

23 August 2016



Ms Catherine Van Laeren
Regional Director Sydney West
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Ms van Laeren

**Re: Submission of a Planning Proposal – Shepherd Street, Liverpool
Draft Liverpool Local Environmental Plan (Amendment No. 65)**

In accordance with Section 56 of the Environmental Planning and Assessment Act 1979, Council is forwarding the attached Planning Proposal for Draft Liverpool Local Environmental Plan 2008 (Amendment No. 65) seeking Gateway determination. The proposal affects 20-33 Shepherd Street, Liverpool, and seeks to:

- Increase the Height of Buildings to 77m; and
- Increase the Floor Space Ratio to between 3.3:1 and 3.7:1.

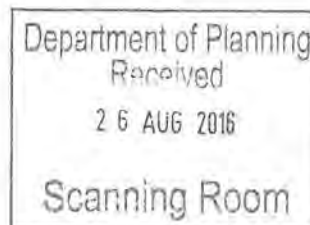
At its meeting on 29 June 2016, Council resolved to:

1. *Endorse, in principle the modified planning proposal for 20-33 Shepherd Street Liverpool for increased density on the existing R4 site;*
2. *Delegate to the A/CEO the authority to finalise the planning proposal and submit to the DPE for Gateway approval, subject to the submission of the following:*
 - a) *An urban design analysis;*
 - b) *A transport and mobility study; and*
 - c) *A comprehensive social impact assessment.*
3. *Note that the A/CEO will finalise negotiations regarding the proposed voluntary planning agreement and public benefit offer and any other relevant conditions as required to support the proposal, with a report to be presented to a future Council meeting.*

Council requests Gateway determination for the planning proposal in accordance with Section 56 of the EP&A Act 1979.

The planning proposal is supported by:

- Urban Design Report;
- Flood Impact Report;
- Traffic and Transport Study;
- Ecology/Riparian Corridor Flora and Fauna Report;
- Heritage Report;
- Aboriginal Cultural Heritage Assessment; and
- Social Impact Assessment.



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Accordingly, the requirements of the Council resolution referenced above have been satisfied and the proposal can now be forwarded for Gateway approval.

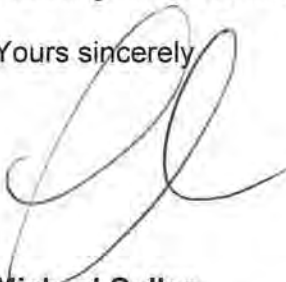
Two detailed reports have been prepared specifically for the precinct including an updated Traffic and Transport report prepared by Inroads and an Integrated Transport Assessment prepared by Smyth Consulting. In combination, these reports address innovative transport solutions to influence mode sharing behaviour in the precinct and demonstrate that the proposed rezoning is acceptable on a technical level. These reports satisfy the Council resolution in terms of progressing to the Department for Gateway determination.

Note that in respect of the transport and mobility study, Council has commissioned a comprehensive traffic study in support of the CBD LEP Amendment 52 as required by Transport for NSW. This traffic modelling will test the technical and professional input that the applicant has provided for the purpose of upgrades for any units above that currently permissible in the precinct under the existing controls. A Voluntary Planning Agreement is being negotiated between the proponent and Council and will be finalised following Gateway. These negotiations will also be informed by the outcomes of the broader traffic studies currently being undertaken. The draft Voluntary Planning Agreement will be exhibited with the planning proposal following Gateway determination.

Details of the outcome of these further traffic studies will be forwarded to the Department upon completion, expected to be mid-September 2016.

Should you require any further information on this matter, please contact Toni Averay Director Planning and Growth on 9821 9242.

Yours sincerely



Michael Cullen
A/Chief Executive Officer

Attachment:

Amended Planning Proposal for 23-33 Shepherd Street prepared by Mecone dated August 2016 including Appendixes 1-9

20 - 33 Shepherd Street, Liverpool

Amended Planning Proposal for a Residential Development

On behalf of
Coronation Property Co Pty Ltd
August 2016



Project Manager

Kate Bartlett

Signed*



.....
Date

Project Planners

Joseph Bell and Emma Burke

* This document is for discussion purposes only unless signed and dated by the persons identified. This document has been reviewed by the Project Director.

Contact

Mecone

Suite 1204b, Level 12, 179 Elizabeth Street
Sydney, New South Wales 2000

info@mecone.com.au
mecone.com.au

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Introduction

This report has been prepared by Mecone Pty Ltd (Mecone) on behalf of Coronation Property Co Pty Ltd (Coronation) in support of an existing Planning Proposal to Liverpool City Council (Council) in relation to the land known as 20 - 33 Shepherd Street, Liverpool (the site).

This report supports a revised masterplan for the site, following the lodgement of the Planning Proposal to Council in September 2015 for 20, 28, 31 and 33 Shepherd Street. Following ongoing discussions with Council, an expanded land area is now included as part of the proposal.

Coronation have engaged SJB Urban Design (SJB) to prepare a masterplan for the expanded precinct, which has investigated the overarching constraints and opportunities and ultimately recommended a final built form concept. From these recommendations, this Planning Proposal seeks an amendment to the Liverpool Local Environmental Plan (LLEP) 2008 for the sites covering 20-33 Shepherd Street to allow for:

- A maximum building height of 77m; and
- A maximum floor space ratio of between 3.3:1 and 3.7:1.

The site is located adjacent to the Liverpool City Centre and is currently zoned R4 High Density Residential. The land is proposed to be developed as a mainly residential precinct with local retail activities within the Heritage Mills Building.

SJB's masterplan identifies that the Shepherd Street Precinct in its entirety (south of Atkinson Street) has the potential to cater for 1,500 dwellings. The site subject to the planning proposal itself, generally on the eastern side of Shepherd Street, has been identified for a potential dwelling yield of 1,200 dwellings. These dwellings are vital to contributing towards Liverpool's state housing targets. Analysis of the Bureau of Transport Statistics shows that between 2011-2015, Liverpool Council was forecast to deliver nearly 8,000 new occupied private dwellings, yet only delivered just over 5,000.

Importantly, as requested by Council, the masterplan and urban design report has considered the entire Shepherd Street Precinct. The masterplan has undertaken a detailed constraints and opportunities analysis of all sites in the precinct to develop recommendations for suitable future development potential. The analysis provides evidence for the suitability of all sites to support the densities as proposed, identifying constraints and providing an evaluation of traffic and transport connectivity, safety by design and public domain treatment, as well as an assessment of the social impacts as a result of the proposed densities.

The masterplan prepared by SJB, in conjunction with a landscaping concept prepared by Aspect Studios, includes the following:

- Street network improvements including new connections from Shepherd Street to the river frontage, realigning and upgrading the Shepherd Street connection through to the Casula Powerhouse Arts Centre via Powerhouse Road, and additional on-street parking;
- A potential for 140,204m² of gross floor area across the entire precinct; and
- Significant public domain improvements including a new pedestrian and cycling connection along the riverbank adjoining the precinct, upgrades to Mill Park, and local street upgrades in conjunction with the new street network.

The proposal will be a key part of providing direct access to the Georges River, which seeks to activate the foreshore area and deliver on Liverpool's River City status. The proposal also unlocks the access constraints on and around the Liverpool City Centre and will not only provide major public benefits in its own right, but also be the catalyst to deliver on Liverpool Council's vision to become a river city. The proposal will deliver a number of public benefits and will:

- Provide a high quality residential development that incorporates excellent residential amenity and protects the amenity of the residents of future surrounding development;
- Contribute a significant number of new high-quality dwellings within the Liverpool City Centre to contribute to Liverpool's dwelling targets and meet the State Plan's Objective for Liverpool to be a regional centre;
- Provide a mix of uses in a location close to existing transport, community infrastructure, open space and adjacent to the Liverpool City Centre, which creates a socially improved work-home life balance for residents;
- Facilitate adaptive reuse of the Heritage Mill Building for local commercial and retail uses to prevent dilapidation of an important heritage item in the locality;
- Unlock the Georges River Precinct by enabling safe vehicular, cycling and pedestrian access to and along the Riverfront and associated public lands including Lighthorse Park. The development will also enhance the Riparian Corridor within the site through best practice bush regeneration works;
- Provide a significant new pedestrian and cycling connection along the riverfront to Lighthorse Park and towards the Casula Powerhouse;
- Activate the public domain by providing a local street network and pedestrian connections as well as active ground-floor uses in the Heritage Mills Building. This will also provide local employment opportunities within the site;
- Allow for a proposal that will complement and support the existing and future surrounding land uses and planning proposals; and
- Increase the size of the public domain and provide public domain works and landscaping.

The planning proposal contains an explanation of the intended effects and justification of the proposed amendments.

The planning proposal has been prepared in accordance with Section 55 of The Act and the relevant Department of Planning and Environment's Guides, including 'A guide to preparing local environmental plans' (April 2013) and 'A guide to preparing planning proposals' (October 2012).

This report has been prepared to support the expanded planning proposal and associated amended documentation and should be read in conjunction with the original proposal lodged in September 2015.

1.1 Proponent and Project Team

The planning proposal has been prepared on behalf of Coronation. Table 1 identifies the project team.

Table 1 – Project Team

Urban Planning	Mecone
Architecture	Woods Bagot
Urban Design	SJB Planning
Flooding and Drainage	Wood & Grieve
Traffic Impact Assessment	InRoads Group
Landscape	ASPECT Studios
Heritage Impact	City Plan Services
Aboriginal Cultural Heritage	Artefact Heritage
Flora and Fauna / Riparian	ACS Environmental
Cost Estimate	Napier & Blakeley

1.2 Background

In considering this amended Planning Proposal it is relevant to consider also the history of this project.

Planning Proposal

A request for a Planning Proposal was originally submitted to Council for 20, 28, 31 and 33 Shepherd Street in September 2015, seeking:

- A maximum building height of 100m at 20 Shepherd Street, 80m at 28 Shepherd Street, and 100m at 31 and 33 Shepherd Street; and
- A maximum floor space ratio of 4:1 at 20 Shepherd Street and 4.5:1 at 38, 31 and 33 Shepherd Street.

Council advised that the planning proposal did not contain sufficient consideration of the surrounding precinct. It was requested that the planning proposal be amended to consider all other properties within the Shepherd Street precinct as well as:

- The relationship of the subject sites to one another, as well as to the adjoining properties that are not part of the proposal;
- The spatial context of these sites within the immediate and larger area, including the city centre; and
- The relationship to the river.

The SJB masterplan and associated supporting documentation including this report addresses Council's feedback request.

Current Development Proposals

Development applications have been lodged by Coronation for 20 Shepherd Street and 28 Shepherd Street under the existing controls.

DA – 1010/2014 – 20 Shepherd Street, Liverpool

On 17 November 2014 Coronation lodged a development application at 20 Shepherd Street Liverpool (an adjacent site) for:

- Demolition of a portion of existing heritage building 'former Challenge Woollen Mills';
- Removal of existing car park and 14 trees;
- Remediation of site;
- Erection of two residential flat buildings ranging from 9 to 16 storeys and containing a total of 245 residential apartments (54 x 1 bedroom, 175 x 2 bedroom, 16 x 3 bedroom);
- Two levels of basement parking containing 313 spaces; and
- Public domain works, landscaping and associated site works.



Figure 1. Photomontage of proposed development – 20 Shepherd Street

Source: Woods Bagot

The development application at 20 Shepherd Street was granted consent on 27 October 2015. The consent was granted for two levels of basement parking with 288 parking spaces, conservation to the 'Challenge Woollen Mills' heritage building and one 9-storey and one 15-storey residential flat building with a total of 247 units.

On 13 November 2015 the applicant submitted a Section 96(2) modification application to:

- Realign the basement and provide an extra level (no change to number of parking spaces); and
- Modify ground level of Building A with respect to car park entries, which results in minor changes to unit location (no change to unit size or mix).

The basement realignment was proposed in order to:

- Reduce the basement's proximity to the waterfront;
- Ensure adequate structural services and design for the overall development; and
- Provide for increased deep soil area to 9% of the site area.
- The realignment results in a reduction in the basement's footprint and thus necessitates addition of a level of parking in order to maintain the approved number of parking spaces.
- The ground floor modifications were proposed for structural reasons relating to the realignment of the basement. These modifications will allow for improved vehicular access and result in slight modifications to adjacent units.

The modification application was approved on 15 February 2016.

DA-612/2015 – 28 Shepherd Street, Liverpool

On 3 July 2015 Coronation Property Co Pty Ltd lodged a development application at 28 Shepherd Street Liverpool (an adjacent site) for:

- Demolition of existing structures on site;
- Remediation of site;
- Erection of two residential flat buildings ranging from 6 to 9 storeys and containing a total of 169 residential apartments;
- Two levels of basement parking; and
- Landscaping and associated site works.

The proposal was subsequently amended in October 2015 for:

- Demolition of existing structures on site;
- Excavation, remediation and early works;
- Construction of a three level basement with vehicle egress and driveway off Shepherd Street;
- Construction of a 6-storey residential flat building (C2) facing Shepherd Street with 65 apartments and roof terraces; and
- Construction of a 7-storey residential flat building (C1) facing Georges River with 79 apartments and roof terraces.



Figure 2. Photomontage of proposed development – 28 Shepherd Street

Source: Woods Bagot

The subject application was under assessment at the time of writing this report.

DA-1065/2015 - Challenge Woollen Mills Building Use and Fit-Out

On 30 October 2015, a DA was submitted for fit out and use of the 'former Challenge Woollen Mills' building on site as a local retail and neighbourhood precinct. The proposed development will generally include the following works:

Addition of 8 separate retail outlets, including:

- Veggie + Juice Bar;
- Asia Spice;
- Roastery;
- Grocery Market;
- Café Coffee;
- Flower Market;
- Bakery; and
- Art in the Market;
- Addition of bathrooms, ancillary administrative office, storage rooms and refrigerator and freezer rooms;
- Seating for approximately 306 persons (210 indoor and 96 outdoor); and
- Proposed trading hours of 7am -10pm, Monday – Sunday

The development application was a requirement of the overarching DA for the site (DA-1010/2014), which required the adaptive reuse and conservation of the Challenge Woollen Mills Heritage Building in order to meet the 'Conservation Incentives' provisions in the LLEP2008.

The subject application was under assessment at the time of writing this report.

1.3 Site Location

The area subject to the Planning Proposal is 20 - 33 Shepherd Street, Liverpool (the site). Figure 3 below provides an aerial image of the site and its immediate context.



