles

The following principles apply:

a) *Character*

The first principle of infill is to be guided by the established character of the area, so it is essential that the elements that contribute to the special qualities of the place are clearly identified. The aim is to harmonise with and complement the existing streetscape fabric or fabric of individual heritage buildings, not compete with it. Infill should not try to dominate its surrounds but should relate sympathetically to existing scale, mass, proportion, etc. As the town character varies throughout Willoughby, infill should be particularly influenced by its individual street setting or context. Good infill relates well to its context, whether this is an individual heritage site, a group of significant original buildings or a streetscape of heritage value.

Council requires applicants to present a streetscape assessment with an application, as an important part of the design process and as a useful tool for assessment.



Out of character development

b) *Scale*

The scale (size, height and bulk) of a new building is of paramount importance. It should not dominate or compete with its neighbours or destroy an existing pattern of single or two-storey development.

Most of Willoughby City's heritage conservation areas have a consistent single storey scale: this is frequently an essential unifying principle. On the other hand, Naremburn Township is remarkable for its diverse mix of built scales, as are some parts of South Chatswood and Findlay/Wyvern Avenues, where there is a scatter of two storey buildings and larger mansions among the predominant single storey original housing. The existing diversity of scale in some places might allow a greater freedom of approach, but if uniformity of scale is part of the heritage value of the area, it must be respected accordingly.

Buildings are said to be "in scale" when the elements fit – when they appear to belong in their setting, when there is a respectful relationship that is often recognisably 'right'. Often this means similar height, size and proportion to adjacent buildings.

"Landmark" buildings in heritage conservation areas are special cases: these may be individual heritage items, such as mansions, public or commercial buildings. In such cases, any adjacent or nearby infill should relate to the scale of the existing development around the landmark and respect its prominence. The presence of a landmark building, which may be a two storey building in a "sea" of cottages, should not be used as a precedent for increasing the scale of infill development.

The relative scale of new buildings should consider the profile of original buildings – that is, the heights of the main ridgelines, or perhaps parapets in the case of commercial buildings, top plates/eaves level (or awnings of commercial buildings) and ground floor levels street or natural ground levels.

- Ensure the building relates in scale to its site and setting.
- Use heights, scale and bulk of original existing buildings as reference points.
- Make sure the parts are in scale with the whole.



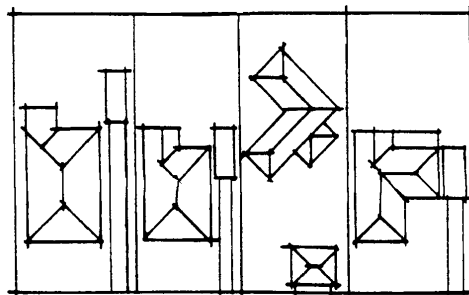
Out of scale development

c) *Siting and Setbacks*

The relative siting and setback of buildings is also important in forming the character of the streetscape and the relationship between adjoining buildings.

New buildings should be sited to correspond with the existing pattern of relationships between buildings and their sites. Front boundary setbacks should be equivalent to those of neighbouring buildings. Side distance setbacks should also be similar to the rhythm of development in the immediate vicinity.

Where existing buildings observe formal setbacks, or have historically been placed in a certain pattern relative to adjoining streets, that pattern must be considered in the location of any new building. If subdivisions challenge those patterns, the particular approach adopted must be justifiable in terms of its effects on heritage significance.



Sitings and setbacks should respect existing patterns

d) *Form and Massing*

The form and massing of a building is its overall shape and the arrangements of its parts. Roofs, facades and verandahs are the primary elements of mass in heritage buildings. The distinctiveness of many older styles may be found in the way the massing of larger elements was broken down into smaller.

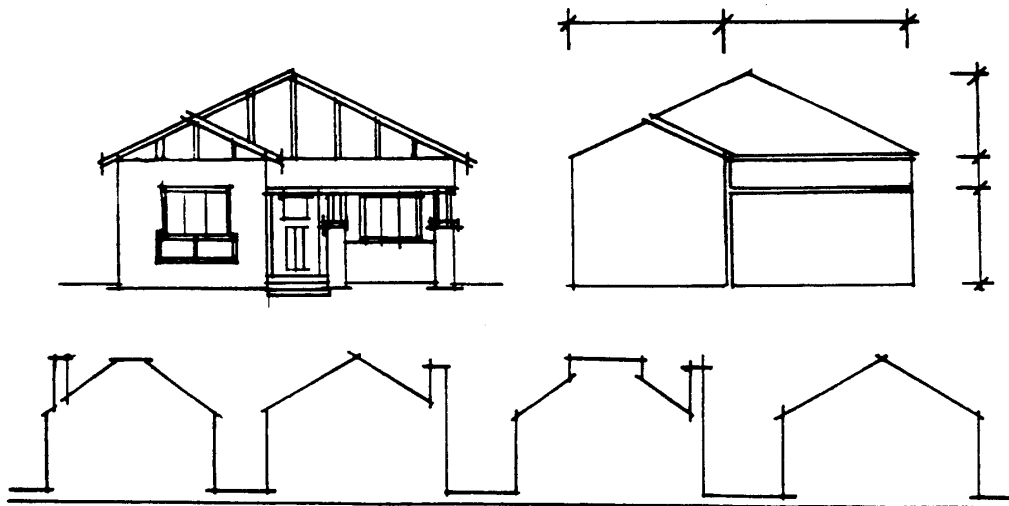
Infill design should identify the predominant form and massing and then design in sympathy with these forms. For example, the apparent bulk of a building may be reduced by breaking the primary facades into smaller components that reflect the character of their neighbours.

- Follow established practice of recessing doorways and emphasising display windows in retail buildings.
- Maintain the proportion and skyline interest of old building parapets when inserting new infill buildings amongst old commercial buildings.

The shape of the roof and the pattern it makes against the sky is often distinctive in heritage conservation areas. The form and character of the roof of new buildings can be the most decisive influence upon its successful integration within an established setting. Although the roof reflects the scale, setback, siting and plan form of the building it shelters, its pitch, form and shape will greatly affect the skyline appearance of a street, and may enable an otherwise very different building to blend in with the forms of buildings around it.

Hipped or gabled, simple or complex, steeply-pitched or flat – these aspects of a roof's design will determine its harmony or otherwise with neighbouring properties.

- Respect adjacent scale, heights and massing.
- Locate the bulk of larger new buildings to the rear.
- Consider the importance of maintaining roof form and rhythm.

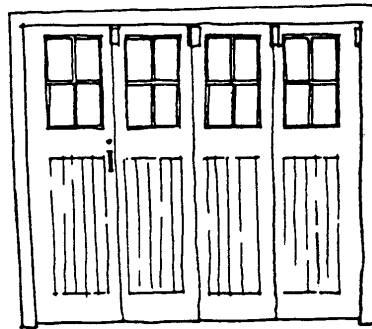


e) *Proportion*

Traditionally older buildings up to the 1930's use vertical proportions reflecting the construction technology of the day. There was a regular ratio of solid wall to openings which reflected the economy of smaller spans. It produced a common pattern and proportion in the doors and windows. Where wider openings were required, this was achieved by multiples of the standard (vertically proportioned) doors, windows and bays.

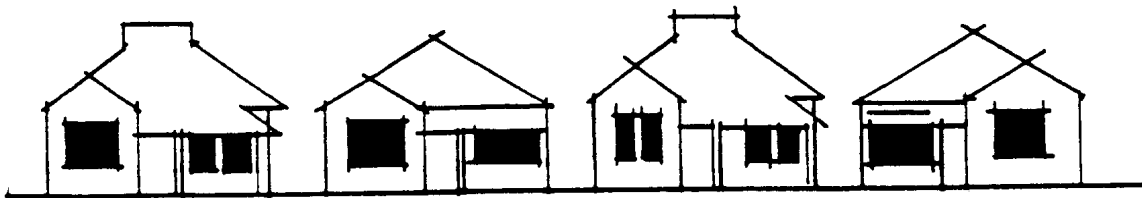
Modern technology and construction permits much greater spans and often features a horizontal emphasis. New infill buildings in heritage conservation areas should preserve the proportions of the surrounding development, even when using modern materials. The proportions and details of openings displayed by a new building will be read as part of the overall design of the building which contains them, and should only depart from established norms in the street if they are balanced by other factors, e.g., by being placed under shading verandahs or overhangs. Large windows can also be divided into smaller vertically proportioned units, often with structural mullions (supports). Be careful, however, to avoid contemporary "pseudo heritage" mullion patterns which bear no resemblance to any typical traditional styles.

Similarly, modern garage doors can be divided into smaller vertical bays to diminish their visual impact.



The proportions of any architectural decorative features should respect those of the original features from which they derive.

- Maintain characteristic proportions of design elements.
- Modulate building facades and maintain rhythm of fenestration.



f) *Materials and Colours*

Materials and their colours will also influence the degree to which any new building will blend with or intrude on the general street or group character established by its neighbours. The materials used in a new building might be completely different from those around its site but can be brought into an overall picture of harmony by careful colour selection.

Materials and details of surrounding buildings need not be copied but can be used as a reference point for infill development. Observe how traditional forms were typically broken into smaller massing elements by using contrasting materials and colours.

Many materials that reproduce original features may be too expensive to use widely even if seen as appropriate. It is usually preferable to use harmonious contemporary materials well. A clean contemporary design solution that observes all the principles of infill is likely to be more successful.

- Avoid fake or synthetic detailing: Do not "dress up" a contemporary design with superficial historic detail.
- There is no need to slavishly follow past styles except in heritage restoration: use simple, sympathetic but contemporary detailing.

g) *Characteristic Design Elements*

Architectural devices and design elements may be important contributions to the character of particular heritage conservation areas. For example, verandahs may be a common feature of street elevations. Chimneys can also be an important part of the skyline, visually grouping buildings together. The use of materials in certain feature elements may also be a signature of a place and part of its subsequent identity.

Some of these key elements can be used in a way that makes no immediate or direct reference to architectural style or fashion, but establishes the family resemblance or neighbourly connection with the other buildings and spirit of the heritage conservation area.

2. Typical Building Styles and Periods

The bulk of Willoughby's heritage is important because it demonstrates the City's residential development over time. Understanding the features of the major building styles is essential to evaluate the significance of individual buildings and to decide how a building or place can be maintained, restored, reinstated, adapted for another use, extended or added to.

Where infill development is proposed, understanding the locality's dominant styles and how these combine with the landform, subdivision pattern and landscaping to form distinctive streetscapes is fundamental to successfully designing new development that fits in with the heritage significance of the locality or nearby heritage items.

The distinguishing features of the major building styles found in Willoughby's housing are summarised here as a basic guide to help you identify the period of your house. Important commercial and public buildings may show these or other styles: more detailed information about all styles can be found in the bibliography.

Buildings are rarely "pure" examples of these "typical" styles. Some buildings may combine elements of several styles, as these naturally evolved, for example, the Federation Bungalow has aspects of a California Bungalow, but generally the massing and proportion of the building together with other architectural detailing enables one style to be distinguished from another. Some of Willoughby's streetscapes are significant because they display a consistent style while others are remarkable and attractive because they blend successive building styles and periods of development in a distinctive way.



2.1 Victorian – c.1840 – c.1890

Houses reminiscent of early Colonial buildings persisted in Victorian times. The earliest remaining buildings in Willoughby, are usually modest single storey cottages in simple, symmetrical Georgian and Regency styles.

2.1.1 Victorian Georgian/Regency

These styles are similar enough given their small number in Willoughby to be treated as one. They share an ordered approach in their symmetrical facades and simple rectangularity of overall shape and individual elements.

As in other colonies in warm and hot climates, the early Australian house protected its principal rooms from the sun by introducing a verandah. The development of new materials meant that roofing slate or corrugated iron were generally used on the main roof with a separate verandah roof of iron. Corrugated iron bullnosed verandahs were often painted in wide stripes of alternating colours, a "motif" derived from canvas awnings used at the turn of the eighteenth century.

Machine tools for shaping timber joinery led to turned posts, balusters and other decorative features. With glass available in larger panes, the 12 pane window of the old Colonial period gradually gave way to the window in which each sash was either divided into two panes of glass or was glazed with a single sheet.

Regency buildings had more sophisticated decoration including simple projecting mouldings, e.g. architraves around doors and windows, louvered timber shutters for sun protection, open-work iron columns, or columns of classical shapes, and an elegantly drooping concave or ogee corrugated iron roof to verandahs. Another feature was a cantilevered balcony with a balustrade of iron or timber.



Victorian Georgian/Regency

Scale

Small and low domestic scale – mainly single storey with occasional two storey houses in Willoughby.

Massing

General Roof Shape: Simple hipped roof, or occasional gabled form of moderate pitch.

Building Envelope: Simple formal rectangular shapes with symmetrical plain, undecorated or subtly decorated facades; sometimes cantilevered balcony projection on occasional two storey Regency type.

Facade Openings/Proportions: Regular symmetrical openings, usually from a verandah stretching across the entire front facade.

Materials & Details

Roof: Mainly corrugated iron, some slate in Willoughby; close eaves; low simple often rendered chimney sometimes with moulded capping.

Walls: Sometimes exposed brick work, sometimes rendered; some sandstone and weatherboard in Willoughby.

Joinery & Decoration: Simple geometric or turned wooden verandah posts; simple mouldings including stucco architraves; cast iron verandah posts and valances.

Windows & Doors: Sash window with small (often 12) panes, some with large panes; casement or French windows; panelled door; fanlight or transom light.

Verandahs: Usually separate corrugated iron bullnose or drooping convex profile roofs supported by slender, simple verandah posts of classical or rectangular design or open-work or slender cast iron columns.



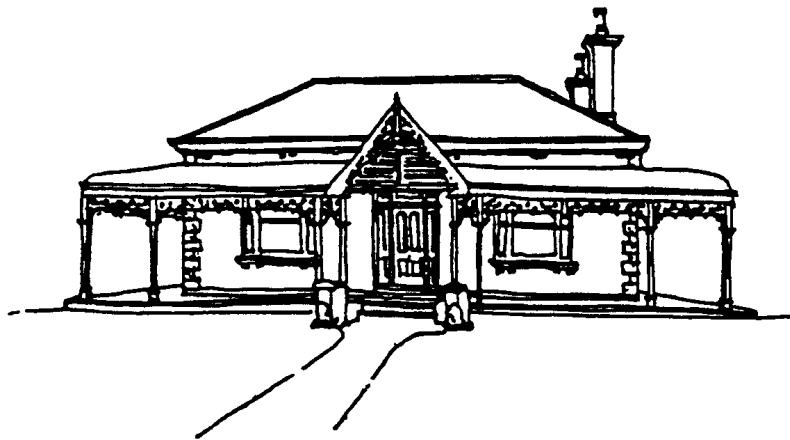
2.1.2 Victorian Gothic/Italian/Filigree

Willoughby has a small number, of these buildings, mainly in Gothic and Italianate styles. Their asymmetrical massing and elaborate decoration are usually seen as typically Victorian. These styles grew out of the British Victorian fascination with "the picturesque: many Britons, finding their nation in the vanguard of nineteenth-century industrialisation, felt the need for regular doses of nostalgia to counteract the harsh and ugly aspects of modern life".

The Italianate style drew on images of country villas. A feature common to house design since, "The Great Australian Asymmetrical Front (where the main bedroom pokes out a metre or two towards the street beyond the rest of the house)", began with Victorian Italianate.

"Rustic Gothic drew on a romantic image of a rural, vaguely medieval past: it was an anti-monumental style applied to houses in the suburbs or country" and was more modest in scale and decoration than the Italianate.

Some of Willoughby's two storey mansions have a Victorian Filigree character, the principal feature being an intricately textured verandah screen shading the main building mass. This style is an extension and embellishment of the Australian verandah tradition, generally expressed by a two storied verandah on an often relatively simple masonry form with classical medieval or Italianate detailing. A growing demand for more ornate architecture after the gold rush was largely met by the extensive use of decorative cast-iron components, by the 1870's designed and made in Australia, sometimes using local flora themes.



Victorian Gothic

Scale

Intimate and modest scale – usually single storey in Willoughby – despite steeply pitched roof and prominent gables.

Massing

General Roof Shape: Steep pitched (45°-60°) roof with prominent gables over projecting room bays.

Building Envelope: Irregular, asymmetrical massing, though some of the single storey houses in Willoughby have more formal principal elevations with a verandah to one side of a projecting gabled room bay on the front facade.

Facade Openings/Proportions: Decorative facade with asymmetrical arrangement of openings.

Materials & Details

Roof: Usually slate, some iron roofs; tall mediaeval looking sculptured chimneys.

Walls: Grey stucco walls sometimes imitating stone; stone walls; brick walls with decorative quoining.

Joinery & Decoration: Elaborately carved decorative timber "tracery" bargeboards and fretwork; turned finials and pendants.

Windows & Doors: Tall narrow casement windows with leadlight panels; bay windows; groups of windows; masonry mullion.

Verandahs: Intricate cast iron fringes and brackets to cast iron verandah posts.



Victorian Italianate

Scale

Imposing, even for single storey houses, with "landmark" elements of towers and faceted bays.

Massing

General Roof Shape: Generally low to medium pitched hipped roof with octagonal or pyramidal tower elements e.g. over the projecting front room bay, typically found in more modest single storey houses.

Building Envelope: Asymmetrical but still formal, principal elevation.

Facade Openings/Proportions: Grouped openings of windows and colonnades.

Materials & Details

Roof: Usually slate; decorative moulded chimney pots.

Walls: Usually grey stucco with moulded ornamental finishes.

Joinery & Decoration: Moulded architraves; bracketed eaves.

Windows & Doors: Curved, arched or stilted segmental window heads; faceted bay windows; coloured and etched glass of reds, blues, greens, purples and yellows; elaborate four panel doors with raised mouldings.

Verandahs: Deep verandahs (loggias); encaustic or tessellated tile or marble hall and porch floors; some iron filigree work on valances, posts, balustrades.



2.2 Federation – c.1890 – c.1915

The main strands of Federation housing found in Willoughby are the Queen Anne style and to a lesser extent the Arts & Crafts and Federation Bungalow styles, though some architect-designed domestic or public buildings exemplify other styles, for example, the Federation Tudor/Gothic of Innisfallen Castle, the Federation and Romanesque of The Hotel Willoughby and the Federation Gothic of Northbridge Suspension Bridge and St Leonards Catholic Church, Naremburn.

2.2.1 Federation Queen Anne

In the Federation period, wood replaced cast iron for structural and ornamental components of verandahs: "The use of steam and, later, electricity to operate tools such as the bandsaw, jigsaw and the lathe made it possible for pieces of wood of many shapes and sizes to be made quickly, easily, relatively cheaply and in large quantities".

Timber posts, balustrades, brackets and valances had a chunkier quality than wrought iron which by the early twentieth century was seen as rather old fashioned. Some buildings used both: the few buildings in Willoughby combining timber and iron decoration do not have the intricately textured screen that was the epitome of the Federation Filigree style.

The other major material changes were the use of unglazed terracotta Marseilles pattern tile roofing – though slate roofing with terracotta decoration (ridge cappings and finials) also occurred in the early period – and reddish face brick walls, usually tuck pointed on the street facade, which replaced Victorian grey stucco finishes.

The roof became a dominant feature with its steeper pitch and, on larger houses, an ensemble of varied roof shapes evolving from a usually hipped, pyramidal main roof. A prominent gable usually faced the street and the verandah tended to be incorporated in the main roof.

The Federation Queen Anne style embodied influences of the English and the more extravagant American styles of the same name, along with some distinctly Australian features. This was the dominant style of Australian domestic architecture during the decades immediately before and after 1900, a period of accelerated suburban expansion based on improved public transport. The first growth spurt in Willoughby occurred at this time with more dense urban settlement near the new railway stations and along tram routes. Willoughby has a wide range of Federation housing types in a variety of locations as a result.

Federation Queen Anne

Scale

Moderate domestic scale of usually single storey in Willoughby, varying from picturesque but imposing larger two storey mansions to elegant grand villas, modest single dwellings and narrow fronted workers' cottages.

Massing

General Roof Shape: Roof dominant with an ensemble of varied roof shapes of moderate to steep pitch; prominently featured subsidiary gables of different sizes; conical tower-like or pyramidal "candle snuffer" roof elements; multiple chimneys, tall with decorative cappings, e.g. lantern shaped with terracotta pot or pots.

Building Envelope: Asymmetrical, informal, picturesque massing, including projecting room bays and diagonally projecting corners; deliberate avoidance of three dimensional simplicities. Smaller houses often have simple plan-shapes with corridor from front door past living rooms and bedrooms to the kitchen, bathroom and laundry at the rear: typically one room at the front projects forward towards the street and a veranda extends across the remainder of the frontage in the more modest houses and worker's cottages.

Facade Openings/Proportions: Varied informal ensemble of openings, usually tall narrow windows, often grouped.

Materials & Details

Roof: Slate gradually supplemented by the more common unglazed French Marseilles tile; terracotta ridge and apex ornaments.

Walls: Warm red brick, often dichromatic, with tuck pointing on street facades; some contrasting rough cast walling; half timbered effects in gable; occasional pressed metal wall and verandah ceiling sheeting.

Joinery & Decoration: Painted timber detailing; timber gable screen; bracketed projecting or "flying" gable; ornamental timber frieze or valance often with turned or fretwork elements; sometimes curvilinear Art Nouveau timber ornaments.

Windows & Doors: Casements with Art Nouveau inspired leadlights; sometimes casements on front facade but double-hung on side walls with multi-paned, (sometimes coloured glass) upper sashes; accent windows, including round windows, bay windows and oriels.

Verandahs: Wide verandah, often wrapped around more than one side on larger houses; timber posts with ornamental brackets, balustrades and valances.

2.2.2 Cottage Forms

Most of Willoughby's Federation housing was fairly modest. Naremburn's unique and cohesive settlement of small single fronted workers' cottages developed within walking distance of the station, brick pits and other industry. And, on the other hand, two storey mansions and commodious single storey grand villas were scattered or found in enclaves in select new suburbs and on more isolated, larger land holdings.

While sharing similar characteristic Federation materials and design elements, there are considerable differences in scale, complexity, massing and richness of decoration between the grand villas, houses and single fronted workers' cottages of this period as illustrated below. The roof profile of the smaller forms, while still prominent visually, is much plainer: cottages tend to have a single gabled room bay to one side of the main hipped (sometimes gambrel) form, while the single fronted cottages in Naremburn usually have either a reduced version of this roof shape or a single gable facing the street with a hipped roof behind.



2.2.3 Arts & Crafts

Compared with the Queen Anne, the Arts & Crafts' style is less common in Willoughby: it tends to be more informal in planning, massing, fenestration and landscaping and have a more unassuming, homely feeling. The roof is a dominant element, featuring gables (with barges or parapets) and/or hips of medium to steep pitch with prominent eaves, sometimes wide enough to require brackets.

In contrast with Queen Anne red brick, painted pebble-dash stucco (rough cast) is commonly used on exterior walls and chimneys, together with other materials having earthy, "natural" colours and textures, such as wooden shingles, often used in gable ends, and stone, often used for basework and trim. In Willoughby, sandstone is much used for these purposes and also for fences of the period. Touches of sinuous Art Nouveau detail are also common, for example in woodwork and stained glass.



2.2.4 Federation Bungalow

This is a transitional style, which is a forerunner of the ground-hugging inter-war California Bungalow, with which it shares qualities of homely simplicity and robust honesty. It differs from the earlier Federation styles in its broad simple roof planes, often featuring an awning-like gabled roof with the ridge parallel to the street and with the main roof extending over the verandah.

It is generally single storey but sometimes has attic rooms in the roof space, which have small "eyelid" dormer windows, though this is very rare in Willoughby. Eaves are wide with exposed rafters. A prominent gable facing the street is often decorated with wall hung stained shingles and roof ventilators.

Verandahs have simple masonry pier supports and/or simple, sturdy timber posts. Walls are rough cast and face brick, sometimes in contrasting sections.

Stone is also used in Willoughby for basework, verandah columns and pier cappings. Leadlights are used sparingly, usually in simple rectangular or diamond grid patterns.



2.3 Inter-War Modern – c.1915 – c.1940

2.3.1 California Bungalow

This earthy and unpretentious style was based on a distinctive type of rustic, Japanese-influenced single storey detached house which developed in the Los Angeles suburbs to become the standard unit of US west coast suburbia by the outbreak of World War I. The Australian version also became the most common housing style of its time, being embraced by speculative builders from the early 1920's until the Depression. Willoughby has a rich variety of California Bungalows.

The hallmarks of the standard bungalow are a visually dominant, low-pitched spreading roof, with wide overhanging eaves, exposed rafters and barge boarded gables facing the street, on a simple rectangular house plan, with walls of dark red or purplish, liver-coloured face brick. A distinctive feature is the deep, shady verandah under a low pitched or flat roof that is supported by substantial masonry piers, sometimes with squat colonettes or grouped timber posts.

In Willoughby, orange-red Marseilles pattern tiles most commonly cover the main roof, while unobtrusive corrugated iron, or usually bituminous felt, is used on flat veranda roofs.

Bargeboards are visually prominent but plain, often with raked edges to accentuate the sweep of the roof. Simple designs of strap work, shingling and ventilators are common end gable infills. External timber joinery is generally plain, compared with Federation decoration, and painted. Window frames, often mounted on the outside face of the wall, sometimes have skirts of shingles or boards.

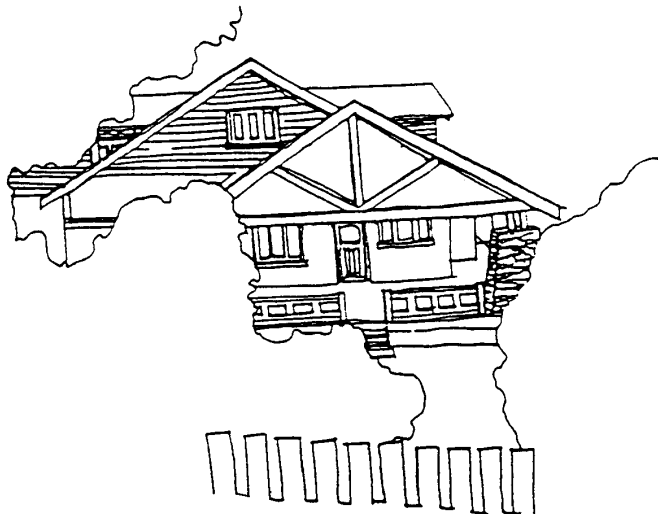
Occasionally walls are pebbledash though pebbledash accents are more common, for example, on heavy tapered masonry verandah pylons or as infills on low veranda walls. Smooth river stone detailing, e.g. as verandah supports or as an external chimney wall, is very rare in Willoughby, but rusticated sandstone is frequently used in foundations, decorative masonry finishes and low walls.

The Bungalow usually has only one prominent main fireplace to the living room/main bedroom, with a second chimney to the kitchen/laundry, compared with the multiplicity for earlier styles, and the dominant chimney is sometimes placed externally on or near the street elevation. Window openings are usually grouped, especially on street facades and to main rooms, with casement sashes favoured, sometimes with stylised geometric leadlight glazing having coloured glass, often blue, accents. Half-glazed, usually single, entry doors are typical.



A separate garage, typically for a single car, began to appear to the side and behind the house in the backyard. This was usually a small unobtrusive shed with double hinged timber doors, either lightly framed in timber or steel with a corrugated iron roof or in the same brick and tile as the main house.

Post and wire fences replaced the timber picket fences associated with the former Victorian and Federation styles. Some Willoughby houses still display the timber pergola entryways typical of the era.



2.3.2 1930's Bungalow

The Depression ushered in a period of more austere buildings: the bulk of Willoughby's small houses from this period are usually fairly plain dark red to liver coloured brick bungalows with hipped (concrete or Marseilles pattern) tile roofs.

Massing is still informal but the roof is lower and visually less dominant than the standard California Bungalow: the distinctive gables facing the street are replaced by a simple hipped roof, which sometimes has a smaller secondary hip over a small centrally placed verandah or porch. In others, the main roof is gabled with the ridgeline parallel to the street. Eaves decreased in size: exposed rafters were replaced by boxed eaves. Chimneys became lower, narrower and less decorative. Sometimes the colour of the roof became an important decorative element with variegated multi-coloured tiles.

The deep verandah of the California Bungalow also decreased in size during the 1930's until it disappeared to be replaced by a recessed entry – sometimes a porch with decorative brickwork or slender Georgian style flanking columns. In transitional styles, the formerly open verandah of the California Bungalow was often closed-in with glazing similar to the rest on the front facade.

Sometimes the unpainted face brick walls feature clinker or textured bricks, with occasional herringbone patterns or chequered brick nogging. Rusticated sandstone under crofts, which occasionally house single car garages, are common on sloping sites and some sandstone detailing, e.g. on columns, occurs.

Windows and doors became visually important decorative elements in what was otherwise an often plain facade in the later houses. Boxed casements, sometimes bayed and supported on corbelled brickwork, gave way to recessed double hung timber framed windows. Leadlight glazing, often in geometric patterns with light blue, opaque white or textured glass accents, was one of the few decorative features.

Earlier houses generally have half-glazed single entry doors, some with textured glass panels. Double glazed entry doors and French doors also occur while the later plainer bungalows tended to have more solid doors with smaller glazed areas.

A single car garage became standard: this was generally provided as a separate building behind the house – usually a simple shed with double opening, sometimes half-glazed, timber doors – or sometimes as a low wing to the side of the house; occasionally, where lot width or topographic restrictions discouraged these more typical options, the garage was built in to a front boundary wall or incorporated as a front projecting wing of the house itself.



The 1930's Depression also saw the period revival styles introduced in the 1920's in the houses still being built for the middle and upper classes. Willoughby has a few simple, symmetrical rectangular Inter-War Georgian Revival houses with their restrained face brick or plain stucco walls and moderately pitched, tiled hipped roofs.

Generally, however, this and other revival styles are found in Willoughby less as clear examples in themselves than as influences modulating the more common "spec built" 1930's brick bungalow. For example, Georgian columns may decorate the portals of the entry porch of an otherwise plain liver brick bungalow or the Spanish Mission style may be seen in the three half-arched windows on a red brick facade.

Many bungalows show one or more aspects of the popular Inter-War Old English (Tudor revival) style: its asymmetrical massing, medium pitch gabled roofs usually of tiles (sometimes in variegated colours) with timber bargeboards and imitation half-timbered gable infills, tall brick chimneys, or textured clinker face brick walls with herringbone or chequered brick nogging, bay windows, casement sashes with diamond pattern leadlight glazing, and arched entry porches.

The final expression of the speculatively built popular 1930's bungalow incorporated a mix of revival styles usually in simplified form.



2.3.3 Spanish Mission

The Spanish Mission style, developed in California after the 1890's, created an image of a romantic past, which was popularised in the Inter-war period by Hollywood stars who used it for their luxurious, well-publicised homes. The style imported to Australia was seen as an attractive option during the Depression for a "middle class" house, a cinema or even a service station.

Spanish Mission houses have generally asymmetrical massing, round-headed arched openings (usually in groups of three) of, for example, windows onto loggias, which are another distinctive feature. The arches are supported by either twisted "barley sugar" or chevron decorated baroque columns or plain, heavy piers.

Walls are stucco with an exaggerated texture "to simulate peon-built adobe masonry", usually cream painted. The medium pitch hipped or gabled roofs often have half-round orange terracotta tiles of Roman or Spanish flavour: the chimney and gables sometimes have a tile capping, with stucco finished up to the underside of the tiles edging decorative parapets. The building is often remarkable for the amount of ornament, including black wrought iron work, for example, as lanterns, balustrades or open work screens in arched window or loggia openings. There are sometimes ledged and boarded window shutters and heavy timber doors with decorative wrought iron screens over their small glazed lights.



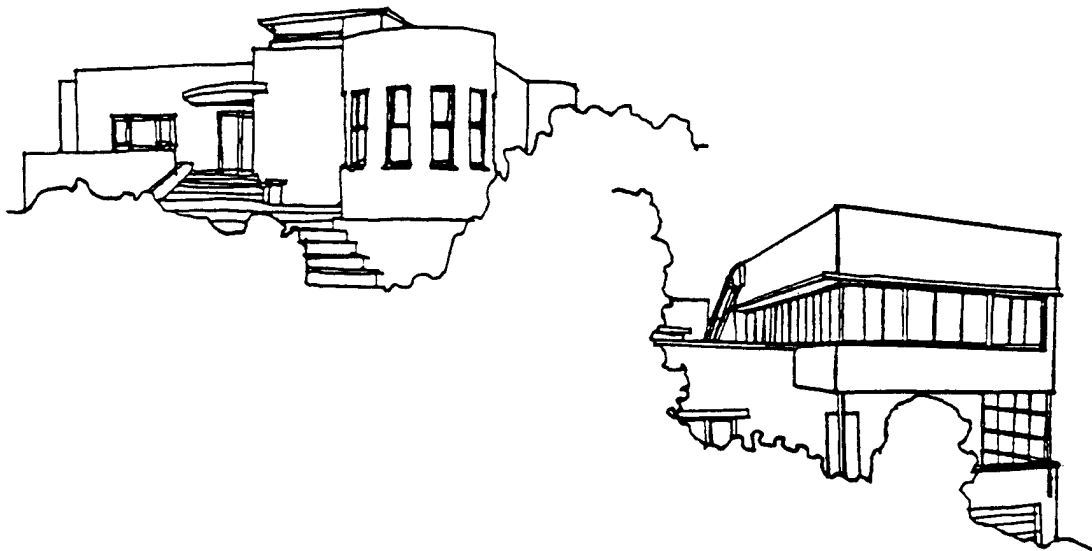
2.3.4 Functionalist

The Inter-War Functionalist style was a major departure which had its roots in Europe and in the idea that the designed object should be 'functional' above all else. It was the forerunner of the international styles which developed more vigorously after the Second World War. While not a widely popular movement, the distinctive "ocean liner" or "waterfall" house was its mainstream expression in domestic architecture for the middle and upper classes: Willoughby has a scattering of these as well as a few more radical, unadorned 'Bauhaus' influenced 'Modern' houses though most of these are from the post war period.

The functionalist style is characterised by an asymmetrical massing of simple geometric shapes and contrasting horizontal and vertical motifs. Major changes in materials were the use of steel and reinforced concrete to achieve wide spans, continuous windows and cantilevered balconies, hoods, roofs (even in domestic buildings) and metal framed, usually steel windows, also in large horizontal expanses. The horizontal "ribbon" window was a major stylistic change from the vertical openings of earlier styles. Glass bricks are also used.

The roof is often concealed by a parapet. Walls usually have plain surfaces of light toned cement or face brick. While one strand of this style emphasises sharply rectangular geometric lines, the more usual "ocean liner" or "waterfall house" has curving shapes, rounded corners, including curved glass windows, wrapping around corners.

The most common expression of the "waterfall house" was a brick cottage with horizontal rounded corners on its front facade, alternating bands of brick and cream stucco, horizontal steel casement windows on its corners, porthole accent windows (including a porthole on the front door) and boxed flush eaves to its low pitched hipped roof of cement tiles.



2.3.5 Modernism

Modernism followed the dictum of “less is more”. The modern house was designed to be functional and streamlined with a minimum of decoration, often painted white. Typically it had a lightweight structure, large expanses of glass and a flat roof. Internal planning was based on a geometric grid. “It observed the landscape, typically from an elevated terrace or balcony, rather than engaged directly with it.”

Modernist architecture has these features:

Little or no ornamentation

Factory made parts

Man-made materials such as metal and concrete

Emphasis on function

Rebellion against traditional styles

2.3.6 The Sydney School

This group of architects emerged during the late 1950s.

The members of the Sydney School had a desire to work with the native Sydney landscape, designing buildings that responded closely to the sites and maintained strong links between internal spaces and the natural world. The sites were usually secluded bushland blocks, often steeply sloping. Their favoured palettes were economical and simple materials; they often used exposed timber beams, floorboards and clinker bricks which blended with the colours of the bush.

Influenced by Frank Lloyd Wright, Japanese architecture, Brutalism and the Arts and Crafts movement, the Sydney School tended to leave the materials and structure of a building exposed.

The Sydney School house often could not be seen from the street. It was married to the landscape, sometimes planned around a feature, such as a rock or tree. It was oriented to light and prevailing breezes. Sydney School architects loved natural materials – typically, brick or timber left in near-original state.

3. Useful Publications / References

The Office of Environment & Heritage, Department of Premier & Cabinet have compiled a comprehensive 'Directory of Conservation Suppliers and Services.' This information is available from their office at, 3 Marist Place, Parramatta, ph. 9873 8500 or can be viewed and downloaded from their website. www.heritage.nsw.gov.au

How the Australian House Developed:

"Architecture in Australia" – A History

J.M. Freeland

Cheshire, Melbourne, 1968

"Australia's Home" – its origins, builders and occupiers

Robin Boyd

Melbourne University Press, Melbourne, 1961

Identifying Types of Buildings:

"A Pictorial Guide to Identifying Australian Architecture"

Richard Apperly, Robert Irving and Peter Reynolds

Angus & Robertson, Sydney, 1989

Restoring Houses:

"Getting the Details Right – Restoring Australian Houses 1890's – 1920's"

Department of Planning

The Flannel Flower Press, Queensland, 1989

"The Federation House, Australia's Own Style"

Hugh Fraser

Landsdowne, Sydney, 1986

"The Federation House, A Restoration Guide"

Ian Evans

Flannel Flower Press, Sydney, 1983

"Conservation of Federation Houses – Seminar, 16 May 1981"

Heritage Council of New South Wales

ISBN 7240 4501 5

"Australian Houses of the 20's and 30's"

Peter Cuffley

The Five Mile Press, Fitzroy, Victoria, 1989

"The California Bungalow"

Graeme Butler, Lothian Books,

"The Australian Home"

Ian Evans

Flannel Flower Press, Sydney, 1983

Colour Schemes:

“Colour Schemes for Old Australian Houses” Vol 1&2
Ian Evans, Clive Lucas, Ian Stapleton
The Flannel Flower Press, Sydney, 1984

Gardens:

“Traditional Gardens in Australia”
Peter Cuffley
The Five Mile Press, Balwyn, Victoria, 1991.

“Interwar Gardens – A guide to the history, conservation and management of gardens of 1915 – 1940”.
The National Trust of Australia (NSW)
Parks and Conservation Committee

Useful Websites:

Willoughby City Council: www.willoughby.nsw.gov.au

Office of Environment & Heritage, Department of Premier & Cabinet
www.heritage.nsw.gov.au

World of Old Homes: www.oldhouses.com.au

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PART I - Water Management

1 Introduction

As impervious areas increase due to continuing urban development there is greater pressure on both the natural waterways and the built drainage systems. Council's stormwater drainage systems (including the natural streams and creeks) are currently operating at full capacity. Apart from environmental and pollution consequences, the increase in impervious surface areas results in additional urban flooding and further costs to maintain and replace Council's stormwater drainage infrastructure. To mitigate these impacts, Council requires most new developments to install on-site detention (OSD) systems to reduce and control the extent of stormwater runoff from a site during storm events.

OSD refers to the control of stormwater peak flows from a site using tanks or other types of storage devices to temporarily store stormwater which then discharges into Council's drainage system at a controlled rate.

OSD systems are required for all developments. However, rainwater reuse tanks may be installed to off-set the requirement for OSD for minor developments such as dwellings, dual occupancies, boarding houses not exceeding 300m² and 12 persons, and secondary dwellings. The stored rainwater can be used for washing cars, watering lawns and gardens, topping-up chemically treated swimming pools, toilet flushing and washing clothes.

There are three technical standards that are relevant to water management provided as **Attachments 1, 2 and 3**. A synopsis of these technical standards is provided in Section 6 of this Part of the WDCP.

1.1 Aim

The specific aim of this Part is to have a number of relatively small low-cost storage systems on individual properties to assist in limiting the peak discharge to predevelopment flow rates for all storm intensities and durations up to and including the 1% Annual Exceedance Probability (AEP) storm event.

1.2 Objectives

The objectives of this Part are to:

- i. provide a safe and effective framework for the control, re-use and disposal of stormwater
- ii. reduce flooding risk in urban areas and protect Council's stormwater drainage infrastructure
- iii. maintain public health and safety
- iv. use water resources efficiently
- v. encourage Water Sensitive Urban Design (WSUD) measures to minimise impacts on the natural water cycle and foster ecological sustainability
- vi. improve water quality and protect the scenic landscape and recreational values of bushland, natural watercourses and receiving waters
- vii. prevent, mitigate and control land degradation

2 Minor Developments

2.1 Rainwater Reuse Tanks for Minor Developments

Minor developments include construction of, and alterations and additions to:

- i. single dwellings
- ii. attached and detached dual occupancies
- iii. boarding houses not exceeding 300m² and 12 persons
- iv. secondary dwellings

Alterations and additions include ancillary structures such as garages, carports, sheds, studios, swimming pools, studios, gazebos and the like.

The installation of rainwater reuse tanks has proven to be an effective method of capturing and disposing of stormwater for the majority of minor developments that can discharge directly into Council's stormwater drainage system. This helps reduce the extent of overland flow and the risk of flooding in urban areas. The installation of rainwater reuse tanks has the added benefit of providing cost savings to a household as a result of the reduced consumption of water from the reticulated system.

In order to promote the installation of rainwater reuse tanks for minor developments, Council will discount all or part of the OSD storage capacity requirement, providing the overflow from the rainwater tank can discharge by gravity into Council's stormwater drainage system. Additional OSD may be required if the at grade impervious surface areas cannot drain by gravity into Council's stormwater drainage system and there is likely to be inundation to downstream properties.

Using rainwater solely for outdoor purposes such as watering the garden will result in poor utilisation of the stored rainwater due to mismatches between the seasonal rainfall and outdoor water usage patterns. For example, during extended wet periods the stored rainwater is unlikely to be used for outdoor purposes such as watering gardens or washing cars.

To maximise the reuse of rainwater, the rainwater tank should be plumbed to indoor facilities such as toilets and laundries. This will ensure a steady rate of use regardless of seasonal rainfall. A combination of indoor and outdoor use of stored rainwater will result in optimum conservation of the potable water supply and provide some capacity for OSD. Therefore, unless stated otherwise, all rainwater reuse tanks must be plumbed to bathrooms/WC for toilet flushing and laundries for washing clothes.

2.2 Table 1: Size of rainwater reuse tanks for minor developments.

Development Type		Requirement	
		Sites which fall directly to a street or via an easement	Sites with a charged system or on-site disposal system
New dwellings			
1	New dwellings on lots greater than 400m ² .	10kL	10kL
2	New dwellings on lots less than 400m ² .	5kL	5kL
New dual occupancies and boarding houses			
3	New attached and detached dual occupancy on potential lots greater than 400m ² /dwelling.	10kL per dwelling	10kL per dwelling
4	New attached and detached dual occupancy on potential lots less than 400m ² /dwelling.	5kL per dwelling	5kL per dwelling
5	New attached dual occupancy on potential strata subdivision lots.	5kL per dwelling	5kL per dwelling
6	New boarding houses (not exceeding 300m ² and 12 persons).	10kL	10kL
New attached dwellings			
7	New attached dwellings on potential lots greater than 400m ² /dwelling.	10kL per dwelling	10kL per dwelling
8	New attached dwellings on potential lots less than 400m ² /dwelling.	5kL per dwelling	5kL per dwelling
Alterations and additions (including attached secondary dwellings)			
9	Alterations and additions to a minor development that involves significant demolition on lots greater than 400m ² . ⁽ⁱ⁾	10kL	10kL
10	Alterations and additions to a minor development that involves significant demolition on lots less than 400m ² . ⁽ⁱ⁾	5kL	5kL
11	Alterations and additions to a minor development that will result in more than 60% impervious areas on lots greater than 400m ² .	10kL	10kL
12	Alterations and additions to a minor development that will result in more than 60% impervious areas on lots less than 400m ² .	5kL	5kL
13	Alterations and additions to minor developments with an estimated cost of more than \$50,000 and impervious area between 50-60%.	5kL	5kL
14	Alterations and additions to a minor development with an estimated cost that is less than \$50,000 and impervious area between 50-60%.	3kL ⁽ⁱⁱ⁾	5kL
15	Alterations and additions to a minor development that do not result in impervious areas more than 50%. ^{(iii)&(iv)}	Nil	5kL for lots >400m ² 3kL for lots <400m ²
16	Notwithstanding items 11, 12, 13 & 14 above, alterations and additions to minor developments that do not result in more than 5% over the existing impervious areas, and the area of works does not exceed 25m ² . ^{(iii)&(iv)}	Nil	5kL for lots >400m ² 3kL for lots <400m ²

Development Type		Requirement	
		Sites which fall directly to a street or via an easement	Sites with a charged system or on-site disposal system
Detached secondary dwelling			
17	New detached secondary dwellings and alterations and/or additions to convert an existing out buildings/studio to a detached secondary dwelling.	3kL	5kL
Other Controls			
18	Irrespective of the development type, a rainwater reuse tank is not required for sites that drain directly into Middle Harbour or Lane Cove River. ^(v)	Nil	Nil
19	Irrespective of the development type, a 5,000litre rainwater reuse tank is required for sites that drain into a natural watercourse, creek or bushland. ^(v)	5kL	5kL

Notes:

- demolition is regarded as 'significant' if the extent of demolition is more than 50% of the external fabric of the existing building
- the rainwater reuse tank is only required to be plumbed to outdoor facilities
- it should be noted that a 3,000 litre rainwater tank may be required under the State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 for any development with an estimated cost of \$50,000 or more or a swimming pool that has a volume of more than 40,000 litres
- whilst a rainwater reuse tank is not required, if the site cannot drain by gravity into Council's stormwater drainage system, there may be a need to provide measures such as infiltration and/or on-site detention systems to ensure downstream properties are not affected by stormwater runoff from the subject property
- for further information regarding approvals and guidelines to drain directly into Middle Harbour, Lane Cove River, natural waterways, creeks or bushland, please refer to Technical Standard No.1 - Stormwater Management provided in Attachment 1

Additional Notes:

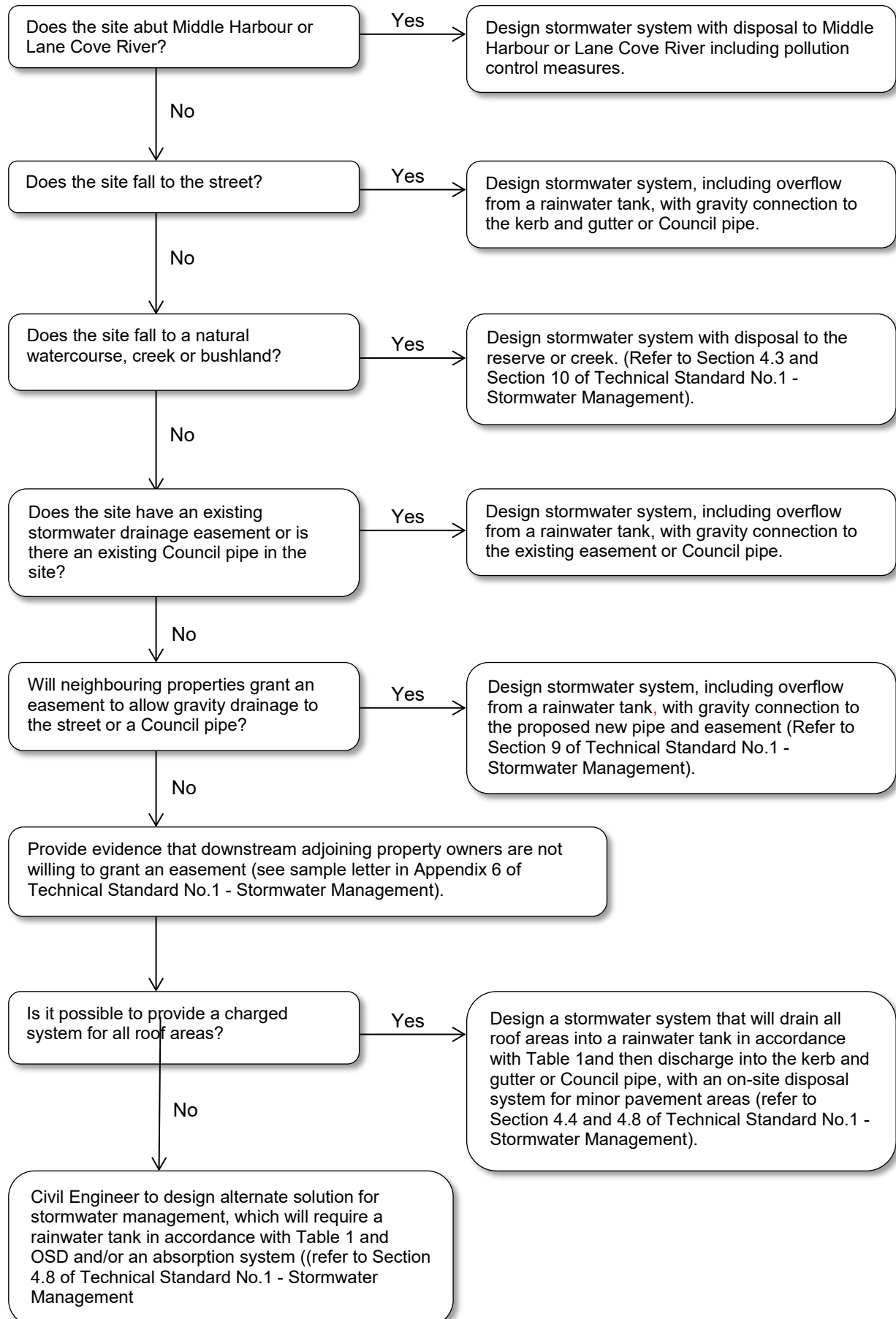
- any variation to the size of rainwater tanks will need to be justified and assessed on their individual merits
- a written request to vary the size of the rainwater reuse tank and/or the plumbing requirement to indoor facilities must be prepared by a suitably qualified person
- for further information relating to the installation and discharge of overflow for rainwater reuse tanks, please refer to Technical Standard No.1 - Stormwater Management
- for further information relating to OSD systems, please refer to Technical Standard No.1 - Stormwater Management
- the table provides the minimum size of rainwater tanks for minor developments; households are encouraged to provide larger rainwater reuse tanks if adequate space is available

2.3 General submission requirements

All applications for minor developments are required to include stormwater drainage details and an impervious area calculation plan prepared by a suitably qualified person. In this regard impervious areas include all existing and proposed new built structures such as roofs (measured to the eaves); driveways and paths; and, paved areas. Swimming pools are included as impervious area.