Figure 3. Site Image

Source: Six maps, modified by Mecone

The figures below show images of the local precinct.



Figure 4. Looking south along Shepherd Street

Source: Mecone



Figure 5. Sites 20-28 Shepherd Street
Source: Mecone



Figure 6. Ongoing construction at 20 Shepherd Street
Source: Mecone



Figure 7. View of Georges River from Atkinson Street

Source: Mecone

Table 2 –below provides the legal description and a brief summary of the site(s).

Table 2 – Subject Site(s)	
Legal description	Lots 1, 3, 4 5 and 6 DP247485, Lot 22 & 23 DP859055
Total site area	31,000 m ² /3.1 hectares (approx.)
Site description	Located on Shepherd Street, west of the Georges River and east of the railway line in the south east of the Liverpool City Centre. The ownership of the site consists of continuous lots. A strip of land extending along the eastern boundary of the site, known as 2 Atkinson Street, is owned by Council and separates the Georges River and the site. Powerhouse Road extends through the western portion of the land on which 31 Shepherd Street is located, which is owned by Council. The Georges River Trail is located to the east of Powerhouse Road and extends south to the Casula Powerhouse Arts Centre and Casula Railway Station.
Site topography	Relatively level close to the street, however there is a steep riverbank decline into the Georges River.
Existing buildings/ structures	20 Shepherd Street – Warehouse with a large hardstand area. 26 Shepherd Street – Undeveloped; caryard with large hardstand area. 28 Shepherd Street – Vacant land with dilapidated shed. 32-34 Shepherd Street – Two storey commercial/industrial building,

Table 2 – Subject Site(s)

	operated in by Liverpool Smash Repairs. 31 Shepherd Street – Building with Powerhouse Road extending through it. This lot is adjacent to the railway corridor. 33 Shepherd Street – Warehouse with Bevisco Commercial Interiors operating in this warehouse.
Vehicular and pedestrian access	Pedestrian and vehicular access to the site is from the north via Shepherd Street and from the south via Powerhouse Road. The Georges River Trail is located to the east of Powerhouse Road and provides cycling and walking along the Georges River to the Casula Powerhouse Arts Centre and then connects to further trails heading south (Waving Gardens Path and Leacock Trail).
Heritage Conservation	20 Shepherd Street, part of the site, is a locally listed heritage item (104) known as the McGrath Services Centre Building (formerly Challenge Woollen Mills and Australian Paper Company's Mill). Light Horse Park is approximately 490 m to the north east of the site extending south to Atkinson Street and is a locally listed heritage item (70).

1.4 Site Context

The site is located in the local government area of the City of Liverpool. It is approximately 27kms south west of the Sydney CBD and within the Liverpool City Centre, which is identified as a regional city under "A Plan for Growing Sydney". The site is located approximately 910m south of the Liverpool Railway line, bus interchange and Liverpool City Centre.

The site is located in a high density residential area between the railway line and the Georges River. This high density residential area extends to the west and north west until the Liverpool City Centre.

Light Horse Park extends along the western bank of the Georges River separating the site from the River.

The proposed development will provide new housing in line with the existing zoning for high density residential land uses.

Figure 8 below shows a panoramic view of the surrounding precinct.



Figure 8. Local Liverpool Context
Source: Coronation

1.5 Surrounding Development

To the north of the site is a precinct of three storey residential flat buildings, on the opposite side of Atkinson Street.

To the east of the site is a strip of land owned by Council and beyond this is Georges River. On the eastern bank of the Georges River is a large industrial precinct.

To the south is Mill Park and Powerhouse Road, and the Georges River Trail extending further south to the Casula Train Station and Casula Powerhouse Arts Centre. To the west of the site are industrial buildings, and the railway line.

There are a number of major development proposals of a similar scale to the proposal, which have recently been approved by Council. Below is a summary of two major development proposals, which are within the context of the site.

420-446 Macquarie Street Liverpool

Macquarie Street is located approximately 800m to the northwest of the site. A staged development was granted consent in January 2015 by the Sydney West Joint Regional Planning Panel for a mixed use development comprising:

- 424 residential apartments, commercial tenancies and communal facilities within 2x29-storey towers and 1x6-storey building;
- Above-ground car parking for 487 cars;
- Landscaping and open space works; and

- Land subdivision into 2 lots for the purpose of road widening.



Figure 9. Approved development at 420-446 Macquarie Street

Source: NBRSPartners

2 Browne Parade and 1-3 Bigge Street Warwick Farm

Located at 2 Browne Parade approximately 1.2 km to the north west of the site. Development consent was granted in April 2012 for a mixed-use development comprising two residential tower blocks at 14 and 15 storeys.



Figure 10. Approved Development at Browne Parade and Bigge Street
Source: Coronation

2 Local Planning Framework

2.1 Liverpool Local Environmental Plan 2008

The environmental planning instrument that applies to the land, which this Planning Proposal relates is the LLEP 2008.

Table 3 – Liverpool LEP 2008

Item	Standard
Zoning	The land to which this Planning Proposal relates is zoned R4 High Density Residential under the LLEP2008.
Building height	Under Clause 4.3 of the LLEP2008 the current maximum building height shown on the height map for the site is 24m (S).
Floor Space Ratio	Under Clause 4.4 of the LLEP2008 the current maximum Floor Space Ratio (FSR) shown on the FSR map for the site is 1.5:1 (S1). Additional provisions under Clause 4.4 of the LLEP2008 increase the FSR of the site to 2.5:1.
Flooding	Under Clause 7.8, a large portion of the site is identified as Flood Prone Land (in green below) and with a smaller portion in a Flood Planning Area (striped area below).
Environmentally Significant Land	Under Clause 7.6, a small portion of the site is identified as Environmentally Significant Land.

Table 3 – Liverpool LEP 2008

	
Foreshore building line map	Under Clause 7.9 a portion of the site is land below the foreshore building line. 
Acid Sulfate Soils	The site contains Class 5 Acid Sulfate Soils.
Heritage	20 Shepherd Street, part of the site, is a locally listed heritage item (104) known as the McGrath Services Centre Building (formerly Challenge Woollen Mills and Australian Paper Company's Mill). Light Horse Park to the north of the site is a locally listed heritage item (70).

2.2 Liverpool Local Environmental Plan 2008 – City Centre LEP Amendment (52)

Amendment 52 of the Liverpool Local Environmental Plan 2008 proposes changes to zoning, Height of Building and Floor Space Ratio for land in the Liverpool City Centre. The changes proposed aim to:

- Rezone a number of B3 sites to B4 to allow for greater flexibility for future land use within the City Centre;
- Increase the development potential in parts of the existing B4 Mixed Use zone;
- Change development standards to correspond to the proposed changes in land use to be principally controlled through built form;
- Allow for greater development potential and increased heights on larger sites, 'key sites', that satisfy a range of criteria and are able to contribute to the public domain, facilities or amenity; and
- A city focused along the river.

Three planning precincts are to be established; the Fine Grain precinct, the Mid Rise precinct and the Long Term Civic Sites precinct. A summary of the proposed modifications to the LEP are outlined in Table 3 below.

Table 4 – Summary of proposed amendment to Liverpool LEP 2008

Item	Fine Grain precinct	Mid Rise precinct	Long Term Civic Sites precinct
Zoning	Rezone a number of existing B3 Commercial Core sites to Mixed Use B4		
Building height	Height to be determined by the building envelope, the street wall height and the related FSR for the site. Generally characterised as 4 storey height. Maximum building height of 21 m.	Height to be determined by the building envelope, the street wall height and the related FSR for the site. Generally characterised as 6 storey at street frontage, except where the adjoining street is to the south. 4 storey height at lane frontage, except where the lane is to the north and 6 storeys would have no adverse impact.	Maximum building height of 28 m

Table 4 – Summary of proposed amendment to Liverpool LEP 2008

		Maximum building height of 28 m	
Floor Space Ratio*	Maximum FSR of 2.5:1	Maximum FSR of 3.0:1	Maximum FSR of 2.5:1
Key sites	Deletes reference to existing key sites in Liverpool City Centre and removes requirements for an architectural design competition from LLEP 2008. This includes the eastern portion of the site.		

*The base FSRs are as above. A Clause will be included in the LLEP to enable fine grain, mid-rise, key and civic sites to exceed the base FSR subject to the building envelopes proposed in accordance with Council's DCP. Key sites will qualify for bonuses up to a maximum of 10:1.

As of the date of this report, the planning proposal has been approved at Gateway and is with Council for implementation.

3

Planning Proposal Overview

Section 55(2) of the *Environmental Planning and Assessment Act 1979* outlines the required contents of a planning proposal. The Department of Planning and Environment has produced "A guide to preparing planning proposals" (October 2012) which breaks these requirements into six parts. These parts are addressed in the next chapters as follows:

- Chapter 4 addresses Part 1 – a statement of the objectives and intended outcomes;
- Chapter 5 addresses Part 2 – an explanation of the provisions to be included in the proposed instrument;
- Chapter 6 addresses Part 3 – justification of the objectives, outcomes and the process for implementation;
- Chapter 7 addresses Part 4 – maps to identify the modifications required to the proposed instrument and the area to which it applies;
- Chapter 8 addresses Part 5 – details of the community consultation to be undertaken; and
- Chapter 9 addresses Part 6 – draft timeline for the planning proposal.

Part 1 – Objectives and Intended Outcomes

The objectives of the proposal are:

1. To facilitate redevelopment of the site in a prime location to provide a mix of uses in a location close to existing transport, community infrastructure, open space and adjacent to the Liverpool City Centre, which creates a socially improved work-home life balance for future residents;
2. To undertake public domain improvements including local street upgrades and connections, a new pedestrian and cycling connection along the front of the site to Lighthouse Park and towards the Casula Powerhouse, upgrades to Mill Park and bush regeneration within the riparian zone;
3. To provide a high quality mixed use development, which will activate the ground level of the site, improve the quality of the public domain, and revitalise the surrounding Riparian Corridor and Georges River precinct in line with Council's vision of Liverpool becoming a River City;
4. To unlock the Georges River Riverfront Precinct by enabling safe vehicular, cycling and pedestrian access to and along the Riverfront and associated public lands including Lighthouse Park. The development will also enhance the Riparian Corridor within the site through best practice bush regeneration works;
5. To contribute approximately 1,200 new high-quality dwellings within the Liverpool City Centre to Liverpool's dwelling targets and meet the State Plan's Objective for Liverpool to be a regional centre;
6. To provide a local street network that improves the surrounding public domain and access to the riverfront.
7. To facilitate local employment uses such as retail and commercial uses in the Heritage Mill Building, which will contribute to the local economy and encourage local recreation;
8. To facilitate redevelopment of the site that takes advantage of the site's strong characteristics, including outlook to the water, and to minimise any impact on surrounding developments;
9. To facilitate redevelopment that reinforces the street and relationship with other development opportunities within the precinct, while enhancing surrounding heritage items including adaptive reuse of the former Heritage Mills Building for local commercial and retail uses to prevent dilapidation and preserve long term conservation of an important heritage item;
10. To create a strong built form edge to the riverfront that activates the waterfront and provides safety and surveillance; and
11. To provide a significant new pedestrian and cycling connection along the riverfront to Lighthouse Park and towards the Casula Powerhouse.

Part 2 – Explanation of Provisions

The planning proposal seeks to achieve the intended outcomes outlined in Part 1 of this report by proposing amendments to the LLEP2008 as follows:

- Increase the building height standard for the site from 24m to 77m; and
- Increase the FSR standard for the site from 2.5:1 to between 3.3:1 and 3.7:1.

The proposed development standards will be reflected in and merged with the *Liverpool Local Environment Plan 2008* (LLEP2008), which is a Standard Instrument LEP.

1. Is the planning proposal a result of any strategic study or report?

The planning proposal is not a result of any specific strategic study or report prepared for Liverpool City Council. However, the planning proposal is broadly consistent with key local strategic documents including the Liverpool Residential Development Strategy 2008, the Liverpool Economic Development Strategy 2013-2018 and 'Revitalising Liverpool City Centre 2007' Report. In addition, the planning proposal is accompanied by substantial reference reports including an initial Urban Design Study (Woods Bagot) and comprehensive masterplan (SJB), which demonstrate that the proposal is in accordance with strategic studies prepared by State and Local Government.

Council have also advised that the Shepherd Street Precinct is being considered strategically as part of the Georges River Precinct Structure Plan being developed by Liverpool City Council for a revitalised mixed-use precinct along the Georges River. Coronation understands that the draft Structure Plan will be shortly submitted to the Council for their consideration and this proposal seeks to inform Council's approach.

Revitalising Liverpool City Centre Plan 2007

Council's Liverpool City Centre Vision 2007 provides a vision for Liverpool and includes an action plan to facilitate the City Centre's growth including 15,000 new jobs, 12,000 more people, a 25 year plan and 1 City Centre.

The planning proposal assists in achieving a number the strategic directions detailed within the vision.

These include:

- *Connecting the City Centre to the Georges River:* The public benefit works associated with the planning proposal will provide a new pedestrian and cycle connection on the riverfront from Lighthouse Park towards the Casula Powerhouse;
- *Improving the quality of new buildings:* The new buildings constructed as a consequence of this planning proposal will be of high quality architecture and design; and
- *Improving the Natural Environment:* The planning proposal will include building massing that guarantees solar access to open spaces, incorporates WSUD and will provide best practice bush regeneration of the current weed infested Riparian Corridor adjacent the Georges River.

The subject planning proposal will complement the approach identified in the City Centre Plan by providing high density housing, local business and retail uses, new connections to the City Centre and key public open space areas along the foreshore. Importantly, the planning proposal aligns with Council's future vision for revitalising the riverfront and will be the catalyst for the renewal of the precinct.

Liverpool Residential Development Strategy 2008

Council's Residential Development Strategy 2008 (RDS) provides a vision for future residential development in the Liverpool Local Government Area and strategies for achieving this vision. The Strategy notes:

"To achieve the Department's target of 20,000 dwellings in the existing urban area, a new scheme would need to:

- provide different types of housing than are currently available within Liverpool;
- provide new housing options in different locations in Liverpool; and
- create certainty for development, making it simpler and more attractive.

The desire of residents to remain within the area supports the case for a range of housing types and sizes to meet the changing needs of residents throughout stages of their life. There needs to be a shift in market supply away from predominantly large accommodation that is causing housing stress, higher in Liverpool than any other Western Sydney LGA.