Open slatted timber decks may be excluded providing the area below the deck is unpaved; however, other partially permeable surfaces such as gravel driveways are included in the impervious area calculation (this is because these areas may be concreted or paved at a later date without Council approval under the provisions of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*).

2.4 Flow Chart for the design and discharge of stormwater systems for minor developments



2.5 Controls for rainwater reuse tanks

All Development Application (DA) for minor development or an application for a Complying Development Certificate (CDC) must comply with the following controls:

- i. above ground rainwater tanks should not exceed 2.4m in height above the existing ground level; this height restriction includes any stand for the tank
- ii. rainwater tanks must be located at least 450mm from any property boundary
- iii. rainwater tanks must be positioned or screened so as not to be visible from the street frontage
- iv. rainwater tanks must be in a neutral, non-reflective colour to ensure tanks are compatible with the character of the locality and do not impact on adjoining buildings
- v. above ground tanks must be built to ensure the area directly beneath any outlet tap and/or drainage plug is contained (or banded) and drained to the nearest stormwater drain
- vi. rainwater tanks must not be installed over or immediately adjacent to a water pipeline, sewer pipeline or Council stormwater pipeline or easement, unless it is installed with approval and in accordance with any requirements of the public authority that has responsibility for the pipeline
- vii. rainwater tanks are not to be located within overland flow paths or flood zones
- viii. minor developments may include OSD devices in lieu of or in addition to the requirement for the installation of rainwater reuse tanks; however, the OSD system is required to be designed by a suitably qualified engineer
- ix. rainwater reuse tanks may be located below the building footprint, such as voids and below decks, providing they are accessible for maintenance and replacement; any tank located below the building footprint must be designed to ensure that any leakage can drain to a point outside of the building to avoid any flooding of habitable rooms
- x. a sign measuring no less than 400mm x 200mm is to be permanently attached and displayed within the immediate vicinity of the rainwater reuse tank/s. The wording shall state:

'This rainwater retention and reuse system is required by Willoughby City Council. It is an offence to alter any part of the system without written consent from Council. The registered proprietor shall keep the system in good working order by regular maintenance including removal of debris'.

- xi. a 'charged system' for rainwater reuse tanks for minor developments is permissible providing the overflow can drain directly into the street or via an easement (please refer to Section 4.4 of Technical Standard No.1 - Stormwater Management)
- xii. if the overflow from a rainwater reuse tanks cannot drain directly under gravity into a street, or discharge into a watercourse or bushland, an applicant may be required to obtain a downstream easement or connect into an existing inter-allotment drainage easement (please refer to Section 9 of Technical Standard No.1 - Stormwater Management)
- xiii. if an easement cannot be obtained or the property cannot connect into an existing inter-allotment drainage easement, alternative measures may be required to mitigate impacts on downstream properties; this may include the installation of OSD tanks and rainwater tanks together with other measures such as on site disposal systems (please refer to Section 4.8 of Technical Standard No. 1 - Stormwater Management)

- xiv. any variation to the controls for the installation of rainwater reuse tanks will need to be justified and assessed on their individual merits; a written request to vary the control must be prepared by a suitably qualified person
- xv. if multiple rainwater tanks are provided, and are not interconnected, the roof area draining to each tank must be proportionate to the tank size

3 Major developments

3.1 OSD for Major Developments

All developments that are not regarded as 'minor' are deemed to be 'major' development, including:

- i. residential developments relating to: multi dwelling housing; attached dwellings; boarding houses exceeding 300m² and 12 people; hostels; residential flat buildings; and seniors housing
- ii. commercial, industrial, institutional, shop top housing and mixed-use developments, and recreation facilities
- iii. all development that generate a water demand in excess of 5,000 litres per day

Note:

- Institutional development includes: community facilities; educational establishments; child care centres, place of public worship; and public administration building.

All major developments are required to provide OSD that is designed to capture and detain stormwater runoff for all storm events up to and including the 1% AEP storm event. The OSD system must be in accordance with Council's Technical Standard No.1 - Stormwater Management and AS/NZS3500.3.

The Statement of Environmental Effects (SEE) and the Stormwater Management Plan submitted with a DA must address WSUD, recycling and pollution control measures (please refer to Technical Standard No.1 - Stormwater Management).

The Stormwater Management Plan is required to be prepared by a suitably qualified engineer.

3.2 Exceptions

On-site detention will not be required where Council is satisfied that the discharge of stormwater from a property does not pass through any Council owned drainage infrastructure before reaching the receiving waters of Middle Harbour or Lane Cove River. Drainage infrastructure includes any pipe, culvert, lined channel or other restrictive structure. However, certain requirements apply for the discharge of stormwater into natural watercourses or bushland (please refer to Section 4.3 and Section 10 of Technical Standard No.1 - Stormwater Management).

3.3 Discharge of Stormwater

Stormwater is required to discharge via gravity, with pipes or channels having a minimum grade of 1% fall. If the overflow from an OSD system cannot drain directly under gravity into a street or an existing easement or discharge into a watercourse or bushland, an applicant will be required to obtain a downstream easement or connect into an existing inter-allotment drainage easement (please refer to Section 9 of Technical Standard No.1 - Stormwater Management). For flows greater than 20L/s, it

may be necessary to extend the Council pipe system to the site at the developer's expense.

3.4 Water Quality

For all major developments, water quality improvement measures are to be provided in accordance with the requirements of Technical Standard No.1 - Stormwater Management.

3.5 Water Sensitive Urban Design (WSUD)

An integrated approach to the management of stormwater in urban areas is the use of WSUD measures. It is one way in which we can protect Council's stormwater drainage infrastructure and make a significant contribution toward sustainability.

WSUD seeks to integrate the management of the natural soil and water resources on a development site by retaining or restoring natural site features. All major developments are required to consider and where practical, implement appropriate WSUD measures.

A detailed explanation of WSUD can be found on the Sydney Water website at:

https://www.sydneywater.com.au/web/groups/publicwebcontent/documents/document/zgrf/mtgz/~edisp/dd_183471.pdf

Landscaping can play an important role in achieving WSUD to help control stormwater pollution and reduce stormwater runoff. This includes; planting native grasses, groundcovers or mulched garden beds; the use of plants with a high water demand to filter nutrients and reduce runoff; and, the construction of depressions, swales, contour banks, rock channels, pebble paths or similar measures to capture and retain runoff.

A civil engineer and landscape architect can assist in providing appropriate WSUD measures for inclusion in the landscape design of a proposed development.

3.6 Additional Information

For some larger or more complex developments, the Stormwater Management Plan should include a comprehensive water cycle management strategy. This includes, but not limited to developments that:

- i. incorporate 15 or more dwellings
- ii. accommodate 50 or more residents, occupants or employees
- iii. generate a water demand in excess of 5,000 litres per day
- iv. involves the creation of 2,500 square metres or more of impervious surface areas
- v. involves the subdivision of 2,500 square metres or more of land for commercial or industrial purposes

The Plan should include the following additional information:

- i. the site constraints and the existing environment within its catchment context
- ii. design principles, objectives and performance standards relating to water cycle outcomes (post-development stormwater volume discharged from the site during a typical rainfall year should not exceed 90% of the volume that would be expected if no measures were applied to reduce the stormwater volume)

- iii. water management measures to meet the objectives of this plan and associated guidelines and Technical Standards or policies adopted by other relevant Government Agencies
- iv. an infrastructure program that integrates all aspects of water cycle management
- v. strategies to ensure effective ongoing maintenance of on-site water management measures, maintenance and regulatory requirements
- vi. arrangements to monitor and maintain the water management strategy to satisfy the objectives of this plan

For major and/or more complex developments, applicants are encouraged to have a pre DA meeting to ascertain the level of information required to be submitted with the application.

4 Subdivision

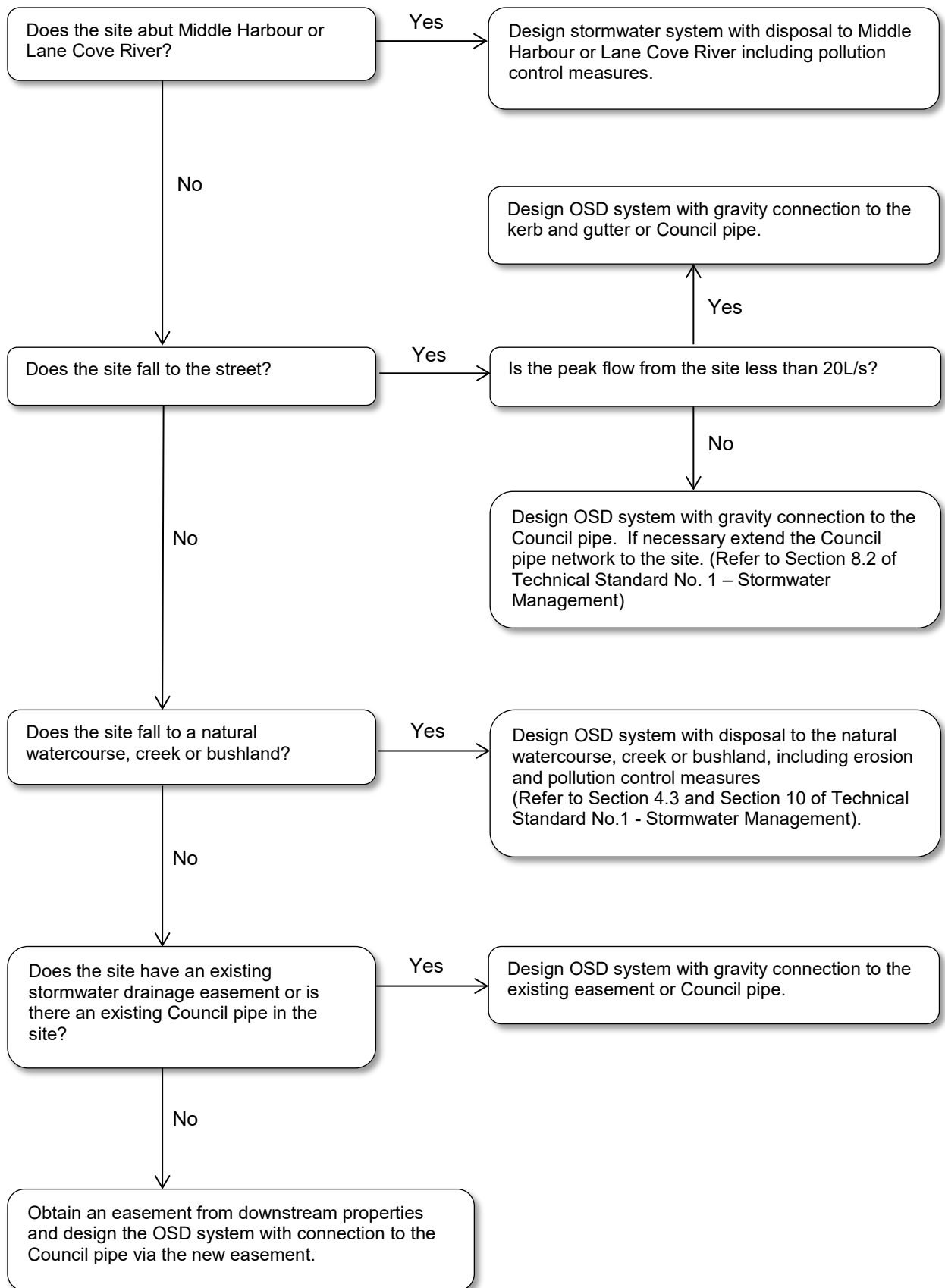
For all subdivisions that create a new lot, a concept stormwater plan is required. The plan is to show the proposed method of stormwater drainage from each lot in the proposed subdivision. All lots must have a gravity drainage system, with pipes and channels having a minimum grade of 1%. If easements are required over downstream properties, they are to be shown on the plans, and written advice provided to confirm that the downstream property owner(s) will grant an easement.

For subdivisions that cannot drain directly into the street or via an easement, an on-site detention (OSD) system must be provided on the site before the plans are registered. Details of the OSD system must be shown on the concept plans.

Note:

For subdivision of an approved dual occupancy or attached dwellings where no building or ancillary works are proposed, no additional stormwater measures are required.

4.1 Flow Chart for the design of stormwater systems for major developments



5 Applications for development

5.1 Site Specific Requirements

In preparing a Development Application (DA) or an application for a Complying Development Certificate (CDC) it is important to refer to the relevant technical standards when designing a stormwater management system for various types of development and discharge conditions. The information submitted with the DA or CDC should consider the following matters:

- i. is the development at risk from slope instability, reactive soils, erosion hazards, acid sulphate soils, land contamination or archaeological relics
- ii. is the land affected, or potentially affected by flooding from stormwater drains, overland flow paths, drainage easements, watercourses or open channels
- iii. does the site drain to adjacent land which is a watercourse, riparian community, bushland or reserve
- iv. does the development propose to cut into the natural surface or change the natural surface levels
- v. does the site fall to the rear and/or into neighbouring properties

If the answer to any of these questions is 'yes', it will be necessary to engage a suitably qualified engineer to prepare a Stormwater Management Plan. The design of this plan must:

- i. consider ground levels and the location of existing stormwater drains when designing new drainage facilities
- ii. consider potential site areas which may maximise rainwater and stormwater collection for reuse
- iii. consider potential recycling facilities and reuse options
- iv. consider the potential use of existing landscape features as part of the proposed stormwater source controls
- v. identify how the design responds to the site constraints and opportunities

Applications for minor developments that drain into a natural waterway or bushland must include all relevant information and a Stormwater Management Plan prepared by a suitably qualified person.

5.2 Soil and Water Management Plan

All applications are required to address sediment and erosion control measures. A Soil and Water Management Plan specifying the proposed measures to control erosion and pollution sources of water both during and after the construction phases will be required where:

- i. a proposed development will expose a soil surface area greater than 250 square metres
- ii. the site adjoins public open space or a watercourse
- iii. the site is on a slope exceeding 18 degrees
- iv. involves cut or filling of the land which will alter the rate, volume or direction of overland flow
- v. the development contains 10 or more car parking spaces

For further information please refer to Technical Standard No. 3 - Sediment and Erosion Control.

6 Technical Standards

6.1 General

Council has three technical standards which include details relating to: stormwater management; floodplain management; sediment and erosion control; and, water quality. These technical standards deal with the provision of on-site detention (OSD) systems, rainwater reuse tanks, flood mitigation and, erosion and pollution control measures.

The technical standards will assist proponents to provide the appropriate level of information to satisfy the aims and objectives of this plan. These documents are provided in Attachments 1, 2 and 3. A synopsis of each technical standard is provided below:

6.2 Technical Standard No.1 - Stormwater Management (Attachment 1)

This document provides guidelines and requirements for stormwater management systems, including OSD, rainwater tanks and discharge requirements. It also includes requirements for water quality improvement measures.

All developments are required to provide OSD systems that temporarily store stormwater before being discharged into Council's drainage system.

For minor developments, Council encourages the installation of rainwater reuse tanks to off-set the requirement for OSD. Rainwater reuse tanks are required to capture roof water to be used for non-potable purposes such as washing cars, irrigating gardens, topping up chemically treated swimming pools, flushing toilets and washing clothes. This document includes requirements for the installation and discharge of overflow from a rainwater reuse tank.

Note:

- Generally a Positive Covenant and Restriction on Use of Land will not be required for rainwater reuse tanks for minor developments. However, some minor developments may be required to have a Positive Covenant and Restriction on Use of Land to ensure any overflow from a rainwater reuse tank and/or the OSD system is retained and maintained to prevent inundation to downstream properties.
- To ensure OSD systems are maintained, a Positive Covenant and a Restriction on Use of Land will be required on the Title of the subject property for major developments.

To mitigate the amount of pollutants entering Council's stormwater drainage systems, which ultimately flow into either Middle Harbour or the Lane Cove River, major developments are required to incorporate pollution control measures to ensure an acceptable level of water quality during and after construction.

6.3 Technical Standard No.2 - Floodplain Management (Attachment 2)

Applications are required to address the risk of inundation and flooding if the site is located adjacent to a creek, drainage reserve, stormwater pipeline or within a low point. The assessment is based on the 1% Annual Exceedance Probability (AEP) event, also referred to as the 1 in 100 years Average Recurrence Interval (ARI) storm event.

A flood study, prepared by a suitably qualified person, must be submitted for developments deemed to be at risk so that the overland flow volume, depth, velocity and extent of inundation can be ascertained. Applicants of properties identified as flood prone land are encouraged to have a pre DA meeting to ascertain the level of information required to be submitted with the application.

The flood study should address all requirements and the information under Section 12 of Technical Standard No. 2 - Floodplain Management

Note:

- An applicant can obtain a Section 10.7 Certificate (formerly a 149 Certificate) or contact Council Engineering Division to ascertain if a property is identified as flood prone land.
- If the property is identified as flood prone land, a Flood Information Certificate is available from Council (the application form and fees are available on Council's website).

6.4 Technical Standard No.3 - Sediment and Erosion Control (Attachment 3)

All applications involving earthworks and/or the generation of additional stormwater runoff must submit a Site Management Plan detailing the proposed method for sediment and erosion control measures. This document provides guidelines on simple, practical steps that may be taken to reduce the risk of polluting runoff from construction sites during storm events.

ATTACHMENT 1 - TECHNICAL STANDARD NO.1 - STORMWATER MANAGEMENT

1 INTRODUCTION

This Technical Standard provides detailed stormwater management requirements and controls to comply with the relevant provisions of Part I (Water Management) under the *Willoughby Development Control Plan (WDCP)*.

It is Council's practice to encourage sustainable development for the preservation of the natural environment, as well as protecting private and public land from the increased probability of being flooded due to upstream development. The increase in impervious surfaces due to urban development also puts greater pressure and further costs on Council to maintain and replace its drainage infrastructure. To mitigate these impacts, Council requires most new developments to install on-site detention (OSD) systems to reduce and control the extent of stormwater runoff from a site during storm events.

The requirement for the installation of OSD systems for any new development on a site(s) is addressed as part of the development assessment process. The appropriate method of on-site detention will depend on the type, size and scale of the proposed development.

This Technical Standard is intended to provide information and controls to assist in limiting the peak discharge to predevelopment flow rates for all storm intensities and durations up to and including the 1% Annual Exceedance Probability (AEP) storm event.

2 OBJECTIVES

The objectives of this Technical Standard are to:

- i. regulate development to ensure that it does not contribute to increased flood risk
- ii. manage the change in discharges from development sites by source control
- iii. minimise adverse environmental impacts caused by increased stormwater runoff by reducing the total volume of runoff being discharged from individual properties
- iv. minimise the use of mains supplied water by encouraging water conservation through the reuse of rainwater
- v. provide an effective framework for the installation and ongoing maintenance of OSD systems and rainwater reuse tanks
- vi. ensure compliance with all codes, guidelines and legislation relating to OSD and rainwater reuse tanks
- vii. minimises water pollution from new developments
- viii. protects the water quality of natural watercourses and receiving waters by preventing further deterioration of the water quality, riparian zones and aquatic ecosystems due to development
- ix. maintain public health and safety

To achieve these objectives and ensure OSD devices operate correctly, the maximum flow rate allowed to discharge from a particular site (Permissible Site Discharge or PSD) is required to be controlled by a restriction such as an orifice plate. In this way, the collective use of OSD systems can reduce the peak discharge to try and match the capacity of the downstream drainage system. This will save the community money by not requiring larger pipe systems. It will also reduce damage to

the environment and improve water quality by preventing increased levels of scour, erosion and sedimentation being transported downstream towards the estuaries.

3 APPLICATION OF THIS TECHNICAL STANDARD

This Technical Standard applies to all development/building works that require approval under the Environmental Planning and Assessment Act 1979 or approval under the Local Government Act 1993.

In accordance with Part I of WDCP, development falls into two categories; 'minor' development and 'major' development. The majority of minor developments will only be required to install a rainwater reuse tank to off-set the requirement for OSD.

4 GENERAL WATER MANAGEMENT REQUIREMENTS

4.1 Stormwater Design Elements

4.1.1 Standards

Stormwater drainage systems are to be designed and constructed in accordance with the requirements of AS/NZS 3500.3, Australian Rainfall and Runoff, Council's Design Standards (AUS-SPEC) and the National Construction Code.

4.1.2 Surface Inlet Pits and Grated Trench Drains

Surface inlet pits and grated trench drains with flush fitting grates are to be installed where necessary within the site to collect stormwater runoff and direct it to the disposal location. They must be designed to meet the following requirements:

- i. sized to be capable of accepting the design flows
- ii. located to prevent runoff from entering buildings and garages
- iii. located to prevent long term ponding of stormwater
- iv. located so that runoff does not affect pedestrian access to buildings and so that concentrated stormwater does not flow over any public footpath or adjacent properties

All required grated trench drains are to be a minimum width of 200mm. For driveways falling to the street, a grated trench drain is to be provided across the driveway adjacent to the property boundary.

A stormwater pit shall be provided adjacent to the property boundary, prior to discharge to Council's drainage system or kerb and gutter, to ensure the system can be maintained. For single dwelling properties, the pit shall be a minimum of 450 x 450mm internal dimensions, and for all other developments 600 x 600mm.

All stormwater junction pits and kerb inlet pits installed in Council's road reserve and public open space must be designed and installed in accordance with Council's Aus-Spec and AS/NZS 3500.3. Pits are to be provided at:

- low points
- every change in pipe size, level, direction or grade

- junction points of multiple pipes

4.1.3 Stormwater Pipes

The minimum allowable pipe size across the footway to the street is 100mm diameter sewer grade UPVC pipe with a converter through the kerb consisting of a 75mm high by 125mm wide by 4mm thick galvanised RHS, with a minimum grade of 1%.

When discharging directly to the kerb and gutter, the maximum velocity is 2.5m/s and the maximum flow is 20L/s. Any site with a discharge of greater than 20L/s is required to connect directly into Council's piped stormwater system via a pit and/or pipe.

All pipes within the Council road reserve, other than direct connections to the street kerb and gutter, or public open space must be a minimum of 375mm diameter RCP.

For stormwater pipes in the road reserve or public open space, the minimum pipe grade shall be 1%. Grades on 0.5% will only be acceptable for pipes larger than 225mm diameter, where a grade of 1% is not achievable and the pipe can be shown to be self-cleaning. For pipes within private property, minimum grades shall comply with the requirements of AS/NZS 3500.3.

Pipes with a gradient greater than 20% must have anchor blocks at the top and bottom of the inclined section and at intervals not exceeding 20m.

The depth of cover on all pipelines is to be in accordance with AS/NZS 3500.3 and manufacturer's guidelines.

4.2 Surface Runoff Retention Tanks

Water stored in underground tanks which are designed to capture runoff from paved or other ground surfaces may be used for outdoor irrigation and other non-potable uses.

The system shall:

- i. incorporate suitable treatment measures prior to storage in the tank, such as a first flush and filter system
- ii. be connected to a sub-surface or drip irrigation system rather than a hose tap, unless treatment devices are provided that meet requirements for contact with the water
- iii. not be connected to indoor water features without suitable treatment in accordance with the requirements of Australian Guidelines for Water Recycling Managing Health and Environmental Risks
- iv. have all fixtures connected to the system marked "NOT SUITABLE FOR DRINKING"
- v. have the tank enclosed and all inlets screened to prevent the entry of foreign matter and to prevent mosquito breeding
- vi. have the tank sited in a location where it will not affect the structural integrity of any nearby buildings
- vii. have the overflow connected to the on-site detention system (if required) and to the site drainage system

viii. be designed by a suitably qualified engineer

4.3 Discharge into Natural Watercourses or Bushland

Approval is required to discharge stormwater, including the overflow from a rainwater reuse tank or OSD system, directly into a natural watercourse, creek or bushland reserve.

Uncontrolled water discharge into natural watercourses and creeks increases embankment erosion and streambed scour. Applicants must ensure that any watercourse or creek bank and bed is protected against erosion and scour at the point of discharge.

Uncontrolled water discharge into bushland increases erosion, weed growth and causes long-term degradation of the bushland. If an applicant has approval to discharge stormwater through bushland, the discharge must be conveyed to the nearest substantial drainage line or watercourse via a natural-looking rock-lined channel or underground pipeline. The construction of the channel can be incorporated into the existing landscape and/or drainage lines and rock outcrops while protecting existing trees and vegetation.

The system for conveying the stormwater or overflow must incorporate:

- i. energy dissipation structures that reduce the velocity of the stormwater discharge (please refer to Technical Standard No.3 - Sediment and Erosion Control)
- ii. facilities for retention of gross pollutants and sediment; these structures and facilities are to be constructed on private property (please refer to Section 11)

Applicants are responsible for the rehabilitation of any disturbed bushland area as a result of the drainage works being undertaken.

A plan detailing any proposed drainage and remedial works within a natural watercourse, creek or bushland must be prepared by a suitably qualified person and submitted to Council for approval.

4.4 Controls for a Charged System

Charged systems are permitted to connect downpipes to rainwater tank, where it is not possible to provide a gravity drainage system. They are also permitted for minor development where it is not possible to drain the site via gravity and where it is not possible to obtain an easement.

For a charged system draining to a rainwater tank, the following requirements are to be met:

- i. hydraulic grade line calculations are to be undertaken by a suitably qualified person demonstrating that the proposed system will have sufficient operating head; a freeboard of at least 500mm is to be allowed between the lowest roof gutter level and the hydraulic grade line at the top of the respective downpipe; alternatively, the eaves gutter level is to be a minimum of 1.5m above the top water level in the rainwater tank and a maximum of 2.0m
- ii. the pipe system shall be fully sealed to a minimum of 500mm above the top water level in the pipe
- iii. a grated cleanout pit must be established adjacent to all system low-points and provided with a screw-capped sealed extension of the respective main charged

drainage line that connects to an on-site dispersal trench system or stormwater pit

- iv. leaf guards, mosquito mesh and/or an appropriate flap valve must be established over the inlet pipes to the stilling pit in order to minimise mosquito nuisance
- v. exposed aerial drainage will not be approved by Council, except for guttering and vertical downpipes and diagonal lines where they are feeding directly into a rainwater tank

For a charged system within the site that drains to the kerb and gutter, the following requirements are to be met:

- a. there is a gravity flow (min 1% grade) across the road reserve from the property boundary to the street gutter to preclude the possibility of street water backflow
- b. a minimum of 1.5 metres head height must be available from the roof gutter or rainwater tank to the invert of the inlet in the stilling pit and a maximum of 1.5 metres head height between the invert level of the inlet in the stilling pit and the base of the downpipe
- c. hydraulic grade line calculations are to be undertaken by a suitably qualified person demonstrating that the proposed system will have sufficient operating head; a freeboard of at least 500mm is to be allowed between the lowest roof gutter level and the hydraulic grade line at the top of the respective downpipe or overflow from the rainwater tank
- d. the discharge pipe must be fully sealed to a minimum level of 1 metre above the invert level of Council's street gutter or 500mm above the top water level in the system, whichever is greater
- e. a grated cleanout pit must be established adjacent to all system low-points and provided with a screw-capped sealed extension of the respective main charged drainage line that connects to an on-site dispersal trench system
- f. leaf guards, mosquito mesh and/or an appropriate flap valve must be established over the inlet pipes to the stilling pit in order to minimise mosquito nuisance
- g. exposed aerial drainage will not be approved by Council, except for guttering and vertical downpipes and diagonal lines where they are feeding directly into a rainwater tank

4.5 Pumps

Generally stormwater drainage from all properties should be by gravity. The use of pumps is generally only permitted for distribution of water from rainwater reuse tanks.

Pumps may be used to drain seepage from underground basements and a minor amount of direct runoff from basement driveway ramps. The pumps are required to be dual submersible pumps and sized and constructed in accordance with Section 9.4 of AS 3500.3.

Wet wells must have a minimum storage capacity of 3m³ and be designed and constructed in accordance with AS/NZ 3500 Part 3.

Direct connection of a pump's rising main to the kerb will not be permitted. The rising main shall be directed to an OSD system, at a level above the top water level, or a stilling pit, prior to discharge.

4.6 Sub-Soil Drainage

Sub-soil drainage systems, which may be necessary in certain types of development, are to be designed and constructed in accordance with AS/NZ 3500.3. Sub-soil

drains should not be directly connected to the street kerb. Instead they should be connected under gravity to an internal stormwater drainage system via a pit. Water in the system should be disposed of in a manner that will not adversely affect adjacent properties. It is recommended that applicants consult a hydraulic engineer in this regard.

4.7 Overland Flow Paths

Existing overland flow paths, including flows from adjacent allotments, are to be preserved and retained. Naturally diffuse surface waters (sheet flows) are not to be concentrated.

Catchment flood studies or drainage analysis must be carried out for sites where there is a risk or record of flooding from overland flow.

Approval to straighten, widen, line or pipe open channels may be granted in some instances, subject to environmental and hydrological considerations.

No structure or fill is to be placed within the flow path where it could cause a rise in the flow depth; increase the velocity beyond the allowable safety limit as defined by Australian Rainfall & Runoff (current edition); or, have an adverse effect on adjacent properties.

Fences within overland flow paths are to be open style that allows the passage of floodwaters.

4.8 On-site Disposal Systems

On-site disposal, including dispersion and infiltration, as a primary method of stormwater disposal is generally not permitted as it can cause inundation of downstream properties in built environments. In addition, dispersion at the rear of properties backing onto bushland could change the moisture content in the bushland area and have an adverse impact on the local flora. On-site disposal is not acceptable for major development.

For minor development only, where it is not possible to obtain a downstream easement, on-site disposal may be used where the following controls are met:

- i. it is demonstrated that no drainage easement exists either over adjoining properties nor are readily available through negotiation
- ii. it is demonstrated that all other alternatives, including charged systems, have been comprehensively examined and demonstrated to be inappropriate and ineffective
- iii. installation of rainwater tank(s) with an effective capacity as per Table 1 of Part I of the draft WDCP, to capture runoff from all roof areas for re-use. The tank shall be connected to supply non-potable use including toilet flushing, laundry devices, car washing, and landscape irrigation etc. Overflow from rainwater tank(s) shall be piped to the on-site dispersion system
- iv. surface runoff from hard paved areas shall be collected via a filtration device prior to discharging into the system to prevent blockage by silt and/or debris
- v. site conditions are suitable for on-site disposal

The design of on-site absorption systems are to be prepared by a suitably qualified civil or geotechnical engineer. The design must demonstrate that the soil and terrain conditions can accommodate an infiltration or soil absorption system having regard

to the soil types, slope of the land, level of the water table, and contamination and hydraulic conductivity of the soils.

The design must comply with the following criteria:

- a. the base of the trench shall be at least 1 metre above the underlying water table or rock stratum
- b. a minimum of 95% of the total site impervious area is to drain to the rainwater tank. A maximum of 5% of the impervious area, generally driveways and paved areas, may bypass the rainwater tank and be drained directly to the disposal system.
- c. the system is at least 5 metres from downstream property boundaries.
- d. the system is at least 3 metres from any buildings
- e. the system is not located where it could have an adverse impact on any existing or proposed tree
- f. if the system is being constructed in conjunction with any new structure (including residential buildings) the foundations of the structure are to consist of pier and beam. The piers are to be to a solid stratum
- g. the system must be at least 1 metre from pavements that are subjected to vehicular traffic
- h. a debris/silt collection pit is to be constructed immediately upstream of the absorption system
- i. the system is to consist of an Evertrench Jumbo 410 or similar product with 20mm river gravel wrapped with geofabric, with 1 lineal metre of trench for every 10m² of impervious area draining to the trench, including areas draining to the rainwater tank

For dual occupancies and other minor developments where there is variation to these criteria, a detailed soil assessment and test report from a qualified geotechnical engineer confirming that the site is suitably permeable will be required. The design details and hydraulic calculations are to be prepared by a suitably qualified civil/hydraulic engineer that demonstrates to Council's satisfaction that such a proposal would have no adverse effect on any building, downstream property, soil stability, local vegetation, drainage system or watercourse.

The design must include the following details:

- the system will enable infiltration of up to a 5% AEP storm event for all storm durations without surcharging onto neighbouring properties
- the system can completely drain within 72 hours
- the infiltration area shall be the area of the base(s) of the trench(s) only
- a 50% clogging factor is to be added to the trench area
- the trench aggregate fill to have a minimum of 35% void
- installation to allow access pit(s) for cleaning

Where test results detail that absorption is not suitable or the minimum trench sizes detailed above cannot be achieved, in addition to the required rainwater tank, an on-site stormwater detention system will be required. The OSD system is to limit peak flows from the site to the 1% AEP flow from the fully pervious site, prior to disposal on site. All impervious area must drain to the OSD system.

4.9 Permeable Paving

Permeable paving may be used as part of a water sensitive urban design (WSUD) system provided for a development, and to meet water quality objectives, particularly on major developments or developments draining to reserves, watercourses, bushland or the harbour.

Permeable paving should not be used in areas which:

- i. comprise impermeable soils with a hydraulic conductivity of less than 0.36mm/hr
- ii. have a surface of rock or shale
- iii. have a slope greater than 5%
- iv. have a high water table
- v. receive high vehicular traffic or regular use by heavy vehicles
- vi. are located downstream of areas likely to contribute significant amounts of silt, sediment, debris or windblown material (due to the potential for such material to result in clogging of permeable paving)

Soil assessment and permeability testing must be undertaken as part of the design process for permeable paving. In the case of shallow soil cover over rock, testing is required to ensure that seepage will not cause negative impacts on downstream properties. Assessment and test results are to be submitted as part of the application for any development that includes permeable paving as part of its stormwater management system.

5 RAINWATER REUSE TANKS

5.1 General

Willoughby City Council promotes and encourages the installation of rainwater reuse tanks in lieu of OSD systems for minor developments. Applicants should refer to Table 1 and the Flow Chart in Part I of the draft WDCP to determine the required size of the rainwater reuse tank and discharge method of overflow for particular types of minor development.

Sydney's water supply is treated to drinking water standard, however approximately 54% of domestic water usage in an average Sydney household could be supplemented by water stored in rainwater tanks.

NSW Health Department does not recommend the use of rainwater tanks for drinking purposes where reticulated potable water supply is available. For additional information in this regard, please contact NSW Health Department or at:

<https://www.health.nsw.gov.au/environment/water/Pages/default.aspx>

The following graph shows the percentage of potable water used in an average Sydney household for domestic purposes.

Figure 1 - Typical Household Water Usage
Sourced from Sydney Water Corporation (2003)

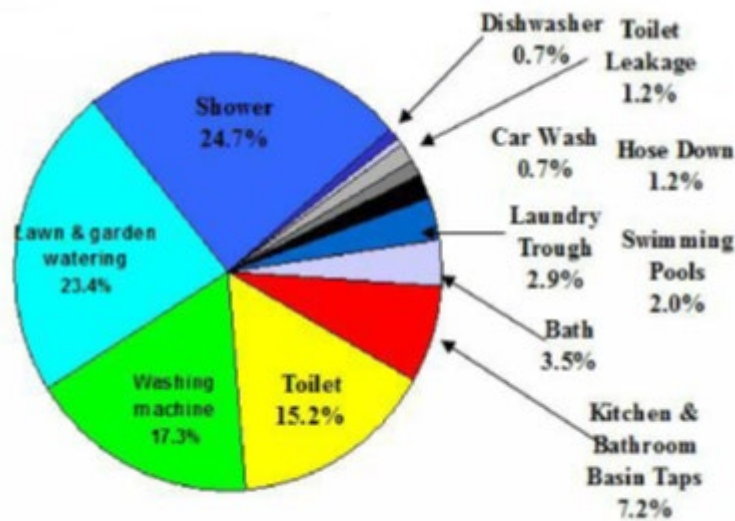
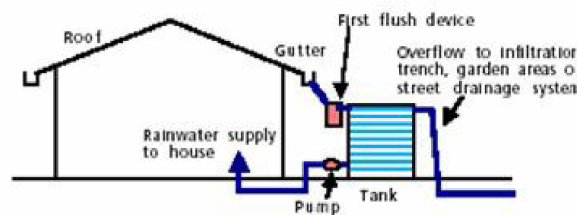


Figure 2 - Key elements of a domestic rainwater system



5.2 Exempt Development

Subdivision 32 of the *State Environmental Planning Policy 2008* (Exempt and Complying Development Codes) allows above ground rainwater reuse tanks that comply with certain criteria to be installed without the need for a Development Application (please see the *SEPP* for further detailed requirements).

It should be noted that if an above ground rainwater reuse tank is constructed or installed on or in a heritage item in accordance with the *SEPP*, the tank must be located in the rear yard.

Installation of Rainwater Tanks which fall under *SEPP 2008* (Exempt and Complying Development Codes) should have regard to the provisions of Part I of the draft WDCP, and this Technical Standard.

5.3 Bush Fire Prone Land

Rainwater tanks installed on bush fire prone land are required to comply with the following requirements:

- i. a gate valve is to be fitted to the water tank (a 38mm Storz coupling will assist the N.S.W. Fire Brigades)
- ii. have an additional gate valve fitted to enable the use of a portable pump

- iii. placement of a SWS (static water supply) symbol in a conspicuous position at the front of the property

Note:

- Bush fire prone land is identified on the Willoughby City Council Bush Fire Prone Land Map.

5.4 Tank Construction

- i. a rainwater tank must only collect rainwater from roof gutters and downpipes and from a water supply service main
- ii. underground rainwater tanks are to be fully sealed to prevent runoff from the ground surface and groundwater entering the rainwater tank
- iii. the rainwater tank must be fitted with a first-flush by-pass device; the device is to be designed to cause a minimum of 1 millimetre of the initial run-off from the roof area to bypass the tank thereby acting as a separator to reduce pollutants entering the tank, (it being noted that filters are not permitted)
- iv. the tank must be rigid walled and structurally sound and be prefabricated or constructed from prefabricated materials that are designed and manufactured for use as a rainwater tank; bladder type tanks are not acceptable
- v. the tank must be assembled and installed in accordance with the instructions of the manufacturer or supplier
- vi. the tank must be placed on a structurally adequate base in accordance with the manufacturer's or engineer's details
- vii. the tank, and any stand, must be installed and maintained in accordance with any requirements of Sydney Water Corporation which has responsibility for the supply of potable mains water to the premises on which the tank is installed
- viii. the tank is not to be fixed to any wall of a building unless certified by a practicing structural engineer
- ix. The tank must be enclosed and any inlet to the tank must be screened to prevent the entry of foreign matter, animals or insects
- x. tanks must be designed for ease of flushing, desludging and general maintenance and, where applicable, comply with Australian/New Zealand Standard 2179.1 "Metal shape or sheet rainwater goods, and metal accessories and fasteners"
- xi. tanks are to be located in a position where they are accessible for maintenance and replacement, and where they are structurally separate from habitable parts of a building; to cater for leakage or bursting of tanks, an overflow path is to be provided to direct water away from habitable areas
- xii. tanks must be in a neutral, non-reflective colour that is compatible with the character of the locality and adjoining buildings

5.5 Interconnected water supply systems and mains top up

To ensure a continuous water supply from the rainwater tank and also to ensure adequate storage availability for rainfall events, an interconnection to the potable water supply or a maximum storage volume (mains top-up zone) is to be set when installing the system.

The interconnection to the potable water supply may be via a three-way flow switching device provided that suitable backflow protection is in place. A three-way flow switching device selects water from the rainwater tank for its intended purpose. When the rainwater tank is low or the pump fails, the device automatically reverts to the potable water supply.

For a mains top up, the maximum level is to be based on the daily household usage expected from the tank and set for one day's usage. Reference should be made to the Sydney Water web site when calculating the average daily usage patterns for the household at:

<https://www.sydneywater.com.au/SW/your-home/moving--renovating---building/buying--selling-or-moving/calculate-water-use/calculate-average-daily-water-usage/index.htm>

Further information regarding plumbing requirements on backflow prevention for rainwater tanks and interconnected systems can be found on the Sydney Water web site at:

<http://www.sydneywater.com.au/SW/plumbing-building-developing/index.htm>

5.6 Overflow

Any overflow from the rainwater tank must be drained by gravity directly to an existing Council stormwater system, OSD system, bushland or watercourse.

For underground rainwater tanks, the invert level of the discharge pipe must be above the 1% AEP flood level. There must be no other connections to the overflow pipes, such as surface water inlet pits. This is to prevent foreign matter entering the pipelines and flowing back into the rainwater tank.

5.7 Pumps

Any motorised or electric pump used to draw water from the tank or used to transfer water between tanks:

- i. must comply with NSW Office of Environment and Heritage guidelines
- ii. in the case of a permanent electrical pump, must be installed by a licensed electrician

5.8 Signage

A sign must be affixed to the tank clearly stating that the water in the tank is rainwater.

Taps supplied by water from the tank must be clearly labelled indicating the source of water.

Pipes from the tank are to be labelled rainwater/non-potable water in accordance with current Australian and Sydney Water standards.

6 ON-SITE STORMWATER DETENTION

In accordance with Part I of the draft WDCP, all developments that are not regarded as 'minor' are deemed to be 'major' development. All major developments are required to provide OSD devices and/or other additional water management strategies, such as water sensitive urban design (WSUD) measures. A stormwater management plan, including hydraulic and hydrological concept plans will be required to be prepared by a suitably qualified engineer and submitted for assessment with the development application.

When full or partial redevelopment of a site is proposed, OSD must be provided to cover all the impervious area. No credit will be given for existing impervious areas.

OSD will also be required for minor development on sites that fall to the rear, where geotechnical test results detail that absorption is not suitable and an on-site disposal system is required (see Section 4.8 for further details).

6.1 Exemptions

OSD will not be required where discharge of stormwater from a property that does not pass through any Council owned drainage infrastructure before reaching the receiving waters of Middle Harbour or Lane Cove River. However, other stormwater management devices are required to maintain water quality and prevent erosion (refer to Sections 10 and 11 of this Technical Standard for further details).

6.2 Design Requirements

OSD systems shall be designed in accordance with Council's policy as follows:

- i. the volume of storage or the site storage requirement (SSR) for a site must be in accordance with Table 1

TABLE 1 - Site storage required

See On-Site Detention Drainage Zone Map (Appendix 1) for the required zone.

Zone	Volume of Storage Required m ³ /Ha	Volume of Storage Required m ³ /100m ²
1	327	3.27
2	360	3.6
3	380	3.8
4	315	3.15

- ii. the Permissible Site Discharge (PSD) for a site must be in accordance with Table 2

TABLE 2 - Permissible site discharge (PSD)

See On-Site Detention Drainage Zone Map (Appendix 1) for the required zone.

Zone	Permissible Site Discharge L/s/Ha	Permissible Site Discharge L/s/100m ²
1	225	2.25
2	170	1.7
3	180	1.8
4	136	1.36

- iii. where flow from impervious area bypasses the detention system, the PSD from the system is to be reduced by a rate equal to the flow from the bypass area in the 1% AEP storm event. Where the area bypassing the system is over 5% of the total impervious area, then a DRAINS model is to be prepared, to confirm that for the 1% AEP storm event the PSD is achieved and confirm the required storage volume for the reduced outflow
- iv. if the PSD is to be reduced to 20L/s to allow discharge to the kerb and gutter, then a DRAINS model is to be prepared to confirm the required storage volume
- v. a spillway with an overland flow route is to be provided in the event that a storm higher than the design storm occurs, or the OSD device malfunctions. The flow route must be capable of carrying the flows for a 1% AEP storm, assuming that the outlet to the OSD device is fully blocked. Finished ground levels of the route must be shown on the plan. Overflow via an internal weir to an overflow pit / chamber with a piped outlet is not acceptable. The overflow path must be in a visible location at ground level, so that any blockage of the system can be rectified.
- vi. all roof and impervious areas shall drain through the OSD system for all storms up to an including the 1%AEP storm event. Should the internal major flow path not drain to the system, then the pipe network, including gutters and downpipes, shall be designed for the 1%AEP storm event
- vii. all floor levels adjacent to the OSD storage, or the overland flow path/spillway from the OSD storage, are to be a minimum of 300 mm above the maximum design storage water surface level. The freeboard may be reduced to 150mm for garages only.
- viii. maximum above ground storage ponding depths are to be as follows:
 - a. 200mm deep in areas such as driveways and car parking areas
 - b. 300mm deep in other storage areas such as landscaping or gardens. Floatable landscaping material, e.g. tree bark chips, is not permitted in above ground storage ponding areas. Depth may be increased to 1000mm, provided the storage area is fully fenced with pool fencing, it is possible to "walk out" of the ponding area (maximum 1:8 batters) and warning signs provided to indicate sudden rise in water levels
- ix. volumes of storage in landscaped areas to be increased by 20%, to allow for vegetation growth
- x. a minimum of 0.36m³ of the storage must be provided in the form of below ground storage such as a pit, which is to form the outlet of the OSD device. For storage on car parks, a minimum 25% of the SSR shall be stored underground
- xi. crate style cell units, such as Atlantis Drainage Cells, are not acceptable to Council for OSD systems, as they are prone to siltation and blockage and are difficult to maintain.
- xii. all below ground OSD tanks must be accessible for maintenance purposes, with the access pit as near to the outlet as possible. Attention is drawn to the provisions of AS 2865 - "Safe Working in Confined Spaces"
 - a. step irons are required at the outlet access grate of below ground storage tanks with a depth of 900mm or greater
 - b. OSD storage outlet discharge flows of 20 l/s or more shall be connected directly to Council's underground drainage system or an extension of the system
 - c. below ground tanks shall be a minimum of 500mm deep

- d. all below ground OSD tanks are to have an additional access grate diagonally opposite the outlet for ventilation and cleaning purposes. The minimum size of any access grate is to be 600mm x 900mm
 - e. the below ground tanks and pits are required to drain completely dry at the cessation of any storm and therefore do not require sediment traps at the outlet point
 - f. tanks are not to be located beneath habitable floors
- xiii. orifice plates used to restrict the outflow must be machined to the exact dimension as calculated from minimum 3mm thick stainless steel, or 3mm thick steel galvanised after machining. The minimum diameter of any orifice shall be 65mm. They must be bolted to the pit walls or permanently fixed in the pit by some approved method so that they cannot be easily removed. A pipe outlet is not recommended for discharge control
 - xiv. a stainless steel or galvanised mesh screen with a minimum area of 75 times the orifice area shall be latched over the orifice plate. To this end, Maxi Mesh (rh3030) is desirable. A handle attached to the screen is desirable
 - xv. all storage outlets must have invert above the 1% AEP floodway level of any nearby creeks or overland flow routes, or be designed with hydraulic grade line analysis in the case of connection to Council's underground system
 - xvi. for all OSD systems, a Positive Covenant and Restriction on Use of Land will be required to be placed on the Title in favour of Council. These instruments shall be created under Section 88B for newly created lots or under Section 88E(3) of the Conveyancing Act 1919 where no new lot is created. The purpose of this is to ensure that the registered proprietor has care, control and maintenance obligations of the OSD system
 - xvii. a plaque measuring no less than 400mm x 200mm and of a material acceptable to Council will be in some way permanently attached and prominently displayed within the immediate vicinity of the OSD device. This plaque will advise occupiers of the property of the existence of the OSD device and also that the device is not in any way to be changed without prior written consent of Willoughby City Council

Required wording for the plaque is:

This is an on-site detention device. It must not be altered in any way without written consent from Willoughby City Council. The owner shall regularly clean the system.

Where required by WHS requirements, a 'Danger sign' no less than 450 mm x 300 mm is to be displayed at the entrance of the tank advising that only persons with confined space training should enter that tank.

Suggested wording for the Danger sign is:

DANGER
CONFINED SPACE
No entry without Confined Space Training.

- xviii. the constructed OSD installation must be certified by a suitably qualified and competent professional engineer, (generally CP Eng qualification) and state that it complies with Council's specifications (AUSPEC), all relevant codes and technical standards and also that it is in accordance with the approved plans

6.3 Submission requirements

All plans, calculations and details submitted must include the following information:

- i. total impervious area in m². Separately show the total roof area and total paved area including all driveways, carports and pathways. Swimming pools will be considered impervious where the high-level overflow is not connected to the sewer. Details of the proposed high-level overflow system are to be included in the submission when seeking exemption from the impervious area calculation
- ii. floor levels of all existing and proposed buildings and structures on the site
- iii. existing and proposed surface levels and contours. These contours shall extend 5 metres outside the property
- iv. location of all existing and proposed trees
- v. the volume of storage being provided, with dimensions and level shown so that the storage volume can be easily calculated. This volume must be in accordance with the figures provided in Table 1
- vi. demonstrate that stormwater flows up to the 1%AEP storm event from all impervious areas (including roofs) are conveyed to the OSD system, either via a major flow path or by an appropriately sized pipe network
- vii. should the permissible site discharge be reduced or throttled calculations showing the outflow versus storage relationship will be required for the critical storm calculations of the size of the orifice plate or other approved outlet control device will be required
- viii. show adequate details of an overflow spillway and overland flow path. To this end Council may require calculations to show that the flow path can cope with the 1% AEP storm event
- ix. all levels are to be given to Australian Height Datum (AHD). Bench Mark information is available from the Survey Control Branch of the Department of Lands (Land & Property Information Section) and from Sydney Water
- x. show the invert level of the proposed discharge outlet point at the street kerb or Council trunk drainage system, and that all connections from OSD systems are above the 1%AEP water surface level
- xi. the OSD Checklist (see Appendix 5) shall be completed and signed and included in the submitted documentation

The standard of presentation required for ease of checking the plan should indicate a north point, reduction ratios, existing and finished floor levels, construction dimensions, details and cross-sections.

6.4 Post-development Documentation

- i. The construction of the OSD installation must be supervised and certified by a suitably qualified Engineer, which must state that it complies with Council's OSD policy, all relevant codes, standards and also that it is in accordance with the approved plans. Appendix 2 contains a draft Certificate of Hydraulic/Hydrological Compliance.
- ii. On completion of the OSD system, a Registered Surveyor must verify critical levels and storage volumes. A suitably qualified Engineer will be required to prepare the Works-As-Executed Plan with any changes shown in red, and complete the attached OSD Record of Installation.

7 MAINTENANCE OF STORMWATER MANAGEMENT SYSTEMS

7.1 Maintenance

Regular maintenance of stormwater management systems, including rainwater tanks and OSD systems, are to be undertaken to ensure they are working effectively.

Rainwater tanks are to be checked for sludge every two to three years. Gutters, leaf screens or guards are to be inspected and cleaned on a regular basis. Discharge control pits and the associated trash rack of OSD systems are to be inspected and cleaned on a regular basis, not exceeding 6monthly intervals.

7.2 Legal Requirements

To ensure the continued effectiveness of stormwater water management devices, the applicant will be required to place a restriction on the property title in favour of Council in the form of a Positive Covenant and/or Restriction on Use of Land under the *Conveyancing Act 1919* for on-site detention systems. Examples of Section 88B and 88E Instruments for the legal protection of stormwater management systems are provided in Appendix 1.

8 CONTROLS FOR DISCHARGE FROM A PROPERTY INTO COUNCIL'S DRAINAGE SYSTEM

8.1 General

All surface water, roof water not connected to a rainwater tank, and the overflow from a rainwater tank must be conveyed by gravity to the Council drainage system, a watercourse or the harbour. All methods of discharge into or through public open space require the approval of Council. (Public open space includes road reserves, drainage reserves, public car parks, public parks, public reserves and bushland), Work, including new connections, may not be carried out on the Council drainage system without approval from Council, and the work may only be carried out in accordance with current Australian Standards, Council's approval and Aus-Spec specifications. Council must be given a minimum of two (2) working days' notice prior to undertaking any works carried out in public roadways or involving Council owned or operated structures, including new pipe systems.

Development site(s) that discharge less than 20 litres per second will be permitted to discharge directly to the street kerb using 125x75x4 galvanised rectangular hollow section (RHS). Only one (1) discharge line will be permitted across the nature strip from each property.

The pipe discharging to the street kerb should be located within the frontage of the subject property at an angle no less than 60° to the kerb-line. If drainage is beyond the subject property frontage, Council's street drainage system is to be extended using a minimum 375mm diameter Reinforced Concrete Pipe (RCP) with a kerb inlet pit to a point near the frontage of the subject property.

In exceptional circumstances and only for minor developments, Council may consider the extension of property drainage line for a maximum of 20 metres or the frontage of one property. The drainage line shall cross the nature strip perpendicular to the kerb with two 45° bends to turn the pipe running directly behind, and parallel to the street kerb.

For any stormwater pipeline proposed to discharge directly into a Council-owned stormwater drainage system such as a pipeline, channel or kerb inlet pit, the applicant may be required to submit hydrological and hydraulic analyses confirming that there will be no surcharges due to backwater effects from the system.

For any connection to a Council pit, pipe, channel etc., the pipe connection must be flush with the pit / pipe wall, and not extend into the pipe / pit.

When connecting to a Council pipe, pit or drainage channel, a minimum of two working days' notice must be given to Council prior to commencing the work, to allow for an inspection of the works when the connection is made.

8.2 Construction of a Public Pipeline

The proposed stormwater management system may include a public pipeline or other stormwater infrastructure built by the developer in Council's road reserve or public open space as a condition of approval. Usually such infrastructure should be designed for all storm events up to and including a 5% AEP storm event, with a minimum pipe size of 375mm and a minimum grade of 1%. However, where the existing road may be unable to carry excess flows in larger storm events and where there may be danger to persons or risk of property damage, Council may require a larger storm event as a basis for the design. Additional information on public stormwater drainage infrastructure design requirements is available in Councils AUS-SPEC.

Plans for any proposed public pipeline are to be submitted to Council for approval under the *Road Act 1993*. Specific conditions for construction, including inspection requirements and work-as-executed drawings will be provided as part of the approval of any plans.

8.3 Discharge to Roads or Lands Controlled by other Statutory Authorities (Integrated Development)

An applicant who proposes connecting the site discharge to a stormwater drainage system that is under the control of another statutory authority must have the authority's written approval for the work. The approval must be submitted to Council prior to an application for a Construction Certificate.

9 CONTROLS FOR DISCHARGE INTO A NEW INTER-ALLOTMENT DRAINAGE EASEMENT AND INTO AN EXISTING DRAINAGE EASEMENT OR DRAINAGE RESERVE

9.1 New Inter-Allotment Drainage Easements

The acquisition of downstream easement(s) may be necessary if the site is unable to discharge into Council's stormwater drainage system by gravity. Documentary evidence of the registration of the drainage easement(s) must be provided to Council prior to issue of a Construction Certificate. Any easements required for a development must be shown on the Linen Plan for any subdivision.

The proposed pipeline in the inter-allotment drainage easement must have adequate capacity to convey the 1% AEP uncontrolled runoff from the development site(s). This pipeline must be constructed prior to commencement of any other works. At completion, the applicant must submit to Council certification from a suitably qualified engineer and works-as-executed drawings from a registered surveyor that the

installation of the pipeline has been completed and complies with the approved drawings, the current Australian Standards and Council's AUS-SPEC. The registered surveyor must also certify that all drainage structures are constructed wholly within the drainage easement(s).

If the downstream property owner does not grant the necessary easement, the developer may be required to apply to the Supreme Court under Section 88K of the *Conveyancing Act 1919* for the matter to be adjudicated.

9.2 Existing Inter-Allotment Drainage Easement

An applicant may propose discharging runoff through an existing pipeline across an adjoining property. In this case the applicant must submit evidence that the property being developed has the right to use the inter-allotment drainage easement.

The applicant may be required to submit a hydrologic and hydraulic assessment indicating that the existing pipeline has adequate capacity to carry the 1% AEP uncontrolled runoff from the development site.

If the pipeline is unable to convey the additional discharge from the development, the applicant will have to upgrade the pipeline. In this case, the applicant will have to submit the following documents to Council for approval:

- i. evidence in the form of a legal agreement showing that the property has the right to drain via the existing easement
- ii. design details of the proposed upgraded stormwater pipeline

The applicant will be required to construct the approved upgraded pipeline in the easement prior to the commencement of any works. At completion, the applicant must submit to Council certification from a suitably qualified engineer and works-as-executed drawings from a registered surveyor that the installation of the pipeline has been completed in accordance with the approved drawings, the current Australian Standards and Council's AUS-SPEC. The registered surveyor shall also certify that all drainage structures are constructed wholly within the drainage easement(s).

9.3 Connection to a Council Drainage Easement or Drainage Reserve

For any proposed stormwater pipeline discharging directly into a Council-owned stormwater drainage system such as a pipeline, channel, inlet pit or discharge onto a vegetated drainage reserve, the applicant may be required to submit hydrological and hydraulic analyses confirming that there will be no surcharges due to backwater effects within the system or adverse impacts to neighbouring property.

9.4 Drainage Easement Widths

The following easement widths are required for inter-allotment (or private) drainage pipelines:

Pipe (mm dia.)	Drainage Easement Width (m)
<300	1.25
300	1.50
375, 475	2.00
525, 600, 675	2.50
750, 825, 900, 1050	3.50

Pipe (mm dia.)	Drainage Easement Width (m)
1200, 1350, 1500	4.00
1650, 1800	4.50

It should be noted that an inter-allotment drainage pipeline is to be contained within an easement of not less than a 900mm width.

The following easement widths are required for Council pipelines:

Pipe (mm dia.)	Drainage Easement Width (m)
<300	2.50
300	2.50
375, 475	2.50
525, 600, 675	2.50
750, 825, 900, 1050	3.50
1200, 1350, 1500	4.00
1650, 1800	4.50

When installing pits in a drainage easement, the easement boundaries must be a minimum of 300mm clear of the pit. This also applies to any other drainage structure.

In exceptional circumstances and subject to Council approval, e.g. where the existing width between a house and fence is limited, drainage easements may be of variable width.

9.5 Structures within Easements

Council will not approve the construction of any permanent structure or the placing of fill over a drainage easement if the structure or fill will prevent or hinder overland flows, construction, reconstruction, maintenance, cleaning or access to the pipeline or easement. Permanent structures include habitable dwellings, eaves, balconies, garages, impervious fences, swimming pools and retaining walls.

Paving and demountable carports over a drainage line or easement may be approved subject to Council assessment. Structures adjacent to pipelines must be sufficiently clear of easement boundaries or independently supported to avoid placing any load within the zone of influence of pipeline elements. Footings must be extended to a minimum of 100mm below the invert of the pipe or to solid rock.

10 CONTROLS FOR DISCHARGE FROM A PROPERTY INTO NATURAL WATERCOURSES, BUSHLAND OR THE HARBOUR

Stormwater systems on properties draining to natural watercourses, bushland or the harbour must include:

- i. water quality improvement devices (see Section 11 Water Quality for further details)
- ii. energy dissipation devices

For properties draining to a watercourse over natural bushland, a rock lined channel is to be provided from the site to the watercourse, or other measures as agreed with Council.

For major developments draining to bushland or natural watercourses, a rainwater reuse tank or appropriate WSUD measures are to be incorporated in the stormwater management system, to reduce water velocities and minimise erosion.

For minor developments draining to bushland or natural watercourses, a 5kL rainwater tank is to be provided.

Permission is required from Council to discharge stormwater directly into a natural watercourse, creek or bushland reserve. A plan detailing any proposed drainage and remedial works on Council land must be submitted to Council for approval.

11 WATER QUALITY

All major developments are required to address water quality during and after construction. Under *the Protection of the Environment Operations (POEO) Act 1997*, allowing pollutants to enter any watercourse is an offence.

11.1 Water Quality during Construction

Construction sites have the potential to significantly affect water quality and contribute to the degradation of the natural environment through poor management of soil, water and materials on the site.

Good management practices on a construction site for the control of water quality includes erosion and sediment control as well as other construction materials such as chemicals and waste.

Reference should be made to Council's Technical Standard No.3 – Sediment and Erosion Control and, for larger sites to Managing Urban Stormwater, Soils and Construction – Landcom 2004 for further information with regards to managing sediment and erosion during the construction phase.

11.2 Permanent Post Development Water Quality Controls

For all developments draining to bushland, creeks or the harbour and for all major development, stormwater runoff is to be treated prior to leaving the site.

11.2.1 General controls

- i. all stormwater flows from regular rainfall events up to and including the 1:2 yr ARI are to be captured and treated prior to discharge to Council's stormwater drainage system
- ii. the treatment measure may include one or more of the following:
 - a. retention - pond, wetland or basin
 - b. retention and filtration – bioretention system, sand filter, rain garden
 - c. retention and volume loss –rainwater tank, surface runoff retention tank, infiltration system
 - d. filtering and conveyance –grassed swale, filtration system
 - e. Gross Pollutant Trap (GPT) –off-line diversion device. in-line diversion device, trash rack, centrifugal displacement systems, pit basket
 - f. any device that is capable of capturing and retaining the specified pollutant load
 - g. any other appropriate technique suitable to the needs of the site

- iii. the treatment measure is to be placed as close as possible to the pollution source within the development site
- iv. the pollution retention efficiency must be maintained up to the design discharge and should not decrease with the build-up of materials
- v. in storm events greater than that of the design discharge or if the storage capacity of captured material is exceeded, the storage device must not allow any release of the previously captured material
- vi. the device must be designed to be able to bypass flows in excess of the design discharge without blocking or overtopping
- vii. the device must be designed to meet appropriate public health and safety standards
- viii. the design should ensure that there is minimal risk of mosquito breeding within the device

11.2.2 Performance objectives and criteria

Objectives:

Issue	Objectives
Runoff volumes and flow rates Stormwater quality	Impervious areas connected to the stormwater drainage system are minimised without causing uncontrolled property runoff
	Reuse of roofwater for non-potable uses maximised
	Use of vegetated flow paths maximised
	Use of stormwater pollutant traps "at source" where appropriate
Riparian vegetation and aquatic habitat	Protect and maintain natural wetlands, watercourses and riparian corridors
	All natural (or modified) drainage channels within the site that possess either baseflow, defined bed and/or banks, or locally occurring native riparian vegetation are to be protected and maintained.
Flow	Alterations to natural flow paths, discharge points and runoff volumes from the site are to be negligible. Generally no increase in the 50% and 1% AEP storm event peak flows
	The frequency of bank full flows should not increase as a result of development
Natural bushland	Minimise the impact of stormwater discharge on bushland areas

TABLE 3 – Water quality requirements

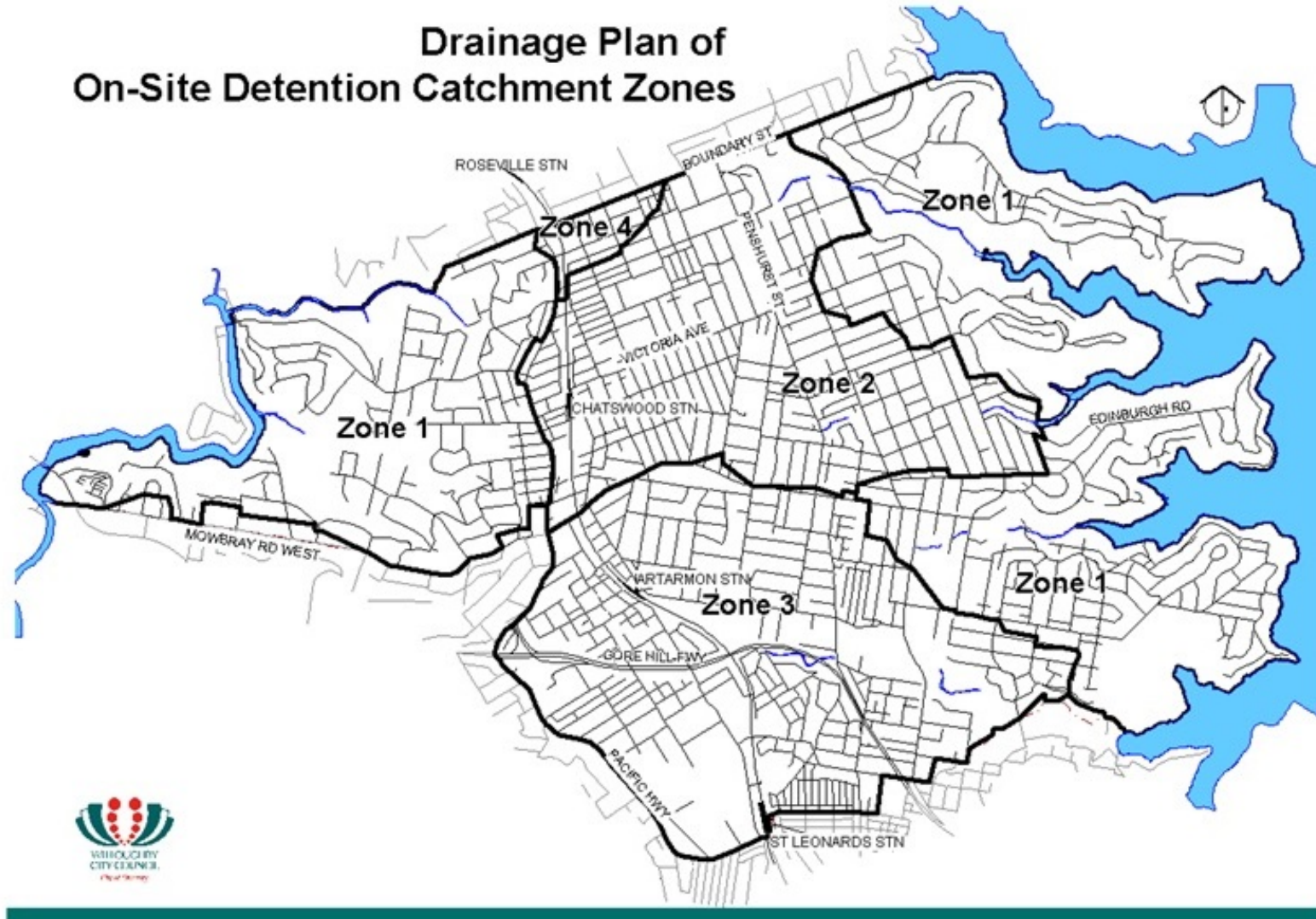
Requirements:

Pollutant	Average annual pollutant load reduction (%)
Gross Pollutants	90%
Total Suspended Solids (TSS)	85%
Total Phosphorus (TP)	60%
Total Nitrogen (TN)	45%
Hydrocarbons	See below

Determination of water quality targets are to be achieved in accordance with Sydney Water guidelines or utilising a MUSIC model. If MUSIC is utilised, parameters are to be in accordance with the parameters detailed in Sydney Catchment Authority's document *Using MUSIC in Sydney's Drinking Water Catchment*.

Developments with more than 5 parking spaces and commercial and industrial development are to provide a treatment device that specifically targets hydrocarbons or incorporates a raingarden / bio-retention basin. Runoff from all parking areas, driveways or access roads is required to drain to the treatment device or raingarden / bio-retention basin.

APPENDIX 1 - ON-SITE DETENTION CATCHMENT ZONES



APPENDIX 2 - ON-SITE DETENTION RECORD OF INSTALLATION AND CERTIFICATE OF HYDRAULIC/HYDROLOGICAL COMPLIANCE

RECORD OF INSTALLATION OF ON-SITE STORMWATER DETENTION

JOB NO: _____

DA NO: _____

Drawing No: _____

PROJECT AT: _____

Attributes	Designed Parameters	Constructed Parameters
Tank Dimensions (LxWxH) (m)		
Orifice Size (mm)		
Orifice Plate Type		
Hydraulic head (m)		
Storage Volume (m ³)		
Permissible Site Discharge (L/s)		
Debris Screen Type		
Debris Screen Area (m ²)		
Overland Flow Provided		
No. of Access Grates		
Plaque(s) attached to wall		
Step irons provided (over 0.9m grate-invert)		
Plumber's Certificate No. for rainwater tank installation		

Comments

CERTIFICATE OF HYDRAULIC/HYDROLOGICAL COMPLIANCE

I _____ of _____ (a professional engineer being competent to practice in the field of stormwater drainage design) have inspected the above completed on-site stormwater detention system, including verification of the generally + or - 10% acceptable limits and tolerances of the system of this policy, and I certify that the works have been constructed in accordance with the approved design details for the above mentioned project, except for the variations highlighted in the Works-As-Executed drawings which do not affect the performance of the system, subject to satisfactory maintenance.

Signature:

Qualifications:

Position:

Membership No:

Telephone:

APPENDIX 3 - SAMPLES OF DRAFT TERMS FOR POSITIVE COVENANT AND RESTRICTION ON USE OF LAND

DETENTION SYSTEM

(To be used with a Deposited Plan is being registered)

Terms of Positive Covenant _____ referred to in the abovementioned plan

The registered proprietor of the land hereby burdened (herein called the "proprietor") in respect of the on-site stormwater detention system (herein called the "System") constructed on the land to:

- (a) clean, maintain and repair all pits, basins, tanks, pipelines, orifice plates, trench barriers, walls, earth banks and other structure, gutters, leaf gutter guards, down pipes, pipe connections and any associated devices relevant to the System, and
- (b) regularly keep the System clean and free from grass clippings, silt, debris and the like to ensure the efficient operation from time to time and at all times of the System, PROVIDED HOWEVER that Willoughby City Council (herein called the "Council") shall have the right to enter upon the burdened lot with all necessary materials and equipment at all reasonable times and on reasonable notice (but at any time and without notice in the case of an emergency):
 - i. to view the state of repair of the System;
 - ii. to ascertain whether or not there has been any breach of the terms of this covenant; and
 - iii. to execute any work required to remedy a breach of the terms of this covenant if the proprietor has not within fourteen (14) days of the date of receipt by the proprietor of written notice from the Council requiring remedy of a breach of the terms of this covenant taken steps to remedy the breach and without prejudice to the Council's other remedies the Council may recover as a liquidated debt the cost of such remedial work from the proprietor forthwith upon demand.

NAME OF AUTHORITY EMPOWERED TO RELEASE, VARY OR MODIFY THE POSITIVE COVENANTS REFERRED TO: **WILLOUGHBY CITY COUNCIL**

TERMS OF SECTION 88B INSTRUMENT FOR THE LEGAL PROTECTION OF ON-SITE STORMWATER

(To be used with a Deposited Plan is being registered)

Terms of Restriction on the Use of land _____ referred to in the abovementioned plan

The registered proprietor of the land hereby burdened (herein called the "proprietor") covenant with the Willoughby City Council (herein called the "Council") in respect of the on-site stormwater detention system (herein called the "System") constructed on the land:

- (a) Not to erect or suffer to permit any building, structure or erection on the whole or erection on the part of the land hereby burdened except:
 - i. dividing fences;
 - ii. such buildings, structures and erections as from time to time form part of or are associated with the carrying out by the proprietor of the land hereby burdened of his obligations under the Positive Covenant as are approved by the Council, and
 - iii. such other structures as are approved by the Council.

- (b) Not to carry out any alterations to the System including, but not limited to, detention levels, controlled outflows, grates, pipes, orifice plate, mesh screen, gutters, leaf gutter guards, downpipes, pipe connections and any associated devices of the System without consent in writing previously obtained from the Council.

NAME OF AUTHORITY EMPOWERED TO RELEASE, VARY OR MODIFY THE
RESTRICTION ON THE USE OF LAND REFERRED TO: **WILLOUGHBY CITY COUNCIL**

TERMS OF SECTION 88E(3) INSTRUMENT FOR THE LEGAL PROTECTION OF ON-SITE STORMWATER DETENTION SYSTEM

(To be used with Form 13PC from the Department of Lands)

Terms of Positive Covenant

The registered proprietor of the land hereby burdened (herein called the "proprietor") in respect of the on-site stormwater detention system (herein called the "System") constructed on the land to:

- (a) clean, maintain and repair all pits, basins, tanks, pipelines, orifice plates, trench barriers, walls, earth banks and other structure, gutters, leaf gutter guards, down pipes, pipe connections and any associated devices relevant to the System, and
- (b) regularly keep the System clean and free from grass clippings, silt, debris and the like to ensure the efficient operation from time to time and at all times of the System, PROVIDED HOWEVER that Willoughby City Council (herein called the "Council") shall have the right to enter upon the burdened lot with all necessary materials and equipment at all reasonable times and on reasonable notice (but at any time and without notice in the case of an emergency):
 - i. to view the state of repair of the System;
 - ii. to ascertain whether or not there has been any breach of the terms of this covenant; and
 - iii. to execute any work required to remedy a breach of the terms of this covenant if the proprietor has not within fourteen (14) days of the date of receipt by the proprietor of written notice from the Council requiring remedy of a breach of the terms of this covenant taken steps to remedy the breach and without prejudice to the Council's other remedies the Council may recover as a liquidated debt the cost of such remedial work from the proprietor forthwith upon demand.

NAME OF AUTHORITY EMPOWERED TO RELEASE, VARY OR MODIFY THE POSITIVE COVENANTS REFERRED TO: **WILLOUGHBY CITY COUNCIL**

TERMS OF SECTION 88B INSTRUMENT FOR THE LEGAL PROTECTION OF ON-SITE STORMWATER DETENTION SYSTEM

(To be used with Form 13RPA from the Department of Lands)

Terms of Restriction on the Use of Land

The registered proprietor of the land hereby burdened (herein called the "proprietor") covenant with the Willoughby City Council (herein called the "Council") in respect of the on-site stormwater detention system (herein called the "System") constructed on the land:

- (a) Not to erect or suffer to permit any building, structure or erection on the whole or erection on the part of the land hereby burdened except:
 - i. dividing fences;
 - ii. such buildings, structures and erections as from time to time form part of or are associated with the carrying out by the proprietor of the land hereby burdened of his obligations under the Positive Covenant as are approved by the Council, and
 - iii. such other structures as are approved by the Council.
- (b) Not to carry out any alterations to the System including, but not limited to, detention levels, controlled outflows, grates, pipes, orifice plate, mesh screen, gutters, leaf gutter guards,

downpipes, pipe connections and any associated devices of the System without consent in writing previously obtained from the Council.

NAME OF AUTHORITY EMPOWERED TO RELEASE, VARY OR MODIFY THE
RESTRICTION ON THE USE OF LAND REFERRED TO: **WILLOUGHBY CITY COUNCIL**

APPENDIX 4 – RAINFALL INTENSITY**RAINFALL INTENSITY IN mm/Hr
FOR VARIOUS DURATIONS AND RETURN PERIODS**

Duration (hours)	RETURN PERIOD						
	1yr	2yrs	5yrs	10yrs	20yrs	50yrs	100yrs
0.083	97.9	125.	159.	178	204.	237.	262.
0.100	91.8	118.	149.	167.	192.	223.	247.
0.167	75.2	96.7	124.	139.	159.	186.	206.
0.333	54.9	70.9	91.7	104.	120.	141.	156.
0.500	44.7	57.9	75.3	85.6	99.0	117.	130.
1.000	30.5	39.6	52.0	59.4	69.1	81.8	91.5
2.000	20.2	26.2	34.8	39.9	46.5	55.3	62.0
3.000	15.7	20.5	27.2	31.3	36.5	43.5	48.8
6.000	10.2	13.4	17.9	20.6	24.1	28.7	32.3
12.000	6.72	8.79	11.8	13.6	16.0	19.1	21.5
24.000	4.45	5.82	7.86	9.10	10.7	12.8	14.5
48.000	2.90	3.80	5.16	6.00	7.07	8.48	9.59
72.000	2.19	2.88	3.92	4.56	5.38	6.47	7.32

LIST OF COEFFICIENTS TO EQUATIONS OF THE FORM:-

$$\ln(I)=a+b(\ln(T))+c(\ln(T))^2+d(\ln(T))^3+e(\ln(T))^4+f(\ln(T))^5+g(\ln(T))^6$$

Where I = Intensity in millimetres per hour;

And T = Time in Hours

Years	RETURN PERIOD						
	a	b	c	d	e	f	g
1	3.4171	-0.5782	-0.0314	0.00714	0.000801	-0.0001313	-0.0000369
2	3.6781	-0.5738	-0.0320	0.00726	0.000784	-0.0001541	-0.0000311
5	3.9521	-0.5605	-0.0350	0.00702	0.001072	-0.0001620	-0.0000370
10	4.0849	-0.5537	-0.0365	0.00708	0.001194	-0.0001887	-0.0000353
20	4.2350	-0.5485	-0.0378	0.00720	0.001314	-0.0002139	-0.0000347
50	4.4041	-0.5427	-0.0392	0.00746	0.001396	-0.0002625	-0.0000286
100	4.5167	-0.5382	-0.0400	0.00733	0.001460	-0.0002589	-0.0000302

RAINFALL DURATION INTENSITY IN MIN. MM/HR**Values of $(t.I^{0.4})$**

Where I = Intensity in millimetres per hour;

RETURN PERIOD

DUR (hr)	DUR (min)	1YR	2YRS	5YRS	10YRS	20YRS	50YRS	100YRS
0.083	5	31.16	34.36	37.83	39.57	41.79	44.37	46.19
0.100	6	36.58	40.45	44.40	46.48	49.14	52.18	54.35
0.167	10	56.41	62.38	68.90	72.12	76.11	81.04	84.41
0.333	20	99.18	109.86	121.77	128.06	135.60	144.64	150.61
0.500	30	137.17	152.12	168.98	177.87	188.53	201.56	210.23
1.000	60	235.44	261.35	291.44	307.37	326.54	349.34	365.36
2.000	120	399.32	443.10	496.38	524.29	557.39	597.41	625.37
3.000	180	541.54	602.52	674.68	713.66	758.91	814.08	852.39
6.000	360	911.47	1016.59	1141.42	1207.40	1285.61	1378.65	1445.38
12.000	720	1542.70	1717.62	1932.35	2045.26	2182.63	2342.86	2456.45
24.000	1440	2616.41	2912.94	3284.97	3483.21	3716.34	3992.51	4196.72
48.000	2880	4409.12	4912.54	5552.04	5897.30	6297.39	6772.53	7114.10
72.000	4320	5911.01	6595.39	7461.02	7926.28	8468.31	9116.86	9578.29

NOTE:
FOR USE WITH "KINEMATIC WAVE" EQUATION

APPENDIX 5 - OSD DESIGN CHECKLIST

1.	Has a spillway with an overland flow route been provided?	Yes / No
2.	Has the minimum freeboard been provided between habitable floor levels and the 1:100yr flood level? Refer to Section 10 of Council's Floodplain Management- Technical Standard No. 3 for information regarding freeboard requirements.	Yes / No
3.	Has a minimum of 300mm freeboard been provided between the habitable floor levels and the OSD design storage topwater level?	Yes / No
4.	For above ground storage maximum depths <ul style="list-style-type: none"> • over driveways and carparking • over landscaping or garden areas • minimum below ground storage mmmmm ³
5.	Below ground OSD tanks must be accessible for maintenance purposes in accordance with AS 286,5 - Safe Working in Confined Spaces. <ul style="list-style-type: none"> • Have step irons been provided for tanks deeper than 900mm? • Have 2 x600mm x 900mm access grates been provided? 	Yes / No Yes / No
6.	Total impervious area including driveways, carports, pathways and swimming pools not incorporating high-level overflow systemm ²
7.	Existing, and proposed surface levels and contours have been provided (contours extend 5m beyond property boundary)	Yes / No
8.	Location of all trees has been provided	Yes / No
9.	Calculated volume of storage according to Table 1m ³
10.	Calculated permissible site discharge according to Table 2.l/s
11.	Calculated orifice diameter (65mm minimum)mm
12.	Type of mesh screen provided?	
13.	Does the major overland flow path within the site for runoff from all impervious areas drain to the OSD system or has the pipe network been designed for the 1%AEP storm event?	Yes / No
14.	Direct connections to Council's drainage system have been checked against backwater effect and drowned orifice?	Yes / No
15.	Is the base of the OSD tank graded flush with the orifice invert level?	Yes / No
16.	Has a minimum 1125mm x 75mm x 4 RHS been provide for a discharge through the street kerb?	Yes / No
17.	All levels have been given to Australian Height Datum (AHD)	Yes / No
Design Engineer		
Qualifications:		

APPENDIX 6 - STANDARD EASEMENT REQUEST LETTER

...../...../.....

.....
.....
..... NSW.....

Dear

I/we are proposing to redevelop our property at

Before we can proceed with this proposal the Willoughby Council has advised us that we have two options for the drainage of stormwater, the first, which is the preferred method, is to obtain a drainage easement to convey the stormwater runoff from our property to

This would require you to grant us a drainage easement through you property with all costs for the creation of the easement being born by us, together with any consideration for the use of your property as may be determined by an independent valuation or later agreement.

Alternatively we are prepared to offer you \$#### *..... as compensation for the right to drain our stormwater under your property.

The alternative is an on-site disposal system which will discharge stormwater into an underground trench and absorption of the stormwater flow into the ground, with overflow over the ground surface.

As the runoff and seepage from this system may flow towards your property and possibly cause some dampness because of the slope of the land the best solution would be to have a drainage system that will convey our stormwater under your property via a pipe to

Could you please indicate your position regarding this matter so that we can advise Willoughby Council to enable our application to progress.

YES I/we are willing to grant you a drainage easement:

.....
Name Address Signature

NO I/we understand that our property will be subject to some overland flow and that we do not want to accept any compensation for a drainage easement as we are not willing to grant you a drainage easement:

.....
Name Address Signature

* compensation amount offered to be in line with market value for easements, and not a nominal amount.

ATTACHMENT 2 - TECHNICAL STANDARD NO.2 - FLOODPLAIN MANAGEMENT

1 BACKGROUND

Like many other major cities of the world, Sydney and in particular Willoughby have been subjected to intense development and redevelopment pressures, including development on areas that are affected by flooding. These areas are primarily located adjacent to Willoughby Council's creek and drainage systems. Understandably, there are economic and other pressures for potential developers to build on these flood affected land. However, Council has to ensure that the community and its assets are protected from future flooding. Council consider that such opposing demands can be managed by the introduction of a Floodplain Management Technical Manual No 2.

This Technical Standard No 2 generally provides consistent guidelines and criteria for property development of flood affected land. Council will assess development applications in accordance with these guidelines, thereby maximising the value of these flood affected properties and minimising the potential environment impacts from the development.

Stormwater catchments within the Willoughby Council Local Government Area (LGA) are generally dissected by the Pacific Highway, which forms a ridge of the area. Catchments to the west of the Pacific Highway drain into pipes, open drains and creeks which eventually flow into the Lane Cove River. Catchments to the east of the Highway drain into several complex manmade channels, pipes and creeks before discharging into the Middle Harbour.

Due to the complex layout of the creek system, coupled with the limited carrying capacities of the present aging drainage network, some parts of the land adjoining to these systems may be subjected to stormwater inundation during times of heavy rainfall. Generally almost all of these existing drainage systems cannot fully convey the present runoff within the system from heavy rainfall. Therefore, land adjoining such systems may be subject to overland flow when the capacity of the drainage network has been exceeded. Similarly, most of the lands adjoining the natural creek systems are also subject to overflow from such events.

1.1 Historical Flood Records

According to Council's historical flood record, there had been major rainfall events, which produced serious flooding across parts of the city. These storms are:

1955: the event recorded in Chatswood was a 1 in 20 year Average Recurrence Interval (5% AEP) event

1986: between the 1 in 20 and 1 in 50 (2% and 5% AEP) year event.

10th April 1998 (Good Friday) had exceeded the 1 in 100 year ARI (1% AEP) in a critical storm duration

Because extreme storms do not occur regularly, computer modelling is used to ascertain flooding from such events. Council has therefore carried out detailed flood studies on most of the Local Government area to ascertain the risk and extent of flooding. The results of these studies have been used to determine the extent of the flood affected properties throughout the City that should be subject to development controls.

1.2 Floodplain Risk Management Studies

Council has completed the following flood studies and floodplain risk management plans:

Floodplain Risk Management Studies and Plan

- Flat Rock Creek
- Sugarloaf Creek

Full Catchment Flood Study

- Blue Gum Creek
- Sailors Bay Creek
- Swaines Creek

Mainstream Flood Study Only

- Scott's Creek.

Lyall & Associates also completed an assessment of the Local Overland Flooding within the City using TUFLOW, a two dimensional hydraulic computer model. Coupled with site assessments of the affected properties the areas of Local Overland flooding in the City were identified. Recommendations from this study are used in the Scott's Creeks Catchment. All flood studies are publically available on Councils website.

2 FLOODING MECHANISMS

This Technical Standard generally conforms with the principles for the development of flood prone land set out in the NSW Government's Floodplain Development Manual (FDM, 2005) and the revised ministerial direction issued by the Department of Planning on 31 January 2008 under Section 117 of the EP&A Act 1979.

In accordance with the FDM, 2005 there are two main types flood producing mechanisms which result in flooding of properties in the Willoughby Council Local Government Area. They are:-

2.1 Main Stream Flooding

This type of flooding can occur when the trunk drainage/creek system surcharge and flows inundate the surrounding floodplains. In Willoughby City, the trunk drainage systems comprise sections of lined and unlined open channels of the main arms of the creeks and their major tributaries, as well as major pipelines which have been laid along the routes of the natural channels as the catchments became urbanised

Depths and velocities of flooding are sufficiently high as to cause provisional high hazard conditions to develop in at least part of the extent of land inundated. Depths of inundation of up to 2 m and flow velocities up to 4 m/s could typically occur in the lined sections of the channels during major storm events. The catchments are up to several km² in area.

Depending on the extent and complexity of the floodwater, the location of structures within main stream flood paths can impact and alter the flow regime to the detriment of adjoining properties.

2.2 Local Overland Flooding

This type of flooding results from runoff which travels as sheet flow over grassed and paved surfaces in individual allotments, or along roads en route to the trunk drainage system, and/or overland surcharges from the minor pipes in the catchment headwaters and the lateral sub-catchments bordering the trunk drainage systems. This type of flooding is further divided into two sub-category viz.,

- Major Drainage
- Local Drainage

In accordance with the FDM, 2005, this Technical Standard distinguishes these two sub-categories by their characteristic depths of flooding and the potential danger to personal safety.

Usually, the depths and velocities of flow are not sufficient to result in high hazard conditions. However, the discharge conveyed by the overland flow paths increase with increasing catchment areas and depending on local topographic conditions, high hazard areas may develop along the major overland flow paths before they reach the creek. Overland flooding also occurs with little warning time.

Structures located in the path of local overland flow could cause the water to be redirected or deflected to other adjoining properties. Such impacts have to be mitigated in the design of proposed developments.

3 OBJECTIVES

The Objectives of this Standard are to:-

- i. Provide consistent guidelines and criteria for developers and other land users of overland flow/flood prone properties in the Willoughby Council LGA in the submission of Development Applications.
- ii. Ensure that land identified by Council as subject to a flood related development control undertake a flood impact statement or flood risk study prior to approval of new development
- iii. Reduce the potential risks to property damage and loss of life arising from the development of overland flow/flood prone land, as well as minimise damage to private property during flooding events
- iv. Prevent development intensification on land that is subject to a high risk of flood (H4-H6).
- v. Ensure that development on flood prone properties have to adopt measures to not exacerbate flooding on other properties
- vi. Increase public awareness through education of the potential adverse impacts of development on properties adjoining overland flow/flood prone properties.

4 APPLICATIONS OF TECHNICAL STANDARD

This Technical Standard shall apply to all development, which involves undertaking construction works on the site, whether approval is needed or exempt and located on flood affected land (either private or public) within the Willoughby Local Government Area.

Flood affected lands are categorised into Main Stream Flooding and Local Overland Flooding (See Section 2). Where there is insufficient information within Council to determine the Flood Planning Level (FPL) or the Minimum Habitable Floor Level of a flood affected property, development on flood affected land will be required to submit a flood study or overland flow assessment. The study/assessment should determine the pre and post maximum water levels, depths at critical locations, velocity and extent of the flooding at the property. In this regard, an experienced civil/hydrological engineer should be consulted.

It must be noted that assessment of the development application is also subject to:-

- The *Environmental Planning and Assessment Act (EP&A Act) 1979*. Matters for consideration are listed under Section 79c,
- The NSW Government Floodplain Development Manual (FDM, 2005),
- *Willoughby Local Environmental Plan (LEP)*, and
- Other applicable planning instrument adopted by Willoughby City Council or the NSW State Government.

The FDM defined flood prone lands as lands affected by the Probable Maximum Flood (PMF), which is the largest flood that could physically occur in a location of interest. From the perspective of an urban council, it is not feasible or economically desirable to alienate land from development within the PMF however basement car parking must take this into account due to the risk present.

The Flood Planning Levels adopted for this policy is generally the 1% Annual Exceedance Probability (AEP) event, which is also sometimes loosely known as the 1 in 100 years Average Recurrence Interval (ARI) flood plus a freeboard. This freeboard is dependant upon the type of development, location, land usage, continuing risk, etc.

5 Controls

5.1 General Controls

For all development that is flood affected, a Flood Impact Statement as a minimum must be submitted to Council. The Flood Impact Statement is to be prepared in accordance with the objectives of the Floodplain Development Manual by a suitably qualified engineer and is required to address the various controls.

For developments where Council has no detailed flood study, the footprint is changing or natural overland flow paths are being altered a detailed Flood Study will be required.

To assist in the preparation of a Flood Impact Statement or a Flood Study, a Flood Information Certificate is available from Council for most flood affected properties. Details of the fees and application process are available on Council's website.

Council has adopted flood related planning controls for various categories of development within flood affected properties. The following flood related controls apply:

5.1.1 New Development in areas subject to mainstream flooding or major drainage

- i. Minimum floor level for buildings = 1%AEP water level + 500mm
- ii. Minimum garage floor level = 1%AEP water level + 300mm
- iii. Minimum crest level for driveway to basement parking = PMF water level or 1%AEP water level, whichever is higher
- iv. Minimum floor level for carport = 1%AEP water level + 100mm
- v. Underside of any structure to be 300mm above 1%AEP flood level
- vi. Flood evacuation route at the PMF level to be provided for sensitive developments, including hospitals, aged care, childcare and seniors living
- vii. Flood evacuation route at 1%AEP +500mm level for all development other than sensitive developments
- viii. Flood study required

5.1.2 New Development in areas subject to local drainage or overland flow

- i. Minimum floor level for buildings = 1%AEP water level + 500mm
- ii. Minimum garage floor level = 1%AEP water level + 300mm
- iii. Minimum crest level for driveway to basement parking = PMF water level or 1%AEP water level, whichever is higher
- iv. Minimum floor level for carport = 1%AEP water level + 100mm
- v. Underside of any structure to be 300mm above 1%AEP flood level
- vi. Construct on high side of property
- vii. Flood evacuation route at 1%AEP +500mm level
- viii. Flood impact assessment required. Flood study may be required where works potentially impact flood levels.

5.1.3 New pools and minor structures (sheds, pergola etc.)

- i. No pool or shed to be located in H4-H6 hazard rating zones
- ii. Structure is not to impede flood flows
- iii. Minimum floor level for minor structures = 1%AEP water level + 100mm
- iv. Flood impact assessment required for local drainage areas and flood study for mainstream flooding or major drainage areas.

5.1.4 Alterations and additions in areas subject to mainstream flooding or major drainage

- i. Minimum floor level for buildings = 1%AEP water level + 300mm
- ii. Minimum floor level for buildings with sensitive use, including hospitals, aged care, childcare and seniors living = 1%AEP water level + 500mm
- iii. Minimum garage floor level = 1%AEP water level + 100mm
- iv. Minimum crest level for driveway to basement parking = PMF water level or 1%AEP water level, whichever is higher
- v. Minimum floor level for carport = 1%AEP water level + 100mm
- vi. Flood proof existing habitable areas where practical.
- vii. Underside of any structure to be 300mm above 1%AEP flood level
- viii. Flood evacuation route for new works at 1%AEP +500mm level
- ix. Flood study required

5.1.5 Alterations and additions in areas subject to local drainage or overland flow

- i. Minimum floor level for buildings = 1%AEP water level + 300mm or 500mm above existing natural ground

- ii. Minimum floor level for buildings with sensitive use, including hospitals, aged care, childcare and seniors living = 1%AEP water level + 500mm
- iii. Minimum garage floor level = 1%AEP water level + 100mm
- iv. Construct works on high side of property
- v. Flood proof existing habitable areas where practical.
- vi. Flood evacuation route for new works at 1%AEP +300mm level
- vii. Flood impact assessment required

5.2 Additional requirements

In all developments whether on Main Stream or Local Overland Flooding property, the following additional requirements shall be considered

- i. The compliance with requirements of other existing environmental planning instruments and relevant statutory authorities.
- ii. Obstruction to Main Stream or Local overland flow path.
- iii. Cumulative effect of any encroachment and analysis on the impact to adjacent areas and the catchment as a whole
- iv. Future maintenance and upkeep of difficult to access locations or Stormwater systems.
- v. Control of soil erosion of disturbed surfaces within the property
- vi. Any other controls specific for the development recommended by a suitably qualified engineer or Council Engineers.

These developments will be treated on a case by case basis on their merits and the general principles of this Technical Standard.

5.3 Land Subdivision, Consolidation and Rezoning

Council will not consider subdivision/consolidation/rezoning of land located in flood affected or high hazard properties unless Council is satisfied that supporting evidence in the form of a flood/overland flow study, which shows the extent of the flooding/overland flow is satisfactorily completed by an experienced Civil/Hydraulic Engineer.

It is necessary that the intended land use of the allotments is appropriate and in accordance with Council's flood related controls and other environmental planning instruments. Council will not support any subdivision/rezoning unless in all subdivided/rezoned lots the proportion of flood free land is more than 50% of the proposed lot size and other planning requirements are complied with. Plans also need to demonstrate that there is sufficient flood free land, which will allow a building to be approved and constructed in accordance with the requirements of this section.

Generally, filling of the land is not supported by Council and filling of flood affected land or land in the flood path is strictly prohibited. Any minor filling/regrading of unaffected land shall be subject to the requirements of Council's relevant Environmental Planning Instruments.

6 REDEVELOPMENT

When re-development of a flood affected property is proposed, the extent of the floodwater, the location of structures within flood paths which can alter the flow regime to the detriment of adjoining properties must be considered. Structures in the path of overland flow would cause the water to be redirected or deflected to other adjoining properties. The flood water could also cause “afflux” (a rise in water level) upstream of the structure.

To reduce the impact of flooding on flood affected properties, all redevelopment must be located within the footprint of the existing structure(s), preferably clear of the 1% AEP event or the overland flow path. Any encroachment on these paths is not permissible unless a cumulative impact study of the floodwaters to both upstream and downstream properties is undertaken by the applicant **and** Council is satisfied that there is no adverse impact to other land owners. A flood study, including an afflux analysis, will be required for any works beyond the existing building footprint.

Council will generally not support the filling of main stream or overland flow path on flood affected land unless it can be demonstrated that other upstream and downstream property owners are not affected by similar cumulative filling of adjoining and adjacent properties and Council is satisfied that there are no adverse effects to other land owners.

7 PROTECTION OF PROPERTIES AND HUMAN LIVES

This Technical Standard also deals with the protection of human lives especially the safety of the young and frail. To achieve this, it is necessary that the velocity and depth of flow ratio within developments be within acceptable limits and that a safe flood evacuation route is provided for the occupants.

New development on flood affected properties must not only be sited away or above the standard flood level but also be analysed to include the cumulative effect of blockage if any of the flow and its effect to other adjoining and adjacent properties.

It may be necessary to flood proofed existing structures if these structures are significantly affected by overland flow, especially where the old and frail are to be accommodated in these buildings.

Residential development on land subject to flood risk categorised as H4 – H6 will not be permitted unless it can be clearly demonstrated that development under this section can be undertaken on the land without jeopardising public safety and access, property damage or adverse ramifications of the pre-developed flood regime by means of a detailed flood study.

8 APPLICATION OF TECHNICAL STANDARD

This Technical Standard shall apply primarily to flood affected areas within the City of Willoughby. Property affected by flooding will be subject to flood related planning controls. Some properties within these areas will be required to submit a flood study so that an accurate assessment regarding the level, depth, velocity and extent of the overland flow within the property can be determined. In this regard, an experienced civil/hydrological engineer shall be consulted. In areas where Council has completed formal flood studies, a flood study (Appendix A) may not be required.

This Standard also shall apply to properties subject to Local Overland Flooding within the City of Willoughby. Developments located on Major Drainage Flooding area are

required to submit an overland flow study but developments on Local Drainage flooding do not in general require such a study.

It must be noted that assessment of a development application is subject to the general requirements of the *Environmental Planning Assessment (EPA) Act (1979)*. Matters for consideration are listed under Section 79c of the EP & A Act. Where it is considered relevant, this policy will form part of the consideration, which the consent authority has to undertake during the assessment of an application.