Higher density housing must be concentrated around centres and transport interchanges to facilitate the viability of urban transport systems and reduce car usage and dependence.

This strategy will locate a greater concentration of population within reach of services and employment and prevent further exaggeration of the severe transport disadvantage in Liverpool."

The planning proposal meets these requirements, as it will provide a range of housing types and options to meet a range of housing users. As a higher density development, the dwellings are located close to the Liverpool City Centre and Liverpool Train Station and transport node, which will facilitate the viability of public transport and reduce car dependency.

The site is not identified within the strategy as one requiring further exploration, however the development of the site meets the key objectives for new residential development outlined within the strategy as it will provide for 1, 2 and 3 bedroom apartments of varying sizes, promoting housing choice and facilitating the provision of affordable housing within the Liverpool LGA.

Liverpool Economic Development Strategy 2013-2018

Liverpool's Economic Development Strategy outlines key economic priorities and targets for the Liverpool Economy. The current proposal meets a number of key priorities, including:

- Developing and implementing a City Centre Strategy that improves public amenity and stimulates commercial activity; and
- Working with prospective and existing local employers to create local employment and self-employment opportunities for youth and culturally and linguistically diverse communities.

The Planning Proposal includes commercial and retail floor space in the former Heritage Mills Building, which will provide local employment opportunities including for youth and culturally and linguistically diverse communities. In addition, the revitalisation of the riverfront for a pedestrian and cycling connection to the City via Lighthouse Park will stimulate commercial activity by improving access.

2. Is the planning proposal the best means of achieving the objectives and outcomes, or is there a better way?

The planning proposal is the best and most appropriate means of achieving the desired future redevelopment of the site and precinct. The planning proposal is a consequence of the following:

- The need to meet Liverpool City Council's future dwelling target requirements by contributing approximately 1,200 new high-quality dwellings towards the local government area. This is a key driver as analysis of the Bureau of Transport Statistics shows that between 2011-2015, Liverpool Council was forecast to deliver nearly 8,000 new occupied private dwellings, yet only delivered just over 5,000.
- Opportunities to provide significant public benefit to the local area including upgrades to the pedestrian and vehicular access to the Georges River and enhanced ecological opportunities through best practice bush regeneration in line with Council's vision for a River City;
- Adaptive reuse of an important local heritage item for local employment and recreation uses and to prevent dilapidation; and
- A comprehensive master plan for the Shepherd Street precinct, which analyses key development constraints and opportunities with respect to amenity, accessibility and public domain and proposes an optimum built form for the precinct.

The Planning Proposal will unlock the precinct by facilitating safe vehicular and pedestrian access to the site; will activate the street level; and will provide a high quality residential precinct and public domain with significant improvements to the surrounding Georges River.

This proposal will achieve all the outcomes of the masterplan and provide a net community benefit. Any alternative means have been considered to be less economically and socially viable for the development and renewal of the site, and as such has meant that a planning proposal is the most efficient means to renew the site.

6.2 Section B – Relationship to strategic planning framework

3. Is the planning proposal consistent with the objectives and actions contained within the applicable regional or sub-regional strategy (including the Metropolitan Strategy and exhibited draft strategies)?

NSW State Plan

NSW 2021 is a plan to make NSW number one. It is a 10-year plan based on strategies to rebuild the economy, return quality services, renovate infrastructure, strengthen local government and communities and restore accountability to government. The plan sets a number of goals, targets and actions to achieve the NSW 2021. Of the 32 goals outlined, this proposal contributes to Goals 5, 20, and 27 as shown in the below table.

Table 5 – Consistency with NSW 2021

Goal	Target	Action	Consistency
5. Place downward pressure on the cost of living.	Improve housing affordability	This includes ensuring that targets for housing	The proposal will contribute to housing targets by modifying the LLEP to

Table 5 – Consistency with NSW 2021

Goal	Target	Action	Consistency
	and availability.	and growth are reflected in local plan making instruments	enable an increase in housing in the LGA. This proposal will increase housing affordability and availability to put downward pressure on the cost of living.
20. Build liveable centres.	Increase the percentage of the population living within 30 minutes by public transport of a city or major centre in metropolitan Sydney.	This includes outlining clear local housing and employment targets and working closely with Councils to deliver local land use zones that support the delivery of housing and employment targets in the metropolitan strategies.	The proposal will contribute to the target by providing additional housing and local employment opportunities within short proximity to the Liverpool Station and City Centre, which is identified as a Regional City Centre.
27. Enhance cultural, creative, sporting and recreational opportunities.	Increase participation in Sport, Recreational, Arts and Cultural Activities in Sydney from 2010 to 2016 by 10%.	Increase opportunities for children and young people to connect with other groups in their communities through sport and recreation.	The proposal will enhance local sport and recreation facilities around Georges River by providing a usable pedestrian and cycling boardwalk around the river; improved pedestrian and vehicular access to Lighthorse Park and improved connectivity to Georges River.

South West Sydney Regional Action Plan

South Western Sydney, which includes the local government areas of Bankstown, Fairfield, Liverpool, Campbelltown, Camden and Wollondilly has one of Australia's largest and fastest growing regional populations. Liverpool is identified as a Regional City within the Regional Action Plan.



Figure 11. South West Sydney with Liverpool as a Regional City
Source: South Western Sydney Regional Action Plan

A Plan for Growing Sydney

The planning proposal is consistent with the current Metropolitan Plan for Sydney, *A Plan for Growing Sydney*. All four key directions identified in the Strategy are relevant to the proposal. Table 5 provides a summary of the consistency of the proposal with these objectives and policies.

Table 6 – Consistency with A Plan for Growing Sydney

Objective	Policy	Consistency
Goal 1: A competitive economy with world-class services and transport		
1.7.1 Invest in Strategic Centres across Sydney to grow jobs and housing and create vibrant hubs of activity.	Unlocking developable land by consolidating fragmented sites for redevelopment and improving planning policies and regulations will encourage flexibility, higher density and a more diverse range of activities.	The proposal will unlock developable land and grow high density housing adjacent the Liverpool Strategic Centre. The redevelopment of the Heritage Mills Building will provide a diverse range of local and vibrant activities for future residents.

Table 4 – Consistency with A Plan for Growing Sydney

Objective	Policy	Consistency
1.7.4 Continue to grow Penrith, Liverpool and Campbelltown-Macarthur as Regional City Centres supporting their surrounding communities.	Recognise Penrith, Liverpool and Campbelltown-Macarthur as important strategic centres and regional city centres for additional housing, and additional employment and services benefitting local areas and the North West and South West Growth Centres.	The proposal is consistent with the goal of increasing housing and employment in the Liverpool Strategic Centre.

Goal 2: A city of housing choice, with homes that meet our needs and lifestyles

2.1.1 Accelerate housing supply and local housing choices.	Work to achieve the Government's target of an additional 664,000 new dwellings by 2031. The most suitable areas for significant urban renewal are those best connected to employment and include in and around centres that are close to jobs and serviced by public transport.	The proposal is consistent with increasing housing in an area connected to employment and around Liverpool Centre close to jobs and serviced by public transport.
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Goal 3: A great place to live with communities that are strong, healthy and well-connected

3.1.1 Support urban renewal by directing local infrastructure to centres where there is growth.	Delivering the infrastructure that is needed means responding to growth. In areas that are growing, it will be most efficient to focus investment in local infrastructure in centres – the most accessible place for the local community.	The proposed development will deliver high quality local infrastructure including pedestrian and cycling links in and around the Liverpool City Centre and the Georges River Precinct, and an upgraded Shepherd Street and Powerhouse Road.
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Goal 4: A sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources

4.1.1 Protect and deliver a network of high conservation value land by investing in Green corridors and protecting native vegetation and Biodiversity.	Applying mitigation measures can prevent or reduce the impacts of development on areas of high conservation value, native vegetation and diversity from development,	The proposal will protect and enhance the surrounding conservation land including the Georges River by providing an appropriate setback and revitalising vegetation around the water's edge, which is currently infested with introduced and weed species.
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South West Subregion

A Plan for Growing Sydney identifies the South West subregion as the fastest growing subregion in Sydney. The plan identifies the subregion as being vital for new housing and jobs for future residents. Liverpool is a Regional City Centre with an Enterprise Corridor extending to Liverpool from the Bankstown CBD.



Figure 12. South West Subregion
Source: *A Plan for Growing Sydney*

Key priorities for the South West Region that this planning proposal supports include:

- Identify suitable locations for housing, employment and urban renewal – particularly around established and new centres along key public transport corridors;
- Provide environmental, recreation and tourism opportunities around the Georges River;
- Work with councils to protect and maintain the social, economic and environmental values of the Georges River and its aquatic habitats;
- Work with Council to provide capacity for additional mixed-use development in Liverpool including offices, retail services and housing;
- Work with Council to improve walking and cycling connections between Liverpool and the Georges River.

The planning proposal is consistent with the relevant regional and sub-regional strategies. In particular, it supports the specific strategies of the South West region by providing additional housing, employment, pedestrian and cycling and recreation opportunities in a key site in close proximity to Liverpool City Centre and the Georges River.

NSW Long Term Transport Master Plan

The NSW Long Term Transport Master Plan (LTMP) was released in December 2012. The Master Plan provides an integrated and comprehensive framework for addressing NSW transport challenges over the next 20 years.

A key action of the LTMP is to reduce Sydney's most constrained corridors including the Liverpool to Sydney Airport corridor, both in terms of road and public transport connections. Improvements to the rail network will provide more capacity on the East Hills Line with capacity to accommodate another 9,600 passengers in the peak hour. In addition, the widening of the M5 and the Southern Sector of WestConnex will provide more capacity and improve travel times and reliability from South West Sydney to Sydney Airport, Port Botany and beyond to the CBD.

The integration of land use and transport planning provides social, environmental and economic benefits. Transit oriented development at the local level is likely to contribute to shorter trips, fewer car trips and more trips by walking, cycling and public transport. In particular, the proposed increase in density in the area from the subject proposal will support the major infrastructure investment by Government in the increased capacity along the East Hills Line and the M5.

As discussed further in this report and in the amended traffic and transport study prepared in Appendix 5, the subject planning proposal will enable an important Transit Oriented Development that enhances public and local active transport including providing and enhancing the local walking and cycling network within Liverpool.

4. Is the planning proposal consistent with a council's local strategy or other local strategic plan?

Growing Liverpool 2023: The 10 year plan to move Liverpool forward

The Growing Liverpool 2023 is a long term Community Strategic Plan for the City of Liverpool. The plan identifies a number of substantial ideas for the City and the Region including supporting and promoting a robust local economy, liveable and safe neighbourhoods and new development that is environmentally sustainable and enhances and protects natural corridors, waterways and bushland.

The planning proposal is considered to meet the strategies and key objectives identified in the plan including helping to build the City as a centre of high value, creating local employment opportunities, developing a new liveable and safe neighbourhood and undertaking a development that is sustainable and enhances and protects the natural corridors around the Georges River.

Revitalising Liverpool City Centre Plan 2007

Council's Revitalising Liverpool City Centre Plan 2007 provides a vision for Liverpool and includes an action plan to facilitate the City Centre's growth. The vision sets the strategic framework for the future development of the Liverpool City Centre. The subject site lies within the Liverpool City Centre and the planning proposal assists in achieving a number the strategic directions detailed within the vision. These include:

- *Connecting the City Centre to the Georges River:* The public benefit works associated with the planning proposal will provide a new boardwalk connection linking Lighthorse Park along the front of the sites through to the Casula Powerhouse precinct;
- *Improving the quality of new buildings:* The new buildings constructed as a consequence of this planning proposal will be of high quality architecture and design; and
- *Improving the Natural Environment:* The planning proposal will include building massing that guarantees solar access to open spaces, incorporates WSUD and will preserve and enhance the natural edge of the Georges River by removing weed infested vegetation and undertaking best-practice bush regeneration on the river's edge.

The subject planning proposal will complement the Council's vision for the City Centre by providing high density housing, local business and retail uses and key public open space areas along the foreshore.

Liverpool Residential Development Strategy 2008

Council's Residential Development Strategy 2008 (RDS) provides a vision for future residential development in the Liverpool Local Government Area and strategies for achieving this vision. The Strategy notes:

"The desire of residents to remain within the area supports the case for a range of housing types and sizes to meet the changing needs of residents throughout stages of their life...Higher density housing must be concentrated around centres and transport interchanges to facilitate the viability of urban transport systems and reduce car usage and dependence. This strategy will locate a greater concentration of population within reach of services and employment and prevent further exaggeration of the severe transport disadvantage in Liverpool."

The planning proposal meets these requirements, as it will provide a range of housing types and options. As a higher density development, the dwellings are located adjacent to the Liverpool City Centre and Liverpool Train Station and transport node, which will facilitate the viability of public transport and reduce car dependency and transport disadvantage.

Liverpool's City Centre Project: Building our new City

'Building our New City' is a revitalisation project for the Liverpool City Centre. Its vision includes:

- To provide high quality mixed use developments to provide housing for key working groups in the City Centre;
- To improve transportation links to and from the City Centre to ensure access to the greater Sydney area is achieved as well as access to the surrounding suburbs of Liverpool;
- To become a city that is pedestrian and cyclist friendly, with active street fronts to create a more liveable city; and
- To develop strategies for increasing visual and physical connection of the City Centre to the Georges River and reinforce its role as the key cultural destination for South West Sydney.

The planning proposal is consistent with Council's City Centre Project as it will provide a high-quality mixed-use development contributing to housing for local workers that will improve links to the City Centre through the new pedestrian and cycling connections to Lighthorse Park. The new public domain works in and around the Georges River will increase visual and physical connection between the Georges River and City Centre including the new boardwalk.

5. Is the planning proposal consistent with the applicable state environmental planning policies?

The proposal would address and/or be consistent with all relevant Environmental Planning Policies (SEPPs). The following outlines the intent of the relevant SEPPs and consistency of the planning proposal.