9 SPECIAL REQUIREMENTS

Applicants of a development affected by Main Stream and/or Major Drainage Flooding shall submit satisfactory environmental, hydrological, hydraulics information including mitigating adverse impacts to Council. However, it is highly improbable that structures within areas of high hazard viz., where depth, velocity and nature of the flow contribute risks to human lives and property damages would be considered without satisfactory mitigating measures.

Council will require supporting evidence to demonstrate that the development will not increase the hazards or risks to future owners or its occupants and to adjoining properties.

For some developments, Council may require additional flood planning control such as safe evacuation from the site and flood proofing of the existing structure. Further, Council will also consider the cumulative impact and effects of the development to adjoining properties.

Further, it must be noted that Council has adopted the 1% AEP event as the standard flood in this policy. The largest flood that could conceivably occur is also known as the probable maximum flood (PMF). The PMF is estimated from the probably maximum precipitation. It may be necessary for some developments to consider the effects of the PMF especially if the development may house young children, the frail and the elderly and is located on or near the major drainage system.

Additionally, the effect of climate change has not been included in this standard.

Climate change relates to the generation of greenhouse gases due generally to the activities of humans. An accumulation of such gases in the atmosphere is understood to cause the planet to gradually warm up and bring about changes to the climate. These climatic changes are predicted to have significant impacts on temperature, air quality, sea levels, water temperature, evaporation rates, rainfall intensities, etc.

In the Sydney Metropolitan Region, current modelling shows a trend towards an increase in both extreme rainfall frequencies and storm events, which increase the severity of the main stream and local overland flow and/or flood. Effectively, what is currently the 1% AEP (1 in 100 year ARI) rainfall event may become more frequent to say the 1.1% AEP (1 in 90.91 year ARI). This has potentially serious implications for flooding frequencies.

Willoughby City Council may consider imposing a higher flood level than the current flood planning level if the nature and circumstances affecting the development warrants such consideration in the future.

10 THE MERIT APPROACH

In consideration of a development application, Council as Consent Authority will use the merit approach. In its deliberation, Council would take into consideration environmental, technical, economic, sociological and flooding impacts including but not limited to minimum flood planning levels, location of structures within the site, access, stability, safety, legal obligations and community responsibilities.

It must be noted that the *Environmental Planning and Assessment Act (1979)* also lists other matters for consideration by the Consent Authority.

11 SUBMISSION REQUIREMENTS

In order to determine the impacts on overland flow and/or flooding by the proposed development to the existing urban environment, the applicant shall demonstrate that the proposed development is consistent with the objectives outlined in this standard. As such, the following information shall be submitted to Council to support the Development Application on lands affected by overland flow and/or flooding:

- i. Detailed survey plan of the site and /or adjoining properties to Australian Height Datum (AHD) at 1:100 scales (or 1:200 for larger sites), prepared by a Registered Surveyor, showing all existing buildings/structures that will affect the extent, depth and velocity of overland flow/flooding.
- ii. Flood/overland flow study report (Appendix A), prepared by a suitably qualified engineer with suitable experience and eligible for Chartered Professional Engineer status with Engineers Australia. The flood/overland flow study report shall include the following information:
 - a. A hydrological analysis (including plans and calculations) of the upstream catchment area for the 1% AEP and 20% AEP storm events.¹
 1. A catchment plan highlighting full upstream catchment area that generate the overland stormwater flows travelling through the site.
 2. The hydrological analysis model shall be based on the following²:-
 - For upstream catchment areas of **less than 3 hectares**, Rational Method is considered acceptable.
 - For upstream catchment areas of **3 hectares and larger**, a suitable runoff routing computer model, such as DRAINS or RAFTS shall be used
 - The estimation of time of concentration (Tc) shall be justified. This may be done through the Kinematic Wave Equation.
 - The fraction impervious (f) of the upstream catchment shall be **between 0.7 (for low density residential area) to 1.0 (for high density residential area, industrial and commercial area)** unless it

¹ Council is in the process of modelling a number of catchments within the city and may be able to provide flow rates to consulting engineers where and when they become available. Where these flow rates are provided, Council will not accept lower flow rate values unless it can be clearly demonstrated that the nominal value is correct.

² Runoff coefficients tables and Intensity Frequency Duration (IFD) tables are provided in Appendix B of this standard.

can be proven that other values may be appropriate for a particular site.

b. A hydraulic analysis (including plans and calculations) of overland flow path through the site for both pre-developed and post-developed scenarios.

1. The overland flow path shall be based on
 - For open channel and natural creek:
 - 1% AEP storm event of upstream catchment area
 - For enclosed drainage system (e.g. pipes and culverts), the larger of:
 - 1% AEP storm event of upstream catchment area with 50% blockage to the enclosed drainage system or;
 - 20% AEP storm event of upstream catchment area with 100% blockage to the enclosed drainage system
 - For basement car parking:
 - PMF event with 50% blockage to the enclosed drainage system
2. The hydraulic analysis model shall be based on the following: -
 - For local drainage or overland flow, Mannings Equation or HEC-RAS may be used
 - For mainstream flooding or major drainage, a Tuflow model or other model appropriate model as agreed by Council shall be used
3. 1:100 scaled site plans showing the extent and levels of the flood/overland flow path for both pre-developed and post-developed scenarios
4. Longitudinal sections (at vertical scale 1:50, horizontal scale 1:100) showing the surface levels, flood/overland flow levels, flow profiles, hydraulic data, changes in grade and critical levels (such as finished floor levels) for both pre-developed and post-developed scenarios
5. Cross-section details at 1:50 scale taken at the right angle to the flood/overland flow path with a maximum spacing of every 5m for both pre-developed and post-developed scenarios and shall include at least the following locations:
 - At the immediate upstream of the property boundary
 - Where the existing and proposed development/structure is closest to the flood/overland flow path
 - At the immediate downstream of the property boundary
 - Other cross-sections as required where the flow path and/or drainage system being affected

Note:

- All levels shown on drawings and details shall be to the Australian Height Datum (AHD)
6. Calculations of the velocity-depth product of the overland flow path. If the result exceeds $0.4\text{m}^2/\text{s}$, suitable open type fencing or other appropriate

measures shall be used to restrict access to such areas affected by hazardous overland flows.

7. Boundary fence details if they are within the extent of flood/overland flow path.
- c. Finished floor levels for the proposed development shall be nominated in the report, taking into account of Council's free board requirements as specified in this standard.
- d. The flood/overland flow study shall demonstrate that the proposed development will not impede the passage of floodwater to cause a rise (afflux) in the flood level upstream and/or increase the downstream velocities of flow for the flood standard. No structures and/or filling are permitted to be placed over the 1 in 100 year ARI overland flow path
- e. The study shall include a hazard risk assessment for the site. The determination of the hazard and the assessment shall be in accordance with the requirements of the current edition of Australian Rainfall and Runoff.
- f. The flood/overland flow study shall be signed by the engineer declaring that the study has been undertaken in accordance with Australian Rainfall and Runoff, the NSW Floodplain Development Manual and Council's Floodplain Management Technical Standard.

12 CREATION OF RESTRICTION ON THE USE OF LAND

The applicant shall create a restriction over the land of the subject property in relation to the affected overland flow path (Appendix C). This must be placed on the land title at the Department of Lands.

The suggested wording for the restriction is:

"No placement of any unauthorised structure, wall, fence, fill or other item which may impede the 1:100 year ARI flood event."

The extent of the flood, in relation to the building footprint, shall be shown on a scaled sketch attached as an annexure to the request forms.

13 GLOSSARY

Afflux

The rise in water level (above normal) on the upstream side of an obstruction caused when the effective overland flow area at the obstruction is less than the natural width of the overland flow path immediately upstream of the obstruction.

Annual Exceedance Probability (AEP)

The chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage. For example, if a peak flood discharge of 50 m³/s has an AEP of 5%, it means that there is a 5% chance (that is one-in-20 chance) of a peak flood discharge of 50 m³/s or larger occurring in any one year (see average recurrence interval).

Average Recurrence Interval (ARI)

The average period in years between the occurrences of a flood of a particular magnitude or greater. In a long period of say 1,000 years, a flood equivalent to or greater than a 100 year ARI event would occur 10 times. The 100 year ARI flood has a 1% chance (i.e. a one-in-100 chance) of occurrence in any one year.

In relation to the economic life of structures, there is a 23% chance of the 100 year ARI event or greater occurring in a 30 year period, a 50% chance of occurrence in a 70 year period and a 60% chance within a 100 year period.

Catchment

The land area draining through the main stream, as well as tributary streams, to a particular site. It always relates to an area above a specific location.

Consent Authority

The council, government agency or person having the function to determine a development application for land use under the Environmental Planning and Assessment Act (EP&A Act) 1979. The consent authority is most often the council, however there are instances where legislation or an environmental planning instrument (EPI) specifies a Minister or public authority (other than a council), or the Director General of the Department of Planning, as having the function to determine an application.

Flood

Relatively high stream flow which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or local overland flooding associated with major drainage before entering a watercourse, and/or coastal inundation resulting from super-elevated sea levels and/or waves overtopping coastline defences excluding tidal waves.

Flood Affected Properties

Properties that are either encompassed or intersected by the flood.

Flood Prone/Liable Land

Land which is subject to inundation. Flood prone land is synonymous with flood liable land and floodplain.

Flood Risk Zone

The division of the Floodplain into areas of varying flood risk according to the nature of flooding and the depth and velocity of floodwaters.

Flood Study

Detailed hydrologic and hydraulic assessment usually undertaken using modelling programs such as RAFTS, DRAINS, MIKE 11 or HECS-RAS to determine with more certainty the extent, velocity, volume and height of overland flows.

Freeboard

A factor of safety typically used in relation to the setting of floor levels, levee crest levels, etc. It is usually expressed as the difference in height between the adopted flood planning level and the flood used to determine the flood planning level. Freeboard provides a factor of safety to compensate for uncertainties in the estimation of flood levels across the floodplain, such as wave action, localised hydraulic behaviour and impacts that are specific event related, such as levee and embankment settlement, and other effects such as "greenhouse" and climate change. Freeboard is included in the Flood Planning Level.

Garage

Structure designed primarily for the storage of vehicles. Can be either a fully enclosed detached structure or a fully enclosed space separated from the main habitable floor area of a building.

Habitable

In a residential situation: a living or working area, such as a lounge room, dining room, rumpus room, kitchen, bedroom or workroom.

In an industrial or commercial situation: an area used for offices or to store valuable possessions susceptible to flood damage in the event of a flood.

Hazard

A source of potential harm or a situation with a potential to cause loss. In relation to this technical standard, the hazard is flooding which has the potential to put life at risk or cause damage to property and local environment.

Hydraulics

Term given to the study of water flow in waterways; in particular, the evaluation of flow parameters such as water level and velocity.

Hydrology

Term given to the study of the rainfall and runoff process; in particular, the evaluation of peak flows, flow volumes and the derivation of hydrographs for a range of floods in a particular catchment or site.

Local Drainage

Local Drainage problems in Local Overland Flooding zones typically include direct surface runoff, surcharges and overflows from low points in kerbs, or overflows from the smaller pipes in the stormwater drainage system. Local Drainage problems involve shallow depths of flooding up to 300 mm with generally little danger to personal safety. Problems generally arise because of deficiencies in building practice where floor levels are near finished ground levels.

Local Overland Flooding Zone

Area where flooding problems occur due to overland flow. Within those zones there may be two categories of flow based on increasing depth and velocity of inundation: Local Drainage and Main Drainage.

Main Stream Flooding

This type of flooding occurs when the trunk drainage systems surcharge and flows inundate the surrounding floodplains. In Willoughby City, the trunk drainage systems comprise sections of lined and unlined open channels of the main arms of the creeks and their major tributaries, as well as major pipelines which have been laid along the routes of the natural channels as the catchments became urbanised.

Major Drainage Flooding

Major Drainage problems in Local Overland Flooding Zones are categorised as the upper end of the scale of Local Overland flooding. Water depths are generally in excess of 300 mm (in the storm event used to derive FPLs). These conditions may result in Provisional High Hazard conditions.

Non-habitable

All other areas of a building not mentioned under the definition of Habitable.

Overland Flow

Inundation by catchment runoff rather than overflow from a stream, river, estuary, lake or dam due to rising water level.

Provisional High Hazard Area

Where land in the event of a 100 year ARI flood is subject to depths of inundation greater than 0.8 to 1 metre with little or no velocity associated with the flow. Wading would be unsafe for able bodied adults. This area may also be subject to local catchment flash flooding when the street system acts as floodways conveying relatively fast moving overland flow.

Probable Maximum Flood (PMF)

The largest flood that could conceivably occur at a particular location, usually estimated from probable maximum precipitation. Generally, it is not physically or economically possible to provide complete protection against this event. The Probable Maximum Flood defines the extent of flood prone land, that is, the floodplain.

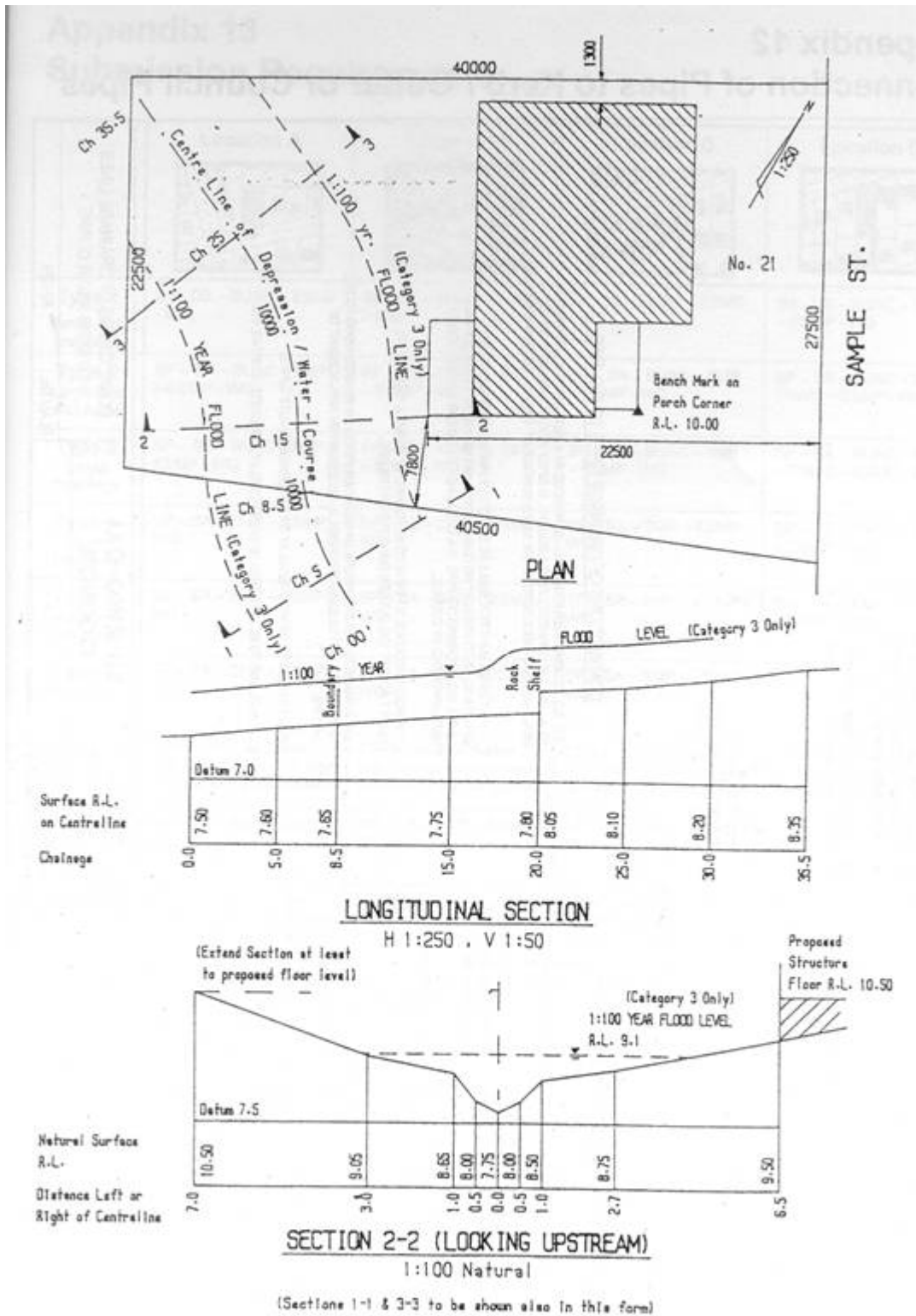
Probable Maximum Precipitation (PMP)

The greatest depth of precipitation for a given duration meteorologically possible over a given size storm area at a particular location at a particular time of the year, with no allowance made for long-term climatic trends (World Meteorological Organisation, 1986). It is the primary input to the estimation of the probable maximum flood.

Survey Plan

Plan prepared by a registered surveyor which shows the information required for the assessment of a development application.

APPENDIX A – SAMPLE FLOOD STUDY



APPENDIX B - IFD Tables

**RAINFALL INTENSITY IN mm/Hr
FOR VARIOUS DURATIONS AND RETURN PERIODS**

Duration (hours)	RETURN PERIOD						
	1yr	2yrs	5yrs	10yrs	20yrs	50yrs	100yrs
0.083	97.9	125.	159.	178	204.	237.	262.
0.100	91.8	118.	149.	167.	192.	223.	247.
0.167	75.2	96.7	124.	139.	159.	186.	206.
0.333	54.9	70.9	91.7	104.	120.	141.	156.
0.500	44.7	57.9	75.3	85.6	99.0	117.	130.
1.000	30.5	39.6	52.0	59.4	69.1	81.8	91.5
2.000	20.2	26.2	34.8	39.9	46.5	55.3	62.0
3.000	15.7	20.5	27.2	31.3	36.5	43.5	48.8
6.000	10.2	13.4	17.9	20.6	24.1	28.7	32.3
12.000	6.72	8.79	11.8	13.6	16.0	19.1	21.5
24.000	4.45	5.82	7.86	9.10	10.7	12.8	14.5
48.000	2.90	3.80	5.16	6.00	7.07	8.48	9.59
72.000	2.19	2.88	3.92	4.56	5.38	6.47	7.32

LIST OF COEFFICIENTS TO EQUATIONS OF THE FORM:-

$$\ln(I)=a+b(\ln(T))+c(\ln(T))^2+d(\ln(T))^3+e(\ln(T))^4+f(\ln(T))^5+g(\ln(T))^6$$

Where I = Intensity in millimetres per hour;
And T = Time in Hours

Years	RETURN PERIOD						
	a	b	c	d	E	F	g
1	3.4171	-0.5782	-0.0314	0.00714	0.000801	-0.0001313	-0.0000369
2	3.6781	-0.5738	-0.0320	0.00726	0.000784	-0.0001541	-0.0000311
5	3.9521	-0.5605	-0.0350	0.00702	0.001072	-0.0001620	-0.0000370
10	4.0849	-0.5537	-0.0365	0.00708	0.001194	-0.0001887	-0.0000353
20	4.2350	-0.5485	-0.0378	0.00720	0.001314	-0.0002139	-0.0000347
50	4.4041	-0.5427	-0.0392	0.00746	0.001396	-0.0002625	-0.0000286
100	4.5167	-0.5382	-0.0400	0.00733	0.001460	-0.0002589	-0.0000302

RAINFALL DURATION INTENSITY IN MIN. MM/HR**Values of $(t.I^{0.4})$**

Where I = Intensity in millimetres per hour;

RETURN PERIOD

DUR (hr)	DUR (min)	1YR	2YRS	5YRS	10YRS	20YRS	50YRS	100YRS
0.083	5	31.16	34.36	37.83	39.57	41.79	44.37	46.19
0.100	6	36.58	40.45	44.40	46.48	49.14	52.18	54.35
0.167	10	56.41	62.38	68.90	72.12	76.11	81.04	84.41
0.333	20	99.18	109.86	121.77	128.06	135.60	144.64	150.61
0.500	30	137.17	152.12	168.98	177.87	188.53	201.56	210.23
1.000	60	235.44	261.35	291.44	307.37	326.54	349.34	365.36
2.000	120	399.32	443.10	496.38	524.29	557.39	597.41	625.37
3.000	180	541.54	602.52	674.68	713.66	758.91	814.08	852.39
6.000	360	911.47	1016.59	1141.42	1207.40	1285.61	1378.65	1445.38
12.000	720	1542.70	1717.62	1932.35	2045.26	2182.63	2342.86	2456.45
24.000	1440	2616.41	2912.94	3284.97	3483.21	3716.34	3992.51	4196.72
48.000	2880	4409.12	4912.54	5552.04	5897.30	6297.39	6772.53	7114.10
72.000	4320	5911.01	6595.39	7461.02	7926.28	8468.31	9116.86	9578.29

NOTE:

FOR USE WITH "KINEMATIC WAVE" EQUATION (EQUATION 14.2 IN A R & R, 1987)
REFER TO TECHNICAL NOTE 3, A R & R, 1987

APPENDIX C – Section 88(E)3 Instruments**TERMS OF RESTRICTION OF USE OF LAND**

(To be used with Form 13RPA from the Department of Lands)

The registered proprietors of the land (hereby called the “proprietor”) hereby burdened covenant with the Willoughby City Council (hereby called the “Council”): -

- a) No placement of any unauthorised structure such as a wall, fence, fill or other item which may impede the 1:100 year ARI flood event on the land hereby burdened except:
 - i. such other structures as are approved by the Council.

NAME OF AUTHORITY EMPOWERED TO RELEASE OR VARY OR MODIFY
RESTRICTION ON THE USE OF LAND REFERRED TO:

WILLOUGHBY CITY COUNCIL

ATTACHMENT 3 - TECHNICAL STANDARD NO.3 - SEDIMENT AND EROSION CONTROL**DEFINITIONS**

Activity	the erection of a building; the carrying out of any work in, on, over or under land; or the subdivision of land.
Approval	a licence or permission or any authorisation under Part V of the EP&A Act.
Authority	in relation to a development application, means: the Council having the function to determine the application; or the Minister or public authority or the Director where an environmental planning instrument specifies as having the function to determine the application.
Building Works	includes buildings or structures or part thereof.
Catchment	is that area within which rainfall will contribute to runoff at a particular point. The area included in catchment is determined by topographic features which on many buildings sites can range from a few square metres to several thousand square metres.
Construction Site	is that portion of a site disturbed by the development and/or building and includes the areas where building materials are placed and access traversed by vehicles.
Development	in relation to land, means; the erection of a building on that land; the carrying out of a work in, on, over or under that land; the use of that land or of a building or work on that land, the subdivision of that land.
Diversion Banks and Catch Drains	a bank is a ridge or embankment of compacted earth or blue metal aggregate. A catch drain is an excavated earth drainage ditch or path used to intercept and direct runoff to a desired location.
Erosion	is the process whereby gravity, rain, wind or wave action detaches soil particles and provides energy to move the particle. Types of erosion are: Soil Erosion is the wearing away of the soil surface material by wind, water or gravitational effects. Natural rates of erosion are accelerated by some human activities such as removal of vegetation for building work exposing the underlying soil. Stream Bank Erosion occurs as a result of flooding or saturation of bank materials due to tidal movement or wave action.
Environmentally	is land that is steeper than 18° of slope; liable to

Sensitive Land	degradation due to erosion, sedimentation, inundation by sand/soil or water, salinity/acidity, invasion by exotic vegetation; or native vegetation and wetlands.
Flocculation	reverses the processes that cause dispersion of soil by causing finer particles to clump together into larger units or 'flocs' that can settle in a reasonable time or can be filtered. Flocculation is usually carried out in ponds or tanks with the most commonly used flocculation agents being gypsum or alum.
Geotextiles	are synthetic fabrics used to filter sediment or stabilise disturbed surfaces, there are several proprietary types of geotextile for a wide range of applications.
Landscape Plan	is a plan showing the location, type and quantity of vegetation and structural elements to be placed on the site to gain visual amenity and screen sections of the site from public view or use.
Receiving Waters	either natural water bodies, including rivers, streams (perennial or intermittent), flowing in natural channels with natural beds or in artificially modified channels or wetlands, either naturally formed or artificially modified, or tidal waters, including bays, estuaries or inlets, or constructed water bodies including waterways, ponds, or wetlands, bays or inlets, whether permanently or intermittently inundated with water.
Sediment	<p>mineral or organic material that is being, or has been, moved from its site of origin by transporting agents such as water, wind and gravity to a lower position in the catchment, either above or below sea level. Types of sediment include:</p> <p>Clay - are soil particles consisting of mineral particles less than 0.002 mm in diameter. Many of the properties of soil depend on the type and quantity of clay particles in the soil.</p> <p>Sand - consists of particles consisting largely of quartz grains between 0.02 mm and 2.00 mm in diameter. Fine sand is defined as particles between 0.02 mm and 0.2 mm and course sand as those between 0.2 mm and 2.0 mm.</p> <p>Silt - are particles between 0.002 mm and 0.02 mm in diameter.</p> <p>Soil – is the loose aggregate of various sized small particles that covers the surface of the land. It consists of approximately 90% inorganic mineral material and 10% decayed plant and animal matter.</p>
Sedimentation	the deposition of sediment, usually in locations such as a channel, along a fence, in an area of low slope or a sediment trap, dam or water body.
SEE	Statement of Environmental Effects as prescribed by the Environmental Planning and Assessment Act 1997 which addresses matters such as any potential environmental impacts of the development, how they have been identified and what

	steps will be taken to protect the environment or to lessen the expected harm to the environment.
Site Management Plan	is a plan showing how potential erosion and sedimentation on a site resulting from approved building work, development or landscaping activity will be minimised or controlled.
Soil and Water Management Plan	describes the planned measures to be undertaken at an activity site which will mitigate soil transport and control pollution to down slope lands and receiving waters.
Subdivision	‘Subdivision’, ‘subdivide’, and similar expressions refer to dividing land into parts.
Topsoil	is a part of the soil profile, typically the first soil layer (called the A1 horizon) below the ground surface that is darker in colour, more fertile and better structured than underlying layers.
Vegetation	means native and exotic trees, shrubs, understorey, ground cover and grasses.

1 OVERVIEW

1.1 INTRODUCTION

In pristine environments, soil erosion and sedimentation naturally occurs and our ecosystems have evolved over time to cope with this natural process. However, urban development and building activity causes significant land disturbance. This disturbance has resulted in tonnes of soil being eroded and deposited into nearby creeks and waterways at an accelerated rate causing severe environmental problems.

Building, construction and landscaping activities have a major impact on the downstream catchment receiving waters (Lane Cove River and Middle Harbour) when not properly managed. Removal of vegetation as well as pollutants such as sand, silt, clay, soil and gravel (sediment) and other construction and landscape materials can cause any of the following environmental impacts:

- i. increased stormwater flooding due to reduced capacity in waterways and blocked stormwater drainage systems,
- ii. increased degradation of terrestrial and aquatic ecosystems and habitats, especially aquatic habitat,
- iii. reduced air quality and/or traffic hazards due to increased dust problems,
- iv. reduced water quality in creeks, estuaries, river and harbour, and
- v. reduced aesthetics and recreational activities due to the infilling of creeks and estuaries.

Due to the large number of construction sites within Willoughby City Council area at any given time, even small amounts of pollution from the individual sites can have significant cumulative effects. Therefore, diligence on the part of those involved in building and construction in regards to the management of soil and water on construction sites is critical if soil erosion and sediment pollution are to be minimised and reduce the risk of environmental degradation.

This Technical Standard has been prepared as a code of practice for all building, construction and landscaping activity undertaken in the Willoughby City Council area which involves the disturbance of the earth's surface, placement of fill or changes in the rate or volume of runoff entering a natural or built drainage system or flowing overland.

1.2 OBJECTIVES

The aim of this technical standard is to ensure that developers/builders:

- i. manage environmental and public safety risks during earth and construction works,
- ii. control erosion and stabilise exposed soil surfaces,
- iii. reduce the potential for the transportation of pollutants off site,
- iv. provide a safe and effective framework for the installation and ongoing maintenance of sediment and erosion controls during earthworks, construction, building and landscaping activities, and
- v. prevent the pollution of stormwater runoff draining into bushland, stormwater drainage systems and waterways.

1.3 LEGAL REQUIREMENTS

The *NSW Protection of the Environment Operations (POEO) Act 1997* makes it an offence to pollute waters.

The term “*pollutes*” means: to place in or on, or otherwise introduce into or onto, the waters (whether through act or omission) any material which changes the condition of the water. This includes soil, earth, mud, stones, sand, clay, or washing of such material.

The term “waters” also has a broad definition, and includes not just harbour, river and creeks but also such things as artificial drains, channels and gutters designed to transport stormwater runoff, which are theoretically the headwaters of such water bodies.

A person may also commit an offence if they place any matter (such as sand or soil) in a position where it is likely to fall, descend, wash or blow into any waters.

Severe penalties exist for offences under the POEO Act ranging from on-the-spot fines through to court imposed fines for each day the offence continues. The Act imposes liability on anyone who participated or contributed to the offence.

Council may also serve a cleanup or prevention notice to install or maintain erosion and sedimentation controls which carries an administration fee. Failure to comply with the cleanup or prevention notice may also result in a penalty.

1.4 Basic Principles of Erosion and Sediment Control

It is important to plan ahead when proposing to carry out any demolition, excavation, construction, building or landscaping works or installation of services. Even if the proposed works may only be minor, a site plan showing where you intend to undertake the works, store construction and building materials, spoil, sand, soil, etc should be drafted prior to starting any work to decide where sediment and erosion control measures may be required.

There are some basic principles that need to be followed when dealing with erosion and sediment control measures:

- i. The most effective way of minimising soil erosion is to limit the area of soil disturbance and removal of existing site vegetation and controlling site activities throughout the project.
- ii. Establish sediment controls on the site before any earthworks commence or materials are stockpiled.
- iii. Control stormwater runoff on the site by reducing water volumes that need to be treated by site controls. This can be achieved by diverting surface water and rainwater away from the work and stockpile areas and reducing water velocities to minimise the potential for scour and sediment pollution.
- iv. Cover roof frames as soon as possible, install roof water drainage and connect to rainwater storage, On-Site Detention tank or Council’s drainage system to remove clean water from the site.
- v. Conserve and cover topsoil on the site to reuse in revegetation works.
- vi. Cover disturbed soil with tarpaulin, straw or cut vegetation.
- vii. Stabilise the site through revegetation immediately construction work has been completed. Revegetation can be carried out in a staged way using temporary cover crops to provide short-term soil protection until permanent vegetation can be established.

- viii. Inspect and maintain erosion and sediment control measures throughout the project to reduce the potential for environmental degradation to occur.

1.5 OTHER POLLUTANTS FROM CONSTRUCTION SITES

In addition to pollutants such as sediment, there are a number of other potential sources of construction pollution. These include the following with suggested management techniques:

- i. Operations such as washing concreting tools and painting equipment, washing the cement residue from paved surfaces being prepared with an exposed aggregate finish and the cutting of bricks and tiles or other masonry should be done within the property boundary with suitable controls in place.
- ii. Potential pollutants such as building litter and waste, dust, fuels and oils and landscape inputs (like fertilisers and herbicides) need to be properly managed on-site.
- iii. Incorrect storage of chemicals used in the building process should also have suitable controls in place to minimise the risk of spillage and pollution incidents.

2 STANDARDS

Managing Urban Stormwater: Soils and Construction Volume 1, March 2004, published by Landcom, NSW Government (The Blue Book) provides detailed information on sediment and erosion control management for construction sites. It includes information on the preparation of plans and techniques to be used to minimise sediment loss and control erosion.

Sediment and erosion control measures on construction sites within Willoughby LGA shall be in accordance with the recommendations of *The Blue Book*.

3 SUBMISSION REQUIREMENTS

The total site area that will be disturbed during the course of the building and construction activity generally defines the minimum submission requirement for a development site.

This includes areas of cut and fill, removal of vegetation, unpaved driveways and access ways and stockpiling of building materials and soil. However, development sites located adjacent to, or within close proximity to, sensitive areas, steep escarpments, public open space, waterways, etc. may, at the discretion of Council, be required to provide more detailed management plans.

The following table provides a guide for submission requirements for site management of soil and water based on exposed surface area and the proposed development activity type.

Disturbed Area (m²)	Typical Activities	Submission Requirements
<250	Alterations and additions such as house extensions, small driveways, carports and garages which are <u>not</u> : <ul style="list-style-type: none"> • adjacent to public open space or a watercourse, • located on a slope exceeding 18 degrees, or • involving any cut or filling of the land which may alter the rate, volume or direction of overland flow. 	A brief written statement on the proposed water management measures and expected performance levels is to be included in the SEE submitted with the Development Application. It should be noted that, prior to disturbing any land or stockpiling building materials, appropriate sediment and erosion controls are to be installed and continually maintained to prevent pollution of downstream waterways.
250 to 2,000	New house, commercial, dual occupancies, multi unit residential, small industrial complexes, subdivision and infrastructure construction. Alterations and additions that are: <ul style="list-style-type: none"> • adjacent to public open space or a watercourse, • on a slope exceeding 18 degrees, or • involves cutting or filling the land which may alter the rate, volume or direction of overland flow. 	A Site Management Plan is to be submitted to Council for approval prior to issue of any Construction Certificate. The plan should specify proposed sediment and erosion control measures for each stage of the construction activity i.e. demolition, excavation and construction. Refer to Section 2.1 of this Technical Standard for submission details.
>2,000	Large multi unit residential, commercial, institutional, industrial developments or development containing more than 10 car parking spaces	A Soil and Water Management Plan is to be submitted with the Development Application specifying proposed measures for the control of erosion and pollution of water both during and after construction. Calculations as to the need for a sediment basin should be included. Refer to Section 2.2 of this Technical Standard for submission details.

Table 1 – Guide to Submission Requirements

3.1 SITE MANAGEMENT PLAN

Council may require a Site Management Plan to be lodged for consideration prior to issue of a Construction Certificate for a proposed development. However, all Development Applications shall require the inclusion of a Site Management Plan where the proposed development will expose a soil surface area:

- i. greater than 250 square metres up to 2,000 square metres, or
- ii. less than 250 square metres if the site:
 - a. immediately adjoins public open space or a watercourse, or
 - b. is on a slope exceeding 18 degrees, or
 - c. involves cut or filling of the land which will alter the rate, volume or direction of overland flow, or
 - d. where a new residential, commercial or industrial building is proposed to be demolished and/or constructed.

The Site Management Plan is to consist of a plan and written specification of proposed soil erosion minimisation and sediment control measures for the site during the demolition, excavation, construction and landscaping stages. The Site Management Plan must also consider the following issues, as applicable, to the proposed development:

- truck routes to and from the site;
- location and description of "all weather access and egress for vehicles" for the site;
- location and type of diversionary drains and any other form of sediment and erosion control device;
- sediment containment and/or dewatering methods including flocculation and monitoring program;
- location and construction of temporary protective fencing/hoardings to the perimeter of the site;
- location of site storage areas/sheds/equipment;
- location of building materials/stock piles for construction;
- dust suppression measures;
- details of methods of temporary storage and disposal for demolition/waste materials;
- protective measures for tree preservation;
- schedule of proposed site stabilisation,
- provisions for temporary sanitary facilities;
- location and size of waste containers/bins;
- frequency and nature of any maintenance program;
- complaint management system including contact details of the person responsible for site management 24 hours a day, 7 days a week.

If Council deems that the proposed building and construction activity poses a higher risk of erosion and/or polluting downstream waterways, Council may also require the applicant to source and supply the following information necessary for development assessment:

- soil characteristics such as depth, erodibility and dispersibility for all proposed exposed soil horizons,
- topography such as ground slope and upstream catchment,
- location relative to existing drains and waterways,
- extent of cut and fill, and
- downstream vegetative buffer zones.

3.2 SOIL AND WATER MANAGEMENT PLAN

Development Applications shall be supported by a Soil and Water Management Plan where:

- i. the proposed area of soil surface exposure is 2,000 square metres or more, or
- ii. the development contains 10 or more car parking spaces, or
- iii. new commercial, industrial or institutional development.

The Soil and Water Management Plan must specify proposed measures to control erosion and pollution sources of water both during and after the construction phases.

Details on how to prepare a Soil and Water Management Plan are described in Chapter 2 of *Managing Urban Stormwater: Soils and Construction Volume 1*, March 2004, published by Landcom, NSW Government.

The Soil and Water Management Plan is to be submitted to Willoughby City Council prior to issue of any consent for the proposed development.

4 SEDIMENT AND EROSION CONTROL TECHNIQUES

Each site will need to be individually assessed to ensure effective containment of sediment and erosion control during each stage of the development activity, particularly on large development sites.

The aim of these controls is to ensure only clean water enters Council's stormwater drainage systems and natural waterways by:

- i. diverting surface water around the site;
- ii. minimizing the volume of rainwater falling/flowing onto the site by installing the roof covering material and roof water drainage system as soon as possible;
- iii. slowing down the surface water flows through the site;
- iv. covering any exposed soil and stockpiles of soil, sand and spoil;
- v. placing erosion and sediment control devices at regular intervals on the site; and
- vi. preventing soil from leaving or entering the site on the wheels of vehicles and/or falling from the trays of vehicles.

Erosion and sediment control measures on construction sites are to be in accordance with the requirements of *The Blue Book*. Techniques to be used include:

- Sediment Fences
- Filter traps
- Filter strips
- Sediment basins
- Diversion banks and catch drains
- Stabilised site access
- Site stabilisation

5 MAINTENANCE

Proper maintenance of erosion and sediment controls is vital in protecting the environment from construction pollutants. Every rainfall event that generates runoff could reduce the effectiveness of the controls or expose problems that must be rectified before the next storm.

The following points should be remembered when considering the maintenance of site controls:

- i. The site should be actively managed to minimise potential pollution hazards at all times. A number of simple, cost effective methods are available to achieve this and delays due to wet weather or incurring fines can be expensive.
- ii. Maintenance of controls should also account for changes to the site as construction proceeds. Drainage path locations and runoff velocities will change, site slopes, catchment size, type of runoff (sheet or concentrated flows) can be dramatically altered by site work. Additional controls or modifications to existing controls may be required to prevent soil loss off site.
- iii. Revegetation or other surface treatments like paving, heavy mulching or landscaping of the site must be carried out as soon as construction activities cease. It is vital that temporary sediment controls are not removed until the site has been effectively stabilised.
- iv. Current legislation requires that discharges from the site are of an acceptable standard and penalties will be imposed if pollution events occur. It is important to remember that the law does not recognise your inexperience or inability to meet acceptable water quality standards, the difficulties experienced on a specific site or how you feel on the day.

5.1 RESPONSIBILITIES OF THE SITE SUPERVISOR

Nominating a site supervisor to regularly inspect site controls and to initiate any repairs or maintenance activities is a requirement of Council. Inspections must be carried out on a daily basis when there is activity on the site and after any rainfall event that causes runoff.

The nominated site supervisor will be required to supervise the installation of erosion and sediment controls and carry out maintenance inspections and initiate repairs if required. This person will be Council's contact for the maintenance of erosion and sediment controls at the site.

On large-scale development sites, the supervisor will be required to keep a logbook to document site conditions and actions taken throughout the project. The book should be kept on the site and made available to any authorised person on request. Entries in the logbook should be at least on a weekly basis, immediately before forecast rain and after rainfall. Entries should include:

- i. Volume or intensity of rainfall;
- ii. Condition of soil and water management measures;
- iii. Condition of stabilisation material or vegetation;
- iv. Need for implementation of dust prevention measures;
- v. Remedial works to be undertaken.

When the nominated supervisor is temporarily unable to perform inspections another suitably experienced person should carry out and record the inspection. It should be noted that the nominated supervisor still has overall responsibility for the integrity of erosion and sediment controls on the site.

In the case where the nominated supervisor is no longer involved in the project, a new supervisor is to be nominated by the applicant and Council notified in writing. The site supervisor should be someone with a working knowledge of erosion and sediment control and preferably have overall responsibility for the site. The person could be the project or area manager, a clerk of works, a builder, an owner/builder (depending on their experience) or specialist sub-contractor.

5.2 WHEN TO UNDERTAKE MAINTENANCE INSPECTIONS

The site supervisor will be required to inspect site controls every day before the commencement of any work and at the end of each day that activity occurs on site and after any rain event that causes runoff.

It is also recommended that controls be inspected during rain events that threaten to exceed the capacity of the sediment controls so that emergency measures can be implemented to reduce the potential for soil loss.

APPENDIX A**GUIDELINES FOR STORMWATER CONTROL
IN BUSHLAND AREAS****1 INTRODUCTION**

Stormwater runoff from urban areas, particularly runoff from houses and roads, is a major cause of degradation in urban bushland areas. Some of the problems created by uncontrolled runoff into the bushland reserves include:

- i. Native vegetation is less able to cope with the additional volumes of stormwater runoff and higher concentrations of nutrients causing dieback;
- ii. The additional nutrient and sediment pollution loads reduce water quality in the receiving waters;
- iii. Stormwater transports seed and vegetative material from gardens and road edges which causes weed infestation;
- iv. Stormwater outlets historically consist of a pipe outlet that allows stormwater discharge to spread across the bushland areas that do not have natural drainage lines. The stormwater either flows to the receiving waters by spreading out across the slope and encouraging weed growth or by finding the quickest path and invariably causing soil erosion problems.

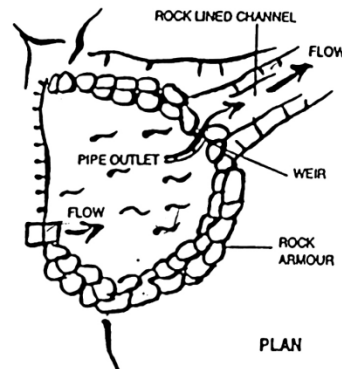
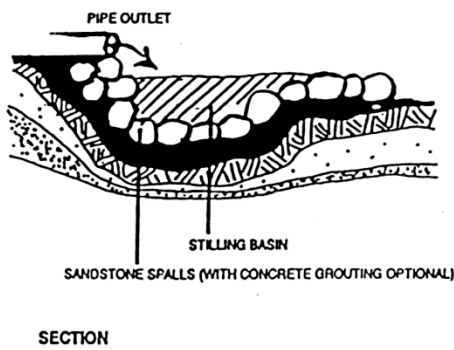
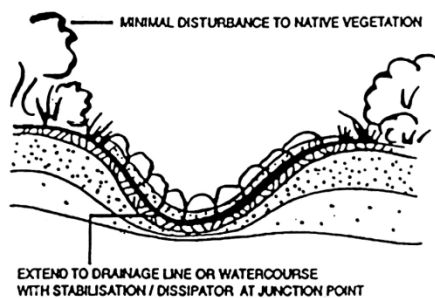
To protect the integrity of bushland reserves and their receiving waters it is essential to efficiently manage stormwater discharge outlets in bushland areas.

It should be noted that approval is required from Council's Infrastructure Services Division before any works may be undertaken in bushland reserves. Each site will have individual characteristics that need to be addressed to ensure the effective capture and containment of stormwater runoff and it is suggested that a preliminary meeting be arranged with Council's Bushland Manager to discuss options.

2 PROCEDURE FOR MANAGING STORMWATER IN BUSHLAND AREAS

To reduce the impact of stormwater runoff on bushland areas and receiving waters, the following guidelines are to be adopted:

- i. construct an energy dissipation structure at the pipe outlet to reduce the velocity of the stormwater and reduce the incidence of scour,
- ii. construct a pit or basin within private property for the retention of gross pollutants and sediment and to reduce the velocity of the stormwater flow,
- iii. construct a well-defined, natural looking rock-lined channel. The channel should be incorporated into the existing landscape, drainage lines and rock outcrops,
- iv. construct a sediment pond(s) along the channel to reduce the velocity of the flow, capture sediment and create habitat for local fauna,
- v. the channel must discharge into the nearest substantial drainage line or watercourse,
- vi. any bushland area disturbed as a result of the stormwater channel works must be rehabilitated as soon as possible on completion of the works, and
- vii. the pit, channel and pond(s) are to be continually maintained.

STILLING BASIN**ROCK LINED CHANNEL****PIPED STORMWATER**

2.1 Preliminary design work

When designing for stormwater discharge through bushland reserves consideration should be given to the following issues:

- i. Determine the size of the catchment discharging through the channel and the scale of the channel required. The channels must be wide and deep enough to incorporate rock lining whilst maintaining the capacity of the peak flow. For example, an average household discharge pipeline is usually 90mm dia. so the internal sectional area of the rock-lined channel should be approximately 0.5m² or 5 times the diameter of the pipeline. For large pipe diameters the channel size will need to be hydraulically and hydrologically assessed.
- ii. Determine the location of the channel which should include determining:
- iii. the location of the closest natural drainage line or watercourse that the proposed channel will discharge into,

- a. incorporation of the channel into the existing landscape, drainage lines and rock outcrops while protecting existing trees and vegetation,
 - b. the optimum route for the channel containing a minimal number of bends, and
 - c. the most degraded area of bushland which will suffer least from construction disturbance.
- iv. Determine the most suitable location(s) for energy dissipation devices such as a pond(s). Ponds reduce the velocity of the water discharging from the stormwater pipeline and therefore the size and capacity of the pond will depend on the volume and velocity of the peak flows.
 - v. Ponds must be located in areas where there is easy access for regular maintenance i.e. the removal of any caught litter or sediment from the pond.



2.2 Visual appearance of the rock-lined channel

There are a few techniques to keep in mind when designing a rock-lined channel that can improve the visual appearance of the construction. These include:

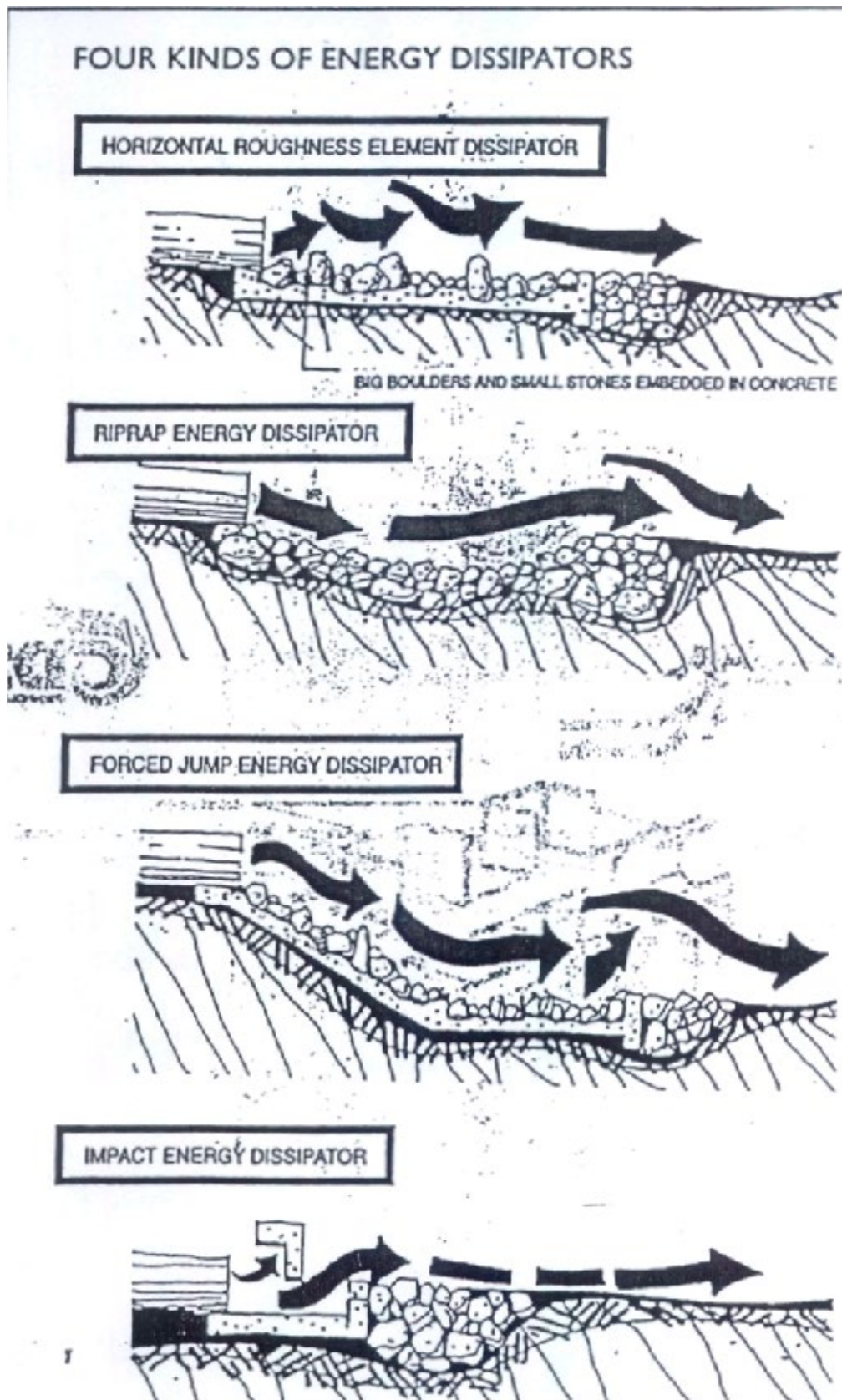
- i. Constructing channels and ponds below ground level as much as possible so that they blend into the natural landscape and allow surface runoff from the surrounding areas to also utilise the channel and pond(s).
- ii. Using natural materials for the construction of the channel and pond(s) such as a combination of different sized rocks.
- iii. Using locally sourced materials (other than bush rock) whenever possible as they are more likely to blend in to the natural landscape.
- iv. Using the topography to direct the water. Channelling the water along the path of least resistance wherever possible gives it the appearance of being a natural drainage line and makes construction easier.

2.3 Construction of energy dissipaters

An energy dissipater must be constructed within the property boundary at the discharge point of the stormwater pipeline to reduce the velocity of the stormwater and for the retention of gross pollutants and sediment. Protection of the opposite bank of

the device from scour may also be necessary dependant on the bank materials and the “jet” effect from the discharge pipe. This would also apply where the stormwater pipeline is discharging directly into a natural drainage line or watercourse.

Examples of devices that can be used for energy dissipation are shown below.



2.4 Construction of rock-lined stormwater channels

To stop the spread of stormwater runoff across the bushland reserve, the water is to be directed or channelled to the nearest existing significant drainage line or

watercourse. This may either involve digging a trench to the next layer of bedrock or constructing a rock-armoured channel. The following outlines minimum requirements when undertaking any rock-lined channel works:

- i. Channels must be dug into the ground wherever possible so that the sides of the channel do not protrude above ground level. However, where this is not possible, the sides of the channel may be mounded.
- ii. When significantly changing the direction of the flow along the channel a pond must be incorporated at the bend.
- iii. Erosion control fabric should be laid along the base of the channel ensuring it overlaps the sides.
- iv. The erosion control fabric should not be reinforced with plastic mesh and must not be exposed on completion of the channel construction.
- v. The base of the channel must be armoured with interlocking sandstone rock capable of withstanding high flows.
- vi. Spoil from the channel excavation should be used to form berms along the edges of the channel to divert overland flows from the surrounding area into the channel.

Barriers such as large rocks should not be placed across the channel. Whilst a barrier may slow the water to some degree it may also divert the water. This can place pressure on the sides of the channel causing the sides to erode and displace or the water may leave the channel entirely.

If it is necessary to slow the velocity of the water in the channel another pond should be incorporated into the structure. This will not only slow the velocity but will also create habitat for native fauna.



2.5 Construction of sediment ponds

The purpose of a sediment pond is to slow the rate of flow of the stormwater and allow it to pool. As the water slows down, the energy of the water is dissipated causing the sediment carried in the water to settle to the bottom of the pond.

When building a sediment pond the following applies:

- i. There must be a flat base lined with flat rocks free of obstructions such as protruding rocks, exposed erosion control fabric, roots etc to facilitate the removal of sediment.
- ii. The pond walls may be constructed of mounded earth re-enforced with erosion control fabric and covered with sandstone boulders.
- iii. The erosion or weed control fabric should not be exposed on completion of the pond construction.
- iv. The pond outlet point should be located below the invert of the stormwater inlet pipeline but lower than the top of the pond walls. This ensures that the water is directed into the channel below. It also ensures that sediment doesn't cause the discharge pipeline to block and water to back-up the pipeline.

2.6 Stabilisation of disturbed area

Any disturbed area must be stabilised on completion of the construction work. Berms should be covered with organic weed mat and planted out with a local native groundcover species to bind the soil.

3 MAINTENANCE

Regular inspections and maintenance of the drainage devices long after the devices have been installed are essential for their continuing efficient operation. The property owner is responsible for carrying out regular monitoring and maintenance of any device within their property boundary.

The following is a general guideline of what may be required for ongoing efficiency:

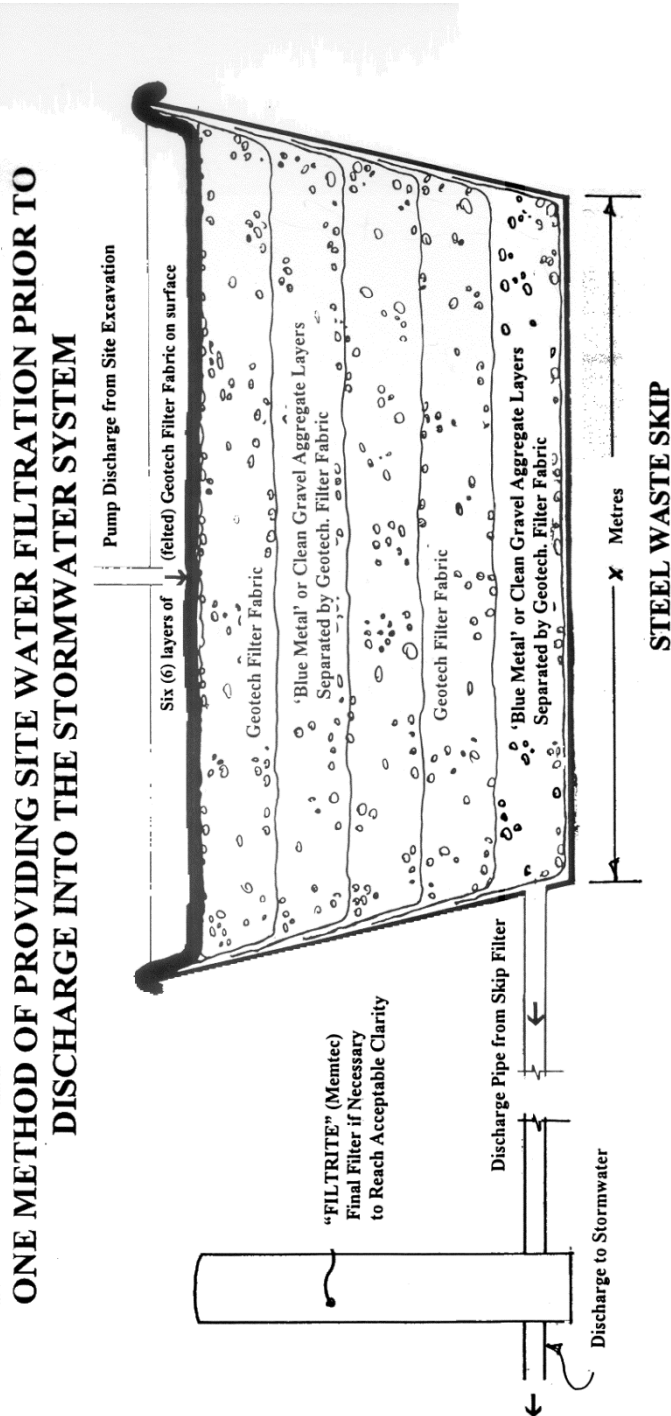
- i. The pond will need regular inspections and removal of trapped sediment and gross pollutants. As the pond fills with sediment and gross pollutants it becomes less efficient during future storms.
- ii. The channel should be regularly checked for signs of excessive erosion and blockages and cleared when necessary.

APPENDIX B

EXAMPLE METHOD OF SITE STORMWATER FILTRATION PRIOR TO DISCHARGE

1 INTRODUCTION

The following method may be useful for development sites that require substantial excavation works to be undertaken as part of the development and may need to be dewatered after rainfall events. This method has been found to be useful in shale and fine clay soils.



This method is based on a standard steel waste skip, which is provided with an outlet pipe fitted to one end, near the base, and filled with blue metal or clean gravel aggregate in five layers, separated by a suitable geotech filter fabric so as to completely contain the contents.

In operation, a settlement pit or tank within the site is used to settle the major sediment content of the site water by use of a proprietary flocculant over a period of twentyfour (24) hours, before it is pumped into the top of the "Filter Skip" (Which should be installed prior to the start of excavation).

The water is filtered through the five layers of filter cloth before discharge, and in most cases should be of satisfactory clarity at that stage, but must be monitored regularly.

If the clarity is not satisfactory (must be completely clear to the eye), or if the quality deteriorates over a period, a final filter such as a "Filtrite Memtec" filter must be fitted between the Skip Filter and the final discharge point

PART J – Building Sustainability

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PART J – Building Sustainability

1 Introduction

Willoughby City Council is committed to environmental sustainability and in so doing, contributing to the conservation of natural resources and global environmental improvement.

This component of *Willoughby Development Control Plan (WDCP)* has been prepared having regard to the 'Objects' of the *Environmental Planning and Assessment Act 1979* to '*facilitate ecologically sustainable development*' and the aim for sustainability under Clause 1.2(2)(b) of *Draft Willoughby Local Environmental Plan (WLEP) 2020*.

1.1 Aim

The specific aim of this plan is to apply 'best practice' principles in the design and construction of developments to create energy efficient and environmentally sustainable buildings.

1.2 Objectives

The primary objectives of this plan are to:

- i. improve the design to achieve sustainable and energy efficient buildings with low greenhouse gas emissions
- ii. reduce waste and promote the adaptable re-use of existing buildings and encourage durable design and construction which is adaptable and low maintenance
- iii. encourage the use of renewable energy and alternative water supply
- iv. improve resident and employee comfort, health and wellbeing
- v. reduce natural resource consumption and source materials responsibly
- vi. encourage sustainable water management
- vii. consider climate adaptation and resilience
- viii. promote sustainable transport management

1.3 Statutory Controls

There are National and State controls that provide mandatory requirements to meet energy efficiency targets in the design and construction of buildings. These controls are found in the *State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 (BASIX SEPP)* and the *National Construction Code (NCC)*.

The NCC identifies the class of building for different types of development. Volume 1 comprises the requirements for Class 2 to Class 9 buildings and Volume 2 comprises the requirements for Class 1 and Class 10 buildings. Attachment 1 provides a guide to the NCC Building Classifications).

1.4 Best Practice

The objectives of this plan can be achieved by incorporating best practice design principles and initiatives into a development proposal. Attachment 2 includes a number of criteria that should be considered to achieve the best possible outcome for energy efficient and sustainable developments.

Many of the objectives relating to the design principles referred to in Attachment 2 will contribute to compliance with the statutory requirements and/or satisfy some of the components of a sustainability rating tool. Implementation of the design principles is likely to reduce the need for active/mechanical heating and cooling and provide long term cost savings as a result of reduced energy consumption.

For more information and ideas to help integrate sustainability into a development project, please refer to Council's [website](#) at:

<http://www.willoughby.nsw.gov.au/environment---sustainability/>

2 Minor Developments

2.1 Definition of Minor Developments

For the purpose of this component of the plan, 'minor developments' include construction of, and alterations and additions to:

- i. single dwellings
- ii. attached and detached dual occupancies
- iii. boarding houses not exceeding 300m² and 12 persons
- iv. attached dwellings not more than two storeys
- v. secondary dwellings

Alterations and additions include ancillary structures such as garages, carports, sheds, studios, swimming pools, gazebos and the like.

2.2 Building Sustainability Index (BASIX)

A BASIX Certificate is required to be submitted with a development application for all new residential construction, including alterations and additions to Class 1a, 1b, 2 and 4 buildings with an estimated cost exceeding \$50,000. A BASIX Certificate is also required for the addition of a swimming pool or spa with a combined volume exceeding 40,000 litres. The BASIX certificate certifies that the residential development will meet the required environmental targets for energy, water and thermal comfort.

Notes:

- The BASIX SEPP states that a DCP cannot include provisions that exceed the minimum BASIX standards. However, Willoughby City Council (WCC) encourages applicants to deliver buildings that incorporate sustainability initiatives which exceed minimum regulatory requirements.
- Council cannot approve a development application for residential development that exceeds \$50,000 or a swimming pool/spa with a volume exceeding 40,000 litres if they do not achieve the minimum BASIX score.
- The BASIX certificate must be generated no earlier than three months before the development application date.

Detailed information regarding [BASIX](#) is available on the Department of Planning Industry and Environment web site at:

<https://www.planningportal.nsw.gov.au/basix>

Applicants are encouraged to incorporate, wherever possible best practice design principles and initiatives provided in Attachment 2.

3 Major Developments

3.1 Definition of Major Developments

For the purpose of this component of the plan, 'major developments' include construction of, and alterations and additions to:

- i. residential accommodation comprising: attached dwellings with 3 or more storeys; hostels and boarding houses exceeding 300m² and 12 people; multi dwelling housing; residential flat buildings; seniors housing; and shop top housing
- ii. new buildings, alterations and additions, and refurbishment of commercial, industrial, indoor recreation facilities and institutional developments

Notes:

- Institutional development includes community facilities; educational establishments; childcare centres, place of public worship; public administration building, and the like.
- Indoor recreation facilities include gymnasiums; health studios; squash courts; indoor swimming pools; and, the like.
- Depending on the size and scale, an Authorised Officer may determine that a proposed development does not warrant consideration of the application as a 'major development'.
- An Authorised Officer is a Council employee that has been granted delegated authority to make decisions on behalf of Council.

3.2 General Requirements

As a minimum, all major developments should consider the best practice design principles and initiatives outlined in Attachment 2. In addition, the following apply:

- i. for developments with an estimated cost between \$750,000 and \$5 million, a Sustainability Performance Statement (SPS) is required to be submitted with development applications
- ii. for developments with an estimated cost between \$5 million and \$30 million, projects should seek to achieve a minimum 4-star rating using the most recent and relevant Green Star rating tool (or equivalent)
- iii. for developments with an estimated cost over \$30 million, projects should seek to achieve a minimum 4-star rating and aspire to achieve a 5-star rating using the most recent and relevant Green Star rating tool (or equivalent)

Note:

- Refer to section 3.3.5 for further information on Green Star requirements.

3.3 Sustainability Performance Statement

A Sustainability Performance Statement (SPS) must be prepared by a suitably qualified person and include details of the proposed method intended to be used to achieve an energy efficient and sustainable development. The SPS must justify not including any of the design principles and initiatives provided in Attachment 2.

Prior to the issue of a Construction Certificate a compliance statement, prepared by a suitably qualified person must be submitted to Council to verify that the sustainability provisions agreed to in the SPS, have been included in the Construction Certificate plans.

Note:

- In lieu of a SPS, applicants may choose to submit a Green Star rating report or similar rating tool.

3.4 National Construction Code (NCC)

Section J of the NCC requires the design of certain non-residential buildings to satisfy minimum standards to improve energy efficiency. These provisions relate to Class 3 and Class 5 to 9 buildings. Compliance is required to be shown at the Construction Certificate (CC) stage. However, the design of an environmentally sustainable building needs to be resolved at the development application stage. Therefore, a compliance statement, prepared by a suitably qualified person, must be submitted with the development application for all Class 3 and Class 5 to 9 buildings to confirm that the energy targets can be achieved in accordance with the 'Deemed to Satisfy' or 'Performance Solution' provisions under Section J of the NCC.

Notes:

- The NCC recognises that the Green Star rating tool or NABERS Commitment Agreement can be used to satisfy the 'Performance Solution' provisions under Section J.
- Where BASIX is not applied to alterations and additions to Class 1 and 2 and Class 4 parts of buildings, the NCC Section J provisions will apply to ensure energy efficiency measures are incorporated.

3.5 Green Star

Green Star is a rating system for buildings and fit outs. The design and construction are assessed against nine categories, including; energy, water, waste, and indoor environmental quality. A 4-star rating represents 'Best Practice' and a 5-star rating is considered to be 'Australian Excellence'. A 6-star rating is regarded as 'World Leadership'.

For developments between \$5 million and \$30 million, Council encourages the use of Green Star or similar rating tool. If a Green Star or similar rating tool is used for these types of development, a copy of the report must be submitted with the development application. Council expects applicants to achieve a minimum 4-star Green Star rating or a 'Best Practice' standard using a similar rating tool.

For developments that exceed an estimated cost of \$30 million, Council requires applicants to demonstrate the design of the proposed development can achieve a minimum 4 star Green Star rating or a 'Best Practice' standard using a similar rating tool. However, it is Council's expectation that these types of development will achieve a minimum 5-star ('Australian Excellence') rating under Green Star or similar rating tool.

Note:

- A compliance statement, prepared by a suitably qualified person, must be submitted to Council to verify the Green Star rating can be achieved, prior to the issue of a Construction Certificate.

3.6 National Australian Built Environment Rating Scheme (NABERS)

The Commercial Building Disclosure (CBD) Program is a regulatory program that requires energy efficiency information to be provided in most cases when commercial office space of 1,000m² or more is offered for sale or lease. The program requires an up-to-date Building Energy Efficiency Certificate (BEEC). To obtain a Certificate an accredited assessor is required to undertake an assessment in accordance with the National Australian Built Environment Rating System (NABERS).

The NABERS Energy for offices rating is a national rating system that measures building performance on a scale of zero to six stars. A zero-star rating means the building is performing well below average and has lots of scope for improvement. A five-star rating is deemed to be 'excellent' and a six-star rating indicates a market leading performance, with half the greenhouse gas emissions or water use of a five-star building.

For more information regarding the Commercial Building Disclosure (CBD) Program, please refer to the Australian Government web site at: <http://cbd.gov.au/>

In addition to the mandatory requirements relating to NABERS Energy, and the owner's obligation to obtain a BEEC, NABERS can be used to rate several types of developments, including apartments, hotels, data centres and office buildings. NABERS can also be used to rate water, waste and indoor environment quality.

Following construction and occupation, the following types of development must demonstrate compliance with this DCP by signing a NABERS Energy Commitment Agreement to achieve a minimum five star rating for the base building, whole building or tenancies as appropriate:

- i. new residential developments comprising 10 or more apartments
- ii. new commercial office buildings with a net lettable floor area of 1,000m² or more
- iii. alterations and additions or refurbishment of existing commercial office buildings with a net lettable area of 1,000m² and estimated cost of work over \$750,000

The NABERS Commitment Agreement must be submitted to the Department of Planning Industry and Environment (DPI&E), and a copy provided to Council prior to the issue of a Construction Certificate.

As part of the Commitment Agreement, the performance rating must be undertaken once the building is fully operational and 12 months of energy data collection. Upon completion, a copy of the assessment report should be submitted to Council for its records.

Notwithstanding the above, a NABERS Energy Commitment Agreement is not required where Council is satisfied that:

- iv. the upgrade works would negatively impact on the heritage significance of a heritage listed item under Schedule 5 of WLEP 2012
- v. the costs associated with the energy efficiency upgrade works are unreasonable when compared to the overall estimated cost of works for the alterations, additions and refurbishment

Notes:

- Any application which may impact on a heritage item must be supported by a Heritage Impact Statement prepared by a suitably qualified heritage consultant.

- Where it is asserted that the costs are unreasonable, the development application must be supported by a detailed cost report prepared by a registered Quantity Surveyor, itemising and verifying the cost of the required energy efficiency upgrade works.

For more information regarding [NABERS](https://www.nabers.gov.au/), please refer to the Australian Government web site at: <https://www.nabers.gov.au/>

ATTACHMENT 1 - NCC Building Classifications

The following table identifies the class of building and the different types of development:

Class of Building	Types of development
Class 1a	Single dwellings. This includes a detached house or semi-detached dwellings, semi-detached dual occupancies, terraces, townhouses and villa units with fire resisting walls and no basement carpark.
Class 1b	Boarding house, guest house, hostel, or the like, not exceeding 300m ² and not more than 12 residents.
Class 2	Building containing two or more sole occupancy units. This includes dual occupancies/duplexes (where one unit is above the other), serviced apartments with a kitchen, apartments in shop-top housing, and residential flat buildings.
Class 3	A residential building, other than a Class 1 or 2 building, including; boarding house, hostel, backpackers accommodation, and retirement villages.
Class 4	A single dwelling within a class 5, 6, 7, 8 or 9 building.
Class 5	An office building used for professional or commercial purposes, excluding Class 6, 7, 8 or 9 buildings.
Class 6	Shops and buildings used for supply of services directly to the public, including; café, restaurant, hairdresser's shop, public laundry, showroom, and service station.
Class 7a	A carpark.
Class 7b	Warehouses, storage/display of goods for sale by wholesale.
Class 8	A laboratory or building (factory) for the production, assembly, altering, repairing, packing, finishing or cleaning of goods for trade, sale or gain.
Class 9a	Healthcare building.
Class 9b	Assembly building including halls, libraries, schools, early childhood centres, church, theatre, nightclub/disco, cinema, and the like.
Class 9c	Aged care building.
Class 10a	Non habitable building such as private garage, carport, shed or the like.
Class 10b	Non habitable structures such as fences, retaining walls, swimming pools, or the like.

Further information can be found at:

<https://www.abcb.gov.au/Resources/Publications/Education-Training/Building-classifications>

ATTACHMENT 2 - Best practice design principles and initiatives to satisfy the objectives of this plan.

The following design principles and initiatives should be incorporated into all new developments and where possible, into alterations and additions to existing buildings.

Objective i. - improve the design to achieve sustainable and energy efficient buildings

1. orientate buildings for passive solar control by maximising solar access in winter and minimising heat gain in summer
2. wherever possible, locate living and work areas within the optimum range of 20 degrees West and 30 degrees East of North
3. ensure that solar access to existing solar panels or photovoltaic panels on adjoining properties is maintained for at least 3 hours
4. the area of north facing windows should be at least 10-15% of the floor area of the building
5. maximise natural ventilation through adequate window openings and flow paths
6. use appropriate thermal properties/mass for glazing and building materials
7. use effective external shading structures
8. landscaping: include deciduous trees adjacent to north facing windows and a minimum 70% local indigenous plant species
9. buildings should include roof, wall and ceiling insulation which meets or exceeds minimum NCC Section J requirements
10. wherever possible, minimise east and west glazing area
11. maximise natural daylight availability
12. minimise external light pollution
13. provide energy metering to monitor annual energy consumption (MJ/m²/year) and equivalent CO₂ emissions per annum (energy management system)
14. provide electricity sub-metering for developments that will consume more than 10,000kWh/a
15. provide electricity sub-metering for lighting, air-conditioning and power within each tenancy and strata unit for multi-tenant commercial and industrial developments and strata subdivision of residential apartments
16. specify LED lighting
17. install a building management system (BMS) as a minimum for all major developments
18. select energy efficient systems, appliances and equipment with efficiency controls to minimise use when not required

Objective ii. - reduce waste and promote the adaptable re-use of existing buildings

1. where a proposal involves demolition of an existing building, applicants must demonstrate that consideration has been given to the re-use of whole or part of the existing building
2. consideration must be given to waste minimisation during design, construction and operation
3. applicants must demonstrate that at least 90% of construction and demolition waste (by mass) has been diverted from landfill
4. applicants must consider durable design and construction which is adaptable (future-proof) and low maintenance
5. provision should be made for separation and storage of major waste streams on-site during operation including recyclable waste, general waste and composting
6. waste storage rooms must be easily accessible
7. a target of 70% operational waste shall be diverted from landfill including compostable organics and green waste

Objective iii. - encourage the use of renewable energy and alternative water systems

1. reduces the generation of greenhouse gas emissions by using renewable energy sources
2. consider the installation of photovoltaic and solar thermal hot water systems
3. consider rainwater harvesting and reuse to minimise potable water consumption
4. create more resilient, future-proofed buildings by using renewable energy systems and rainwater harvesting

Objective iv. - improve resident and employee comfort, health and wellbeing

1. maximise daylight while mitigating glare discomfort
2. design for good thermal comfort
3. allow for effective natural cross ventilation whenever possible
4. design mechanically ventilated areas to maintain CO₂ levels under 800ppm
5. consider biophilic design principles including provision of indoor plants
6. pollutant generating activities such as high-volume printing equipment must have a dedicated exhaust system that has a 100% return air exhausted directly to the outside or printers must have a low emission certificate
7. promote sustainable transport management

Objective v. - reduce natural resource consumption and source materials responsibly

1. whenever possible, applicants should minimise natural resource depletion and prioritise responsible materials by specifying materials which:
 - a. have a high recycled/reused content
 - b. are responsibly sourced from non-invasive renewable sources free of modern slavery
 - c. are locally sourced materials
 - d. have transparent ingredients and supply chain
 - e. are free of toxic chemicals
 - f. are free of ozone depleting chemicals
2. the use of life-cycle assessment is encouraged to assist with design decisions and material selection.

Objective vi. - encourage sustainable water management

1. install water efficient appliances, fixtures and fittings
2. apply drought tolerant, low water use and native landscaping
3. use drip irrigation systems with soil moisture sensors
4. apply water sensitive urban design principles
5. use rainwater collection for reuse
6. collect and reuse greywater

Note:

- For further information regarding water management/sustainability, please refer to Part C5 (Water Management) of WDCP.

Objective vii. - consider climate adaptation and resilience

1. major developments are required to submit a Climate Adaptation Plan (CAP) identifying potential risks to people and to the project
2. the CAP must address high and extreme risk factors during the design and operation of the development
3. at minimum, projects should consider the following over the expected lifetime of the building:
 - a. increased average temperatures
 - b. increased maximum temperatures
 - c. increased severity of storm events
 - d. longer periods between rainfall
 - e. increased flooding risk and sea level rise

Objective viii. - promote sustainable transport management

1. major developments are required to submit a Transport Management Plan/Green Travel Plan
2. car parking areas comprising 10 or more car parking spaces must install electric vehicle charging points at the rate of 1 charging point/10 car parking space
3. car parking areas comprising 10 or more car parking spaces must provide at least one car sharing space
4. if mechanical ventilation is required, the mechanically ventilated systems must install carbon monoxide monitoring and variable speed fans (refer to AS 1668.1 Car Park Ventilation)

Note:

- For further information regarding transport management, please refer to Part C4 (Transport Requirements for Developments) of WDCP.

PART K – Development near Lane Cove Tunnel Ventilation Stacks

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PART K – Development near Lane Cove Tunnel Ventilation Stacks

1 Introduction

The Lane Cove Tunnel was completed and opened for traffic in March 2007.

Vehicle emissions from the Lane Cove tunnel are vented via two stacks: one at the western end, Sirius Road (within Lane Cove Council LGA); and one at the eastern end, in the Artarmon industrial area, Marden Street (within Willoughby City Council LGA). Both stacks have potential impacts on land within the Willoughby LGA.

Environmental assessments were undertaken at design stage, with specific regard to potential impacts on existing buildings that are situated in proximity to the stacks. The ventilation system was designed to ensure air impacts were acceptable to all existing buildings.

An air quality assessment process was undertaken by Consulting Air Pollution Modelling & Meteorology (CAMM). This process was undertaken to determine likely characteristics of the plume and identify the zone of influence of the plume (being a 3 dimensional zone also known as buffer volume). The assessment process is detailed in the CAMM report referred to as the 'Lane Cove Tunnel Buffer Zone Analysis Report No: 21/06' dated March 2008.

1.1 Land affected by this Part

This Part of the draft WDCP applies to land within an 800m radius of the stacks in Sirius Road, Lane Cove and Marden Street, Artarmon as indicated in Map A and B in **Attachment 1**.

1.2 Aim

The specific aim of this Part is to ensure a detailed assessment is carried out by a suitably qualified person for any new developments within the affected areas.

1.3 Objectives

- i. ensure new development does not reduce the effectiveness of the ventilation stacks.
- ii. ensure new buildings are not exposed to excessive air pollution from the Lane Cove Tunnel ventilation stacks.

2 Buffer Zone Analysis

The CAMM report defines a building overlay with the purpose to ensure adequate separation between the vent stacks and any future proposed buildings. The derived overlay control has two key parts:

- i. ensure sufficient separation of proposed buildings from the vent stack emissions so that occupants of those buildings would not be exposed to predicted pollutant concentrations that exceed air quality objectives.

- ii. ensure sufficient separation of proposed buildings from the vent stack so that the building wake under any wind conditions would not interact with the vent stack plume and reduce the effectiveness of the vent stack.

The height control/building overlay has been defined using conservative assumptions as to the plume behaviour and the meteorology. Therefore, it is intended that the overlay is used as a 'trigger' to determine if further detailed site-specific investigation for a proposed building is required.

The overlay for each vent stack is presented in the form of a decision tree in **Attachment 2** together with worked examples.

3 Submission Requirements

The proponent is to assess the proposed building development against the objectives in Section 4 using the decision trees as presented in **Attachment 2** unless the development meets any of the exemption criteria listed below.

4 Exemptions

Exemption criteria:

- i. outside the 800m radius from stack (Attachment 1)
- ii. any proposal for a change of use for commercial or industrial premises
- iii. alterations & additions to existing residential, industrial & commercial premises where the buildings floor area and building heights are not increased or altered
- iv. where the property is located within the 800m radius of the Sirius Stack:
 - a. the building height of proposed new work is less than or equal to 13 metres (i.e. AHD 42)
 - b. the building is located at a distance from the Sirius Stack that is greater than five times the building height (when measured from the reference elevation level of 29 metres AHD)
- v. where the property is located within the 800m radius of the Marden St Stack:
 - a. the building height of the proposed new work is less than or equal to 24 metres (ie AHD 98)
 - b. the building is located at a distance from the Marden St Stack that is greater than five times the building height (when measured from the reference elevation level of 74 metres AHD)

Where a result is achieved demonstrating that the building is permitted under the decision tree assessment, no further action is required unless Council considers it necessary to require a site specific investigation. The details showing that this process has been undertaken are to be submitted with the development application.

A site specific investigation may be required due to the limitations of the Decision Tree process which is more applicable to isolated buildings and replacement of existing/structures. For example, two or more new adjacent buildings (that are larger than the existing buildings) may together change the dispersion of the plume through building wake effects and therefore require further investigation. Buildings of unusual shape or materials may also require further investigation.

5 Site Specific Investigation for Non-Exempt Development based on the Decision Tree Assessment

Where a site specific investigation is required the proponent should consult with an appropriately qualified consultant to undertake investigations to demonstrate that:

- i. occupants of the proposed building would not be exposed to pollutant concentrations that exceed air quality objectives.
- ii. the building wake from the proposed building under any wind conditions would not interact with the vent stack plume and reduce the effectiveness of the vent stack.

Site specific investigations should then take into account:

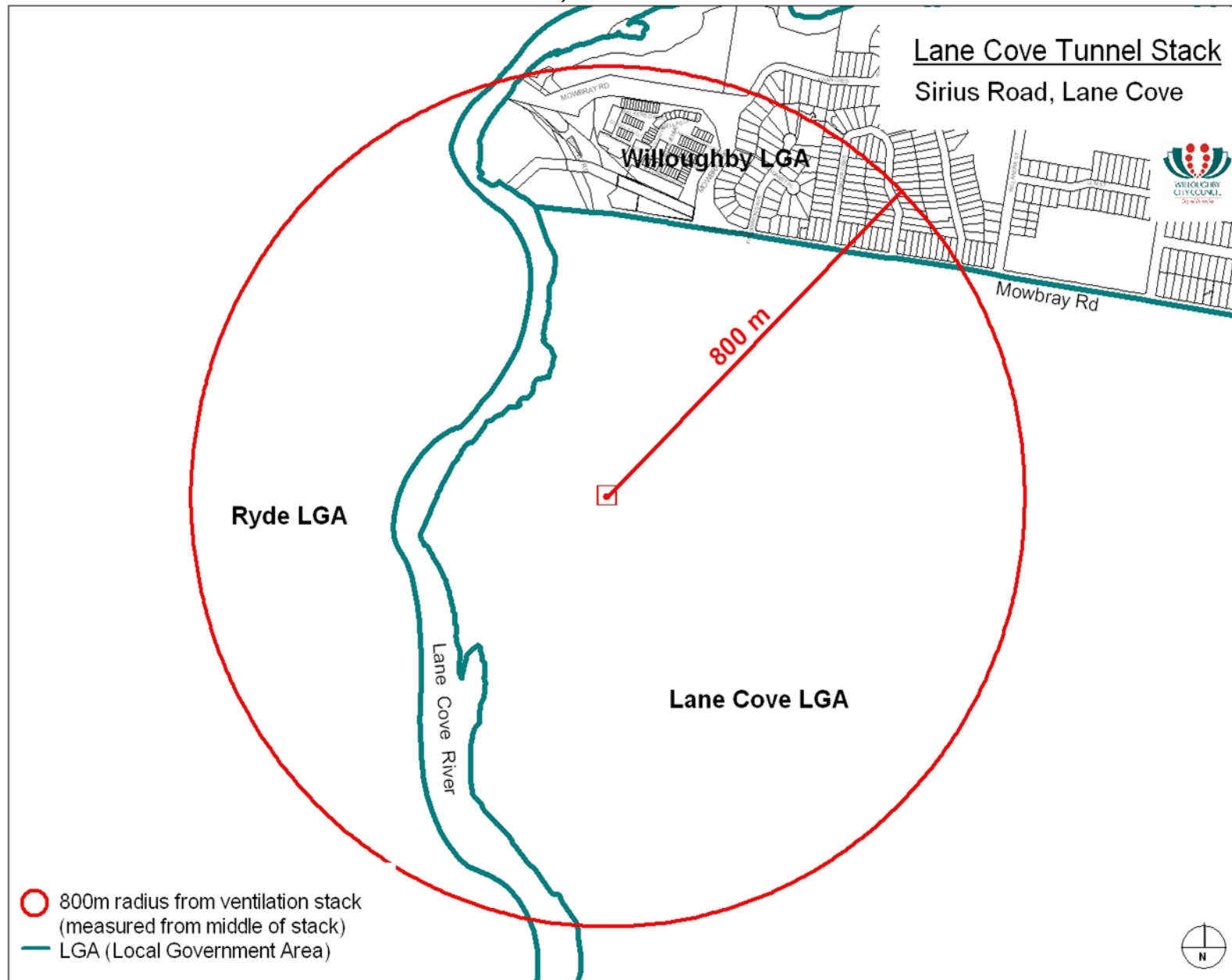
- iii. the detailed geometry of the proposed building.
- iv. any changes to the Office of Environment and Heritage (OEH) air quality objectives.
- v. any changes to ambient air quality at the location of the proposed development.
- vi. any changes to the vent stack pollutant emission rates.
- vii. cumulative changes to the built form array around the ventilation stacks that may have altered the wind dispersion climate experienced by the Lane Cove Tunnel vent stacks.

Where the investigations show that the proposal is still marginal, then it may require physical scale modelling or computational fluid dynamic (CFD) modelling to more accurately determine whether a new building development will satisfy the purpose of the control.

The appropriate methodologies to be used to assess the impacts of the proposal are described in the OEH documents relating to the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW.

At the time of assessment the current up to date published methodologies should be used. Where this is not the case or where another methodology is used consultation should be made with OEH.

ATTACHMENT 1 – Lane Cove Tunnel Stack - Sirius Road, Lane Cove



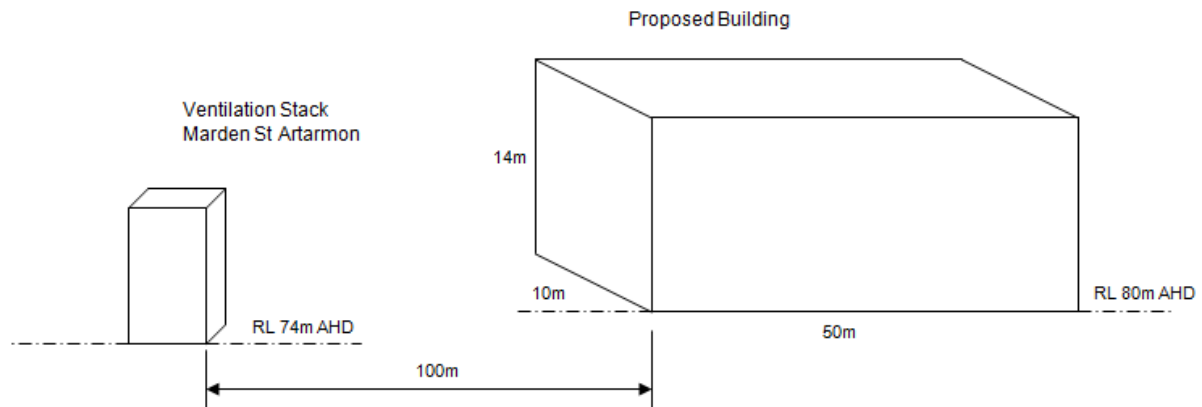
ATTACHMENT 2 – Lane Cove Tunnel Stack - 16 Marden Street, Artarmon



ATTACHMENT 3 - Assessment Procedure for Building Height wake/plume Interaction with Marden Street Vent Stack

Step	Task Description	Action/Result
Step 1	Measure the distance (Rb) from the Marden vent stack to the leading edge of the proposed building:	
	If $R_b > 800$ metres	No height constraint
	If $R_b \leq 800$ metres	Go to step 2
Step 2	Determine the proposed building height (Hb) measured from the ground level elevation at the base of the Marden stack (reference level of 74 metres AHD)	
	If $H_b \leq 24$ metres	Building permitted
	If $H_b > 24$ metres	Go to step 3
Step 3	On a site plan, measure the projected building width (wb) perpendicular to the line joining the building to the Marden vent stack.	Go to step 4
Step 4	Calculate the building aspect ratio (A):	
	$A = H_b \div W_b$, Let $A = 1$ if $H_b < W_b$	Go to step 5
Step 5	Calculate the wake constraint height (Hwake) control using the 'trigger level' curve and compare it to the proposed building height (hb):	
	$H_{wake} = 0.2 \times A \times R_b$	
	If $H_b \leq H_{wake}$	Go to step 6
	If $H_b > H_{wake}$	Reduce building dimensions (Wb or Hb) or go to step 7
Step 6	Calculate the plume constraint height (HT) at distance Rb from the 'limiting curve' and compare it with the proposed building height (Hb):	
	If $R_b > 270$ metres	Building permitted
	If $R_b < 270$ metres, use plume constraint equation $HT = (R_b + 90) \div 3$	Compare Hb to HT
	If $H_b \leq HT$	Building permitted
	If $H_b > HT$	Reduce height (Hb) or go to step 7
Step 7	Detailed site-specific investigation required for the proposed building.	Contact an appropriately qualified Consultant

Marden St Vent Stack Example 1



A building that is 14 metres tall and 10 metres wide by 50 metres long (i.e. squat building) is proposed at a site located 100 metres to the east of the Marden St stack on Hotham Parade. The reference level (RL) at the base of the proposed building is approximately 80 metres AHD.

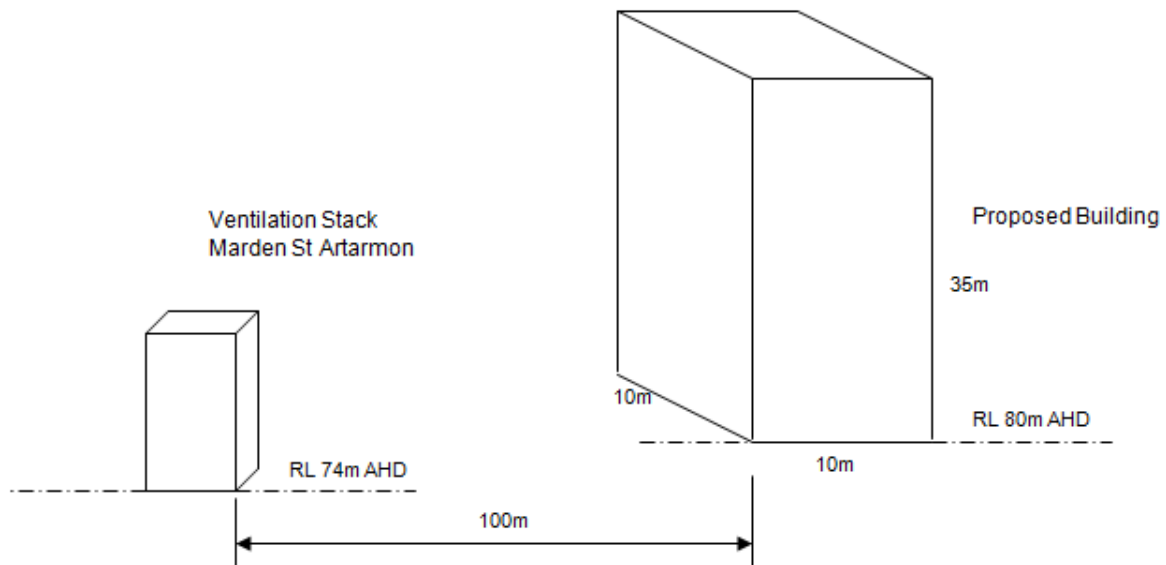
Note:

- The RL ground elevation at the base of the Marden St stack is 74 metres AHD. Need to determine RL of building at ground elevation (in this example we are using 80 metres AHD).

Using the Table Assessment Procedure for Building Height wake/plume Interaction with Marden Street Vent Stack the assessment steps for the proposed building are as follows:

Step	Task Description	Example 1	Action/Result
Step 1	Measure the distance (Rb) from the Marden vent stack to the leading edge of the proposed building:	Rb = 100m	Go to step 2
	If Rb ≤ 800 metres	Rb < 800m	
Step 2	Determine the proposed building height (Hb) measured from the ground level elevation at the base of the Marden stack (reference level of 74 metres AHD)	Hb = height of building on plan - (Stack RL - Building RL) Hb = 14 - (74 - 80) Hb = 14 - (-6) Hb = 20 metres above elevation at stack base	If Hb ≤ 24 metres then building is permitted.

Therefore in this example the building is permitted without further investigation. Building satisfies both the building wake constraint and the pollution plume constraint.

Marden St Vent Stack Example 2

A building that is 35 metres tall and 10 metres wide by 10 metres long (i.e. tall building) is proposed at a site located 100 metres to the east of the Marden St stack on Hotham Parade. The reference level (RL) at the base of the proposed building is approximately 80 metres AHD.

Note:

- The RL ground elevation at the base of the Marden St stack is 74 metres AHD. Need to determine RL of building at ground elevation (in this example we are using 80 metres AHD).

Using the Table Assessment Procedure for Building Height wake/plume Interaction with Marden Vent Stack the assessment steps for the proposed building are as follows:

Step	Task Description	Example 2	Action/Result
Step 1	Measure the distance (R_b) from the Marden vent stack to the leading edge of the proposed building:	$R_b = 100\text{m}$	Go to step 2
	If $R_b \leq 800$ metres	$R_b < 800\text{m}$	
Step 2	Determine the proposed building height (H_b) measured from the ground level elevation at the base of the Marden stack (reference level of 74 metres AHD)	$H_b = \text{height of building on plan} - (\text{Stack RL} - \text{Building RL})$ $H_b = 35 - (74 - 80)$ $H_b = 35 - (-6)$ $H_b = 41$ metres above elevation at stack base	If $H_b > 24$ metres Go to step 3 If $H_b < 24$ metres, then building is permitted.
Step 3	On a site plan, measure the projected building width (w_b) perpendicular to the line joining the building to the Marden vent stack.	Measure the projected building width (w_b). In this case the long side of the building runs north-south, therefore, $w_b = 10\text{m}$	Go to step 4

Step	Task Description	Example 2	Action/Result
Step 4	Calculate the building aspect ratio (A): $A = H_b \div W_b$, Let $A = 1$ if $H_b < W_b$	$A = H_b / W_b$ $A = 41 / 10$ $A = 4.1$ Note if $A < 1$ (i.e. building width is greater than building height) let $A = 1$. However, in this case $A = 4.1$	Go to step 5
Step 5	Calculate the wake constraint height (H_{wake}) control using the 'trigger level' curve and compare it to the proposed building height (H_b): $H_{wake} = 0.2 \times A \times R_b$ If $H_b \leq H_{wake}$	$H_{wake} = 0.2 \times A \times R_b$ $H_{wake} = 0.2 \times 4.1 \times 100$ $H_{wake} = 82$ $H_b = 41$ and $H_{wake} = 82$ $H_b \leq H_{wake}$ therefore go to Step 6 (i.e. building satisfies the 'wake' constraint but still needs to be tested against the 'plume' constraint).	Go to step 6
	If $H_b > H_{wake}$	If $H_b > H_{wake}$	Reduce building dimensions (W_b or H_b) or go to step 7
Step 6	Calculate the plume constraint height (HT) at distance R_b from the 'limiting curve' and compare it with the proposed building height (H_b):	Given distance from stack (R_b) is less than 270 metres we need to use the plume constraint equation which is: $HT = (R_b + 90) \div 3$ $HT = (100 + 90) \div 3$ $HT = 63m$ $H_b = 41m$ Compare H_b to HT $H_b < HT$ therefore building is permitted.	Building permitted
	If $R_b > 270$ metres		Building permitted
	If $H_b \leq HT$		Building permitted
	If $H_b > HT$		Reduce height (H_b) or go to step 7
Step 7	Detailed site-specific investigation required for the proposed building.		Contact an appropriately qualified Consultant

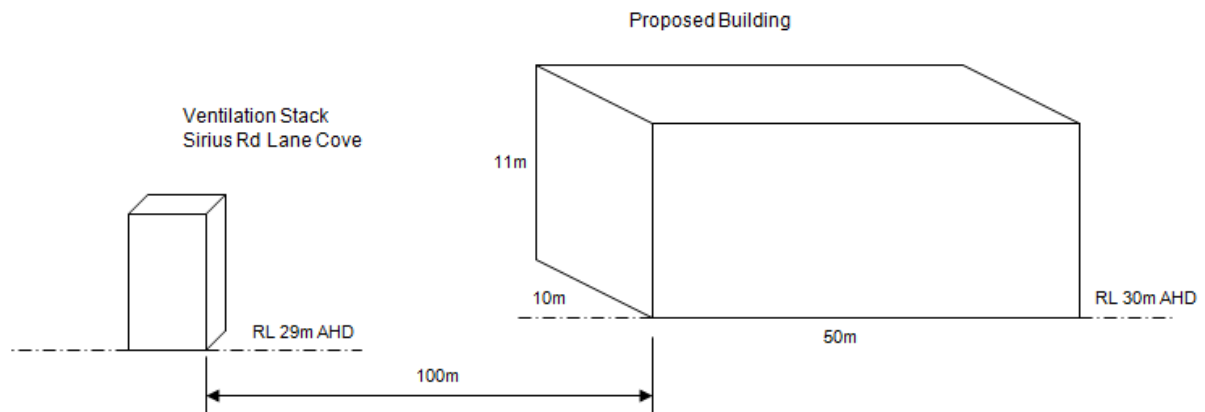
Note:

- that if H_b was greater than H_{wake} or HT in the steps 5 or 6 above, the dimensions of the proposed building would need to be reduced until compliance was achieved or further investigations must be conducted to determine if the proposed building can be permitted.

ATTACHMENT 4 - Assessment Procedure for Building Height wake/plume Interaction with Sirius Rd Vent Stack

Step	Task Description	Action/Result
Step 1	Measure the distance (Rb) from the Sirius vent stack to the leading edge of the proposed building:	
	If $R_b > 800$ metres	No height constraint
	If $R_b \leq 800$ metres	Go to step 2
Step 2	Determine the proposed building height (Hb) measured from the ground level elevation at the base of the Sirius stack (reference level of 29 metres AHD)	
	If $H_b \leq 13$ metres	Building permitted
	If $H_b > 13$ metres	Go to step 3
Step 3	On a site plan, measure the projected building width (wb) perpendicular to the line joining the building to the Sirius vent stack.	Go to step 4
Step 4	Calculate the building aspect ratio (A):	
	$A = H_b \div W_b$, Let $A = 1$ if $H_b < W_b$	Go to step 5
Step 5	Calculate the wake constraint height (Hwake) control using the 'trigger level' curve and compare it to the proposed building height (hb):	
	$H_{wake} = 0.2 \times A \times R_b$	
	If $H_b \leq H_{wake}$	Go to step 6
	If $H_b > H_{wake}$	Reduce building dimensions (Wb or Hb) or go to step 7
Step 6	Calculate the plume constraint height (HT) at distance Rb from the 'limiting curve' and compare it with the proposed building height (Hb):	
	If $R_b > 150$ metres	Building permitted
	If $R_b < 40$ metres, $HT = 20$ metres If $40 \leq R_b < 120$ metres, $HT = 0.5 \times R_b$ metres If $120 \leq R_b < 150$, $HT = 2(R_b - 90)$ metres	Compare Hb to HT
	If $H_b \leq HT$	Building permitted
	If $H_b > HT$	Reduce height (Hb) or go to step 7
Step 7	Detailed site-specific investigation required for the proposed building.	Contact an appropriately qualified Consultant

Sirius Road Vent Stack Example 1



A building that is 11 metres tall and 10 metres wide by 50 metres long (i.e. squat building) is proposed at a site located 100 metres to the east of the Sirius Rd stack. The reference level (RL) at the base of the proposed building is approximately 30 metres AHD.