Table 7 – State Environmental Planning Policies

SEPP	Consistent	Comments
SEPP No. 1- Development Standards	Not Applicable	Not applicable. It does not apply to Liverpool LEP 2008.
SEPP No. 14 – Coastal Wetlands	Not Applicable	
SEPP No. 15 – Rural Landsharing Communities	Not Applicable	
SEPP No. 19 – Bushland in Urban Areas	Not Applicable	
SEPP No 21 – Caravan Parks	Not Applicable	
SEPP No. 26 – Littoral Rainforests	Not Applicable	
SEPP No. 29 – Western Sydney Recreation Area	Not Applicable	
SEPP No. 30 – Intensive Agriculture	Not Applicable	
SEPP No. 32 – Urban Consolidation (Redevelopment of Urban Land)	Consistent	The proposal is an example of urban renewal and provides for multiple uses on site. The proposal meets the aims and objectives of this SEPP.
SEPP No. 33 – Hazardous and Offensive Development	Consistent	The proposal is to adopt the standard instrument definitions of hazardous and offensive development, which are not permitted on site.
SEPP No. 36 – Manufactured Home Estates	Not Applicable	
SEPP No. 39 – Spit Island Bird Habitat	Not Applicable	
SEPP No. 44 – Koala Habitat Protection	Not Applicable	
SEPP No. 47 – Moore Park Showground	Not Applicable	

Table 7 – State Environmental Planning Policies

SEPP no. 50 – Canal Estate Development	Not Applicable	
SEPP No. 52 – Farm Dams and Other Works in Land and Water Management Plan Areas	Not Applicable	
SEPP No. 55 – Remediation of Land	Consistent	The site would be appropriately remediated to make it suitable for residential development.
SEPP No. 59 – Central Western Sydney Regional Open Space and Residential	Not Applicable	
SEPP No. 62 – Sustainable Aquaculture	Not Applicable	
SEPP No. 64 – Advertising and Signage	Consistent	This proposal does not contradict or hinder the application of this SEPP.
SEPP No. 65 – Design Quality of Residential Flat Development	Consistent	The concept proposal has been designed by leading architecture and urban design firm SJB, and is generally consistent with the provisions of SEPP 65. Refer to the design report at Appendix 2 for further information, which demonstrates how the scheme ensures any future development in the precinct will be able to comply with the SEPP provisions and the Apartment Design Guide.
SEPP No. 70 – Affordable Housing (Revised Schemes)	Consistent	The proposal would not affect the schemes within this SEPP, nor does it propose any new scheme for affordable housing that would need to be included in this SEPP. The planning proposal is consistent with the objectives of the SEPP.
SEPP No. 71 – Coastal Protection	Not Applicable	
SEPP (Affordable Rental Housing) 2009	Consistent	This proposal does not inhibit any operations of this SEPP.
SEPP (Building Sustainability Index: BASIX) 2004	Consistent	This proposal does not inhibit any operations of this SEPP.
SEPP (Exempt and Complying Development Codes) 2008	Consistent	This proposal does not inhibit any operations of this SEPP.

Table 7 – State Environmental Planning Policies

SEPP (Housing for Seniors or People with a Disability) 2004	Consistent	This proposal does not inhibit any operations of this SEPP.
SEPP (Infrastructure) 2007	Consistent	The proposal can be referred to the RMS and Sydney Trains when development applications are lodged, due to proximity to the rail corridor and its capacity as a 'traffic generating development'.
SEPP (Kosciuszko National Park – Alpine Resorts) 2007	Not Applicable	
SEPP (Kurnell Peninsula) 1989	Not Applicable	
SEPP (Major Development) 2005	Consistent	This proposal does not inhibit any operations of this SEPP.
SEPP (Mining, Petroleum Production and Extractive Industries) 2007	Not Applicable	
SEPP (Penrith Lakes Scheme) 1989	Not Applicable	
SEPP (Rural Lands) 2008	Not Applicable	
SEPP (State and Regional Development) 2011	Not Applicable	
SEPP (Sydney Drinking Water Catchment) 2011	Not Applicable	
SEPP (Sydney Region Growth Centres) 2006	Not Applicable	
SEPP (Three Ports) 2013	Not Applicable	
SEPP (Urban Renewal) 2010	Not Applicable	
SEPP (Western Sydney Employment Area) 2009	Not Applicable	
SEPP (Western Sydney Parklands) 2009	Not Applicable	
Greater Metropolitan REP No. 2 – Georges River Catchment	Consistent	The proposal is consistent with the Planning Principles outlined in the REP including Acid Sulfate Soils, bank disturbance, flooding and water quality. Refer to the Ecology Report in Appendix 6.
SREP No. 8 – Central Coast Plateau Areas	Not Applicable	

Table 7 – State Environmental Planning Policies

SREP No. 9 – Extractive Industry (No 2 – 1995)	Not Applicable	
SREP No. 16 – Walsh Bay	Not Applicable	
SREP No. 18 – Public Transport Corridors	Not Applicable	
SREPP No. 19 – Rouse Hill Development Area	Not Applicable	
SREP No. 20 – Hawkesbury – Nepean River (No 2 – 1997)	Not Applicable	
SREP No. 24 – Homebush Bay Area	Not Applicable	
SREP No. 26 – City West	Not Applicable	
SREP No. 30 – St Marys	Not Applicable	
SREP No. 33 – Cooks Cove	Not Applicable	
SREP (Sydney Harbour Catchment) 2005	Not Applicable	

6. Is the planning proposal consistent with applicable Ministerial Directions (S. 117 directions)?

The planning proposal is consistent with all relevant S117 Directions or is justified in consideration of their objectives. The assessment of these is outlined in Table 8 below.

Table 8 – Section 117 Ministerial Directions

Clause	Direction	Consistent	Comments
1 Employment and Resources			
1.1	Business and Industrial Zones	Not Applicable	The planning proposal does not affect a business or industrial zone.
1.2	Rural Zones	Not Applicable	The site is not identified within a Rural Zone.
1.3	Mining, Petroleum Production and Extractive Industries	Not Applicable	The planning proposal has no impact on mining, petroleum production of extractive industries.
1.4	Oyster Aquaculture	Not Applicable	The site is not identified as a priority oyster aquaculture area.
2 Environment and Heritage			
2.1	Environmental Protection Zones	Consistent	The land is identified as being adjacent to Environmentally

Table 8 – Section 117 Ministerial Directions

Clause	Direction	Consistent	Comments
			Significant Land of the Georges River. The planning proposal will ensure the protection and conservation of the adjacent environmentally sensitive areas and will not change the existing environmental protection standards in the Liverpool LEP 2008. The planning proposal has been accompanied by an Ecology, Riparian, Flora and Fauna Report, which has been updated for the amended in scheme and is provided in Appendix 6.
2.2	Coastal Protection	Not Applicable	The site is not identified as a coastal zone.
2.3	Heritage Conservation	Consistent	The Liverpool LEP contains heritage provisions. This planning proposal does not seek to amend these. Heritage aspects in relation to the Heritage Mill Building at 20 Shepherd Street and any potential Aboriginal heritage have been considered in the Heritage Reports in Appendixes 7 and 8 and will be considered as part of future development applications.
2.4	Recreation Vehicle Areas	Not Applicable	The planning proposal does not enable the land to be developed for the purpose of a recreational vehicle area.
3 Housing, Infrastructure and Urban Development			
3.1	Residential Zones	Consistent	The proposal allows for a range of residential dwelling types, which are consistent with the existing trends and market demands. The planning proposal will broaden the choice of building types and locations available in the housing market and will reduce the consumption of land for housing and associated urban development on the fringe. The

Table 8 – Section 117 Ministerial Directions

Clause	Direction	Consistent	Comments
			development will be of a high quality design and is on land that is adequately serviced and will not reduce the permissibility of residential density of land.
3.2	Caravan Parks and Manufactured Home Estates	Not Applicable	
3.3	Home Occupations	Not Applicable	
3.4	Integrating Land Use and Transport	Consistent	The site is within walking distance to a range of retail and business services in the Liverpool City Centre and is easily accessible by public transport, particularly the Liverpool Train Station and slightly further to Casula Station. A detailed traffic, transport and accessibility study has been provided in Appendix 7 that supports the proposed scheme and demonstrates its consistency with the 117 Direction.
3.5	Development Near Licensed Aerodromes	Not Applicable	

4 Hazard and Risk

4.1	Acid Sulphate Soils	Consistent	The Liverpool LEP 2008 contains acid sulphate soils provisions and this Proposal does not seek to amend them. Acid sulphate soils investigations and analysis will accordingly be undertaken as part of any future development of the land if required.
4.2	Mine Subsidence and Unstable Land	Not Applicable	
4.3	Flood Prone Land	Consistent	Liverpool LEP 2008 contains flood prone land provisions and this Planning Proposal does not seek to amend them. Flooding is addressed as part of the Flood Study in Appendix 5 and will be

Table 8 – Section 117 Ministerial Directions

Clause	Direction	Consistent	Comments
			addressed as part of any future development of the land.
4.4	Planning for Bushfire Protection	Not Applicable	The site is not identified as bushfire prone land.
5 Regional Planning			
5.1	Implementation of Regional Strategies	Not Applicable	
5.2	Sydney Drinking Water Catchments	Not Applicable	
5.3	Farmland of State and Regional Significance on the NSW Far North Coast	Not Applicable	
5.4	Commercial and Retail Development along the Pacific Highway, North Coast	Not Applicable	
5.5	Development in the vicinity of Ellalong, Paxton and Millfield (Cessnock LGA) (Revoked 18 June 2010)	Not Applicable	
5.6	Sydney to Canberra Corridor (Revoked 10 July 2008. See Amended Directions 5.1)	Not Applicable	
5.7	Central Coast (Revoked 10 July 2008. See amended Directions 5.1)	Not Applicable	
5.8	Second Sydney Airport: Badgerys Creek	Not Applicable	
5.9	North West Rail Link Corridor Strategy	Not Applicable	
6 Local Plan Making			
6.1	Approval and Referral Requirements	Consistent	The proposal does not propose to amend or include additional consultation, referral or concurrence provisions, nor identifies any development as designated development.

Table 8 – Section 117 Ministerial Directions			
Clause	Direction	Consistent	Comments
6.2	Reserving Land for Public Purposes	Consistent	The proposal does not contain any land that has been reserved for a public purpose, and no requests have been made to reserve such land.
6.3	Site Specific Provisions	Consistent	The planning proposal does not propose any unnecessarily restrictive site-specific planning controls.
7. Metropolitan Planning			
7.1	Implementation of the Metropolitan Strategy	Consistent	The proposal is consistent with the aims, objectives and provisions of A Plan for Growing Sydney.

6.3 Section C – Environment, Social and Economic Impact

7. Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

The Flora and Fauna Survey, Biodiversity Impact Assessment, and Riparian Zone Assessment which was prepared by ACS Environmental Pty Ltd to accompany the lodgement of the original planning proposal has been revised accordingly to incorporate the additional land, and is located in **Appendix 6**.

Currently, the vegetation along the Georges River embankment consists primarily of noxious weeds and noxious weedy vines, as evidenced in Figure 9 below. The subject properties themselves contain some vegetation, with a mix of native and exotic species, and are characterized by unmanaged weed growth.



Figure 13. Noxious weed growth along Georges River at the site
Source: ACS Environmental Pty Ltd

A total of 14 indigenous flora species were recorded across the subject site, in comparison to 42 exotic environmental weeds, 7 noxious weeds, 10 landscaped exotic ornamentals, 16 landscaped locally endemic species, and 2 landscaped non-locally occurring species. Vegetation areas on the site also provide very poor habitat for most terrestrial fauna. Only one species, the Dark-flecked Garden Sunskink, was recorded in proximity to the site.

Flora species

Within 5km of the site, a total of 7 threatened flora species have been recorded by the OEH Atlas of NSW Wildlife in the past 25 years. However, no threatened species have been recorded within 1 square kilometre of the site. Targeted searches for the mostly large-life form threatened species recorded within a 5km radius of the site did not locate these or any other threatened species, flora or fauna. These threatened species are not expected to occur at the site as the current habitat is unsuitable for their occurrence, being greatly disturbed and with no occurrence of natural habitat.

The composition of the subject vegetation is comprised largely of exotic species and has been mapped by the Office of Environment and Heritage (OEH) as "Weeds and Exotics". The vegetation on the site was concluded to contain no biodiversity significance.

Fauna species

A total of 19 threatened fauna species have been recorded by the OEH Atlas of NSW Wildlife within a 5km radius of the site, within the past 25 years. Only two of these were recorded within 1km of the site. An Individual Swift Parrot was sighted approximately 850m to the south on the eastern side of the Georges River in 1996, and an individual Little Lorikeet was sighted 500m to the south on the eastern side of the Georges River in 2014. The subject site itself contains no habitat that would potentially attract either of these species.

ACS reviewed other threatened terrestrial fauna species listed by the Commonwealth Department of the Environment in relation to the distribution, habitat, and likelihood of occurrence. It was concluded that the site contains no nesting or foraging habitat for any of these species. Further, ACS considered the OEH Atlas of NSW Wildlife, which listed 7 migratory species of avifauna covered by bi-lateral bird agreements. None of the migratory species listed and recorded within 5km of the subject site has the potential to occur on the site and would not be impacted by the proposed development.

8. Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

Any substantial environmental impacts can be appropriately dealt with as part of the assessment of individual development applications for the lots within the site. The existing planning and development controls under the Liverpool LEP 2008 and Liverpool DCP 2008 are considered to provide sufficient guidance to ensure that a high quality residential development outcome is achieved alongside the additional development standards established under the planning proposal.

Based on feedback from Council on the initial scheme, the amended masterplan and associated reports provide detailed environmental considerations. Further discussion and assessment of the environmental and urban context is presented below.

Urban Design Concept

SJB have prepared an urban design study and masterplan for the precinct, to test the development capacity and amenity of all properties in the precinct in a comprehensive manner. As requested by Council, the masterplan considers all sites

within the Shepherd Street precinct, including sites not included in the planning proposal. The masterplan has been developed in collaboration with other key consultants including planning, landscape, public domain, traffic, transport and accessibility.

The planning has included an analysis of the site including its immediate and broader urban contexts; the preparation of the design principles to guide options and testing; and the recommendation of a preferred concept. The key urban design concept focuses on:

1. **Heights;** with a stepping of height proposed on a north-south axis, concentrated on the east side of Shepherd Street adjacent to the Georges River.
2. **Orientation and Separation;** with buildings oriented as best as possible to optimise solar access. Setbacks of 12m to the railway corridor, 30m in line with the foreshore building setback, as well as building separation to meet the *Apartment Design Guide* have been implemented.
3. **Active Frontages;** with development addressing Shepherd Street as the primary frontage, as well as the Georges River Foreshore and any through site links.
4. **Movement and Access;** Shepherd Street will serve as the primary vehicular and pedestrian corridor and should be enhanced as part of the proposal. Vehicular access should be rationalised where possible. This work has been informed by traffic and transport analysis undertaken by InRoads.
5. **Site permeability;** permeability down to the boardwalk along Georges River is a vital element to incorporate.
6. **Built Form Character;** the concept is to enhance the revitalisation of the precinct by encouraging built form and architectural variation.
7. **Planting strategy;** with deep soil planting proposed to be implemented within the 12m Railway Setback, creating a visual and acoustic barrier to the rail line, and landscaping to enhance the streetscape along Shepherd Street.

The preferred concept plan features a range of building typologies throughout the precinct. Podium towers of 14 to 24 storeys are located along the river foreshore.

As requested by Council, SJB's masterplan considers:

- The relationship of the subject sites to one another, as well as to the adjoining properties that are not part of the proposal. In particular, detailed analysis has been provided with respect to the properties on the western side of Shepherd Street and why they cannot easily sustain additional density;
- The spatial context of these sites within the immediate and larger area, including the city centre, and the relationship to the river;
- Key urban design elements including connectivity, height, foreshore, frontages, orientation and heritage; and
- Evidence of the suitability of the planning proposal sites to support the densities proposed, through opportunities and constraints analysis such as SEPP 65 (separation, overshadowing, cross-flow etc), public and local transport connectivity, public domain treatment and safety principles.

On the western side of the street, constraints are presented by setbacks, separation requirements, overshadowing, and noise issues from the rail line. The resultant FSR for these sites is therefore lower than those on the eastern side of Shepherd Street, with some lots unable to achieve the base case FSR.

The precinct as a whole is identified for a total dwelling yield of 1,500 dwellings - 1,200 of which are contributed by the lots subject to this planning proposal. The preferred concept plan is shown Figure 14 below, with the proposed massing in Figure 15.



Figure 14. Preferred Concept Plan
Source: SJB

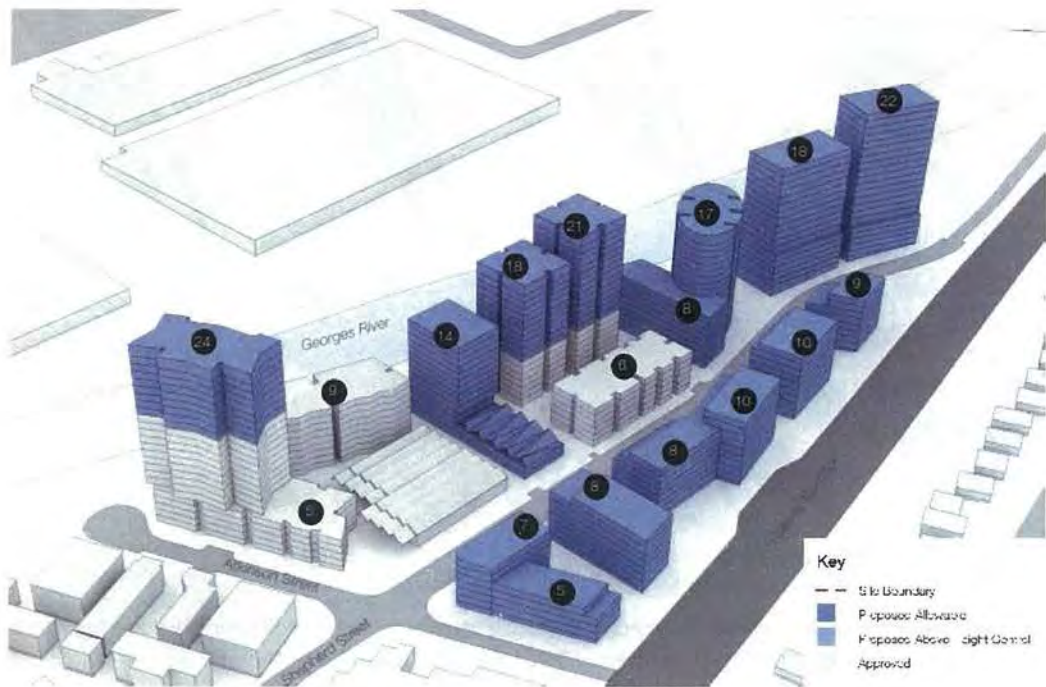


Figure 15. Preferred Concept Massing
Source: SJB

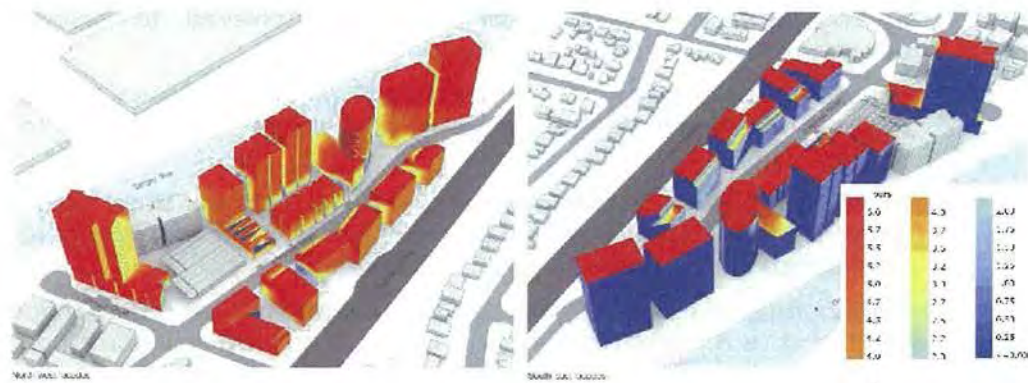


Figure 16. Solar Access
Source: SJB



Figure 17. Overshadowing
Source: SJB

The preferred concept proposed in the masterplan has the following key advantages, including demonstrating the ability for future compliance with SEPP 65:

- Improved permeability and accessibility to the Georges River;
- A clearly defined street wall along Shepherd Street;
- Building envelopes ensure solar access is achieved to surrounding development, as well as within the precinct;
- Variation in height along the eastern edge of the site allows for greater separation between the taller buildings and creates visual interest to the skyline;
- Tall towers on 20-24 Shepherd Street and 31-33 Shepherd Street create an urban marker visible from the CBD and the M5 thus creating a spatial relationship with the desired future City Centre of Liverpool;
- The separation in the skyline between 20-24 Shepherd Street and 26 Shepherd Street acts as a marker to the Paper Mill, whilst the low scale buildings that address the through-site links provide a human-scale connection to the river and have a good relationship to the Paper Mill heritage item;
- Orientation of buildings and sensitive landscaping treatment along the through-site links, Shepherd Street and the through the foreshore walk will allow for passive surveillance of these spaces in accordance with CPTED Principles;
- The proposed built form and density responds to key urban considerations, whilst delivering a uplift in development that supports and provides opportunity for substantial improvements to the surrounding public domain including the a new connection to the Casula Powerhouse Arts centre and the public foreshore walk.
- The proposed building envelopes be made to achieve the required 2 hour solar access to 70% of each building and no greater than 15% with no solar access (Objective 4-A1 of the ADG) This can be achieved through layout of apartments on each floor. However, it is noted that alternative amenity is also provided from the waterfront aspect available to the precinct.

Landscaping and Public Domain and connectivity to Georges River and Casula Powerhouse

Landscaping, public domain, connectivity and permeability are principal components of the proposal, resulting in significantly positive impacts on the surrounding area and Liverpool community. As part of the landscaping design for the site, prepared by Aspect Studios and included within SJB's masterplan, there are proposed upgrades to local parks and roads, as well as major improvements to riparian areas and provision of access to the waterfront. The Planning Proposal is accompanied by a VPA Letter of Offer at **Appendix 3**, which further outlines and quantifies the cost of the significant local public domain improvements to be associated with the proposal.

Shepherd Street and Atkinson Street are to be upgraded with new concrete footpaths, and new tree planting in the verges and in blisters within parking lanes. Shepherd Street will also be re-aligned to create a better flowing link to Powerhouse Road. Mill Park, at the southern end of the site, is to be upgraded with play space, community garden, an outdoor gym, amphitheatre, and BBQ and picnic areas. These works will dramatically improve the existing streetscape and public domain, which lacks a coherent and attractive urban design approach and is uninviting to pedestrians. Similarly, provision of public space alongside the adaptive reuse of the Heritage Mills Building for retail purposes, will have a positive impact on the urban fabric of the precinct and create new spaces for social interaction.

The Georges River waterfront will be activated with direct public access through a series of environmental and physical improvements. A 2.5m wide boardwalk, for shared pedestrian and cyclist access, will be built alongside the Georges River between Mill Park and Atkinson Street. The boardwalk will feature lookouts and seating areas, on-grade access points and connections to existing park paths, and all-access ramp connection to the water's edge. Accompanying this, regeneration works are proposed within the riparian zones. The riverbank will be protected by providing a rehabilitated landscape of endemic vegetation, as part of a continuous green corridor.

Public domain improvements will be supported by efforts to provide site permeability, ensuring the proposal opens up the precinct for pedestrians and does not present obstacles. Pedestrian access from Shepherd Street to the riverfront and boardwalk is to be provided through the site via numerous links. These are in the form of shared lanes, which will also provide vehicular access to basement car parking, as well as a public pedestrian/cycle access path alongside the Heritage Mills Building. In total, there is the potential for six links from Shepherd Street to the boardwalk, over a distance of approximately 400m between Mill Park and Atkinson Street (including through Mill Park and Atkinson Street).

As a result of the abovementioned streetscape and riverfront works, connectivity in the vicinity of the site will be markedly improved. Pedestrian access into and through the site is to be provided by the new boardwalk, increasing passive recreation opportunities and providing a safe, high-quality green link between Mill Park and Lighthorse Park. This link ultimately provides access to and between the Casula Powerhouse the site, and the Liverpool CBD.

A detailed landscape package is incorporated as part of the Urban Design Report in **Appendix 2**.

Transport, Access and Connectivity

The original planning proposal was accompanied by a traffic and transport assessment prepared by Traffix. As transport, access and connectivity has been raised as a key issue with respect to the potential uplift in the precinct, a comprehensive

amended report has been prepared by InRoads and can be found in **Appendix 5**. Importantly, the expanded report:

- provides relevant background information regarding previous applications made and approvals granted, over sites within the Masterplan area;
- discusses active and public transport accessibility;
- investigates current travel behaviour for residents in the vicinity of the Masterplan area;
- forecasts the additional traffic impact which would be generated as a result of the redevelopment of all properties within the Masterplan area; and
- forecasts the traffic impact of the redevelopment of all properties within the Masterplan area, upon critical intersections in its vicinity.

As requested by Council, the report considers traffic and access impacts as a result of future redevelopment of the broader precinct and undertakes a comprehensive study of impact at the following intersections:

- Shepherd Street / Atkinson Street
- Shepherd Street / Riverpark Drive
- Shepherd Street / Speed Street
- Speed Street / Mill Road

The intersection modelling demonstrates that there is substantial spare capacity at all four intersections modelled during the critical AM and PM peak hours, to accommodate the traffic expected to be generated by 1,500 residential apartments, at the forecast 2035 design horizon. Under all design scenarios, the intersections are performing well within acceptable capacity limits, at under 60% degree of saturation, and Level of Service A or B. As a consequence, no external roadworks are considered to be required to support the proposal, and any impacts could be mitigated by way of Section 94 contributions levied against the development. It is also noted that council is undertaking network modelling that might identify some intersection upgrade works as a result of the development of the Shepherd Street precinct. These will be determined following the outcome of the network modelling and prior to the delivery of units over and above that already permissible in the precinct under the existing planning controls.

The report assesses key active and public transport connectivity to the precinct including rail, bus, walking and cycling. It finds that overall, the Masterplan area will benefit from convenient access to frequent public transport (bus and rail) services, as well as close proximity to a number of key attractions, destinations, and employment and education nodes. Notwithstanding this, it may be appropriate to consider new bus routes, which run closer to the catchment (e.g. along Speed Street), as development in the area proceeds and additional routes can be supported.

The report also assesses existing travel behaviour for Liverpool residents and makes recommendations to encourage public transport patronage as part of any future redevelopment of the precinct. The report concludes that, it would appear that there is the potential for a substantial proportion of future residents of the Masterplan area to travel to/from work by public transport. Notwithstanding the above, sustainable travel modes (both active and public transport) could be encouraged by way of a Green Travel Plan and accompanying Transport Access Guide (TAG), which it is suggested be prepared for each individual development within the Masterplan area, at Development Application stage.

The masterplan includes key road network connections to ensure appropriate accessibility and connectivity within and through the precinct. These connections were developed collaboratively between InRoads, SJB and Aspect and are as follows:

- The construction of the cul de sac at the termination of Atkinson Street (eastern end), and the dedication of land from 20 Shepherd Street to facilitate this.
- Provision for two (2) east-west laneways from Shepherd Street towards the river (between 20 and 26 Shepherd Street, and 28 and 32-34 Shepherd Street, which will provide connectivity for vehicles and pedestrians and accommodate on-street car parking;
- Provision of a pedestrian-only east-west laneway from Shepherd Street towards the river, between 32-34 Shepherd Street and 31-33 Shepherd Street;
- Streetscaping and formalisation of kerbside parking along Shepherd Street; and
- The realignment of 'Powerhouse Road' through the site at 31 Shepherd Street, so as to form an extension of Shepherd Street. Streetscaping and formalisation of kerbside parking along this realigned section of road would be undertaken, with parking to be available to the public. This section of roadway would continue to provide access to the Casula Powerhouse, to the south.

These proposed road network elements will be essential to the success of the precinct. In conclusion, subject to the proposed treatments and recommendations, InRoads considers that the proposal is satisfactory from a traffic, transport and accessibility perspective.

Riparian Corridor

A Flora and Fauna Survey, Biodiversity Impact Assessment, and Riparian Zone Assessment (**Appendix 6**) has been prepared by ACS Environmental for the site located between the Georges River and Shepherd Street. This report has been updated to include the expanded sites from the original September 2015 report.

The subject site is affected by a Riparian Corridor (RC) adjacent to the Georges River. The NSW Office of Water defines a Riparian Zone or Corridor as *"a transitional zone between the land, also known as the terrestrial environment, and the river or watercourse or aquatic environment. Waterfront land includes the bed and bank of any river, lake or estuary and all land within 40 metres of the highest bank of the river, lake or estuary."*

ACS note that in 2012 new rules commenced regarding controlled activities within riparian corridors. Key aspects of the changes were to provide greater flexibility for allowable uses and works within riparian corridors, standardization of the width of the vegetated riparian zone (VRZ) and where suitable, non-riparian corridor works or development may be undertaken within the outer 50% of a VRZ, so long as works are offset by connecting an equivalent area to the riparian corridor.