Note:

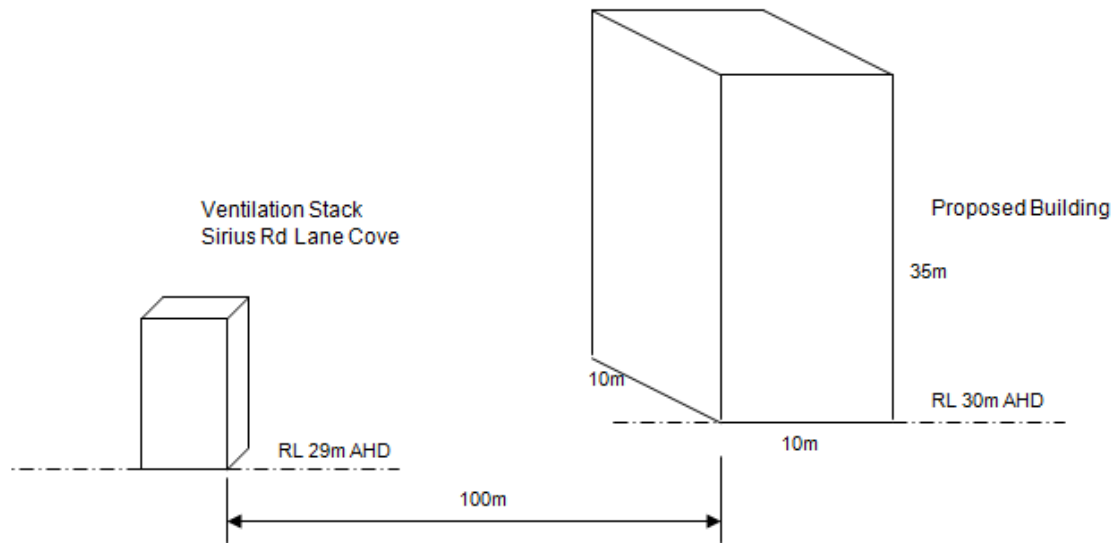
- The RL ground elevation at the base of the Sirius Rd stack is 29 metres AHD. Need to determine RL of building at ground elevation (in this example we are using 30 metres AHD).

Using the Table Assessment Procedure for Building Height wake/plume Interaction with Sirius Rd Vent Stack the assessment steps for the proposed building are as follows:

Step	Task Description	Example 1	Action/Result
Step 1	Measure the distance (R_b) from the Sirius vent stack to the leading edge of the proposed building:	$R_b = 100\text{m}$	Go to step 2
	If $R_b \leq 800$ metres	$R_b < 800\text{m}$	
Step 2	Determine the proposed building height (H_b) measured from the ground level elevation at the base of the Sirius stack (reference level of 29 metres AHD)	$H_b = \text{height of building on plan} - (\text{Stack RL} - \text{Building RL})$ $H_b = 11 - (29 - 30)$ $H_b = 11 - (-1)$ $H_b = 12 \text{ metres above elevation at stack base}$	If $H_b \leq 13$ metres then building is permitted.

Therefore in this example the building is permitted without further investigation. Building satisfies both the building wake constraint and the pollution plume constraint.

Sirius Rd Vent Stack Example 2



A building that is 35 metres tall and 10 metres wide by 10 metres long (i.e. tall building) is proposed at a site located 100 metres to the east of the Sirius Rd stack. The reference level (RL) at the base of the proposed building is approximately 30 metres AHD.

Note:

- The RL ground elevation at the base of the Sirius Rd stack is 29 metres AHD. Need to determine RL of building at ground elevation (in this example we are using 30 metres AHD).

Using the Table Assessment Procedure for Building Height wake/plume Interaction with Sirius Vent Stack the assessment steps for the proposed building are as follows:

Step	Task Description	Example 2	Action/Result
Step 1	Measure the distance (R_b) from the Sirius vent stack to the leading edge of the proposed building:	$R_b = 100\text{m}$	Go to step 2
	If $R_b \leq 800$ metres	$R_b < 800\text{m}$	
Step 2	Determine the proposed building height (H_b) measured from the ground level elevation at the base of the Sirius stack (reference level of 29 metres AHD)	$H_b = \text{height of building on plan} - (\text{Stack RL} - \text{Building RL})$ $H_b = 35 - (29 - 30)$ $H_b = 35 - (-1)$ $H_b = 36$ metres above elevation at stack base	If $H_b > 13$ metres Go to step 3
Step 3	On a site plan, measure the projected building width (w_b) perpendicular to the line joining the building to the Sirius vent stack.	Measure the projected building width (w_b). In this case the long side of the building runs north-south, therefore, $w_b = 10\text{m}$	Go to step 4

Step	Task Description	Example 2	Action/Result
Step 4	Calculate the building aspect ratio (A): $A = H_b \div W_b$, Let $A = 1$ if $H_b < W_b$	$A = H_b / W_b$ $A = 36 / 10$ $A = 3.6$ Note if $A < 1$ (i.e. building width is greater than building height) let $A = 1$. However, in this case $A = 3.6$	Go to step 5
Step 5	Calculate the wake constraint height (H_{wake}) control using the 'trigger level' curve and compare it to the proposed building height (H_b): $H_{wake} = 0.2 \times A \times R_b$ If $H_b \leq H_{wake}$	$H_{wake} = 0.2 \times A \times R_b$ $H_{wake} = 0.2 \times 3.6 \times 100$ $H_{wake} = 72$ $H_b = 36$ and $H_{wake} = 72$ $H_b \leq H_{wake}$ therefore go to Step 6 (i.e. building satisfies the 'wake' constraint but still needs to be tested against the 'plume' constraint).	Go to step 6
	If $H_b > H_{wake}$	If $H_b > H_{wake}$	Reduce building dimensions (W_b or H_b) or go to step 7
Step 6	Calculate the plume constraint height (HT) at distance R_b from the 'limiting curve' and compare it with the proposed building height (H_b):	Given distance from stack (R_b) is less than 120 metres we need to use the plume constraint equation which is: $HT = (0.5 \times R_b)$ $HT = (0.5 \times 100)$ $HT = 50m$ $H_b = 36m$ Compare H_b to HT $H_b < HT$ therefore building is permitted.	
	If $R_b > 150$ metres		Building permitted
	If $H_b \leq HT$		Building permitted
	If $H_b > HT$		Reduce height (H_b) or go to step 7
Step 7	Detailed site-specific investigation required for the proposed building.		Contact an appropriately qualified Consultant

Note:

- that if H_b was greater than H_{wake} or HT in the steps 5 or 6 above, the dimensions of the proposed building would need to be reduced until compliance was achieved or further investigations must be conducted to determine if the proposed building can be permitted.

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Part L: Place based plans

1 Introduction

This Part of the *draft WDCP* includes guidelines and additional controls for developments in the Chatswood Central Business District (CBD) and the local centres within the Willoughby Local Government Area (LGA).

Note:

- The performance criteria and controls provided in Part B (Residential Development) and Part D (Commercial Development) of the draft WDCP apply to the Chatswood CBD and the local commercial/retail centres. However, for any inconsistency between those Parts and this Part, the controls under this Part prevail.

1.1 Aim

The specific aim of this Part is to ensure commercial and residential development is carried out in accordance with strategic planning for these localities in a manner that sustains and enhances the economic and environmental qualities of the Willoughby LGA, and the health and wellbeing of those local communities.

1.2 Objectives

The objectives of this Part are to:

- establish a strong framework to guide future development in the Chatswood CBD and the local retail/commercial centres
- provide capacity for future growth by increasing residential densities and creating job opportunities by making provision for additional commercial floor space
- achieve exceptional design, and distinctive, resilient and vibrant centres
- create attractive and thriving local retail/commercial centres
- protect the heritage values of heritage listed items and ensure any new development integrates with the character of heritage conservation areas
- provide greening on and around buildings, and improve pedestrian and cycle links

2 Strategies/Plans

Council has undertaken a number of studies and prepared several strategies and plans to set the direction for future commercial and residential development in key locations within the Willoughby LGA.

2.1 *Chatswood CBD Planning and Urban Design Strategy to 2036 (Chatswood CBD Strategy)*

The *Chatswood CBD Planning and Urban Design Strategy to 2036 (Chatswood CBD Strategy)* aims to guide future private and public development over the next 20 years for the Chatswood CBD.

The strategy was adopted by Council in June 2017 and endorsed by the DPIE in August 2020. The strategy includes expansions to the north and south of the existing CBD and provides growth prospects for commercial development in the B3

Commercial Core zone whilst creating additional residential opportunities as part of the B4 Mixed Use zone. The Strategy can be viewed on Council's website at:

<https://www.willoughby.nsw.gov.au/Development/Plan/Planning-Rules/Planning-Strategies#section-4>

2.2 *Willoughby Local Centres Strategy (WLCS) 2036*

The *Willoughby Local Centres Strategy (WLCS) 2036* aims to revitalise the local economy and provides the framework for future planning controls. Those centres are:

- a. Artarmon; located on the east and western side of the Artarmon railway station.
- b. Castlecrag; situated on Edinburgh Road between Eastern Valley Way and Rutland Avenue/The Postern.
- c. North Willoughby; located around the intersection of Penshurst Street and Victoria Avenue, extending south to Patrick Street.
- d. High Street; bounded by McClelland Street and Glover Street.
- e. Naremburn; located on the western side of Willoughby Road and bounded by Quiamong Street, Bongalong Street and Glenmore Street.
- f. Northbridge; situated along the major arterial roads of Sailors Bay Road, Eastern Valley Way and Strathallen Avenue.
- g. Penshurst Street; located along and north of Mowbray Road.
- h. Willoughby South; located along Willoughby Road and branching off Frenchs Road.

The Strategy provides an indicative master plan for each local centre. This plan, which has been adopted by Council, identifies key features to promote growth and show how future development can be achieved alongside opportunities for public domain improvements.

The Strategy also includes controls with a diagram to show how the desired scale of development can be achieved for each local centre.

Any variations from the adopted master plans and/or the layout and building envelopes identified in the scale of development diagrams must be justified, having regard to the performance criteria and controls under this Part and any other relevant Parts of the *draft WDCP 2021*. A copy of the Strategy can be viewed on Council's website at:

<https://www.willoughby.nsw.gov.au/Development/Plan/Planning-Rules/Planning-Strategies#section-4>

2.3 *Draft Willoughby Local Environmental Plan 2020*

To ensure the objectives, vision and guidelines of the adopted strategies are met, the *draft WLEP 2020* includes controls for active street frontages, and increased height limits and floor space for commercial buildings and mixed use developments. New clauses have been included to ensure sun access is provided to public spaces, solar access is maintained to the important areas in Chatswood, design excellence is sought, urban heat impacts are addressed, minimum lot sizes are provided for commercial and mixed use developments, and minimum non-residential floor space is provided for mixed use developments in the outer parts of the Chatswood CBD beyond the commercial core.

3 Public Art & Prominent Corner Sites

To enhance the visual appearance of buildings in gateway or highly visible locations such as prominent street corner sites, major developments such as retail centres or shop top housing should make provision to integrate public art and/or unique façade treatment.

A major development proposal may be required to submit an Art Plan which identifies opportunities to integrate public art in accordance with Council's Public Art Policy.

Prominent corner sites often define the main entry points into a commercial/business centre. Buildings on prominent corner sites should incorporate subtle changes in height or façade treatment by including measures such as:

- partial additional storey or parapet extension
- splayed setbacks
- public art
- landscape treatment
- other elements such as clock towers or spires

A change in colours or materials can also help to differentiate or accentuate a building on a prominent corner site.

4 Chatswood CBD

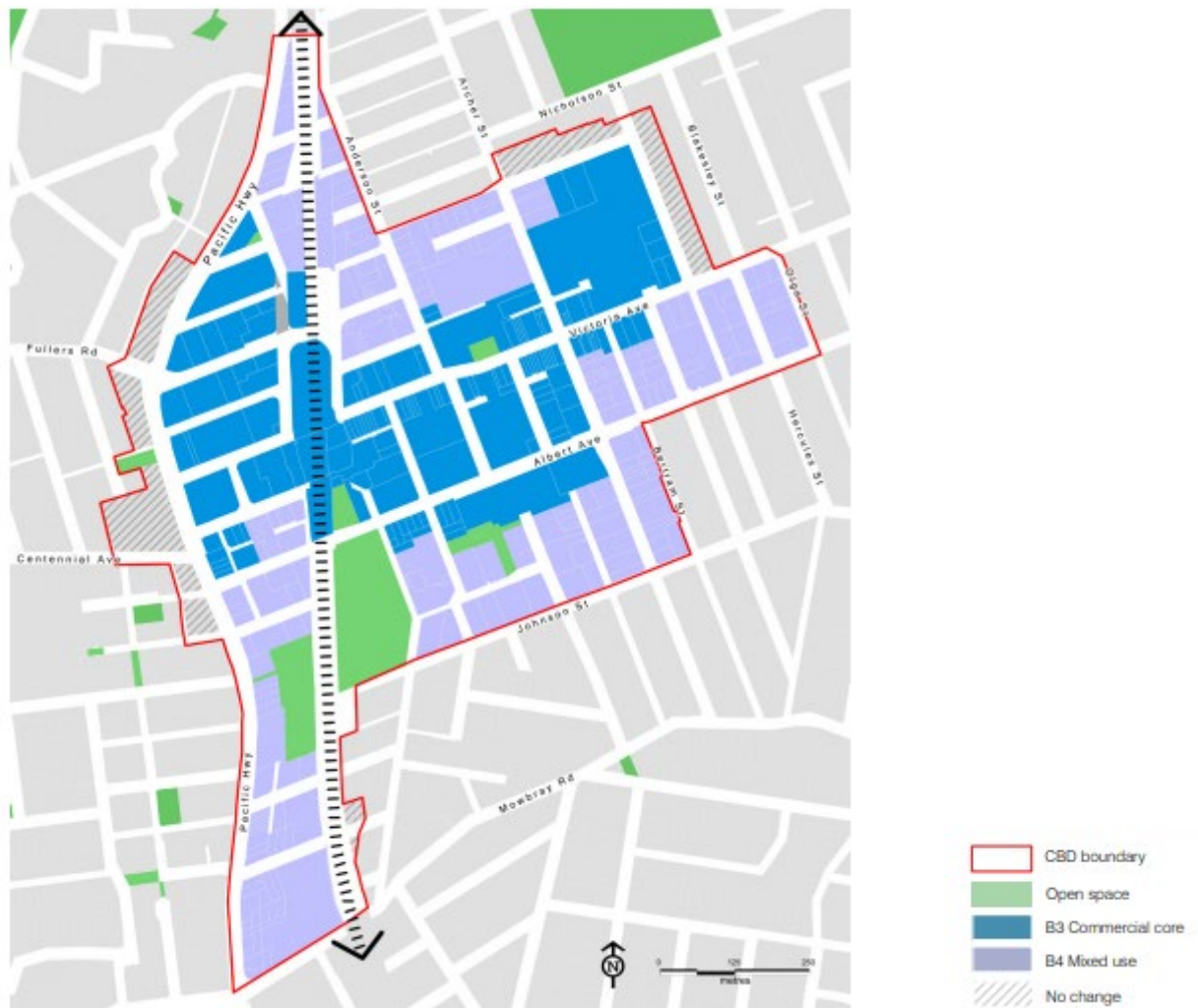
4.1 Character Statement

Chatswood is identified as a strategic centre within the Sydney Metropolitan area. The CBD includes a vibrant mix of offices, major retail facilities, health facilities, educational establishments, cultural facilities, and high density residential accommodation. At its centre is a rail and bus interchange that provides direct connections to the Sydney CBD, other strategic centres, and residential areas across Sydney. Connectivity has been heightened by the opening of the Metro Northwest in 2019 with a new platform at Chatswood Station. Connectivity will be further improved by the opening of the Metro City and Southwest in 2024.

The Chatswood CBD Strategy found that without modifications to the current planning controls, there is a risk the market will fail to deliver the desired jobs growth. Therefore, it is proposed to confirm the B3 Commercial Core zone and lift height and FSR controls to create investment confidence in office development and protect these employment hubs from residential incursions. In addition, it is proposed to establish a B4 Mixed Use zone to provide a mix of commercial and residential around the B3 Commercial Core in accordance with Figure 1 (Chatswood CBD Strategy Land Use Map). This will help to maximise returns on existing and planned investment in public infrastructure, and give Chatswood the opportunity to be restored as a major employment centre in Metropolitan Sydney.

The proposed controls under the *draft WLEP 2020* and this Part of the *draft WDCP 2021* aim to maintain a compact, walkable city centre, and create exceptional urban design. The proposed controls also aim to deliver easy pedestrian and bicycle linkages, and good public domain, where the local character and heritage are embraced, and the greening of the centre is achieved.

Figure 1: Chatswood CBD Strategy Land Use Map

**Note:**

- The proposed zoning changes recommended in the Strategy have been included in the *draft WLEP 2020*.

4.2 Performance criteria

Proposed development in the Chatswood CBD should:

- i. be in accordance with permitted development within the B3 Commercial Core zone, which prioritises non-residential land uses.
- ii. allow residential growth as part of mixed use development surrounding the B3 Commercial Core within the CBD
- iii. maintain a diverse mix of uses, including; retail, medical, educational, health, cultural and recreational activities
- iv. involve amalgamated sites to achieve optimum development outcomes
- v. create new publicly accessible spaces with links to existing public places
- vi. embellish and/or add to existing public spaces
- vii. adopt travel demand management to support active and sustainable transport
- viii. deliver excellence in urban design

- ix. provide greening of the streetscape as well as green areas on and around new buildings to improve the visual quality, amenity for workers and visitors, and reduce the impacts of urban heat island effects
- x. ensure sun access is provided to public places
- xi. reinforce Victoria Avenue as the primary pedestrian spine
- xii. increase activation of side streets from Victoria Avenue
- xiii. create a pattern of mid-block links along the eastern part of the centre
- xiv. ensure roof top communal open spaces are designed to address issues of quality, safety and usability

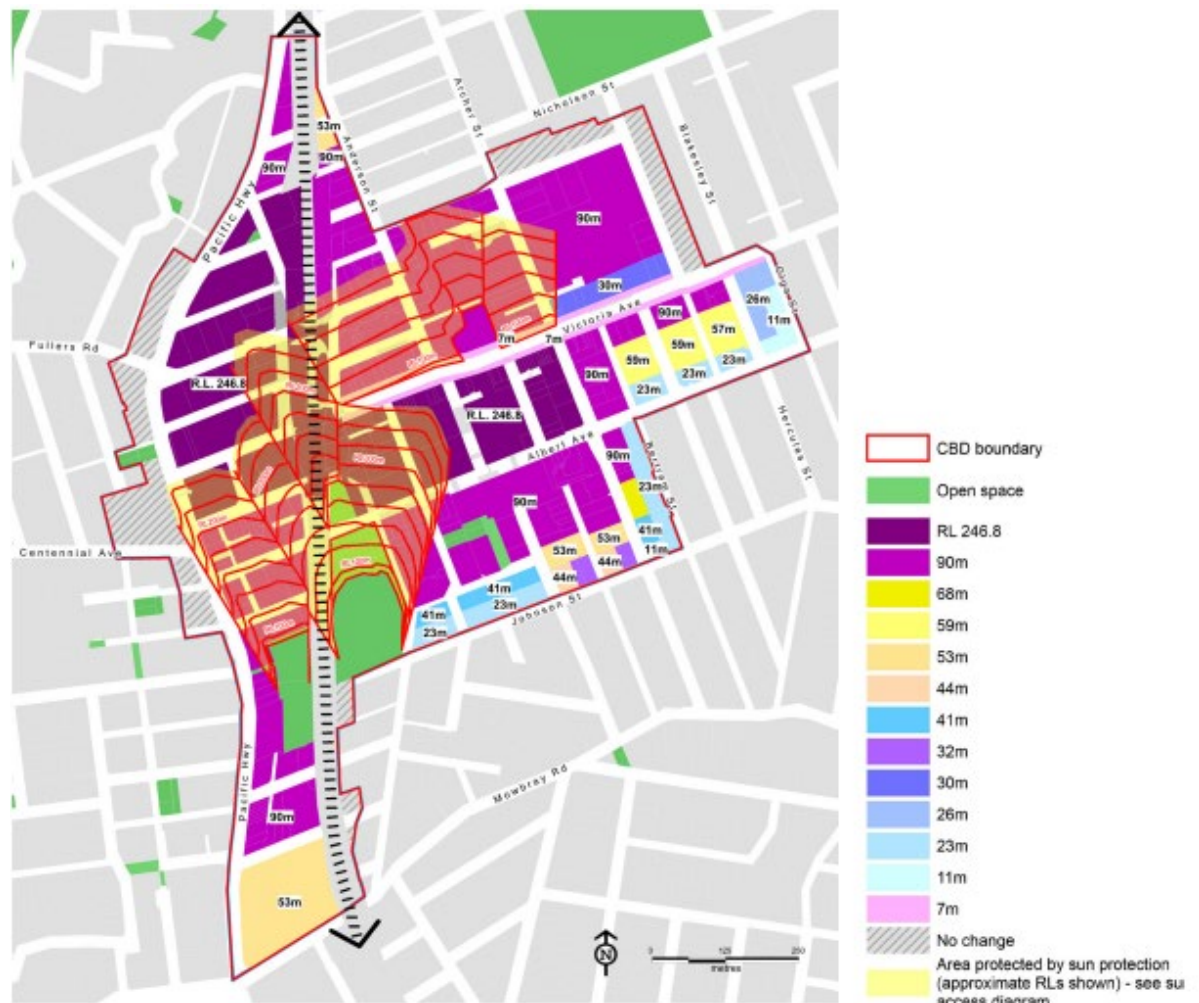
4.3 Controls for the Chatswood CBD.

4.3.1 Built form:

a. Height of Buildings:

The maximum height of buildings are identified on the Height of Buildings Map under the *draft WLEP 2020*. The following diagram identifies the proposed increase in the height of buildings and maximum RL's to ensure certain public spaces in the Chatswood CBD are not impacted by excessive overshadowing.

Figure 2: Chatswood CBD Strategy Height of Buildings Map



- b. Sun access protection to key public spaces and the South Chatswood Conservation Area:

Provisions to protect certain public spaces in the Chatswood CBD and the South Chatswood Conservation Area from excessive overshadowing are provided in Clause 6.x (Solar access) of the *draft WLEP 2020*. The following diagram identifies the areas that need to be protected from excessive overshadowing.

Figure 3: Chatswood Strategy Sun Access Protection Map



- c. Slender towers:

To achieve slender towers and adequate building separation, the maximum floor plate at each level of a development should be no more than:

- i. 2000m² GFA for office developments
- ii. 700m² GFA for residential towers above the podium level in the mixed use zone

Note:

- Where there is more than one tower on the same site, towers are not to be linked above the podium; they should operate independently regarding lifts and services.

d. Lot pattern

Traditional lot patterns should be retained with building widths between 6-12m provided along Victoria Avenue east.

e. Vehicular access

To minimise streetscape impacts and ensure vehicle entry points are rationalised, only one entry area into and exiting a site is permitted.

f. Loading/unloading facilities

All loading docks, including provision for garbage trucks and residential removal trucks are to be located within basement areas with adequate on-site manoeuvrability to ensure vehicles can enter and leave the site in a forward direction.

Note:

- Council does not generally support mechanical systems, such as turntables to facilitate vehicles entering and leaving the site in a forward direction.

g. Site isolation:

- Where site isolation is unavoidable or inadequate areas are available within the basement level, buildings should provide for joined basement areas with 'break through' walls to provide vehicle access to adjoining sites.
- Similarly, where site isolation is unavoidable, zero setback podiums should be provided with 'break through' walls to encourage future efficient sharing of infrastructure.

h. Substations:

Substations are to be provided within buildings, not within the street, open space, or setbacks and not facing key active street frontages.

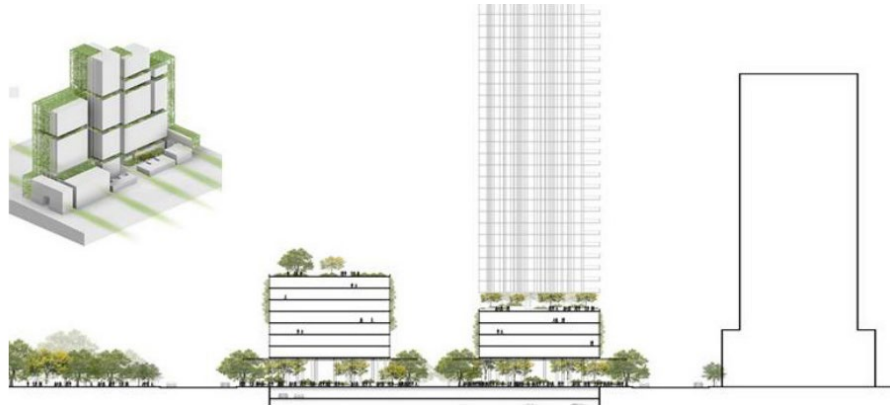
4.3.2 Greening the Chatswood CBD

A range of approaches will be applied on a site-specific basis to ensure permeability, provide publicly accessible open space and a 'green' ground plane. Over time these will develop a comprehensive network for the centre of landscape and open space to deliver a green, well-connected CBD. However, the following controls apply to all high rise buildings:

- all roofs up to 30m from the ground are to be green roofs (these are to provide a green contribution to the street and a balance of passive and active green spaces that maximise solar access)
- a minimum of 20% of the site is to be provided as soft landscaping, which may be located on the ground, podium, and roof top levels of buildings (soft landscaping must comprise a minimum depth of 600mm)
- provision for 'green' walls is also encouraged

The images below describe the approach to be applied in the Chatswood CBD and more broadly for high rise commercial and residential buildings and their surrounds.

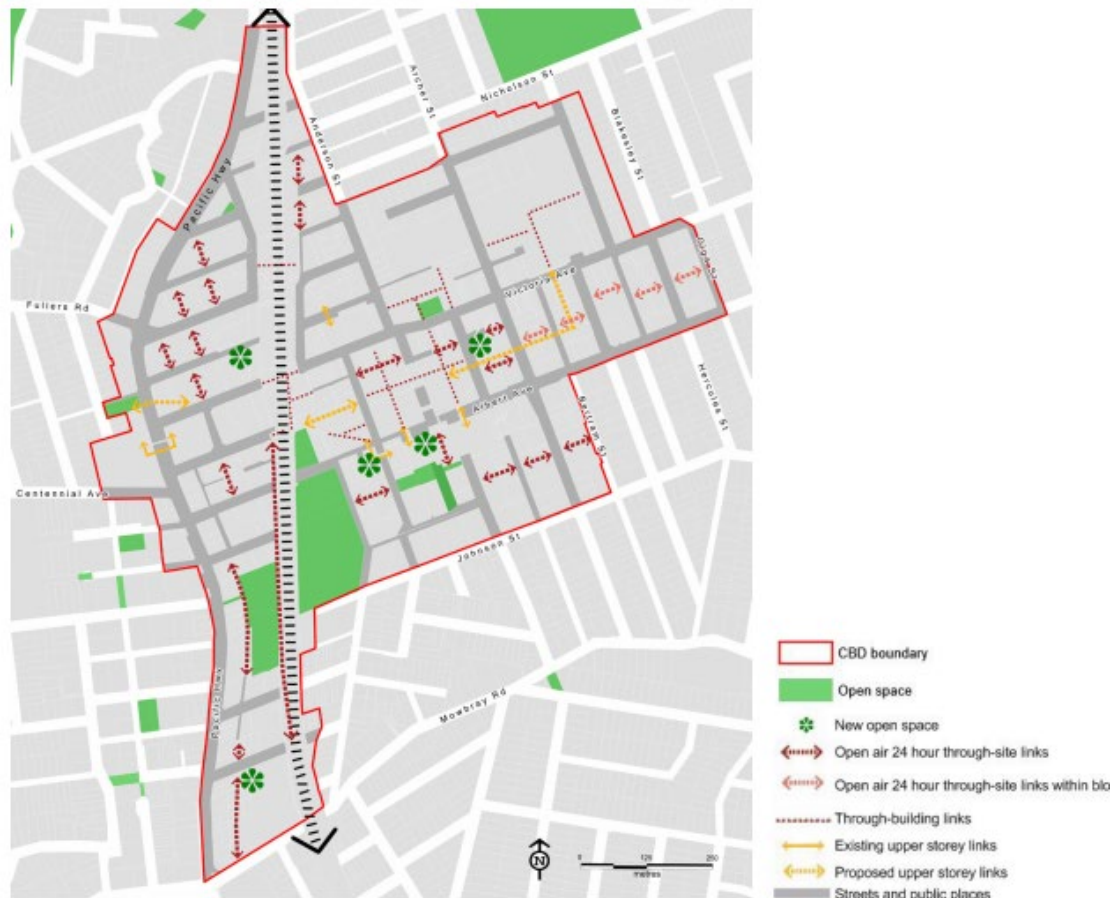
Figure 4: Greening the CBD



4.3.3 Links and public realm

- a) All proposals must have regard to the potential for through links to public places. Pedestrian and cycling linkages will be sought in order to improve existing access within and through the CBD (refer to Figure 5). New linkages may also be sought where these are considered to be of public benefit. All such links must be:
 - i. a minimum of 4m wide.
 - ii. provided with public rights of access and designed with adequate width, sympathetic landscaping and passive surveillance.
- b) Public realm or areas accessible by public on private land should be included in all B3 and B4 redeveloped sites, and:
 - i. be designed to respond to context and nearby public domain
 - ii. be visible from the street and easily accessible
 - iii. be accompanied by public rights of way or similar to achieve a permanent public benefit

Figure 5: Chatswood CBD Strategy Links and Open Space Map



4.3.4 Setbacks and street frontage heights

- a) Minimum setbacks and maximum street frontage heights are to be provided based on Figure 6, which reflect requirements for the following different parts of the Chatswood CBD:
- i. **Victoria Avenue Retail Frontage:**
Maximum 7m street wall height at front boundary;
Minimum 6m setback above street wall to tower
 - ii. **Urban Core:**
Maximum 24m street wall height at front boundary;
Minimum 6m setback above street wall to tower
 - iii. **Office Core Frontage:**
4-12m maximum street wall height at front boundary;
Minimum 6m setback above street wall to tower
 - iv. **Mixed Use Frontage with Commercial Ground Floor:**
6-14m maximum street wall height at front boundary;
Minimum 3m setback above street wall to tower
 - v. **Pacific Highway Frontage:**
Minimum 4m setback at ground level from front boundary (with exception of heritage sites);
Maximum 7m street wall height;
Minimum 6m setback above street wall to tower

- vi. Southern Precinct:
Maximum 6m setback at ground level from front boundary;
No setback from podium to tower
- vii. Albert Avenue South:
Minimum 3m setback at ground level from front boundary, with intermitted wider open space;
Maximum 24m street wall height;
3m setback above street wall to tower
- viii. Anderson Street Interface:
Minimum 3m setback at ground level from front boundary;
6-14m maximum street wall height;
Minimum 1m setback above street wall to tower
- ix. Bertram Street Interface:
Minimum 6m setback at ground level from front boundary;
Maximum 7m street wall height;
Minimum 3m setback above street wall to tower
- x. Albert Avenue North and Olga Street Interface:
Minimum 3m setback at ground level from front boundary;
6-14m maximum street wall height;
Minimum 1m setback above street wall to tower
- xi. Johnson Street Interface:
Minimum 12m setback at ground level from front boundary;
No setback from podium to tower

Notes:

- With setbacks of 3m or more, including the Pacific Highway, deep soil planting for street trees is to be provided.
- Setbacks greater than the minimum are encouraged, particularly at the interface with low density residential conservation areas.
- Street wall heights lower than the maximum are encouraged at the interface with low density residential conservation area.
- Where adjacent links or pathways involving public rights of way (not streets unless appropriate), stepped podiums are sought.

- b) All towers above podiums in the B3 Commercial Core and B4 mixed Use zone are to be setback from all boundaries a minimum 1:20 ratio of the setback to building height. This means if a building is:

- i. a total height of 30m, a minimum setback from the side boundary of 1.5m is required for the entire tower on any side
- ii. a total height of 60m, a minimum setback from the side boundary of 3m is required for the entire tower on any side
- iii. a total height of 90m, a minimum setback from the side boundary of 4.5m is required for the entire tower on any side
- iv. a total height of 120m, a minimum setback from the side boundary of 6m is required for the entire tower on any side
- v. a total height of 150m, a minimum setback from the side boundary of 7.5m is required for the entire tower on any side
- vi. a total height of 160m, a minimum setback from the side boundary of 8m is required for the entire tower on any side

Notes:

- The required setback will vary depending on height and is not to be based on setback averages, or a stepped approach, but the full setback.

- Setbacks greater than the minimum are encouraged, particularly in locations at the interface with low density residential conservation area.
- c) Separation of buildings must be provided in accordance with the Apartment Design Guide for residential apartments within a mixed use development
 - d) Commercial uses must have a minimum 6m setback from all boundaries above the street level wall height

Figure 6: Chatswood CBD Strategy Setbacks and Street Frontage Heights Map



4.4 Additional controls for specific locations.

4.4.1 Victoria Avenue East Retail Frontage

Victoria Avenue is the heart of Chatswood's retail activity and its shops contribute to the enduring quality of the centre. To maintain the great public spaces and the urban design quality of developments fronting Victoria Avenue, the following principles apply:

- i. clear and accessible vertical circulation
- ii. public use of rooftop spaces
- iii. provision of links to neighbouring sites
- iv. provision of car parking access from neighbouring sites

The following diagram provides an example of envisioned development along the Victoria Avenue retail frontages.

Figure 7: Section of Victoria Avenue Frontage



4.4.2 Pacific Highway – Green Setback

The eastern side of the Pacific Highway is required to provide a 4m wide deep soil zone setback and the western side is required to provide a 6m wide deep soil zone setback.

In addition, Council is seeking an unobstructed shared pedestrian and cycle path along the eastern side of the Pacific Highway (being within the Chatswood CBD). Dimensions are to be based on a 1.5m wide landscape verge and 3m wide shared path. This should be factored into redevelopment of any site fronting the Pacific Highway and may involve encroachments into the abovementioned 4m wide deep soil zone setback within a site. If this is the case, a public right of way will be required.

4.4.3 Interface with Low Density Residential Conservation Areas

Developments at the interface with Low Density Residential Conservation Areas (i.e. opposite) are required to be designed having regard to the surrounding low density heritage context, with the objective being to minimise impacts by:

- i. utilising design, façade treatment and high quality materials and finishes
- ii. maximising setbacks and minimising street wall heights to provide separation and reduce bulk and scale (setbacks above minimum requirements may be sought in these locations).

- iii. providing deep soil landscape planting at ground, and landscaping on podium levels, and where possible, the upper levels

5 Artarmon local centre

5.1 Character Statement

The main component of the Artarmon local centre is situated along the western side of Hampden Road, located adjacent to the Artarmon railway station. A large portion of this part of the centre is within the Artarmon Heritage Conservation Area. Shops on the western side of Hampden Rd currently provide a range of local needs and services such as post office, banking, health services, takeaway food, cafes and restaurants. There are high rise residential units behind the main Artarmon shopping area to the west.

Wilkes Plaza, which is within the Artarmon Heritage Conservation Area, is located on the eastern side of the railway station. It provides a pleasant, popular open space area enclosed by cafes, restaurants and shops as well as being a well-used pedestrian thoroughfare.

The Centre sits in a valley, with the land climbing to the west of the railway line and the Wilkes Avenue plaza at a low point. Hampden Lane, to the rear of Hampden Road, is approximately level with the retail rooftops (two levels above Hampden Rd). This slope results in an approximately 2 metre difference in some parts of the Centre from the retail and the street.

Key attributes of the centre include the train station and a good level of pedestrian traffic. Artarmon has a strong village atmosphere and an active resident and business community concerned to retain and enhance its heritage character and sense of place. The built form generally presents two storey commercial street frontages, with many of the retail facades demonstrating the heritage character of the precinct with architectural features and detailing. A narrow landscaped strip runs north-south between the railway line and Hampden Road, known as the Artarmon Village Green.

5.2 Performance criteria

Proposed development in the Artarmon local centre should:

- i. maintain the two storey commercial built form as shown in Figure 9 in order to provide a significant proportion of non-residential floor space for shop top housing developments
- ii. retain and refurbish the existing fine grain heritage frontages on Hampden Road, while allowing for site amalgamation to provide additional 'shop top' residential apartments
- iii. provide articulation to break up the length of walls to reduce the bulk and visual impacts of shop top housing above the second level
- iv. encourage green roofs, and roof top gardens in appropriate locations
- v. maintain existing small-scale village character east of the railway line
- vi. maintain active street frontages
- vii. provide deep soil zones in appropriate locations to support existing and additional mature trees with wide tree canopies to improve the streetscape and reduce urban heat impacts

5.3 Master plan for the Artarmon local centre

Any future development in the Artarmon local centre must have regard to the following key features of the adopted master plan (the numbers below refer to actions to be carried out by Council and/or developers to achieve the outcomes of the adopted master plan):

1. Improvements to the public domain and pedestrian access around the station entry on Hampden Road and Broughton Road.
2. Construction of new toilets, small café pavilion and cycle storage.
3. Provision of new plaza and play space next to the pavilion.
4. Improvements to pedestrian crossings with new kerb blisters and thresholds to slow traffic.
5. Public domain improvements to Wilkes Avenue.
6. Retention of fine grain shop fronts.
7. New developments to provide upper level setbacks to minimise visual impact on Hampden Road.
8. Opportunity for lot amalgamation to provide a supermarket close to the station.
9. New developments to provide landscaping and good design elements along the Hampden Lane frontage.
10. New developments to provide roof gardens/green roofs.
11. New developments to make provision for at grade parallel car parking, interspersed with landscaped areas.
12. Any redevelopment of the library site should include new a new community centre on the ground floor level.

Figure 8: Local Centres Strategy Master Plan for Artarmon



5.4 Controls for the Artarmon local centre

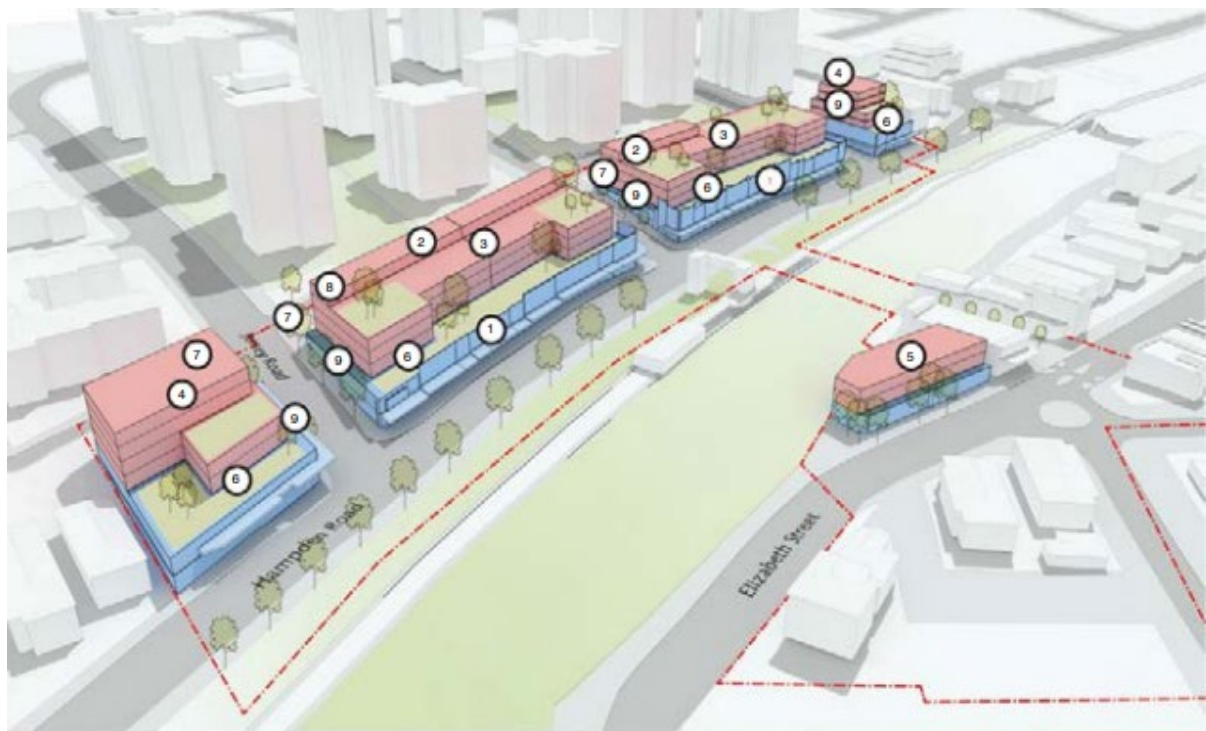
The following controls apply to any proposed new development in the Artarmon local centre:

1. Retain the fine grain heritage frontage on Hampden Road.
2. Utilise the slope of the terrain to achieve 4-5 storey shop top housing developments between Francis Road and Jersey Road.
3. Amalgamate sites fronting Hampden Road, between Francis Road and Jersey Road to achieve a FSR of up to 3:1.
4. Amalgamate sites fronting the eastern side of Jersey Road and the western side of Francis Road to achieve a FSR of 3:1 and up to 6 storeys.
5. Maintain height of 3 storeys and FSR of 1.3:1 on the library site.
6. Minimum 8m upper level setback (above the 2nd storey) to Hampden Road.
7. At grade vehicle access to car parking and loading/unloading area to be provided off Hampden Lane or side streets.
8. No upper level setback required to Hampden Lane.
9. Minimum 3m upper level setback (above the 2nd storey) from side streets.

Note:

- The roof top of shop top housing developments should provide communal (green) roof gardens.

Figure 9: Scale of development for the Artarmon local centre



6 Castlecrag local centre

6.1 Character Statement

The Castlecrag local centre is situated on Edinburgh Road between Eastern Valley Way and Rutland Avenue/The Postern.

The subdivision and layout of Castlecrag was designed by Walter Burley Griffin and the south eastern side of the centre is within the Griffin Conservation Area. The centre sits on a ridgeline with wide views across the district.

The centre has a predominantly one to two storey built form character with a fine grain street frontage. The built form within the conservation area has a strong heritage character, referencing the original vision for Castlecrag.

The centre offers north-facing cafes and associated outdoor dining, complemented by retractable awnings on the southern side of the street and consistent fixed awnings on the north side.

The centre has been recently improved with new large unit Urban Stone paving, planting and street furniture. Generally, improvements include additional street trees and planting on the southern side of Edinburgh Rd. There is a strong desire within the community to retain the integrity of the design philosophy of Walter Burley Griffin for Castlecrag

6.2 Performance criteria

Proposed development in the Castlecrag local centre should:

- i. reinforce the Griffin philosophy that the built form is subordinate to the surrounding natural environment
- ii. design buildings which are highly articulated with strong vertical elements
- iii. encourage green roofs, and roof top gardens in appropriate locations
- iv. retain the fine grain built form of existing shopfronts on Edinburgh Road
- v. ensure any redevelopment of the Quadrangle site provides new publicly accessible open space with good solar access
- vi. ensure any redevelopment of the Quadrangle provides a significant proportion of non-residential floor space as shown on Figure 11, with a pattern of fine grain shops along the Edinburgh Road frontage
- vii. maintain active street frontages
- viii. minimise vehicular access from Edinburgh Road
- ix. provide deep soil zones in appropriate locations to support existing and additional mature trees with wide tree canopies to improve the streetscape and reduce urban heat impacts

6.3 Master plan for the Castlecrag local centre

Any future development in the Castlecrag local centre must have regard to the following key features of the adopted master plan (the numbers below refer to actions to be carried out by Council and/or developers to achieve the outcomes of the adopted master plan):

1. Retention of the Griffin Centre and ground floor façade, roof line and active street frontage.
2. Provision of a new park/green space.
3. Extend the curved façade of the Griffin Centre to reinforce The Postern.
4. Provide pedestrian links through to the Quadrangle site.
5. Retain mature boundary trees.
6. Any new development of the Quadrangle site to include a plaza with good solar access.
7. Roof top gardens and communal open space to be provided for shop top housing.
8. Roof top gardens and communal open space to be provided for shop top housing.
9. Retain at grade car parking area.
10. Provide kerb blisters to improve mid-block crossing amenity.
11. Provide threshold and kerb blister treatments to improve pedestrian amenity.
12. New developments to provide open space between shop top housing buildings.
13. Provide new vehicle access to the Quadrangle basement.
14. Provide a new left out vehicle access from the Quadrangle.
15. Create a green entry point at the intersection of Eastern Valley Way and Edinburgh Road.

Figure 10: Local Centres Master Plan for Castlecrag



6.4 Controls for the Castlecrag local centre

The following controls apply to any proposed new development in the Castlecrag local centre:

1. Maximum of 4 storeys above the level at the Eastern Valley Way frontage and up to 3 storeys along Edinburgh Road (the additional storey below the Edinburgh Road frontage would utilise the topography of the site).
2. Retain the Griffin Centre which is identified as a heritage item.
3. Maximum of 3 storeys and 6m setback above the second level on the northern side of Edinburgh Road.
4. Maximum of 3 storeys for The Postern
5. Require amalgamation for two development sites at 95-103 Edinburgh Road with vehicular access from the rear lane or side street.
6. Create public open space on Council owned car park adjacent to the Griffin Centre.
7. Provide a minimum 3m upper level setback (2nd storey) for shop top housing
8. Maintain direct pedestrian links from the Quadrangle site to The Postern.
9. Ensure the built form does not restrict solar access along the footpath and adjoining public open space on the southern side of Edinburgh Road between 9am and 3pm during the winter solstice.
10. Retain the mature trees at the front and rear of the Quadrangle site.
11. Provide a 'green' landscaped entry point.
12. Provide a rooftop garden over the development with car parking area below.

Figure 11: Scale of development for the Castlecrag local centre



7 North Willoughby local centre

7.1 Character Statement

The North Willoughby local centre is located at the intersection of Penshurst St and Victoria Ave. It is bounded by Patrick St to the south, Terminus Lane to the north west and Power Lane to the north east.

North Willoughby, which has been referred to as East Chatswood, is situated on the fringe of the Chatswood CBD, within a reasonable walking distance of approximately 1.5km from Chatswood railway station.

The existing built form character of the centre is a traditional streetscape defined by two-storey street frontages with a setback third storey. Buildings define key corners, such as the heritage listed Willoughby Hotel at the corner of Penshurst Street and MacMahon Street, and the mixed-use building at the junction of Victoria Avenue and Penshurst Street. There is a range of businesses including medical suites, real estate agents, bakery, café and restaurants.

The centre offers excellent established street tree planting, particularly on Victoria Avenue and in the south of the centre. These trees provide shade on footpaths in the summer and a green leafy context. Generally, footpaths comprise a mix of tan herringbone brick pavers and more recent asphalt infill treatment. There have been recent improvements with street trees and low-level planting along Victoria Avenue.

7.2 Performance criteria

Proposed development in the North Willoughby local centre should:

- i. retain the fine grain built form of existing shopfronts
- ii. ensure any new development respects the heritage value of the Willoughby Hotel on the corner of Penshurst St and MacMahon Street
- iii. create high amenity retail connections to rear lanes
- iv. maintain active street frontages
- v. encourage green roofs, and roof top gardens in appropriate locations
- vi. provide deep soil zones in appropriate locations to support existing and additional mature trees with wide tree canopies to improve the streetscape and reduce urban heat impacts

7.3 Master plan for the North Willoughby local centre

Any future development in the North Willoughby local centre must have regard to the following key features of the adopted master plan (the numbers below refer to actions to be carried out by Council and/or developers to achieve the outcomes of the adopted master plan):

1. Provide new high quality public open space (pedestrianised or traffic calmed) at the corner of Penshurst Street and Sydney Street.
2. Provide ground floor active street frontages to public open space.
3. Provide new through site pedestrian links to laneway networks.
4. Improve pedestrian amenity/crossings and public domain at the intersection of MacMahon Street and Penshurst Street.
5. Provide 'gateway' corner elements for any new developments at the intersection of Victoria Avenue and Penshurst Street.
6. Provide kerb blisters to improve pedestrian amenity.
7. Create new public open space at the corner of Royal Street and Victoria Avenue and relocate the at grade parking into a basement car parking area.
8. New shop top housing developments to create open space connectivity and separation between buildings.
9. The increase in height and density of this site to facilitate the open space and basement parking identified in Item 7.
10. The height of any new development adjacent to the Willoughby Hotel shall not exceed the eaves height of the heritage item.

Figure 12: Local Centres Strategy Master Plan for North Willoughby



7.4 Controls for the North Willoughby local centre

The following controls apply to any proposed new development in the North Willoughby local centre:

1. Maximum of 5 storeys and FSR of 2:1 for amalgamated lots directly fronting a new public open space.
2. Maximum of 5 storeys for amalgamated lots fronting Sydney Street within the local centre.
3. Maximum of 6 storeys and FSR of 2.8:1 for amalgamated lots at the corners of the intersection of Victoria and Peshurst Streets.
4. Development on sites immediately adjacent to the Willoughby Hotel are not to exceed the current eaves height of the heritage item.
5. Maximum of 8 storeys and FSR of 2.1:1 for amalgamated lots and provision of new public open space/plaza.
6. Minimum 3m upper level setback above two storeys along Peshurst Street and Victoria Avenue.
7. Provide public domain/open space improvements at the intersection of Sydney and Peshurst Streets.
8. Provide public domain and pedestrian improvements at the intersection of MacMahon and Peshurst Streets.
9. Provide minimum 4m wide through site pedestrian links to laneways.
10. Improve laneway access from Peshurst Street and Victoria Avenue.
11. Any new development identified in Item 5 is to make provision for new public open space at the corner of Royal Street and Victoria Avenue having a minimum dimension of 15m x 30m.

Figure 13: Scale of development for the North Willoughby local centre



8 High Street local centre

8.1 Character Statement

The High Street local centre is located along High St and is bounded by McClelland St and Glover St. The centre is a small strip of retail shops amongst one and two storey residential dwellings. It is a high amenity local centre, with a range of grocery and convenience offerings provided to serve the local neighbourhood.

The centre has convenient car parking provided at grade behind the shops on the northern side of Alexander Avenue. The Church and associated school on the opposite side of the street have a key role in defining the character of the centre. The Church adds civic and cultural elements and variety to the skyline.

8.2 Performance criteria

Proposed development in the High Street local centre should:

- i. retain and strengthen the good pedestrian access and through site connections from the retail shops
- ii. maintain and increase opportunities for active street frontages
- iii. increase fine grain shopfronts and maintain the active street frontages and outdoor dining areas
- iv. improve landscaped street frontages
- v. encourage green roofs, and roof top gardens in appropriate locations
- vi. provide deep soil zones in appropriate locations to support existing and additional mature trees with wide tree canopies to improve the streetscape and reduce urban heat impacts

8.3 Master plan for the High Street local centre

Any future development in the High Street local centre must have regard to the following key features of the adopted master plan (the numbers below refer to actions to be carried out by Council and/or developers to achieve the outcomes of the adopted master plan):

1. Roof top gardens and communal open space to be provided for shop top housing.
2. Maintain and upgrade access and rear car parking area, north of Alexander Avenue; and, maintain and upgrade rear lane car parking, south of Alexander Avenue.
3. Maintain through site/plaza links.
4. Relocate pedestrian crossings to better align with the through site/arcade links.
5. Improve pedestrian treatment and traffic calming measures at the intersection of High Street and Alexander Avenue.
6. Improve pedestrian treatment and traffic calming measures at the intersection of High Street and McClelland Street.

Figure 14: Local Centres Strategy Master Plan for High Street



8.4 Controls for the High Street local centre

The following controls apply to any proposed new development in the High Street local centre:

1. Maintain rear parking and laneway access.
2. Minimum 3m setback above 2 storeys along the High Street frontage.

Figure 15: Scale of development for the High Street local centre



9 Naremburn local centre

9.1 Character Statement

The Naremburn local centre is located along Willoughby Rd and is bounded by Quiamong St to the north, Willoughby Rd to the east, Bongalong St to the south and Glenmore St to the east.

The centre is in close proximity to the Gore Hill Freeway. It is located approximately 750m from the St Leonards strategic centre and approximately 3.3km from the Chatswood CBD.

Naremburn has a series of two-storey, mid-century brick shop fronts with awnings and small unit paving that contributes to the village feel. Despite this, the centre is dominated by its relationship to Willoughby Road and the intersection with the Gore Hill Freeway.

The majority of the built form along Willoughby Road has awnings that span the width of the footpath and provide pedestrians protection from the weather. The wide footpaths can accommodate multiple users which encourages foot traffic as the predominant mode of transport in the area.

There are good trees around the northern end of the centre, providing a buffer between the street and the outdoor dining area; however, the landscape aesthetic is not continued to the southern portion of the centre. The centre includes two heritage items, located at 284/284A Willoughby Road and 272-276 Willoughby Road. Retail in the centre is focused around food and beverage with some other services such as health and beauty and laundry. The centre lacks convenience stores such as grocery or banking.

9.2 Performance criteria

Proposed development in the Naremburn local centre should:

- i. retain the fine grain built form with heritage character
- ii. maintain active street frontages
- iii. encourage restaurants and cafes to provide outdoor dining areas
- iv. create through site activated arcade links
- v. encourage green roofs, and roof top gardens in appropriate locations
- vi. provide deep soil zones in appropriate locations to support existing and additional mature trees with wide tree canopies to improve the streetscape and reduce urban heat impacts

9.3 Master plan for the Naremburn local centre

Any future development in the Naremburn local centre must have regard to the following key features of the adopted master plan (the numbers below refer to actions to be carried out by Council and/or developers to achieve the outcomes of the adopted master plan):

1. Retain the fine grain shop fronts/facades fronting Willoughby Road.
2. Provide through site/arcade links.
3. Retain heritage buildings/facades.
4. Provide public car parking and service access to the rear of lots fronting Willoughby Road.
5. Create additional high quality public space fronting Willoughby Road.
6. Pedestrian access to be provided for the public.
7. Roof top gardens and communal open space to be provided for shop top housing.
8. Opportunity for a new public plaza.
9. Opportunity for a small supermarket with basement car parking.

Figure 16: Local Centres Strategy Master Plan for Naremburn

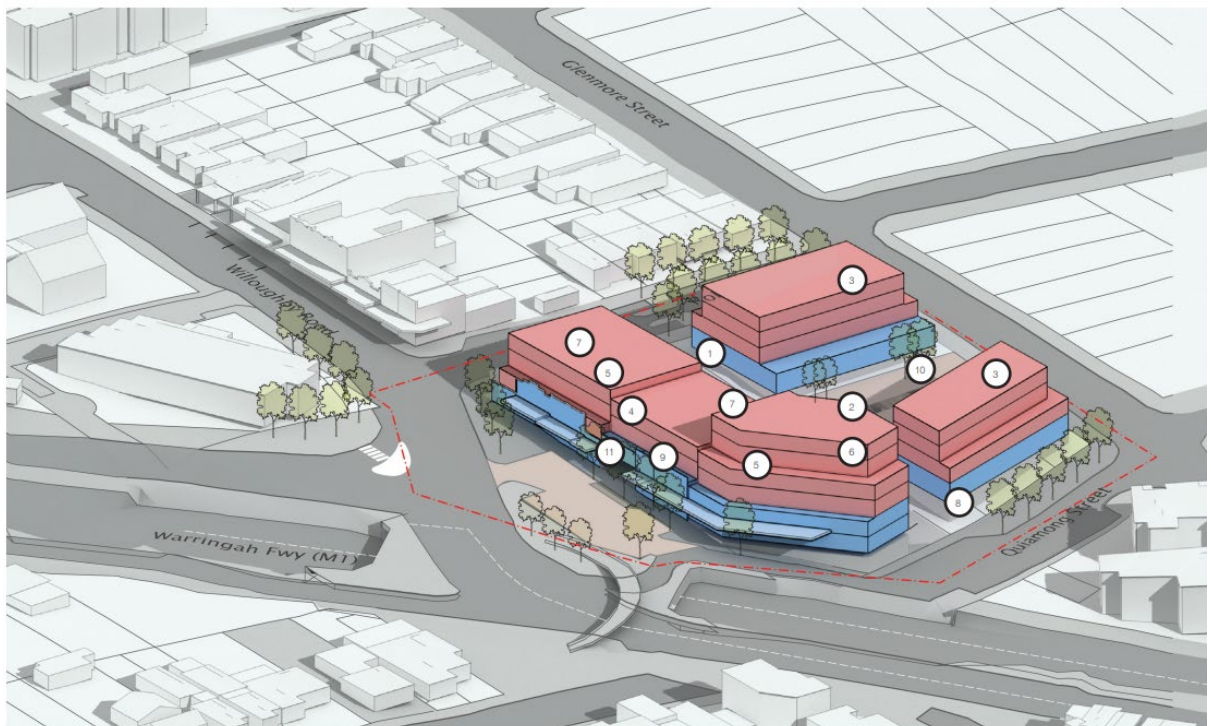


9.4 Controls for the Naremburn local centre

The following controls apply to any proposed new development in the Naremburn local centre:

1. Maximum of 4 storeys.
2. Maximum of 6 storeys and FSR of 1.9:1 for amalgamated lots on the north-east corner site.
3. Maximum of 4 storeys and FSR of 1:1 for amalgamated lots with 3m setback above 2 storeys fronting Glenmore Road and Rohan Street.
4. Maintain fine grain shop fronts along Willoughby Road.
5. Minimum 3m upper level setback above 2 storeys fronting Willoughby Road.
6. Additional 3m setback above 4 storeys fronting Willoughby Road.
7. Ensure the built form (including height and setbacks) of new development does not detract from the heritage values of adjacent heritage listed buildings.
8. Minimum rear setback of 18m for lots fronting Willoughby Road to allow for future public parking and service areas.
9. Make provision for ground floor arcade/public through site link.
10. Make provision for new public space with active ground floor frontage.
11. Delete car parking spaces in front of shops and relocate car parking spaces within new developments to create improved public plaza on Willoughby Road.

Figure 17: Scale of development for the Naremburn local centre



10 Northbridge local centre

10.1 Character Statement

Northbridge is at an entry point to the Willoughby Local Government Area from the south. The business precinct is focused on a major arterial route along Sailors Bay Rd, Eastern Valley Way and Strathallen Ave.

Eastern Valley Way is a freight corridor and regular bus routes which service the centre travelling north and south, and to and from the Sydney CBD.

Northbridge Plaza is located on the north-east corner of Eastern Valley Way and Sailors Bay Road. It includes a major supermarket as well as 23 specialty shops. There is a large Council car park located at the rear of the Plaza.

The Northbridge local centre lacks any significant outdoor open space area for community recreation and gatherings.

The topography of the centre is generally flat, with Sailors Bay Road running along the ridge-line. The built form character of the centre is generally a two to four storey street frontage. While the eastern side of the centre has a smaller lot pattern, the western side of the centre is characterised by larger lots and a bulkier built form. Some recent examples of shop top housing exist in the centre.

The eastern side of the centre benefits from increased street tree planting and landscaping, a pedestrian crossing at Bellambi Street, a generally consistent zero building setback to the street, and a higher level of fine grain street presentation. The majority of the centre is paved in a tan herringbone brick paver.

10.2 Performance criteria

Proposed development in the Northbridge local centre should:

- i. retain the fine grain built form along Sailors Bay Road, east of Strathallen Avenue
- ii. maintain and increase opportunities for active street frontages
- iii. encourage restaurants and cafes to provide outdoor dining areas east of Strathallen Avenue
- iv. create high quality design elements for buildings on prominent corner sites to identify the gateways entrances to the town centre
- v. make provision for public open space and underground car parking at the rear of the Northbridge plaza
- vi. encourage green roofs, and roof top gardens in appropriate locations
- vii. provide deep soil zones in appropriate locations to support existing and additional mature trees with wide tree canopies to improve the streetscape and reduce urban heat impacts

10.3 Master plan for the Northbridge centre

Any future development in the Northbridge local centre must have regard to the following key features of the adopted master plan (the numbers below refer to actions to be carried out by Council and/or developers to achieve the outcomes of the adopted master plan):

1. Only commercial floor space allowed for any new development on the northern side of Sailors Bay Road between Eastern Valley Way and Harden Avenue.
2. Provide new public open space above basement public car parking area.
3. Create a pedestrian laneway link.
4. Provide a range and mix of dwelling typologies, including opportunities for affordable housing and build-to-rent housing.
5. New residential development to provide basement car parking areas with vehicular access from Baringa Road only.
6. Provide streetscape improvements to Sailors Bay Road and Strathallen Avenue.
7. Provide a public domain with pedestrian access at the southern end of Bellambi Street.
8. Roof top gardens and communal open space to be provided for shop top housing.
9. Maintain and improve laneway network for servicing and deliveries.
10. Investigate opportunities for additional pedestrian crossing at existing intersections.
11. Provide blisters or central refuge for safer pedestrian crossing.

Figure 18: Local Centres Strategy Master Plan for Northbridge



10.4 Controls for the Northbridge local centre

The following controls apply to any proposed new development in the Northbridge local centre.

1. Maximum of 6 storeys with provision for a roof top garden between two 6 storey building components for any new development on 83-113 Sailors Bay Road as shown on Figure 19.
2. Maximum of 3-5 storeys for a mix of residential apartment and townhouse developments with provision for large areas of open space as shown on Figure 19.
3. Maximum of 3 storeys along the northern side of Baringa Road and up to 4 storeys along Sailors Bay Road (new development sites must be amalgamated to achieve the minimum lot size of 1,100m² and a minimum frontage of 27m).
4. Maximum of 4 storeys for amalgamated lots on the north-west corner of Eastern Valley Way and Sailors Bay Road.
5. Maximum of 5 storeys for amalgamated lots in the B2 zone with a 1m setback on east and western side of Strathallen Avenue and a 3m setback on Baringa Road above the third level.
6. Maximum 4 storeys; however, maximum of 5 storeys if a second storey of commercial floor space is provided.
7. Provision for new public open space with a minimum area of 2,000m² immediately behind any commercial development along Sailors Bay Road.
8. Minimum upper level setback of 3m above 2nd storey and additional 6m setback above 4th storey for commercial buildings along Sailors Bay Road.
9. Minimum 6m deep soil landscaped setback area provided along the southern side of Sailors Bay Road, west of Strathallen Avenue.
10. Provision for a shared vehicle and pedestrian laneway from Eastern Valley Way to Harden Avenue.
11. Provision to be made for a laneway and service access from Sailors Bay Road.

Figure 19: Scale of development for the Northbridge local centre



11 Penshurst Street local centre

11.1 Character Statement

The built form character of the centre is generally two-storey in the B2 Local Centre zone with a consistent build to boundary street address and awnings.

In the B5 zone running along the west of Penshurst Street, built form is generally two to three storeys, with inconsistent setbacks, landscaping, and awnings. Some buildings are substantially setback with at grade parking at the front. The lack of rear or side access has resulted in a number of access driveways interrupting the street footpath.

The B5 zone at the intersection of Mowbray Road and Penshurst Street is characterised by a taller built form of three to five storeys.

Despite the R3 Medium Density Residential zoning south of Oakville Road, the residential character of built form facing the eastern side of Penshurst Street is low density with single storey detached dwellings and small garden setbacks to the street. This side of the street has ornamental pear trees and some landscaping along the footpath. There is minimal street tree planting elsewhere in the centre.

The area located south of Mowbray Rd comprises shop top housing style premises including a recent development known as “The Mint”.

11.2 Performance criteria

Proposed development in the Penshurst Street local centre should:

- i. make provision to improve the pedestrian and cycling environment
- ii. improve service access to minimise impacts on the public domain along Penshurst Street
- iii. ensure active frontages are provided in the B2 and B5 zones
- iv. encourage green roofs, and roof top gardens in appropriate locations
- v. provide deep soil zones in appropriate locations to support existing and additional mature trees with wide tree canopies to improve the streetscape and reduce urban heat impacts

11.3 Master plan for the Penshurst Street local centre

Any future development in the Penshurst Street local centre must have regard to the following key features of the adopted master plan (the numbers below refer to actions to be carried out by Council and/or developers to achieve the outcomes of the adopted master plan):

1. Roof top gardens and communal open space to be provided for shop top housing.
2. Provide shared vehicular access to reduce the number of driveways off Penshurst Street.
3. Investigate provision for safe pedestrian crossings at the intersection of Penshurst Street and Oakville Road.
4. Provide streetscape improvements and additional street trees along Penshurst Street.
5. Roof top gardens and communal open space to be provided for shop top housing.
6. Extend Medway Lane to Penshurst Street.
7. Retain at grade car parking area.
8. New development to incorporate enhanced visual features such as public art and/or unique façade treatment on the prominent corner site.
9. New development to incorporate enhanced visual features such as public art and/or unique façade treatment on the prominent corner site

Figure 20: Local Centres Strategy Master Plan for Penshurst Street

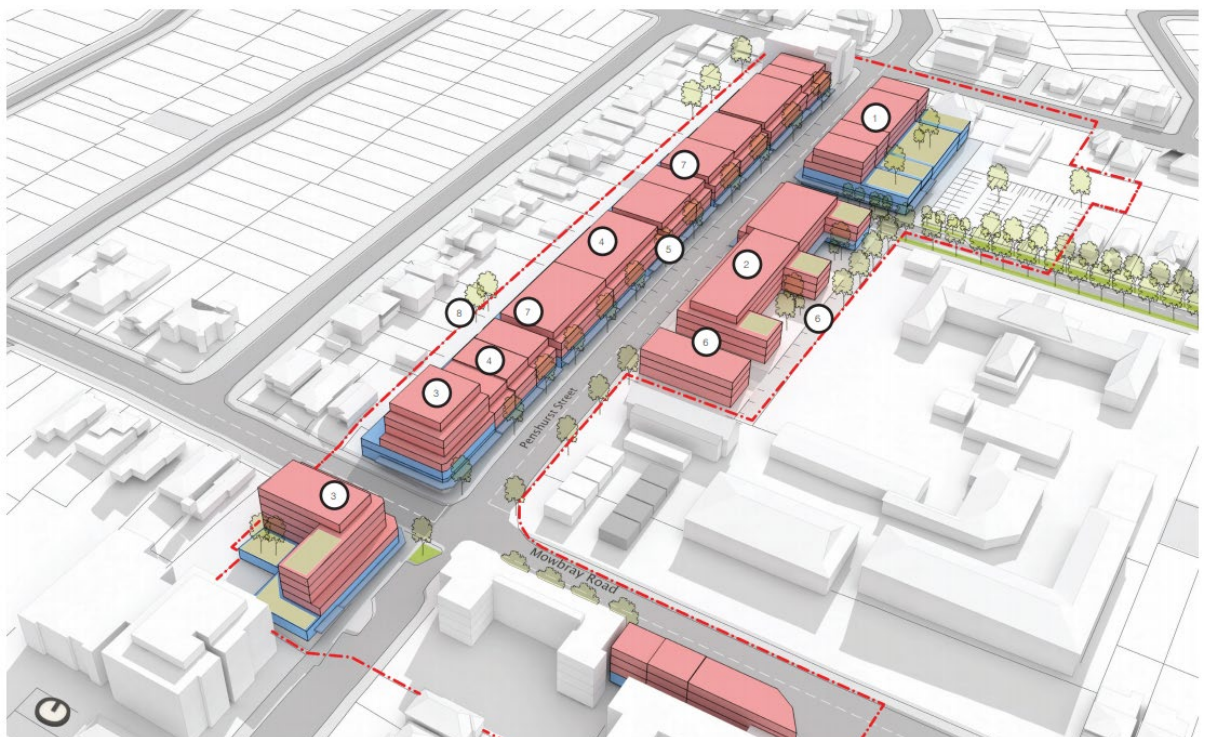


11.4 Controls for the Penshurst Street local centre

The following controls apply to any proposed new development in the Penshurst Street local centre.

1. Maximum of 5 storeys and FSR of 2.8:1 for amalgamated lots fronting Penshurst Street with a roof top garden above the second level comprising approximately 50% of the width of the site as shown on Figure 21.
2. Maximum of 4 storeys and FSR of 2.1:1 on amalgamated lots in the R3 zone with roof top gardens at the rear above the third floor levels.
3. Maximum of 6 storeys and FSR of 2.8:1 on amalgamated lots; with a minimum 3m setback from the rear boundary and a further minimum 3m setback above the second floor level for any new development on the north western corner of Penshurst Street and Mowbray Road; and roof top gardens for any new development on the south western corner as shown on Figure 21.
4. Maximum of 4 storeys and FSR of 2:1 on amalgamated lots fronting Pershurst Street.
5. Minimum 3m setback above 3 storeys.
6. New development to make provision to extend Medway Lane to join Penshurst Street.
7. Provide shared vehicle access between amalgamated sites to minimise the number of driveways on Penshurst Street.
8. Minimum 3m rear setbacks and a further minimum 3m setback above the first floor level for all new developments adjoining the rear yard area of properties along Ward Street.

Figure 21: Scale of development for the Penshurst Street local centre



12 Willoughby South local centre

12.1 Character Statement

The Willoughby South local centre is bounded by Penkivil Street and Harris Street to the north and Borlaise St to the south. The commercial area predominantly fronts Willoughby Road with additional commercial areas branching off Willoughby Road in Frenchs Road. The centre has direct access to the Gore Hill freeway from Willoughby Rd and is approximately 7.2km from the Sydney CBD.

The topography of the area slopes from north to south and there is a substantial east/west change in level between the area bounded by Frenchs Road, Tulloh Lane and Prentice Lane.

The existing buildings are generally one and two storeys with shop fronts to Willoughby Road. There have been some more recent mixed use developments which are three-storey in height. The Bridge View Hotel is a prominent building in this locality and is identified as a local heritage item. The facades of the buildings at 549-553 Willoughby Road are also heritage listed.

There are two Council car parks off Borlaise Street; however, they are not well sign-posted and have poor connection to the retail strip.

Sanders Park located to the west of the centre in Julian Street provides neighbourhood open space. There is also significant tree canopy creating a green network at the rear of properties on the western side of Willoughby Rd.

12.2 Performance criteria

Proposed development in the Willoughby South local centre should:

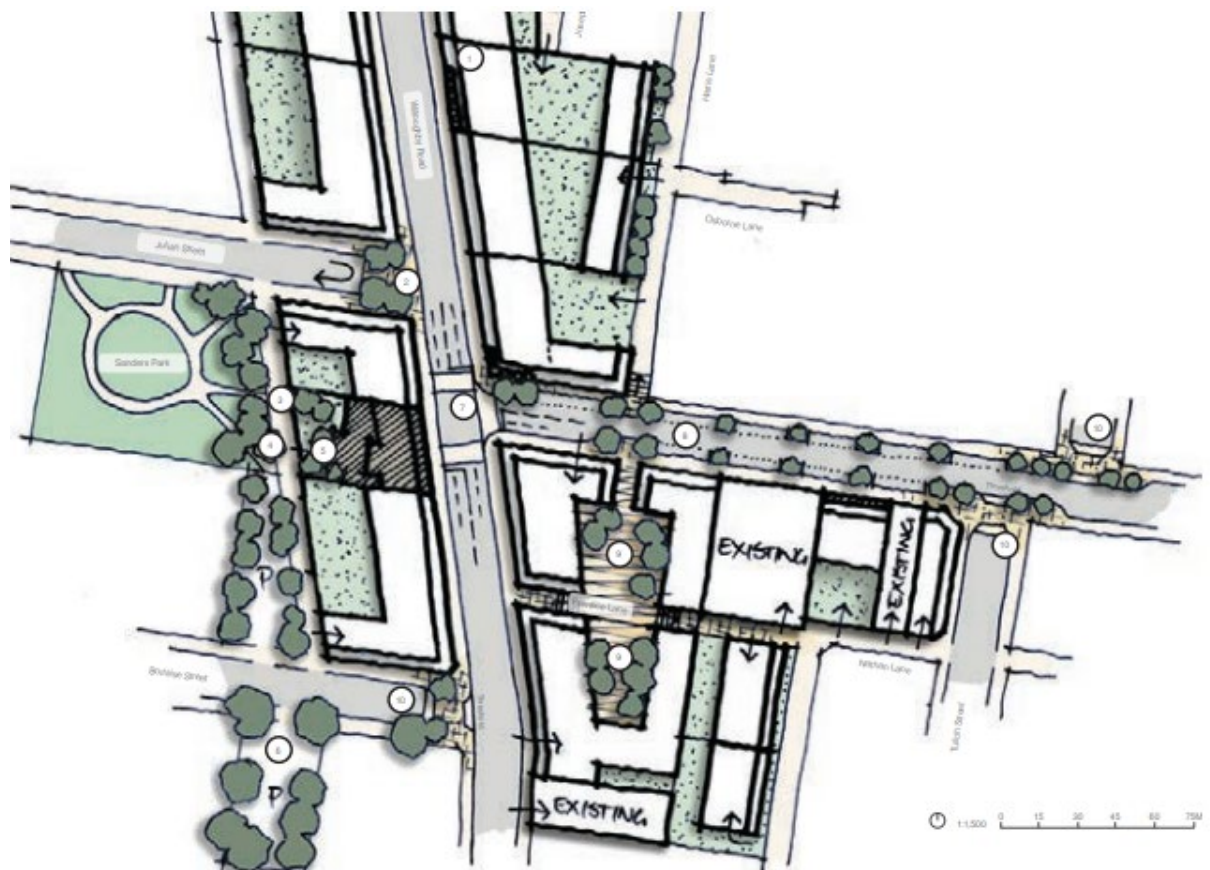
- i. make provision for new and/or improved laneway connections
- ii. maintain and increase opportunities for active street frontages
- iii. encourage first floor commercial uses
- iv. ensure active frontages are provided at the corners of local side streets off Willoughby Road and Frenchs Road, and to any internal plaza spaces
- v. encourage green roofs, and roof top gardens in appropriate locations
- vi. provide deep soil zones in appropriate locations to support existing and additional mature trees with wide tree canopies to improve the streetscape and reduce urban heat impacts

12.3 Master plan for the Willoughby South local centre

Any future development in the Willoughby South local centre must have regard to the following key features of the adopted master plan (the numbers below refer to actions to be carried out by Council and/or developers to achieve the outcomes of the adopted master plan):

1. Retain the fine grain shop fronts/facades fronting Willoughby Road.
2. Provide a public domain with pedestrian access at the eastern end of Julian Street.
3. Connect laneway between Julian Street and Borlaise Street.
4. Improve landscaping of Sanders Park along the frontage of the new laneway.
5. Upgrade outdoor space at the rear of the Bridgeview Hotel.
6. Retain car parking area off Borlaise Street.
7. Provide kerb extension on the northern side of Frenchs Road at the corner of Willoughby Road.
8. Provide streetscape improvements and additional street trees along Frenchs Road.
9. New developments to create a public plaza around Prentice Lane.
10. Improve pedestrian treatment and traffic calming measures at the intersections of Frenchs Road with Tulloh Street and Chiltern Road.

Figure 22: Local Centres Strategy Master Plan for Willoughby South



12.4 Controls for the Penshurst Street local centre

The following controls apply to any proposed new development in the Willoughby South local centre.

1. Maximum of 5 storeys for amalgamated lots in the B2 zone on the eastern side of Willoughby Road.
2. Maximum of 2:1 FSR for amalgamated lots east of Willoughby Road.
3. Maximum of 2:1 FSR for amalgamated lots west of Willoughby Road.
4. Maximum of 3:1 FSR for amalgamated lots with a frontage on the eastern side of Willoughby Road with a minimum non-residential FSR of 1.5:1 (amalgamated sites must ensure there is an equitable distribution of public open space/plaza areas within the development).
5. Provide fine grain shop fronts that are consistent with existing development along Willoughby Road.
6. Minimum 3m upper level setback above 2 storeys fronting Willoughby Road.
7. Development on lots adjacent to the Bridgeview Hotel, between Julian Street and Borlaise Street, must provide a consistent street setback to the heritage item above the first storey, and a 3m setback to the heritage item.
8. All developments to the west of Willoughby Road with access off Borlaise Street must consider vehicle/conflict, and create activation for new developments adjacent to Sanders Park.
9. New developments to make provision for a 7m wide rear lane for vehicular access and servicing to the west of Willoughby Road and north of Julian Street.

Figure 23: Scale of development for the Willoughby South local centre



15.8 ENDORSEMENT FOR EXHIBITION - DRAFT RESILIENT WILLOUGHBY STRATEGY AND ACTION PLAN

ATTACHMENTS:	2. DRAFT RESILIENT WILLOUGHBY STRATEGY AND ACTION PLAN
RESPONSIBLE OFFICER:	HUGH PHEMISTER – PLANNING AND INFRASTRUCTURE DIRECTOR
AUTHOR:	NICK CHAPMAN – RESILIENCE SPECIALIST
CITY STRATEGY OUTCOME:	1.1 – CREATE AND ENHANCE GREEN SPACES 1.2 – PROMOTE SUSTAINABLE LIFESTYLES AND PRACTICES 2.5 – CREATE FAMILY FRIENDLY NEIGHBOURHOODS THAT CONNECT PEOPLE 3.1 – FOSTER FEELINGS OF SAFETY, SECURITY AND CLEANLINESS 3.3 – PROMOTE AN ACTIVE AND HEALTHY LIFESTYLE 5.2 – DEMONSTRATE LEADERSHIP AND ADVOCACY FOR LOCAL PRIORITIES
MEETING DATE:	15 JUNE 2021



Draft Resilient Willoughby Strategy and Action Plan

June 2021



WILLOUGHBY
CITY COUNCIL

Acknowledgment of Country

We acknowledge the traditional inhabitants of the land on which we stand, the Aboriginal People, their spirits and ancestors.

We acknowledge the vital contribution that indigenous people and cultures have made and still make to the nation that we share, Australia.

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Mayor's message



Our Willoughby community has shown resilience in recent years, having experienced COVID-19, storms, smoke pollution from bushfires and concerns around the impacts of climate change. We have developed this *Draft Resilient Willoughby Strategy and Action Plan* (the Plan) to support and build our community's resilience into the future.

The Plan outlines Council's approach to resilience challenges and is informed by the broader work of the Resilient Sydney group of Councils and our local Community Perception and Resilience Survey undertaken in November 2020. Concerns include longer term, underlying stresses such as climate change, housing affordability, traffic congestion, work/life balance, employment opportunities and job security. The Survey also considered the impact of shocks such as bushfires, drought, floods and storms.

Other resilience priorities for Council and the community are outlined in Council's Community Strategic Plan. They include building stronger community connections, caring for vulnerable community members, protecting our environment and green spaces and supporting our local centres through the impacts of COVID-19.

Local government is uniquely placed to help build community resilience, which can lessen the impact of shocks and stresses on people and the environment and minimise social, environmental and economic costs. This is especially important for vulnerable people in our community, who may find it harder to bounce back.

The high-priority actions in this Plan recommend ways to enhance the resilience of our people, buildings, places and governance. We currently engage in activities that develop resilience, including volunteering and caring for our elderly through community services. We also develop planning controls to ensure new buildings are sustainable and better adapted to withstand the impacts of climate change.

Our important new initiatives include outreach services supporting vulnerable youth, implementing the Cooler Homes pilot program and establishing multi-purpose greenways to encourage walking and cycling and provide better connections to parks, open spaces, bushland and foreshores.

We are committed to supporting our community through challenging circumstances. The *Resilient Willoughby Strategy and Action Plan* represents the next step on the journey to a more resilient future for Willoughby.

Gail Giles-Gidney

Mayor, Willoughby City Council

1. Introduction



Willoughby City Council (Council) prepared the *Draft Resilient Willoughby Strategy and Action Plan* (the Plan) to outline how Council and its partners can support the community to withstand the challenges of the 21st century.

The Plan identifies the range of shocks and stresses most likely to impact the people of Willoughby, and proposes a range of actions to help the community overcome them. Some of the shocks and stresses are with us now, like the impact of bushfires or expensive housing, whilst some have yet to occur.

"[City resilience is] the capacity of individuals, communities, businesses and systems within a city to survive, adapt and thrive no matter what kinds of acute shocks and chronic stresses they experience."

City of Sydney, Resilient Sydney: A strategy for city resilience 2018¹

The Plan outlines the many actions already being undertaken by Council to strengthen community resilience and proposes a suite of exciting, new actions to address gaps and emerging threats. The Plan will be a valuable document to guide future planning and investment decisions.

Resilience planning is a relatively new field of expertise. This Plan is Council's first resilience plan, prepared in consultation with Resilient Sydney, the peak resilience organisation established in 2015 to help coordinate resilience planning and action across Metropolitan Sydney. Hosted by the City of Sydney, Resilient Sydney was established with funding provided by the global 100 Resilient Cities (100RC) organisation initiated by the US-based Rockefeller Foundation.

The Plan uses the risk-based approach developed by 100RC and applied in member cities across the world, including London, Toronto, Cape Town, Luxor, Sydney and Melbourne.

Throughout the Plan, there is an emphasis on evidence-based thinking, integration, collaboration, a sense of place, and the need to build a culture of self-reliance in the broader community.

1. Introduction

1.1 Shocks and stresses

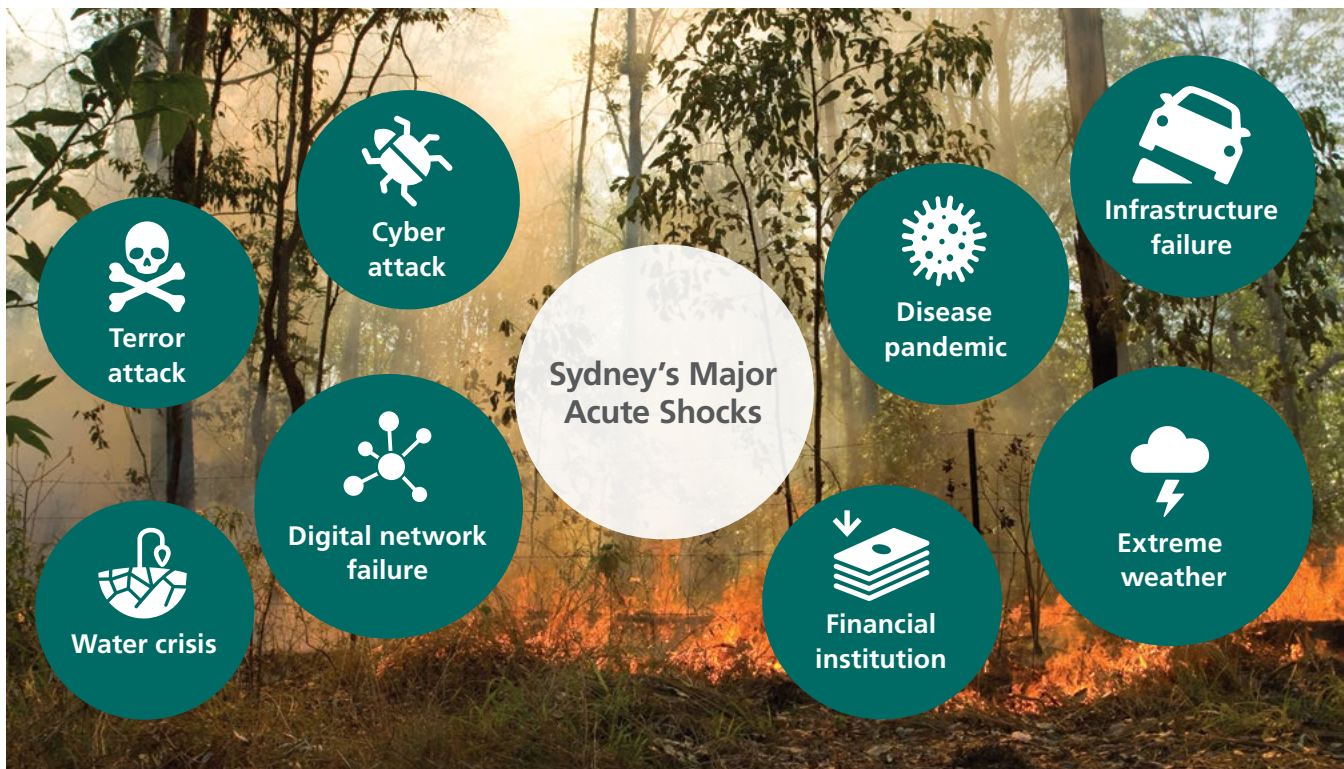
Although Willoughby is among the most liveable and affluent local government areas (LGAs) in Sydney, the community is affected to varying degrees by acute shocks and chronic stresses. Figure 1 outlines key shocks identified by Resilient Sydney which have informed the risk analysis and development of actions in the Plan.

Acute shocks are sudden, relatively short-term events that threaten a city. Recent shocks in the Willoughby community include unprecedented smoke pollution from the 2019–20 Black Summer bushfires, the COVID-19 pandemic and the economic recession that followed.

“Australia needs to be better prepared for natural disasters. Extreme weather has already become more frequent and intense because of climate change (and) further global warming over the next 20 to 30 years is inevitable.”

Australian Royal Commission into National Natural Disaster Arrangements, Final Report, October 2020²

Figure 1: Sydney’s major acute shocks



Source: *Resilient Sydney – A strategy for city resilience 2018*

Chronic stresses weaken a city’s fabric over time and make it harder for the community to overcome acute shocks when they happen, particularly if people are already vulnerable. Ongoing stresses affecting the Willoughby community include expensive housing, traffic congestion, poor work/life balance, social isolation and climate change.

Figure 2 outlines chronic stresses identified by Resilient Sydney.

Everyone can be affected by universal shocks such as COVID-19 or the intense heatwaves experienced in Sydney during December 2019. Other shocks, such as bushfires or floods, primarily affect people living in a particular location. Some stresses, such as chronic health problems or social isolation, affect a minority of the population who are particularly vulnerable.

Community impacts from shocks and stresses include death and disability, damage to property and social infrastructure, and mental and physical health problems. Some shocks and stresses also impact significantly on the natural environment and its capacity to nurture ecosystems and support life over time.

High levels of community resilience can lessen the impact of acute shocks and chronic stresses on people and the environment and can help minimise the social, economic and environmental cost in the short and long terms.

Figure 2: Sydney’s major chronic stresses



Source: *Resilient Sydney – A strategy for city resilience 2018*

1. Introduction

1.2 Shaping the Plan

We used a staged approach to develop the Plan, which included research, consultation and comprehensive risk analysis. These stages informed the development of a strategic framework with desired outcomes and a series of new, prioritised actions to compliment our existing resilience-building activities. The resilience planning stages are set out in Figure 10 on page 30.

Some of the new actions require minimal resourcing and are achievable in the short term. Others are more ambitious and require extensive planning, lead-in times, third-party collaboration and comprehensive resourcing.

Taking action to manage the impact of shocks and stresses and to build resilience across the Willoughby community will pay dividends now and in the future, as illustrated in Table 1.

Willoughby City Council, in collaboration with Resilient Sydney and its other partners, will continue to monitor and evaluate the benefits of investing in resilience-building activities.

Table 1: Short- and long-term benefits of resilience-building activities

	Benefits
Short-term	<ul style="list-style-type: none"> • A reduction in immediate damage to people, property and the environment • Support for the vulnerable • Maintenance of community wellbeing
Long-term	<ul style="list-style-type: none"> • A reduction in the social, economic and environmental impacts of shocks and stresses • Empowered communities and governments • Long-term ecological health • Intergenerational equity • A growing sense of connection, hope and self-reliance to enable our communities to survive and thrive in the 21st century.



2. Willoughby profile

This section summarises the key characteristics of the Willoughby local government area – the place and its people – which form the context for the strategic outcomes and individual actions proposed in the Plan.

Cultural diversity is a distinctive part of Willoughby City’s character. Nearly half our residents were born overseas and 40% of households don’t typically speak English at home. Our population is expected to grow 12% by 2036 and life expectancy will most likely increase, resulting in a growing proportion of residents over 60 years old. 41% of the Willoughby local government area is covered by vegetation and 46% of the resident workforce drives a car to work each day.

2.1 Our people

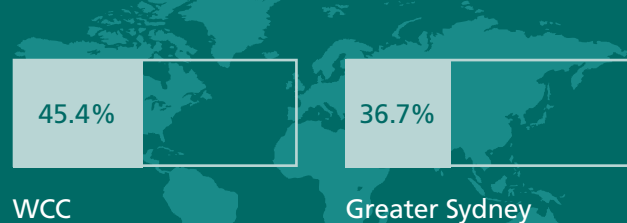
Ageing population



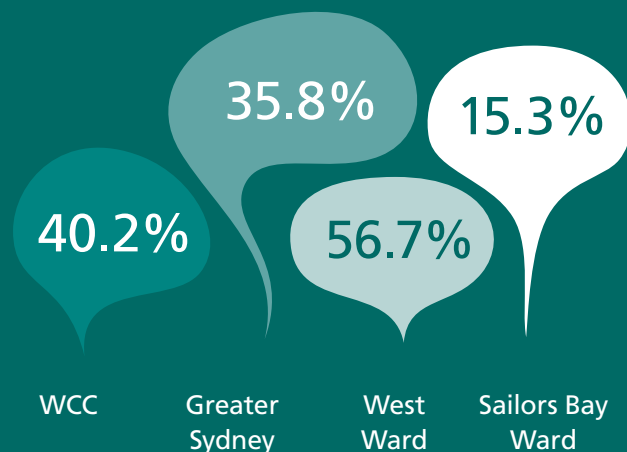
Source: Willoughby City Council, Micromex Research, 2020

Cultural diversity (2016)

Born overseas

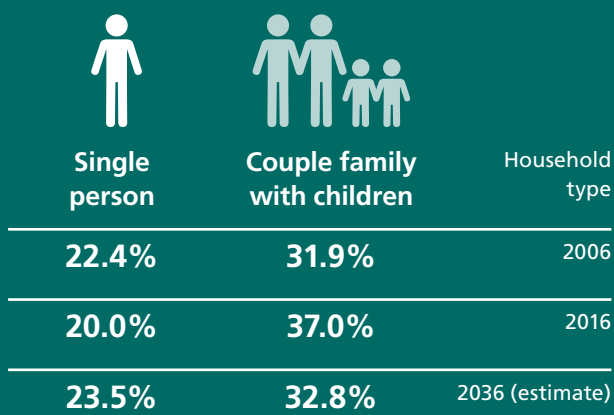


Don't typically speak English at home



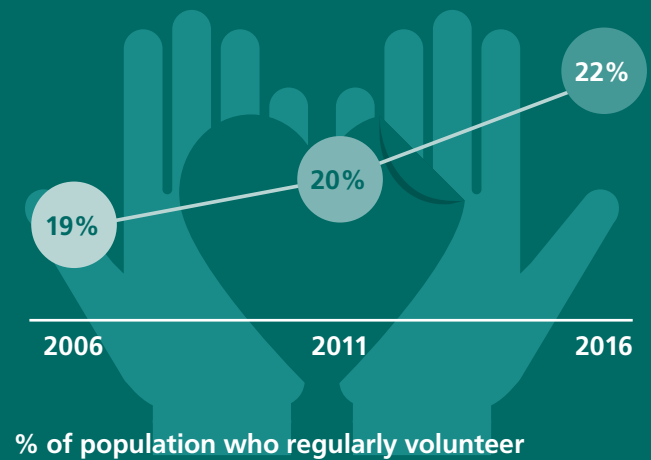
Source: profile.id, 2021

Household tenure



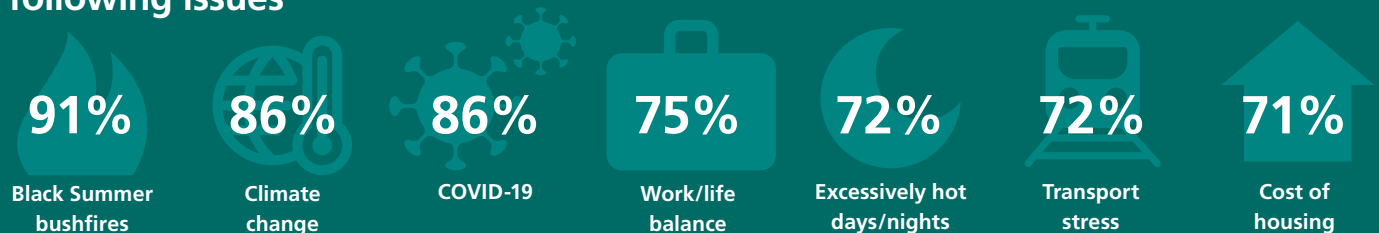
Source: profile.id, 2021

Volunteering



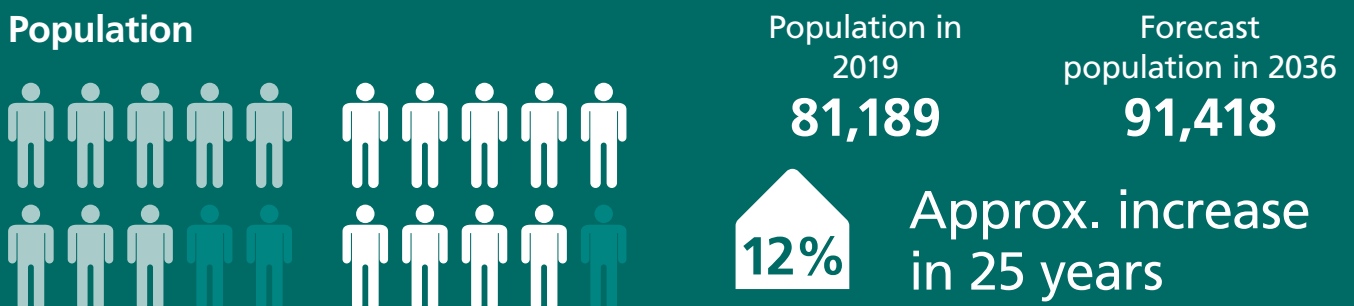
Source: Willoughby City Council, 2020

Percentage of population concerned or very concerned about the following issues



Source: Willoughby City Council, Micromex Research, 2020

Population



Source: profile.id, 2021

2. Willoughby profile

2.2 Our place

Chatswood is the **sixth largest office market** in metropolitan Sydney, with

a gross annual regional product of **\$11.5 billion**

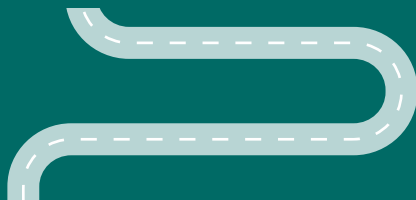


Source: Willoughby City Council, 2020

In 2017, there were **12,427 businesses** in Willoughby local government area, mostly located in **Chatswood, St Leonards and Artarmon**

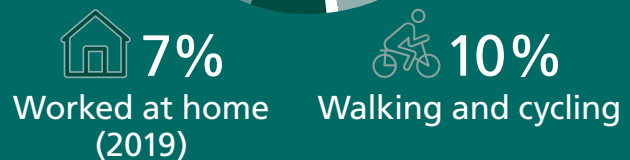
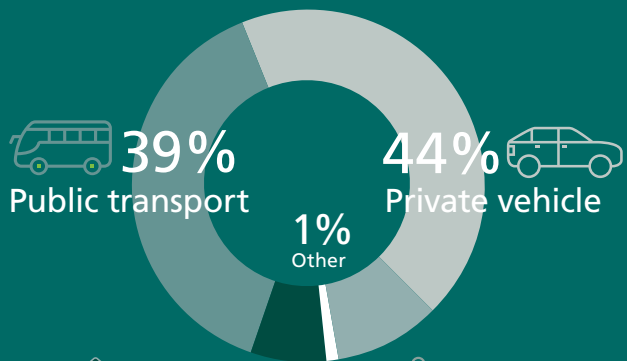
Source: Willoughby City Council, 2020

In the past five years in the Willoughby LGA, **9.6 kilometres of bike paths** have been completed or are under construction, and a further **13.3 kilometres** are being designed



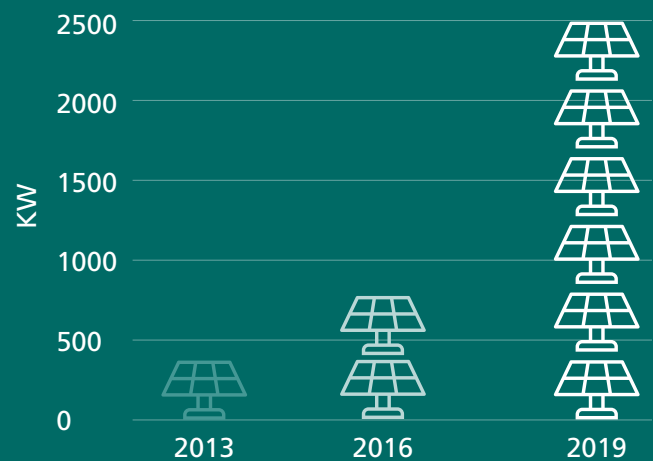
Source: Willoughby City Council, 2020

How Willoughby residents travel to work



Uptake of photovoltaic (PV) panels in Willoughby LGA – 2013 to 2019

All Sectors – Solar Capacity



Source: Resilient Sydney data platform, by Kinesis

Figure 3: Map showing major land uses in Willoughby LGA



Source: Willoughby City Council

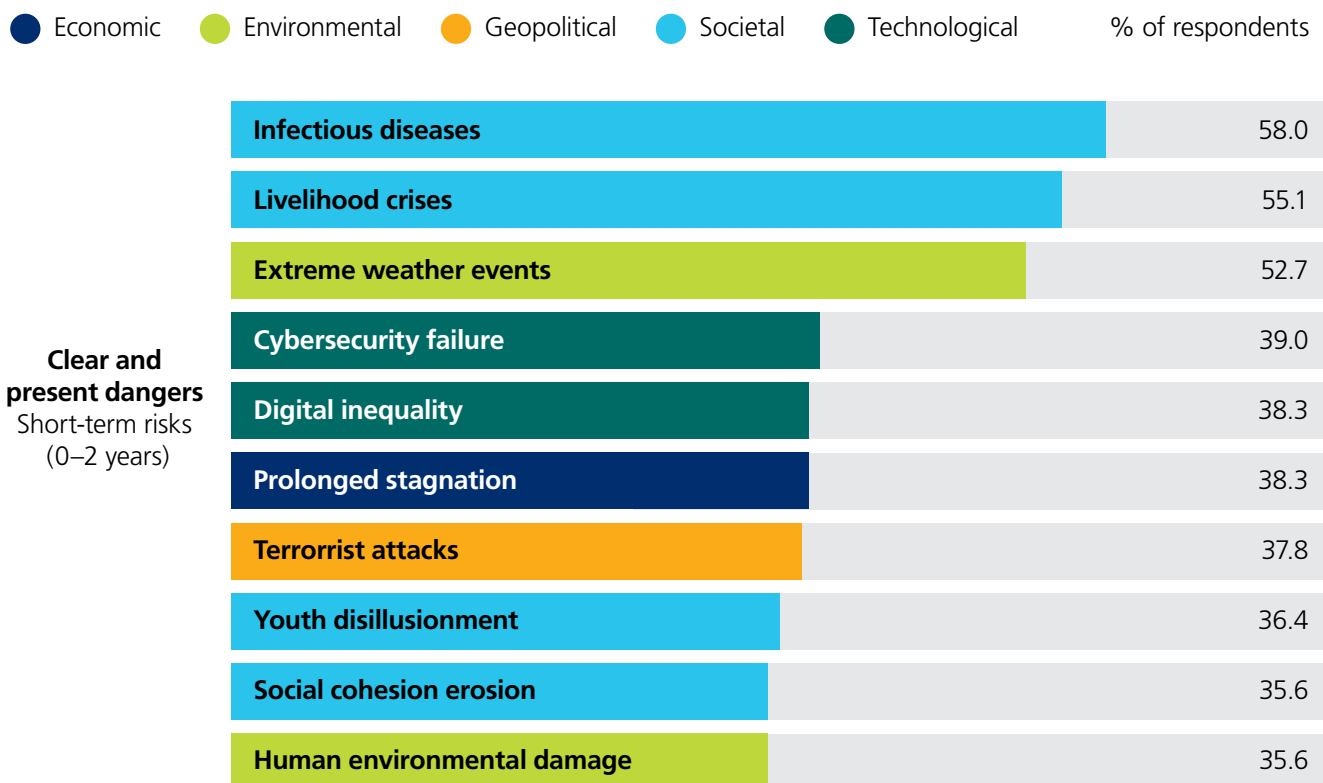
3. The resilience challenge

3.1 Global and national

The 21st century is marked by a range of socio-political, environmental and economic challenges such as increasing climate change, globalisation, urbanisation and declining trust in governments and institutions. These challenges are taking their toll on people in both developing and developed parts of the world.