The report outlines the overarching objective of the controlled activities provisions of the Water Management Act 2000 as establishing and preserving the integrity of riparian corridors. Ideally, the environmental functions of riparian corridors should be maintained or rehabilitated by applying the following principles:

- If a watercourse is present, define the RC/VRZ on a map;
- Seek to maintain or rehabilitate a RC/VRZ with fully structured native vegetation;
- Seek to minimise disturbance and harm to the recommended RC/VRZ;

- Minimise the number of creek crossings and provide perimeter road separating development from the RC/VRZ;
- Locate services and infrastructure outside of the RC/VRZ. Within the RC/VRZ, provide multiple service easements and/or utilise road crossings where possible; and
- Treat stormwater run-off before discharging into the RC/VRZ.

The NSW Office of Water does however allow for a range of works and activities on waterfront land and in riparian corridors to better meet the needs of the community, so long as they cause minimal harm.

ACS has determined that the section of the Georges River that adjoins the site is a 4th order watercourse. As such, a riparian setback of 40m (including the VRZ) from the riverbank is taken as a guideline.

The Liverpool LEP 2008 also indicates environmentally significant land along the Georges River. The 40m setback recommended by the guidelines issued by NSW Office of Water for this section of Georges River generally approximates that the foreshore building line indicated by the Liverpool LEP 2008.

Figures 18 through 23 show the 40m VRZ and the foreshore building line for environmentally sensitive land indicated in the Liverpool LEP 2008.



Figure 18. 40m VRZ at 20 Shepherd Street
Source: ACS Environmental Pty Ltd



Figure 19. The foreshore building line and 40m VRZ at 26 Shepherd Street
Source: ACS Environmental Pty Ltd



Figure 20. The foreshore building line and 40m VRZ at 28 Shepherd Street
Source: ACS Environmental Pty Ltd



Figure 21. The foreshore building line and 40m VRZ at 32-34 Shepherd Street
Source: ACS Environmental Pty Ltd



Figure 22. The foreshore building line and 40m VRZ at 31-33 Shepherd Street
Source: ACS Environmental Pty Ltd



Figure 23. The foreshore building line and 40m VRZ at Mill Park
Source: ACS Environmental Pty Ltd

Under the guidelines, certain controlled activities are allowable particularly within the outer 50% of the VRZ. This may include cycleways and paths, detention basins, stormwater outlet structures and essential services and road crossings.

However, as the section of the river near the site is heavily weed infested and requires extensive rehabilitation, a merit-based development may be proposed in negotiation with the NSW Office of Water which would consider the following:

- In a study of disturbance patterns in vegetation associated with the Georges River estuarine processes, similarly weed-infested river banks were mapped downstream of the subject site as 'Very High Intensity Disturbance Pattern – generally >70% affected';
- The edges of the Georges River at Shepherd Street have not been mapped by the DEC as containing any significant vegetation;
- The weed infested VRZ should be rehabilitated by best-practice bush regeneration; and
- The extent of the areas encroached by buildings and other structures into the outer 50% of the VRZ should be amply offset elsewhere within the development.

This issue will need further resolution with the Office of Water in partnership with Council, as the riverfront boardwalk and cycleway is a key Liverpool Council priority in order to achieve its vision of a River City.

Greater Sydney Metropolitan Regional Environmental Plan No. 2 – Georges River Catchment

Compliance with this SREP is required for development on the site, as there is potential to adversely impact the water quality, river flows, flood regime or ecosystems within the catchment.

Development upon the site will be able to comply with the requirements of the SREP. Further details can be provided at development application stage where the individual compliance of each development will be outlined.

Fisheries Management Act 1994

Development on the site is also subject to compliance with the Fisheries Management Act 1994. This ensures that fish stocks are maintained and that there is no net loss of key fish habitats upon which they depend. The aquatic habitat protection and threatened species conservation provisions in Parts 7 and 7A of the Fisheries Management Act 1994 specifically cover this issue.

Compliance with the provisions of this Act is met due to the following:

- The VRZ would be commensurate with the foreshore buffer guidelines as recommended by Fisheries NSW for a merit-based approach for development along the Georges River shoreline;
- River bank regrading works are not proposed for the development, with the riverbank to be left intact;
- Bioswales are to be located outside of the VRZ and all surface flows grade to this point for settlement, prior to discharge into the Georges River; and
- The riparian buffer zone provides generous provision of native vegetation and habitat on the Georges River. Provision for connectivity in both upstream and downstream directions is made. Deep-rooted areas are provided for native tree species.

Heritage Conservation

The site includes one heritage item listed under LLEP 2008, and has potential to contain items of Aboriginal significance due to its riverfront location. Two separate heritage investigations were progressed for the sites subject to the original planning proposal, discussed below.

Built heritage

The subject site incorporates an item of heritage significance listed within LLEP 2008 at No. 20 Shepherd Street, and known as *McGrath Services Centre Building (formerly Challenge Woollen Mills, and Australian Paper Company's Mill)* (item no. 104). The site is also within close proximity to a number of heritage items also listed under LLEP 2008, including Light Horse Park in Atkinson Street and the railway viaducts along Shepherd Street, Mill Road, and the Main Southern Railway line to the north. City Plan Services have prepared an update to their initial Heritage Impact Statement with respect to the expanded precinct in **Appendix 7**. The two documents should be ready in conjunction with one another.

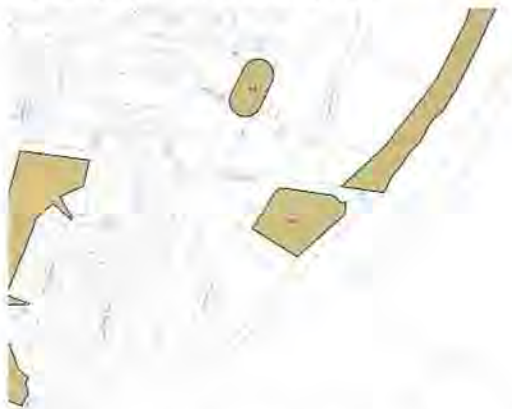


Figure 24. Liverpool LEP 2008 Heritage Map
Source: Legislation NSW

The subject heritage listing at 20 Shepherd Street pertains to a heritage mill building. The site has been used as a paper mill since the 1860s, with the original operation becoming one of Australia's largest paper production companies. The original paper mill ceased operation in 1910, overtaken by Challenge Woollen Mills Pty Ltd who extended and modified the factory on the site in 1914. The building remained largely intact, although was subject to some modifications in the 1970s to convert the site into a vehicle service centre. The site operated as a vehicle service centre up until its closure in 2011.

The building's Shepherd Street façade features red brickwork divided into twelve bays, with English bond brickwork and a wall recess between the brick pillars. A saw-tooth roof covers the building at this frontage, with each section sloping to the west.

The northern façade has been subject to significant alterations including the addition of several roller shutter doors, added to allow vehicular access to the site. A concrete area to the north and east of the factory, previously used for parking, has been closed off to the public. Other structures to the north of the property have been adapted to house display rooms regarding the proposed future developments.

City Plan Services have considered the Planning Proposal to have an acceptable impact from a heritage perspective, as it will allow for the rejuvenation of the precinct and improved community engagement in the area. The following recommendations were made:

- The Planning Proposal must take into consideration any recommendations of the Aboriginal Cultural Heritage Assessment being prepared by Artefact Heritage Services;
- Any subsequent developments at 31 and 33 Shepherd Street must employ the same design principles and language as the current DA's for 20 and 28 Shepherd Street, focusing on the retention of the Paper Mills building;
- The Heritage Interpretation Strategy which has previously been prepared for the precinct should be incorporated into subsequent proposals; and
- Photographic archival recording of the structures at 31 and 33 Shepherd Street.

Further comments have been provided by City Plan Heritage in relation to SJB's masterplan proposal for the Shepherd Street precinct. City Plan note that the location of the proposed new buildings follow the principles of maintaining a clear buffer zone and visual corridors to the former Mills building, making it a focal point of the precinct. Corridors are also provided between each allotment on the eastern side of the street, providing a visual connection to the river. Buildings on the western side of Shepherd Street opposite the Mills building, are recommended to have their highest portions located to the rear along the Railway Corridor to ensure a compatible scale. Overall, the Planning Proposal has been supported in principle and will have negligible impact on the setting and appreciation of the heritage item.

It is also noted that Clause 5.10(10) of the LLEP 2008 allows for the adaptive reuse of heritage items for purposes otherwise prohibited, where the consent authority is satisfied that:

- The conservation of the heritage item or Aboriginal place of heritage significance is facilitated by the granting of consent, and
- The proposed development is in accordance with a heritage management document that has been approved by the consent authority, and

- The consent to the proposed development would require that all necessary conservation work identified in the heritage management document is carried out, and
- The proposed development would not adversely affect the heritage significance of the heritage item, including its setting, or the heritage significance of the Aboriginal place of heritage significance, and
- The proposed development would not have any significant adverse effect on the amenity of the surrounding area.

The planning proposal will facilitate the use of the above provisions under a development application lodged to Council.

Archeological/ Aboriginal Heritage

Artefact Heritage Consultants undertook an archaeological survey report for the site area between the Georges River and Shepherd Street. The Archaeological Survey Report is located in **Appendix 8**.

The aim of the survey was to identify whether Aboriginal objects would be impacted by the planning proposal and to recommend if any further management or mitigation measures are required.

The study area has been subjected to significant ground disturbance through decades of agricultural and industrial use and was assessed as demonstrating low archaeological potential.

The Archaeological Survey Report subsequently found that no Aboriginal sites and/or places were located within the study area.

The study recommended that the planning proposal should proceed without the need for further archaeological and/or Aboriginal heritage assessment.

Flooding

The land is identified as flood prone land under the Liverpool LEP 2008. Detailed Flood studies will be undertaken as part of preparation of individual DAs for the sites; however an initial Stormwater / Floodwater Impact Assessment has been prepared by Wood & Grieve Engineers for the purposes of the planning proposal and is located at Appendix 3.

The report prepared by Wood & Grieve discusses the impacts of the proposed development on the 10 sites in the precinct on either side of Shepherds Street.

- The existing Georges River floodplain extents;
- The quality of the water discharging from developed sites; and
- The risk of erosion and sedimentation pollution on the downstream watercourse.

Flood levels for the site are depicted in the below images. The majority of the site is located above the 100 year flood level of 9.90m AHD. As such the area above this level is not affected during a 100 year flood. This area is not currently providing any flood storage and as a result, retaining or raising these levels will not impact on the flood storage of the precinct provided the levels are not reduced.



Figure 25. 100 Year Flood levels (southern section)
Source: Wood & Grieve Engineers



Figure 26. 100 Year Flood levels (northern section)
Source: Wood & Grieve Engineers

Areas currently below the 100 year flood level do provide flood storage for the floodplain. Loss of this storage will result in an increase in flood levels elsewhere, which is not acceptable due to the increased risk of flood damage to properties and infrastructure. Therefore, it is required to maintain the current flood storage on the site by either:

- Suspending ground floor levels to maintain existing flood storage areas on the site; or
- Create compensatory storage elsewhere on the site to ensure flood levels are maintained, requiring further flood modelling.

Given the development of the site as a whole, it is likely that the ground floor levels in this area will be suspended to allow flood waters to be stored between the underside of the ground floor slab. Wood & Grieve confirm that by utilising this method, there will be minimal, if any, impact on the existing floodplain or flood levels.

However, it is noted that the only areas below the 1 in 100 year flood level are within 20 Shepherd Street, which has already obtained development consent and is under construction for a scheme that addresses flooding adequately (DA/1010/2014).

In terms of water quality, the change of use of the precinct from industrial to commercial/residential, as well as remediation of the site, will reduce the risk of pollutants entering into the watercourse by floodwaters or site drainage systems. The development of the site will be undertaken in accordance with Council imposed targets for water pollutant reduction, which can be achieved by incorporating water quality measures. This will result in an improvement on the existing situation, with increased treatment of stormwater runoff from the site.

Similarly, erosion and sediment control measures are able to be incorporated into the development through common control measures such as sedimentation fences and basins, stormwater drainage inlet protection, and overland flow diversion swales. These will ensure that, throughout construction, erosion and sedimentation pollution on the downstream watercourse is minimised.

9. How has the planning proposal adequately addressed any social and economic effects?

The proposed high-density development will support the viability of the Liverpool City Centre, and provide housing choice for the population wishing to live in proximity to jobs and transport. There will be positive social impacts arising from the proposal, with high quality residential spaces complemented by upgraded parks and public domain, and dwellings located close to the employment hub of the Liverpool City Centre, promoting a better work-home life balance.

Cred Consulting have prepared a comprehensive Social Impact Assessment (SIA) to look at the potential impacts of a proposed development at the Shepherd Street Precinct, for a residential development of 1,200 high density dwellings as part of an overall precinct yield of 1,500 dwellings (see Appendix 9).

The proposed development would result in an additional 2,702 to 3,303 residents in the suburb of Liverpool, with the greater precinct itself potentially adding up to 4,125 residents.

The SIA investigates community facilities and open space accessible to the site (within 800m of the site). 10 community facilities are accessible to the site, including child care centres, a library, and community halls, which all have capacity for increased use. There are no public high schools or primary schools within 800m of the site, and though the Liverpool CBD, railway station, and hospital are within walking distance, there will need to be improvements to pedestrian and cyclist access. These improvements are proposed as part of the public benefit offer outlined in **Appendix 3**.

There is a high supply of public open space within 800m of the site, including a playing field and a district park. The entire Shepherd Street precinct would require between 24,345m² and 29,754m² of open space when completed. The precinct is able to

deliver approximately 14,000m² of semi-private (communal) open space, as well as 16,000m² of public open space including an embellished Mill Park.

Cred Consulting consider that the proposed public benefits of 16,000m² of improved public open space, 14,000m² of communal open space (11,000m² in the proposed development), increased housing stock and employment opportunities outweigh the negative impacts of increased density and population. Opportunities to enhance the positive benefits include providing a multipurpose space that can service the wider neighbourhood; the delivery of community building and community engagement from the early stages of the development; and a universal, well lit, and safe design of the public domain.