Each year the World Economic Forum publishes a *Global Risks Report* outlining key risks confronting the global community in the short to long terms. Figure 4 summarises 'clear and present dangers' from the 2021 *Global Risks Report*. The dangers represent high-risk challenges that will impact on the global population in the next two years.

Figure 4: Global risks horizon



Source: World Economic Forum, *Global Risks Report*, January 2021³

Australians experienced a particularly disruptive year in 2019–2020, with a series of unprecedented shocks. These included record-breaking drought and heat, the Black Summer bushfires and the COVID-19 pandemic, the latter of which plunged the global economy into a significant recession.

Numerous institutional, government and academic reports and studies predict that these ‘unprecedented’ shocks are most likely to be repeated, some with increasing regularity.

“Climate change is happening today, so we have to build a more resilient tomorrow. The world has just concluded the hottest decade on record during which the title for the hottest year was beaten eight times. People, planet and prosperity are vulnerable to climate change. We need to prevent the un-adaptable and adapt to the un-preventable.”

European Commission, Forging a Climate-Resilient Europe – the new EU Strategy on Adaptation to Climate Change, 2021⁴

In addition to pandemic and climate change shocks, a number of stresses are undermining community wellbeing and established ways of living in many parts of the world.

Across Australia, the stresses include increasing environmental degradation and species extinction; unaffordable housing; employment insecurity; increased social isolation; mental and physical health challenges; and the threat of economic recession.

“Social isolation, along with disruptions to our sense of connection ... can greatly impact on our mental health and can lead to an increase in loneliness, anxiety and depression. Red Cross already makes more than a million wellbeing phone calls a year to people who are elderly and living alone.”

CEO Australian Red Cross, 29 April 2020 <https://www.redcross.org.au/news-and-media/media-centre/media-releases/covid-connect-launch⁵>

Figure 5: Bushfire smoke over Sydney, December 2019



Source: Shutterstock

3. The resilience challenge

3.2 Metropolitan and local

Research undertaken by Resilient Sydney and Willoughby City Council demonstrates how global and national risks translate to resilience challenges at a metropolitan and local level.

In 2016 Resilient Sydney commenced an extensive two-year program of community consultation and technical assessment to identify the main resilience challenges confronting the Sydney metropolitan region. These challenges are:



Sydney-wide resilience challenges impact on people at a local level. In November 2020 Willoughby City Council commissioned Micromex Research to conduct a telephone survey about the resilience challenges of most concern to the Willoughby community. The 604 residents interviewed were concerned about a mixture of shocks and stresses. Table 2 summarises the top 5 responses in order of greatest concern.

Table 2: Top five shocks and stresses

	Shocks of greatest concern	Stresses of greatest concern
1	Black Summer bushfires	Climate change
2	COVID-19	Cost of housing
3	Current state of Australia's economy	Work/life balance
4	Last summer's storms and floods	Transport stresses in Willoughby
5	Excessively hot days and/or nights	Employment opportunities and job security

Source: *Willoughby Community Perception and Resilience Survey – 2020*, Micromex Research, December 2020⁶



3. The resilience challenge

Not everyone was concerned about shocks and stresses to the same degree.



- **Women** were significantly more concerned than men about bushfires, COVID19, climate change and impacts on overall health.



- **Non-English speaking households** were significantly more concerned about employment security, work/life balance, crime and safety and their ability to cope with and adapt to change.



- **Home renters** were significantly more concerned about cost of housing, excessively hot days/nights, lack of social contact and impacts on mental and/or physical health.



- **Home owners** were particularly concerned about bushfires, climate change, the Australian economy, storms and transport stress.

Survey participants nominated areas or activities they believe Council should focus on to enhance resilience in the community. Suggestions were wide-ranging including:

“More community services such as libraries and nature tours, architectural tours. Things that help with mental health.”

“Make Willoughby a much greener place with the ability to get around without being reliant on cars.”

“More information about things happening within the community.”

The resilience challenges highlighted in research conducted by Resilient Sydney and Willoughby City Council informed development of the *Resilient Willoughby Strategy and Action Plan*.

“Whilst many of us work and spend in economies, we all live and die in communities the most vulnerable groups in these communities are always the hardest hit in major crises like this pandemic”

Bernie Fraser, Former Australian Reserve Bank Governor, September 2020

3.3 Impacts on people

Shocks and stresses impact on people at different times in life and in different ways. Although young working families with school-age children may lead active, sociable lives, they may also struggle to afford suitable housing. Later in life, elderly people may often own their own home, but also experience social isolation and loneliness.

Similarly, the impacts of shocks and stresses are not distributed equally across the population. People already affected by chronic stresses such as ill health, social isolation, housing stress or insecure employment have less capacity to overcome acute shocks such as COVID-19 or extreme heatwaves.

Social demographers Profile.ID conducted an 'analysis of vulnerability' for Council. It demonstrates that vulnerability varies across the Willoughby local government area.

Vulnerability

Metric	Area with highest percentage	Area with lowest percentage	Willoughby local government area average
People aged over 80	Chatswood West – Lane Cove North 8.1%	St Leonards 1.9%	4.3%
Older single-person households (65+ years)	Chatswood West – Lane Cove North 13.2%	St Leonards 3.1%	7.7%
Poor proficiency in English	Chatswood (CBD) 17.9%	Castlecrag 1.4%	7.6%
Unemployment rate	Chatswood (CBD) 7.6%	Northbridge 3.4%	5.0%
Disengaged youth	Willoughby 5.5%	North Willoughby– Willoughby East 1.1%	3.9%
Need for assistance due to disability	Chatswood West – Lane Cove North 5.8%	Castlecrag 2.2%	3.4%
Housing stress	Chatswood (CBD) 18.3%	Castlecrag 1.8%	8.5%

Source: profile.id, 2021

3. The resilience challenge

A national survey of young people for the *Our World, Our Say 2020* report, published by the Australian Institute for Disaster Resilience, shows increasing concern amongst young people about the existential threat of climate change.

“As young Australians, we are united in the opinion that our nation needs to do more to reduce its carbon emissions and become a greener, more sustainable nation. We are aware of climate change, and we are worried about climate change. Young people feel unprepared, under-educated, concerned and increasingly scared by the prospect of a disaster. The 2020 bushfires demonstrated that you need not live in the bush to be affected by a bushfire.”

Australian Institute for Disaster Resilience, *Our World, Our Say 2020* report⁷

These concerns have been compounded by the impacts of COVID-19 on education and employment opportunities for young people, as outlined in Willoughby City Council’s *Economic Recovery Plan 2020*⁸.

The World Economic Forum’s *Global Risks Report 2021*³ identifies youth disillusionment as being a “clear and present danger” over the next two years.

This Plan recognises the uncertainty many young people feel about their future, and prioritises actions that aim to address youth well-being and enhance resilience among Willoughby’s young people.

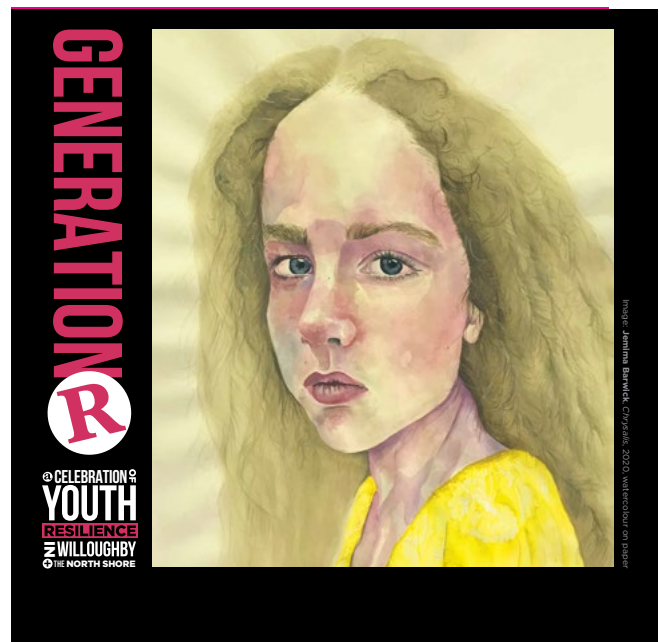


Image: Jemima Barwick, *Chrysalis 2020*, water colour on paper
Source: Generation R youth arts program, presented by Willoughby City Council, 3–28 March 2021

“Here we were, all locked up. Most of us going ballistic. Seeking help, friends, experiences, anything. Yes it was restricting. Yes it was tedious. However, I still think we all have different opinions that matter. In my opinion, what matters most is the way we handle the situation. Look. Reflect. The mirror you look into represents yourself. Not the way you look, but the way you are as a person.”

Looking into a Mirror’ by Alayna Fahd, aged 13 – Celebration of Youth Resilience, Willoughby City Council, March 2021

3.4 The resilience of Aboriginal people

Willoughby City Council is fortunate to have a rich history of Aboriginal culture and heritage. The areas around Middle Harbour and the Lane Cove River were mainly inhabited by the Cammeraygal clan and contain many enduring elements of their ancient culture.

Shelters, art, engravings, middens and various artefacts exist in the Willoughby area, and at other sites on the North Shore and in the Greater Sydney region.

The British colonisation of Australia in 1788 completely disrupted a culture that had evolved over tens of thousands of years. This single, all-engulfing shock decimated Aboriginal society and caused widespread disease, displacement and death.

“Over a short period of time the Europeans depleted fish stocks by netting huge catches, reduced the kangaroo population with unsustainable hunting, cleared the land and polluted the water. As a result, the Aboriginal people throughout the Sydney Basin were soon close to starvation. Introduced European diseases, the battle for Sydney and the practice of genocide reduced the Sydney population by 80–90%”.

ref: History at Willoughby- Fact Sheet No. 13 – Aboriginal people – Willoughby City Library Services, 2014⁹

For many generations since, Aboriginal people have demonstrated courage and resilience in the face of ongoing shocks and stresses. We acknowledge and respect the skills, characteristics and behaviours that enable Aboriginal people to maintain their resilience and continue to deal with and overcome adversity.

Figure 6: A midden on the shore of Middle Harbour



Source: Aboriginal Heritage Office, Northern Sydney Region NSW; April 2021

Figure 7: Taking of Colbee and Benelon



Source: NSW State Library

3. The resilience challenge

3.5 Overview of Willoughby resilience challenges

This section provides an overview of the resilience challenges in Willoughby, drawing on a range of studies, surveys and analyses conducted by Willoughby City Council (see references section).



People

Willoughby's community is complex and diverse. Small pockets of disadvantage are surrounded by some of Sydney's most affluent suburbs. As the *Willoughby Council Community Wellbeing Survey 2019*¹⁰ shows, some in our community are isolated or lonely, particularly our elderly. 18% of residents living in an apartment 'feel like an outsider' in their local community. 17% of families with children find that maintaining a good work/life balance is a challenge. Although our multi-cultural community contributes significantly to our City's vitality and cosmopolitan identity, it can be vulnerable to social isolation and discrimination due to a lack of fluent English. 23% of residents have seen or experienced discriminatory attitudes. Newly arrived migrants working long hours can be vulnerable to job insecurity.

"Social cohesion has traditionally been high in Australian Society, defined as the presence or absence of social trust and communication between citizens. However social cohesion between our different communities is decreasing and social isolation is increasing."

City of Sydney, Resilient Sydney: A strategy for resilience 2018¹

Figure 8: elderly people are often more vulnerable to shocks and stresses



Figure 9: Changing weather patterns due to climate change can cause damage in residential areas



Source: Willoughby City Council



Buildings

Willoughby is a city of contrasts. Modern, multi-storey buildings cluster around transport interchanges and retail hubs in Chatswood and St Leonards. These centres are surrounded by more traditional, low-rise residential and commercial suburbs, leading to significant urban bushland and the high-value foreshore areas of Middle Harbour. People living in lower-cost rental properties and older houses, may rely on expensive air conditioning to cope with extreme heat. Power outages caused by storms can leave residents stranded, particularly in high-rise buildings. Council's *Local Strategic Planning Statement 2020*¹¹ notes that housing in Willoughby has become increasingly unaffordable, particularly for young families, key and essential workers and low-income residents.

"Low-income households suffer from overheated or cold homes and experience problems associated with energy inefficiency and poor indoor environmental quality (IEQ), which ultimately affect residents' quality of life, comfort, well-being, physical and mental health."

Institute of Physics, Conference Series: <https://iopscience.iop.org/article/10.1088/1757-899X/609/4/042067>¹²



Places

The pressures of a growing city are encroaching on the main centres of Chatswood and St Leonards. Conversely, some local centres are declining due to a lack of local services, retail diversity and job opportunities, as acknowledged in Council's *Willoughby Local Centres Strategy 2020*¹³. Traffic congestion is a major problem in parts of the Willoughby area, particularly near busy roads such as the Pacific Highway. Council's *Integrated Transport Strategy 2020*¹⁴ notes that dispersed residential areas are often car-dependent, with limited

access to reliable or frequent public transport. As outlined in *Our Green City Plan 2028*¹⁵, urban bushland and much-loved parks are heavily used and under increasing pressure from population growth, climate change and the ecological impacts of pollution, weeds and feral animals. Local creeks and foreshores are vulnerable to stormwater pollution and recreational pressures.

"Green infrastructure is fundamental to creating a high quality of life and is important in creating a region that is climate-resilient and adaptable to future needs."

*Greater Sydney Commission, North District Plan, 2018*¹⁶



Governance

2019–20 has been one of the most challenging years in the past century for Australian governments at every level. Unprecedented bushfires, persistent drought, storms and the COVID-19 pandemic have stretched government resources. Additional stresses on the community include unaffordable housing, issues with the natural and built environment, and social problems ranging from discrimination and family violence to youth anxiety. Although our public services are effectively tackling many of these stresses, problems may occur due to inadequate communication, poor coordination, under-resourcing or a lack of sufficient evidence on which to base decisions.

"Australia's social cohesion has withstood the COVID-19 pandemic, with attitudes largely positive and trust in government significantly higher. Whilst COVID-19 was seen as the most important issue facing the country, a majority of Australians remained optimistic about the future (70% in July, and 75% in November), and trust in government was the highest ever recorded in the surveys (54%)".

*Mapping Social Cohesion Report 2020, Scanlon Foundation – <https://scanlonfoundation.org.au/2020-mapping-social-cohesion-report-out-now/>*¹⁷

4. Resilience planning network

The methodology and structure of the Plan reflects an approach to resilience planning developed over several years by a network of resilience organisations at a global, state and metropolitan level.

4.1 100 Resilient Cities

100 Resilient Cities (100RC) was established by the Rockefeller Foundation in 2013 to act as a catalyst for global cities to build resilience in the face of the growing shocks and stresses of the 21st century.

In 2019 100RC evolved into the self-supporting Resilient Cities Network who's role is to:

"Bring together global knowledge, practice, partnerships, and funding to empower our members to build safe and equitable cities for all".

<https://resilientcitiesnetwork.org/about/>¹⁸

1,000 cities applied to join the network and 98 cities have been accepted as members, as at July 2019. They include Luxor (Egypt), Rio De Janeiro (Brazil), Vancouver (Canada), Boston (US), London (UK), Dakar (Senegal), Jaipur (India) and Huangshi (China).

Australia's member cities are Sydney and Melbourne.

4.2 NSW state government

In May 2020 Shane Fitzsimmons was appointed by the NSW State Government as the inaugural Commissioner of Resilience to lead the newly established Resilience NSW (formerly the NSW Office of Emergency Management).

Resilience NSW is the:

"Lead disaster management agency for NSW, responsible for all aspects of disaster recovery and building community resilience to future disasters. The agency oversees and coordinates emergency management policy and service delivery with a focus on social, economic, infrastructure and natural environment outcomes".¹⁹

Many other parts of the NSW Government are involved in resilience building, including strategic planning organisations such as Infrastructure NSW, Greater Sydney Commission and the NSW Department of Planning, Infrastructure and Environment; research entities such as Adapt NSW; and operational agencies such as Transport for NSW, NSW Fire and Rescue and the NSW National Parks and Wildlife Service.

Strategies, plans and guidelines developed by NSW Government agencies informed the development of this Plan, as outlined in section 5.2.

"A focus on good design will help create resilient cities and places that mitigate and adapt to the effects of a changing climate. Decisions made now will continue to affect our lifestyles for decades into the future. Design can help explain the interrelatedness of things such as climate and resources in managing risk and unintended consequences."

Better Placed: An integrated design policy for the built environment of NSW, Government Architect of NSW 2017²⁰

4. Resilience planning network

4.3 Resilient Sydney

Sydney successfully applied to join the Resilient Cities Network in 2015. The City of Sydney hosts the Resilient Sydney office comprising the Chief Resilience Officer and a small support team.

Resilient Sydney is a collaboration across 33 Sydney metropolitan councils, state agencies such as Resilience NSW and the Greater Sydney Commission, business representatives and the community.

A steering committee chaired by the City of Sydney's CEO provides policy advice and strategic direction to the NSW Government and member councils via the Resilient Sydney Office. Willoughby City Council's CEO is a member of the Steering Committee. Each council nominates a Resilience Ambassador and a Local Emergency Management Officer (LEMO) to support the program and ensure their council is represented and engaged.

The Resilient Sydney team provides a range of support services to member councils to facilitate a coordinated approach to resilience planning and action across Metropolitan Sydney.

Willoughby City Council would like to acknowledge the invaluable advice and support provided by the Chief Resilience Officer and her team during the development of the Plan.





5. Developing the Plan

Council adopted a staged approach to the development of the Plan. The stages are outlined in Figure 10 below.

The first three stages (research, consultation and risk analysis) informed the development of a strategic framework with desired outcomes and a series of new, prioritised actions to complement Council's existing resilience-building activities.

Sections in this Plan

Figure 10: Resilience planning stages



5.1 Strategic context

Two key documents have provided the strategic context for developing this Plan.

Resilient Sydney – A strategy for city resilience

Published by Resilient Sydney in 2018, this was the first resilience strategy for metropolitan Sydney. The strategy:

“sets the direction we must take to strengthen our ability to survive, adapt and thrive in the face of increasing global uncertainty and local shocks and stresses”.¹

Informed by engagement with over 1,000 people and over 100 organisations, the strategy outlines a five year action plan with five strategic directions and 40 specific actions to address the resilience challenges outlined in section 3.2. The five strategic directions are:

- 1) **Create a people-centred city:** include communities in decision-making for growth and equity
- 2) **Live with our climate:** adapt to sustain our quality of life and our environment
- 3) **Connect for strength:** make every Sydneysider feel they belong in our community and city
- 4) **Get ready:** know how to prepare, respond and recover
- 5) **Be one city:** operate as a unified city



Source: Resilient Sydney

5. Developing the Plan

Sydney resilience challenges – what makes Sydney vulnerable?



Our Future Willoughby 2028 – Community Strategic Plan

Published by Willoughby City Council in 2018, the *Community Strategic Plan*²¹ outlines the vision and priorities for Willoughby as:

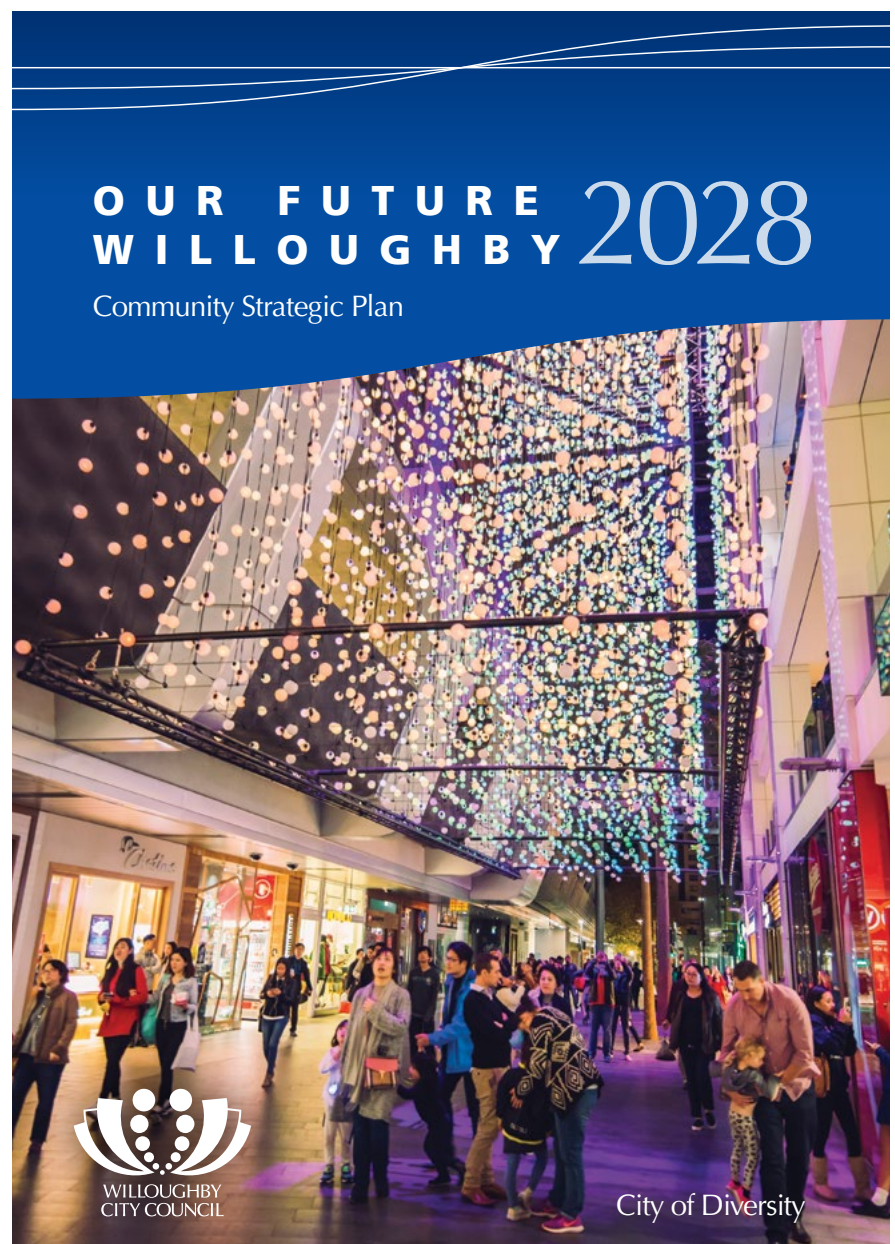
*A city of diversity:
diverse landscapes,
people and businesses.*

The Plan sets out five strategic outcomes and 29 community priorities to achieve the community's vision over the next ten years.

- 1) **Green** – Our City will become a leader in sustainability
- 2) **Connected and inclusive** – Our City is connected through our people, transport, technology and history
- 3) **Liveable** – Our City is safe, engaging, vibrant and supported by great urban design
- 4) **Prosperous and vibrant** – Our vibrant City will have a robust, creative and innovative economy with meaningful and diverse employment opportunities close to home
- 5) **Effective and accountable** – Our City is governed by an ethical and informed Council that is open, transparent and accountable

The selection and prioritisation of actions in this Plan are informed by the strategic directions in both the *Resilient Sydney – a strategy for city resilience* and the *Willoughby Community Strategic Plan: Our Future Willoughby 2028*.

This ensures that Council's investment in resilience-building contributes to the achievement of the long-term vision and strategic direction for both metropolitan Sydney and the City of Willoughby.



5. Developing the Plan

5.2 Research and consultation

The Plan has been informed by a range of research and consultation actions including those outlined in the table below.

Table 3: Research and consultation actions

Action	Example
Desk-top analysis of strategies and plans developed by planning authorities, resilience groups and response agencies	Resilient Sydney, Greater Sydney Commission, Willoughby City Council
Targeted community surveys at a local, regional and national level	<i>The Pulse of Greater Sydney 2020 Report</i> , Greater Sydney Commission; ²² <i>COVID19 Community Pulse Survey 2020</i> , Northern Sydney Regional Organisation of Councils; ²³ <i>Community Perception and Resilience Survey 2020</i> , Willoughby City Council ²⁴
Consultation with specific community sectors and third party service providers	Culturally and linguistically diverse (CALD) community, Willoughby and Lane Cove SES, Nextdoor social media platform
Consultation with a wide range of internal and external resilience stakeholders	Internal: councillors and executive leadership team; unit managers, operations staff External: Resilient Sydney, NSROC, WSROC, GSC, DPIE, Government Architect NSW

Figure 11: Willoughby Council workshop on resilience issues facing non-English speaking communities



Source: Willoughby City Council

Key documents and programs

Some of the resources used to inform the *Willoughby Resilient Strategy and Action Plan* include:



● Global resources

- United Nations (UN) – *Sendai Framework for Disaster Risk Reduction 2015–2030*²⁵
- UN – *Sustainable Development Goals 2015*²⁶
- World Economic Forum – *2021 Global Risks Report*³
- Resilient Cities Network – *various*

● National resources

- Council of Australian Governments – *National Strategy for Disaster Resilience 2011*²⁷
- Climate Council of Australia – *various*
- Commonwealth Government – *Disaster Response Plan 2020*²⁸

● State resources

- Premier’s Priority – *Greening our city 2019*²⁹
- NSW Government – *NSW Climate Change Policy Framework 2016*³⁰
- Government Architect NSW – *Greener Places: An urban green infrastructure design framework 2020*³¹
- Government Architect NSW – *Better Placed: An integrated design policy for the built environment of NSW 2017*²⁰

● Regional resources

- Greater Sydney Commission – *Greater Sydney Region Plan: A Metropolis of Three Cities 2018*³²
- Greater Sydney Commission – *North District Plan 2019*¹⁶
- Resilient Sydney – *A strategy for city resilience 2018*¹
- Northern Sydney Regional Organisation of Councils – *10-Point Plan 2018–19*³³

● Local resources

- Willoughby City Council – *Disability Inclusion Action Plan 2017*³⁴
- Willoughby City Council – *Our Future Willoughby 2028*²¹
- Willoughby City Council – *Our Green City Plan 2028*¹⁵
- Willoughby City Council – *Integrated Transport Strategy 2036*¹⁴
- Willoughby City Council – *Local Strategic Planning Statement 2020*¹¹

Figure 12: UN Sustainable Development Goals relevant to resilience



5. Developing the Plan

5.3 Risk analysis

Council undertook a risk analysis to inform development of this Plan. The analysis focused on two aspects:

- Risks to the community
- Risks to Council assets and community services

The risk analysis assessed potential disruptions or threats to the Willoughby community and to Council (acute shocks and chronic stresses) and generated over 100 resilience actions to address them.

Many of these actions are already being implemented by Council and its partners. New actions generated are prioritised to address resilience gaps and create additional economic, social and environmental benefits, as detailed in the Action Plan (section 6).

5.4 Strategic framework

A value proposition and four resilience outcomes provide the strategic framework for the implementation of the Action Plan.

The value proposition is:

a thriving, vibrant City that is resilient, sustainable and connected

The resilience outcomes are:



Resilient people: our diverse community is healthy, adaptable, self reliant, inclusive and connected.



Resilient buildings: our buildings are safe, well-designed, affordable and sustainable.



Resilient places: our places can withstand the challenge of climate change, sustain biodiversity, and support vibrant, connected communities.



Resilient governance: our public agencies and institutions are trusted, efficient, and responsive to community needs.

5.5 Prioritising actions

The efficacy of each action was assessed against six resilience criteria and a high-priority was assigned to those actions which scored well.

Table 4: Criteria for prioritising actions to achieve a resilient city

The action is ...	
integrated	It addresses multiple community resilience challenges
achievable	It is cost-effective and viable
needs-based	It focuses on meeting the needs of vulnerable communities
place-specific	It achieves tangible community benefits on the ground
engaging	It promotes community participation, ownership and a culture of self-reliance
strategic	It addresses one or more of the strategic outcomes outlined in <i>Community Strategic Plan: Our Future Willoughby 2028</i> ²¹ and <i>Resilient Sydney: A Strategy for City Resilience 2018</i> ¹

The high-priority actions are listed in the Action Plan in section 6 and will provide the focus for Council's resilience building activities in the short to medium term (0 to 5 years).

This will require some budgetary commitments in Council's four-year delivery plans and annual operational plans. External grants will also be sought for some of the actions.

Detailed project bids will be prepared for each action and resources allocated in accordance with Council's project management and control system.

Figure 13: Tenacious Realm, Visual Arts Biennial, Willoughby City Council 2019 – Tamara Whyte, *Bulman Hybrid*, 2018, video still



Source: Willoughby City Council

6. Action Plan



The Action Plan table details new, high priority actions to achieve additional resilience outcomes.

These new actions complement a range of resilience-building actions identified in the risk analysis which are already being implemented by Council, as detailed in section 7. These existing Council actions may be extended when additional internal or external resources become available.

The columns in the Action Plan table below provide the following information:

Risk – the risk to the Willoughby community or Council arising from a major shock, stress or challenge

Strategic direction – a high level statement describing Council’s strategic response to the risk

Action – individual actions to be implemented by Council and partner(s) to address the risk

Partners – organisations or groups who Council may partner with to implement the action



Resilient People –

our diverse community is healthy, adaptable, inclusive and connected

New actions

Risk	Strategic direction	Action	Partners
Increasing social isolation and loneliness reduces capacity to withstand shocks and stresses	Engage and connect communities, promote self-reliance	<ol style="list-style-type: none"> 1. Launch <i>Nextdoor</i> social media platform <i>August 2021</i> 2. Initiate <i>Know Your Neighbours</i> program, including a series of community-based place-making projects e.g. “adopt a street”, resilience-themed public art, pop-up parklets <i>Ongoing</i> 	Volunteer groups (e.g. Bushcare, Clean Up Australia), social network platforms (e.g. Nextdoor, Willoughby Life), neighbourhood associations, service clubs

6. Action Plan

Risk	Strategic direction	Action	Partners
Increased youth anxiety, resentment and loneliness	Increase targeted support to build resilience amongst vulnerable and at-risk youth	<p>3. Launch comprehensive <i>Resilient Youth Program</i> based on successful pilots at Chatswood High School, Waves of Wellness, Willoughby Girls High School, to provide targeted support to young people to develop resilience e.g. positive psychology; consent and addiction counselling</p> <p><i>Annually</i></p>	Schools; universities and colleges; youth support groups; NSW DoE, NSW DCJ; NSW Police; youth service providers e.g. Headspace
Increased car dependency causes congestion, emissions and stress and reduces fitness, social connections and independence	Increase community awareness and participation in schools active travel	<p>4. Establish <i>Schools Active Travel</i> pilot program in two schools to support more walking and riding to school</p> <p><i>December 2022</i></p>	Cycling advocacy groups (e.g. Bicycle Network, Bike North), TfNSW, NSW DoE, local schools, SINSW
Extreme weather causes damage to people and property and associated trauma	Increase community awareness of extreme weather risks and strengthen self-reliance	<p>5. Implement "<i>Connecting the Disaster Dots</i>" – emergency planning program for CALD communities</p> <p><i>October 2021</i></p> <p>6. Run an awareness program to support <i>Red Cross Get Ready</i> campaign</p> <p><i>Ongoing</i></p> <p>7. Launch <i>Climate-Wise Communities</i> Program to assist households prepare for emergencies e.g. bush fires, floods, extreme heat</p> <p><i>October 2022</i></p>	SES, NSW Fire and Rescue, Resilience NSW, NSROC, partner councils, NSW Health, Resilient Sydney



Resilient buildings – our buildings are safe, well-designed, affordable and sustainable

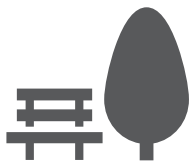
New actions

Risk	Strategic direction	Action	Partners
Increasing proportion of income spent on housing.	Initiate and/or enhance affordable housing programs and funding mechanisms	<p>8. Promote <i>Affordable Housing</i> opportunities to increase community awareness of available support</p> <p><i>Ongoing</i></p> <p>9. launch <i>Mind Your Budget</i> project to enable vulnerable residents to develop financial resilience and reduce housing stress</p> <p><i>Ongoing</i></p>	Commercial and not-for-profit affordable/social housing developers and operators, DPIE, NSW Land and Housing Corporation, NSW DCJ, not-for profit financial services, TAFE
Extreme heat impacts comfort, productivity and health	Initiate and/or enhance sustainable programs to address thermal comfort in the built environment (indoors and outdoors)	<p>10. Deliver <i>Beat the Heat</i> program, including <i>Cooler Homes</i>, <i>Cooler Streets</i> and <i>Cooler Schools</i> pilot programs and a <i>Cool Retreat</i> register</p> <p><i>July 2024</i></p>	Residential and commercial building owners/landlords, NSW DPIE, NSW DCJ, NSW Health, NSW LHC, community service providers, NSW Education and local schools, universities, non-profit and faith-based groups

Figure 14: The Concourse, Chatswood



6. Action Plan



Resilient places –

our places can withstand the challenge of climate change, sustain biodiversity and support vibrant, connected communities

New actions

Risk	Strategic direction	Action	Partners
Drought causes decline in biodiversity, water restrictions, bushfire smoke and dust	Increase community awareness of drought impacts, air quality issues and water cycle management solutions	<p>11. Deliver <i>Don't Dry Out</i> awareness program to help people prepare for and overcome drought and poor air quality etc. e.g. drought resistant gardens, water harvesting, use of face masks and air filters on smoky days</p> <p><i>December 2022</i></p>	DPIE, NSW GA, NSW EPA, stormwater and WSUD sector, Sydney Water, NSW Health, design and development sector
Decline in urban biodiversity and reduced availability of green infrastructure	Extend community support and enjoyment of urban greening and green infrastructure	<p>12. Launch <i>Bushcare 2.0</i> to increase bushcare volunteer numbers, especially amongst young people and culturally and linguistically diverse (CALD) communities</p> <p><i>March 2022</i></p> <p>13. Launch <i>Gardening Willoughby</i> to encourage residents to get involved in community gardening e.g. in high rise buildings</p> <p><i>August 2022</i></p> <p>14. Initiate two <i>Urban Greenways</i> to better connect our green open spaces and enhance opportunities for residents to enjoy nature and improve fitness by walking and cycling</p> <p><i>December 2024</i></p>	DPIE, GSC, NSW GA, TfNSW, community/ residents groups and progress associations, strata managers, commercial land owners/ operators, open space and urban sustainability sector, utilities
Unsustainable waste practises generate social, economic and environmental costs	Implement sustainable resilient waste management	<p>15. Launch <i>Willoughby Waste</i> to encourage greater take-up of more sustainable community waste practises e.g. food waste and composting trial, circular economy program (plastics and coffee pods trial)</p> <p><i>June 2024</i></p>	NSW EPA (Waste); waste and recycling sector; universities; ROCs (including SSROC); construction sector; place-based community groups; progress associations



Resilient governance –

our public agencies and institutions are trusted, efficient and responsive to community needs

New actions

Risk	Strategic direction	Action	Partners
Cyber-attack disruption of digital and on-line services causes social, economic and environmental impacts	Increase community awareness of the strengths and weaknesses of the digital environment	16. Initiate <i>Cyber Safe Willoughby</i> community information program to raise community awareness of scams and cyber-attack e.g. Tech Savvy Seniors <i>June 2022</i>	Services NSW, NSW DCJ, NSW Police, third party service providers for the elderly and vulnerable
Pandemic disruption of everyday life causes major social and economic impacts	Maintain community awareness of pandemic threats and defence measures	17. Develop <i>Pandemic Awareness Program</i> for existing and new pandemic threats <i>Ongoing</i>	NSW Health, emergency response agencies, ROCs
Resilience needs of vulnerable residents are inadequately met due to miss-communication and/ or poor coordination	Identify gaps and enhance coordinated delivery of community services	18. Deliver <i>Willoughby Collective Impact Model</i> to address gaps and facilitate a more coordinated approach to community services provision <i>June 2023</i>	Community services providers (agencies, not-for-profit service providers), community stakeholder

Figure 15: Meals on Wheels services help to maintain the resilience of elderly residents



Source: Willoughby City Council

7. Existing resilience actions

The risk analysis identified a wide range of actions at a strategic and operational level which are already being implemented by Willoughby City Council to support and strengthen community resilience.

This Plan provides an opportunity to focus on these existing actions and the resilience outcomes and benefits they generate.

Some actions may be extended and new actions commence when additional internal or external resources become available.



Resilient People –

our diverse community is healthy, adaptable, inclusive and connected

Council will continue to:

- Extend digital platforms to connect with 'hard to reach' groups
- Provide professional and volunteer-based community services to support vulnerable people
- Implement resilience-themed Live Well in Willoughby programs
- Extend fitness and wellbeing programs for vulnerable groups
- Promote cross-cultural understanding through events and multi-cultural programs
- Present resilience-themed arts exhibitions and programs
- Promote inter-generational understanding and support through activities and programs
- Extend road safety
- Support citizen-science and general environmental awareness in the community

- Advocate and support healthy work/life balance
- Conduct surveys and social research to evaluate programs

Figure 16: Council-run 'Live Well in Willoughby' workshops improve residents' well-being



Source: Willoughby City Council



Resilient buildings – our buildings are safe, well-designed, affordable and sustainable

Council will continue to

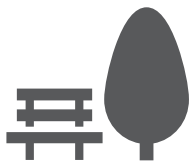
- Equip council buildings and assets to withstand the impacts of extreme weather
- Support and extend DDA (Disability Discrimination Act) design requirements and controls in buildings and places
- Develop innovative planning controls to facilitate 'smart', sustainable buildings and community infrastructure
- Mitigate urban noise in built and natural environments
- Promote "COVID-friendly" buildings and public space design
- Encourage and support sustainable business practises

Figure 17: Willoughby City Council solar farm, Westfield Centre car park, Albert Avenue, Chatswood



Source: Willoughby City Council

7. Existing resilience actions



Resilient places –

our places can withstand the challenge of climate change, sustain biodiversity and support vibrant, connected communities

Council will continue to

- Improve thermal comfort in pedestrianised places
- Provide robust playing surfaces in parks and ovals
- Implement 'safer by design' principles and practises in highly pedestrianised areas and open spaces
- Review planning policies and guidelines to facilitate resilience outcomes in new developments
- Conserve and extend urban tree cover
- Implement innovative and sustainable bushland management
- Manage and protect foreshores and waterways
- Implement sustainable stormwater management through best practise water sensitive urban design (WSUD) and pollution control
- Promote shared-use of infrastructure corridors to optimise benefits to the community
- Conserve and interpret Aboriginal heritage
- Facilitate growth in walking and cycling, including expansion of cycle and pedestrian infrastructure
- Protect employment lands
- Stimulate the night-time economy and reinvigorate declining local centres

Figure 18: Tenacious Realm, Visual Arts Biennial – Louis Pratt, *Legacy*, 2019, coal, fibreglass, resin and steel



Source: Willoughby City Council



Resilient governance –

our public agencies and institutions are trusted, efficient and responsive to community needs

Council will continue to

- Support integrated and coordinated planning, design and delivery of place-based improvements
- Support and/or facilitate inter-agency collaboration in emergencies
- Encourage sustainable procurement and operations
- Provide resilience training and support
- Maintain and enhance business continuity and risk management practise
- Adopt innovative approaches to climate change risk assessment and valuation of green infrastructure
- Procure appropriate insurance and natural disaster funding to address growing risks from climate change

Figure 19: Ecological and hazard reduction burning



Source: Willoughby City Council

8. Implementation and monitoring

Successful implementation of the *Resilient Willoughby Strategy and Action Plan* requires effective collaboration and integration of outcomes across a number of Council’s strategic and operational areas.

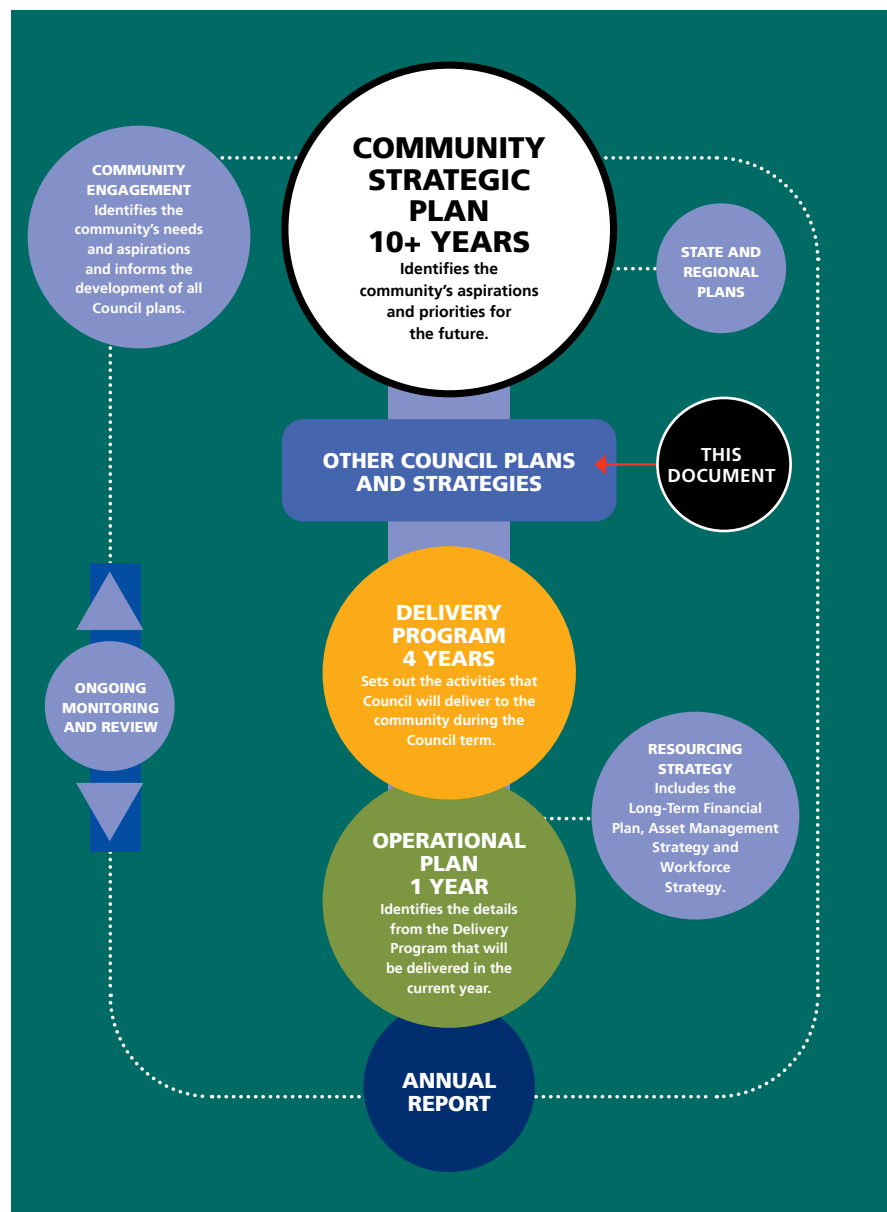
We will continue to emphasise collective leadership, knowledge sharing, community participation, diverse stakeholder engagement and capacity building.

Combining services to deliver measurable resilience outcomes has the potential to benefit a number of different parts of Council, delivering innovation, cost efficiencies and community benefits.

Outcomes reporting for this Plan will be incorporated in Council’s existing Integrated Planning and Reporting Framework.

Willoughby City Council, in collaboration with Resilient Sydney and other resilience partners will continue to monitor and evaluate the benefits to the community and Council of investment in resilience-building activities.

Figure 20: Community Strategic Plan – *Our Future Willoughby 2028*



Source: Willoughby City Council

This will involve a combination of:

Standard reporting required as part of Council's Integrated Planning and Reporting Framework. This will include surveys of community wellbeing and customer satisfaction undertaken by Council at regular intervals.

Peer review of specific elements of the Plan, conducted by resilience partners and specialist organisations such as Resilient Sydney and the Greater Sydney Commission (GSC).

Community consultation and stakeholder feedback involving input from specific communities involved in or benefiting from resilience activities, for example bush care volunteers, and stakeholder partners involved in delivering community services with Council, for example culturally and linguistically diverse (CALD) community workers.

Social research on specific aspects of resilience, such as social cohesion or vulnerability in the community

Information and data from the monitoring and evaluation process will feed directly into annual and four-year reviews of the *Resilient Willoughby Strategy and Action Plan*.

Progress reporting will inform reviews of other relevant council programs and plans, including *Our Green City Plan 2028*¹⁵, *Our Future Willoughby 2028*²¹, the *Willoughby City Local Strategic Planning Statement*¹¹, the *GSC North District Plan*¹⁶, and the *Lane Cove/Willoughby Emergency Management Plan*³⁵.

“Valuing the dividend is critical to more fully understanding why we should build resilience and encourage resilience planning. The full impacts are often not immediately recognised, and can be difficult to estimate. But, like major infrastructure investment that forecast decades worth of economic benefit, we must do the same for resilience planning if decision-makers are to invest in policies and projects that promote resilience.”

Judith Rodin, President (2015–2017), Rockefeller Foundation³⁶

8. Implementation and monitoring

Figure 21: The role of resilience

Where does resilience sit?



“Sydney is subject to a range of natural and urban hazards which can be exacerbated by climate change ... to be resilient, communities need social cohesion, access to economic resources, and access to quality information about hazards that may affect them.”

Greater Sydney Region Plan – A Metropolis of Three Cities, Greater Sydney Commission, 2018



Glossary

100RC: The 100 Resilient Cities initiative, established by the US-based Rockefeller Foundation in 2013. In 2019, it evolved into the 100 Resilient Cities Network: resilientcitiesnetwork.org

BASIX: The Building Sustainability Index, a planning tool used to measure water and energy usage, and thermal comfort performance

CALD: Culturally and linguistically diverse

DCJ: NSW Department of Communities and Justice

DDA: *Disability Discrimination Act 1992*

DPIE: NSW Department of Planning, Industry and Environment

GANSW: Government Architect NSW

GSC: Greater Sydney Commission

LGA: Local government area

LEMO: Local emergency management officer

NABERS: The National Australian Built Environment Rating System, used to measure and compare the environmental performance of Australian buildings and tenancies

NGO: Non-government organisation

NSROC: Northern Sydney Regional Organisation of Councils

NSWLHC: NSW Land and Housing Corporation

Resilience: The capacity of individuals, communities, businesses and systems within a city to survive, adapt and thrive no matter what kinds of acute shocks and chronic stresses they experience

ROC: Regional organisation of councils

SES: State Emergency Service

SINSW: Schools Infrastructure NSW

TfNSW: Transport for NSW

WSUD: Water-sensitive urban design

WSROC: West Sydney Regional Organisation of Councils

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