There will be immediate economic impacts felt in the Liverpool area as a result of the development. This will include the provision of a number of construction and project management jobs, and jobs in other fields such as landscape regeneration. The provision of more than 1,200 new dwellings into the market will also have positive economic impacts, and will help place downward pressure on the rising cost of housing in Sydney. There will be ongoing benefits resulting from the additional residential population, who will provide increased viability for retail and commercial premises in the vicinity of the site. There will also be a number of local employment opportunities, with the provision of 1732m² of retail floor space within the Heritage Mills Building.

The site is identified within Council's Liverpool City Centre Vision as within the Inner City Residential South district of the Liverpool CBD. The planning proposal and the subsequent development will spur economic development in the city and assist in reaching the CBD's target of 5,000 dwellings. In line with the City Centre Vision, increasing housing choices in this area will assist Liverpool in its important role as a living and working city.

6.4 Section D – State and Commonwealth Interests

10. Is there adequate public infrastructure for the planning proposal?

The subject site is well serviced by existing transport, infrastructure and services. Further investigations will be undertaken as part of the preparation of the DA to determine whether any upgrade of existing facilities is necessary.

The planning proposal includes the provision of new public infrastructure including new roads, a pedestrian and cycle connection to the Liverpool City Centre and new pedestrian and cycling infrastructure adjacent the Georges River.

11. What are the views of State and Commonwealth public authorities consulted in accordance with the gateway determination?

At this stage, the views of appropriate State and Commonwealth public authorities have not been obtained. This will occur following the Gateway Determination.

Part 4 – Mapping

The masterplan report prepared by SJB provides the context and rationale for the approach to establishing proposed controls and planning maps. This chapter provides information on the maps that support the proposed changes.

The land subject to the planning proposal is shown in Figure 27 below, with Tables 9 – 13 showing the proposed controls (noting the numerical lot order does not correlate with the progression of lots along Shepherd Street).



Figure 27. Land subject to planning proposal
Source: SIX Maps

Table 9 – Key planning controls for 20 Shepherd Street (Lot 1 DP 247485)

Control	Current Controls	Proposed Controls
Floor Space Ratio	2.5:1	3.3:1
Height of Building	24m	29m/76m

Table 10 – Key planning controls for 26 Shepherd Street (Lot 23 DP 859055)

Control	Current Controls	Proposed Controls
Floor Space Ratio	2.5:1	3.7:1
Height of Building	24m	46m

Table 11 – Key planning controls for 28 Shepherd Street (Lot 22 DP 859055)

Control	Current Controls	Proposed Controls
Floor Space Ratio	2.5:1	3.7:1
Height of Building	24m	20m/58m/68m

Table 12 – Key planning controls for 32 Shepherd Street (Lots 3-4 DP 247485)

Control	Current Controls	Proposed Controls
Floor Space Ratio	2.5:1	3.6:1
Height of Building	24m	56m

Table 13 – Key planning controls for 31-33 Shepherd Street (Lots 5-6 DP 247485)

Control	Current Controls	Proposed Controls
Floor Space Ratio	2.5:1	3.5:1
Height of Building	24m	65m/77m

The following maps have been drafted, which relate specifically to the LEP:

- Height of Building Map;
- Floor Space Ratio Map; and

These proposed maps are provided at **Appendix 1**.

The following list of maps have not been drafted as no revised information would be included:

- Land Application Map;
- Land Zoning Map;
- Key Sites Map;
- Land Reservation Acquisition Map;
- Heritage Map;
- Delayed Rezoning Map;
- Flood Planning Area Map;
- Acid Sulphate Soils Map;
- Dwelling Density Map;
- Foreshore Building Line Map;
- Environmentally Significant Land;
- Airport Noise Map;

- Urban Release Area Map; and
- Land Reclassification (Part Lots) Map.

Part 5 – Community Consultation

Community consultation would take place following a Gateway determination made by the Minister for Planning and Infrastructure, in accordance with Section 56 and 57 of the *Environmental Planning and Assessment Act 1979*. It is anticipated that public exhibition would include:

- Notification on the Liverpool City Council Website;
- Advertisement in local newspapers that are circulated within the local government area;
- Notification in writing to adjoining landowners and neighbours, and any other relevant stakeholders; and
- A four week exhibition period.

Part 6 – Project Timeline

This project timeline has been provided to assist with monitoring the progress of the planning proposal through the plan making process and assist with resourcing to reduce potential delays.

Table 14 – Project timeline

Milestone	Date	Comments
Anticipated commencement date (date of Gateway determination)	June 2016	
Anticipated timeframe for the completion of required technical information	Completed prior to lodgement	Updates to be made if necessary.
Timeframe for government agency consultation (pre and post exhibition as required by Gateway determination)	June 2016	Other relevant agencies to be consulted as necessary or required by the gateway determination
Commencement and completion dates for public exhibition period	July 2016	
Dates for public hearing (if required)	Within exhibition period	
Timeframe for consideration of submissions	August 2016	
Timeframe for consideration of a proposal post exhibition	As above	
Date of submission to the department to finalise the LEP	September 2016	
Anticipated date for publishing of the plan	October 2016	
Anticipated date RPA will forward to the department for notification	As above	

The Planning Proposal has been prepared in accordance with:

- Section 55 of the Environmental Planning and Assessment Act 1979, (the Act);
- NSW Department of Planning and Infrastructure A Guide to Preparing Planning Proposals; and
- Relevant s.117 Directions.

The Planning Proposal pertains to the land currently described as Lots 1 & 3-6 in DP247485, and Lots 22 & 23 DP859055.

This report provides a full justification of the proposal in line with the Department of Planning and Environment's template for gateway determinations. The justification demonstrates that the proposal:

- Is consistent with the NSW State Plan and 'A Plan for Growing Sydney' including the targets for the South West Subregion;
- Is consistent with relevant S.117C directions;
- Facilitates a high quality residential development that incorporates excellent residential amenity, adaptive reuse of an unused heritage building, whilst protecting the amenity of the residents of future surrounding development;
- Results in significantly positive urban design outcomes for the Shepherd Street precinct and the Georges River frontage, with the activation and upgrade of Shepherd Street, improved pedestrian amenity, and an upgraded Mill Park;
- Activates and increases the size of the public domain by providing a legible and permeable street and pedestrian network, landscaping, and employment opportunities;
- Vastly improves pedestrian and cycling connections throughout and across the precinct, through upgraded roadways and dedicated paths, ultimately assisting in creating a continuous link from the Liverpool City Centre to the Casula Powerhouse;
- Unlocks riverfront land and will help Liverpool reconnect to the Georges River as part of a continuous pedestrian link, as envisaged by the Liverpool City Centre Vision;
- Proposes significant riparian zone stabilization and vegetation regeneration adjacent to the Georges River; and
- Has the potential to contribute 1,200 dwellings to Liverpool, which are vital to contributing towards Liverpool's state housing targets. Analysis of the Bureau of Transport Statistics shows that between 2011-2015, Liverpool Council was forecast to deliver nearly 8,000 new occupied private dwellings, yet only delivered just over 5,000.
- Provides a high density residential land use in a location close to existing transport, community infrastructure, open space and adjacent to the Liverpool City Centre, which improves work-home life balance for residents.

As discussed earlier, the subject report addresses an amended scheme that has been prepared by Coronation in response to Council feedback on the original planning proposal submitted in September 2015.

Importantly, as requested by Council, the masterplan and urban design report has considered the entire Shepherd Street Precinct. The masterplan has undertaken a detailed constraints and opportunities analysis of all sites in the precinct to develop

recommendations for suitable future development potential. The analysis provides evidence for the suitability of all sites to support the densities as proposed, identifying constraints and providing an evaluation of traffic and transport connectivity, safety by design and public domain treatment, as well as an assessment of the social impacts as a result of the proposed densities.

The masterplan prepared by SJB, in conjunction with a landscaping concept prepared by Aspect Studios, includes the following:

- Street network improvements including new connections from Shepherd Street to the river frontage, realigning and upgrading the Shepherd Street connection through to the Casula Powerhouse Arts Centre via Powerhouse Road, and additional on-street parking;
- A potential for 140,204m² of gross floor area across the entire precinct; and
- Significant public domain improvements including a new pedestrian and cycling connection along the riverbank adjoining the precinct, upgrades to Mill Park, and local street upgrades in conjunction with the new street network.

This report has been prepared to support the expanded planning proposal and associated amended documentation and should be read in conjunction with the original proposal lodged in September 2015.

Appendix 1 – LEP Maps

Appendix 2 – Urban Design Report

Appendix 3 – Flood Impact Report



Appendix 4 – Updated Letter of Offer – Public Benefits



Appendix 5 – Traffic and Transport Study

Appendix 6 – Ecology / Riparian Corridor / Flora and Fauna

Appendix 7 – Heritage Report

Appendix 8 – Aboriginal Cultural Heritage Assessment

Appendix 9 – Social Impact Assessment



Suite 12048, Level 12, 179 Elizabeth Street
Sydney, New South Wales 2000

info@mecone.com.au
mecone.com.au

4 March 2016

Our Ref: 15-014

The General Manager
Liverpool City Council
Liverpool, NSW, 2170

Dear Sir/Madame,

RE: PLANNING PROPOSAL MASTER PLAN, SHEPHERDS STREET PRECINCT,
LIVERPOOL

City Plan Heritage has been asked to provide comments on the proposed Master Plan for the Shepherds Street Precinct bounded by Atkinson Street to the north, Railway corridor to the west, Georges River to the east and Mill Park to the south. The associated sites are located on both sides of Shepherd Street and terminate at Mill Park at the southernmost end.

The Shepherd Street Precinct incorporates ten allotments of varying sizes and shapes including the former Woollen Mills site (20 Shepherd Street). This allotment has been approved for redevelopment incorporating adaptive reuse of the former Mills building and construction of two residential towers on the site. The allotments on the eastern side of Shepherd Street are proposed to be occupied by residential towers ranging from 6 to 31 levels with the tallest tower at the southernmost end of Shepherd Street creating a book end to the Precinct and complimenting the planned 29 level tower of the Paper Mill site on the northern end.

In general, the location and arrangement of the proposed new buildings around the previously approved development of the Paper Mill site and 28 Shepherd Street, which is pending approval, follow the similar principles of maintaining a clear buffer zone and visual corridors to the former Mills building, making it a focal point of the Shepherd Street Precinct. Between each allotment along the eastern side of Shepherd Street, corridors have been kept to connect the street with the Georges River as it has been the case for the Paper Mill development although the subject sites historically did not have visual connection with the River.

A combination of low, medium and high residential towers with low scale buildings along both sides of the Street is considered acceptable for the reasons explained above. It is anticipated that all of these developments will incorporate heritage interpretation linking all of the former Woollen Mills, celebrating the unique and significant industrial history of the site and its importance to the locality.

It is recommended that the higher portion of the new buildings opposite the Mills building is at the rear towards the Railway corridor and the river with the lower portion along the Shepherd Street frontage to provide a more compatible scale with the Mills building.

The composition of the towers is generally consisted with the approved Paper Mill development and will have a negligible impact on the Mills Building's setting and appreciation as a heritage asset in the Liverpool LGA.

The Planning Proposal is supported in principle in relation to heritage matters. I trust this brief assessment of the proposed Master Plan will assist Council in the assessment of the proposed future development within the Shepherd Street Precinct. Should you require any further information, please do not hesitate to contact me on 8270 3500.

Yours Sincerely,



Kerime Danis
Director - Heritage



Liverpool Local Environmental Plan 2008

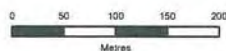
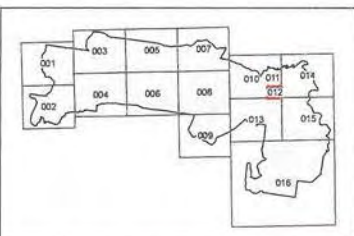
Height of buildings map - sheet HOB-012

Maximum Building Height (m)



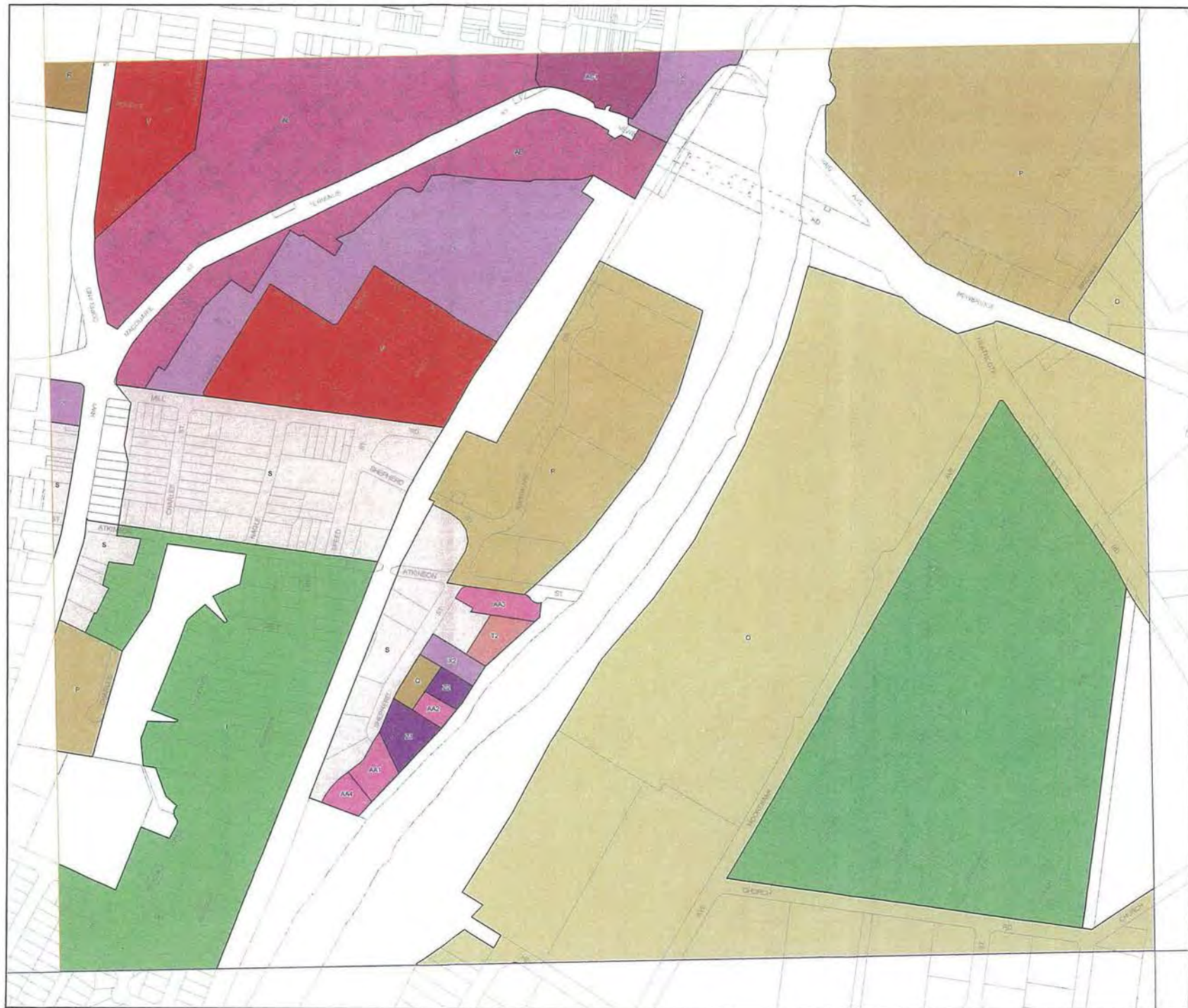
Cadastre

Cadastre 31/7/2009 © Dept of Lands



Scale: 1:5,000 @ A3

Map identification number:
4900_COM_HOB_012_005_20091123





Liverpool Local Environmental Plan 2008

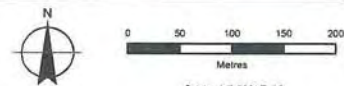
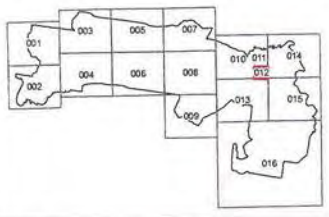
Floor space ratio map - sheet FSR-012

Maximum Floor Space Ratio (n:1)

A1	0.01	refer to clause 4.4
A2	0.1	refer to clause 7.29
A3	0.15	refer to clause 7.30
A4	0.25	refer to clause 7.32
D	0.5	
F	0.6	
G	0.65	
I	0.75	
N	1.0	
P	1.2	
S1	1.5	
S2	1.7	
T	2.0	
U	2.5	
U1	3.0	
U2	3.3	
W1	3.5	
W2	3.6	
W3	3.65	
W4	3.7	
X1	4.0	
X2	4.1	
Y1	4.6	
Y2	4.9	
Z	5.0	

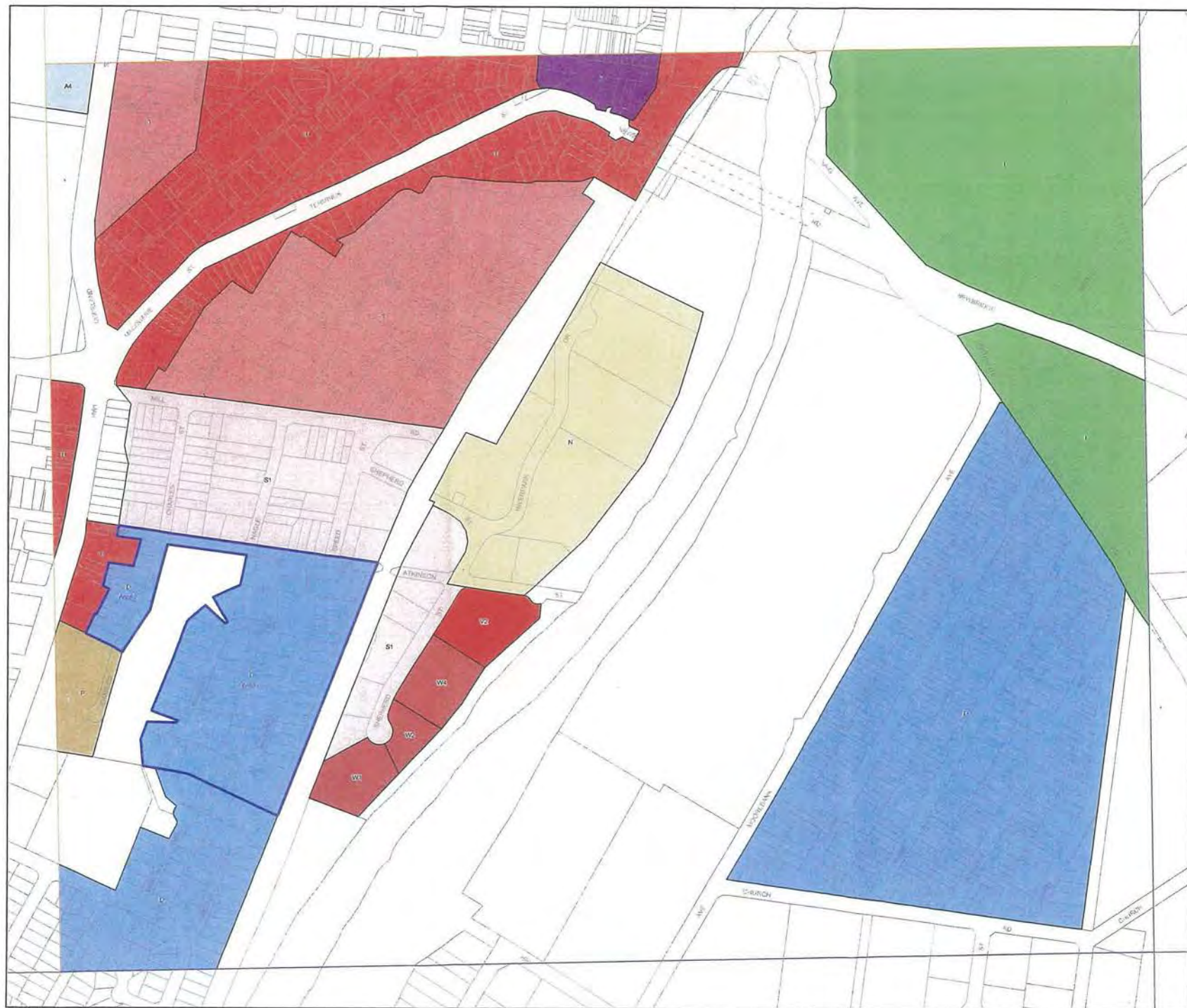
Cadastre

Cadastre 26/10/2011 © Land and Property Information



Scale: 1:5,000 @ A3

Map identification number:
4900_CCM_FSR_012_005_20120201





Shepherd Street Precinct, Liverpool

Stormwater/Floodwater Impact Assessment Report

Prepared for:

Client name
Shepherd Street
Developments Pty Ltd

Date:
24 February 2016

Prepared by:

Ian Harris
Project No. 28376-SYD-C

P:\28376\PROJECT DOCUMENTATION\28376-SYD-C-R-001 STORMWATER_FLOOD IMPACT ASSESSMENT.DOCX

Level 6, Building B, 207 Pacific Highway, St Leonards NSW 2065
T: (02) 8484 7000 F: (02) 8484 7100 E: sydney@wge.com.au W: www.wge.com.au

Revision

REVISION	DATE	COMMENT	APPROVED BY
A	14/08/2015	Issued for Information	I.Harris
B	24/02/2016	Issued for information	I.Harris

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Executive Summary

1. Executive Summary

The report has been prepared by Wood & Grieve Engineers to discuss the impacts of the proposed development of sites 19, 20, 21, 25, 26, 27, 28, 29, 31-33 and 32-34 Shepherd Street, Liverpool on the following:

- The existing Georges River Floodplain extents;
- The quality of water discharging from the developed sites;
- The risk of erosion and sedimentation pollution on the downstream watercourse.

The majority of the development precinct is located above the 100 year flood level meaning that development of this area will have no impact on the existing floodplain provided that levels are not reduced below the 100 year flood level. For areas below the 100 year flood level mitigation measures will be put in place to ensure the impacts on the existing floodplain do not cause detrimental impacts to other properties or infrastructure.

The change of usage for the precinct from industrial to commercial/residential will reduce the risk of pollutants existing on the development site which could be conveyed into the watercourse by floodwaters or site drainage systems.

As part of the development of the area council will impose water pollutant reduction targets for the site which will be achieved by incorporating water quality measures for the development. The treatment of the quality of the stormwater runoff from the site will mean that the stormwater discharge from the development will be of better quality than the current situation.

Erosion and Sedimentation measures will be incorporated both during and following construction of the developments within the precinct to ensure the risk of erosion or sedimentation pollution to the downstream water course is minimised.

Introduction

2. Introduction

This report has been prepared by Wood & Grieve Engineers in support of Coronation Property's proposal to increase the height/density (FSR) across the ten sites located at 19, 20, 21, 25, 26, 27, 28, 29, 31-33 and 32-34 Shepherd Street Liverpool.



Precinct Location

The site is located on the west bank of the Georges River and is flood impacted. This report discusses the existing flood conditions in the proximity of the development and the impacts of the proposed development on the existing floodplain and watercourse.

This report addresses flooding and stormwater drainage issues associated with the principles of the Greater Metropolitan Regional Environmental Plan GMREP No. 2 – Georges River Catchment.

Flood Impact

3. Flood Impact

3.1 Georges River Flood Levels

The Georges River runs directly along the east boundary of the precinct and previously undertaken flood investigations confirm that this reach of the river does experience flooding.

Reference has been made to the Georges River Floodplain Risk Management Plan prepared by Bewsher Consulting Pty Ltd for Liverpool City, Fairfield City, Bankstown City and Sutherland Shire councils during the compilation of this report.

Liverpool City Council has provided flood levels for the precinct which have been used as the basis for the assessment of flood impacts on the proposed development. These flood levels are recorded in the table below.

Design Storm	Flood Level
20	8.90m
50	9.50m
100	9.90m
PMF	11.80m

Table 1. Flood Levels for Precinct

3.2 Flood Planning Levels – Impact of Flooding on Development

The Georges River Floodplain Risk Management Plan – Volume 2 sets the flood planning levels for development within the Georges River floodplain. The flood planning levels are summarized in a flood planning matrix which identifies minimum design levels for various developments types.

An extract from the study has been included in this report as a reference to the flood planning levels associated with the Georges River Floodplain.

3.2.1 Ground Floor Levels

It is understood that the ground floor levels for all developments within the precinct will be classed as habitable which means that according to the flood planning matrix the minimum ground floor levels for the developments will be set at the 100 year + 0.5m freeboard level. The minimal ground floor level for developments within the precinct will be RL10.40m AHD.

3.2.2 Basement Entry Levels

All entry points to basement car parks within the precinct are to be protected from inundation by floods occurring during storms equal to the 100 year. Additional freeboard may be provided to reduce the risk of flood inundation however this is not required by council in the flood planning matrix.

3.2.3 Critical Infrastructure Levels

All critical infrastructure such as substations will be set at a minimum level of 100year + 0.5m freeboard. The minimal level for this infrastructure will be set at RL10.40m.

Flood Impact

3.3 Development Levels – Impact of Development on Flooding

Wood & Grieve Engineers have prepared a proposed development plan showing the extent of the 100 year flood on the precinct. This plan is included in Appendix B of this report.

3.3.1 Areas above the 100 Year Flood Level

As can be identified from the flood impact plan the large majority of the site is located above the 100 year flood level of RL9.90m AHD. This means that the area above this level is not flood affected during a 100 year flood.

The area which is above the 100 year flood level is not currently providing flood storage during a 100 year flood event and as a result retaining these levels or raising these levels will not impact on the flood storage provided within the precinct. Provided that the levels are not reduced, development in these areas will not have an impact on the existing floodplain.

3.3.2 Areas below the 100 Year Flood Level

Areas which currently have surface levels below the 100 year flood level are providing flood storage for the floodplain. Loss of this storage will result in an increase in flood levels elsewhere on the floodplain as the volume of water previously stored on the site finds somewhere else to be stored. This increase in flood levels is not acceptable to council as it increases the risk of flood damage to properties and infrastructure in and around the floodplain.

For the proposed areas of the development where flooding currently occurs and floor levels must be raised to comply with the flood planning levels it will be essential to maintain current flood storage on the site by either of the following options:

1. Suspending the ground floor level above the existing level to maintain the existing flood storage areas on the site or;
2. Create compensatory storage elsewhere on the site to ensure the flood levels are maintained as per the existing condition. This method is likely to require flood modelling to confirm that flood levels are not adversely impacted by the development.

As the areas of the development impacted by flood waters are proposed to be fully developed it will prove difficult to provide compensatory flood storage which implies that it is likely that the ground floor level in this area will be suspended to allow flood waters to be stored between the underside of the ground floor slab and the existing ground level or roof of basement.

By incorporating the methodology above and due to the fact that the majority of the precinct is above the 100 year flood level it can be confirmed that the impact of the proposed development of the precinct will have a very minor, if any, impact on the existing floodplain extent or flood levels.

Water Quality Treatment

4. Water Quality Treatment

Water quality treatment describes the treatment of stormwater runoff which falls upon the site to reduce water borne pollutants prior to being discharged from the site into the Georges River. As stated in the GMREP No 2.

"Water Quality and River Flows within the catchment are to be improved through the implementation of environmental objectives for water quality and river flows."

4.1 Hazard Posed by Development of Flood Liable Land

It is important to assess whether the development of the Flood Liable Land within the precinct is likely to increase the hazard of river pollution.

4.1.1 Existing Flood Liable Land Usage

The existing nature of the development areas within the precinct which are Flood Liable is currently industrial with warehouses and large areas of paved surfaces. There is a high risk that stormwater runoff from industrial areas will contain high concentrations of pollutants due to the increased probability of pollutant creators existing on the site.

4.1.2 Proposed Flood Liable Land Usage

The change of land usage from industrial to commercial/residential will significantly reduce the risk of pollutants entering the Georges River from the inundation of the Flood Liable Land. All areas of development will be designed to remove the risk of flood waters conveying pollutants from the site into the adjacent water course.

4.2 Treatment Measures for Stormwater Runoff

The treatment of stormwater runoff to remove pollutants will be incorporated across the entire precinct. This water quality treatment will be provided in line with Liverpool City Councils Development Control Plan. The Development Control Plan sets stormwater runoff pollutant reduction targets summarised in the table below.

Pollutant	Reduction Target
Total Nitrogen (TN)	45%
Total Phosphorus (TP)	45%
Total Suspended Solids (TSS)	80%
Gross Pollutants	100%

Stormwater Runoff Pollutant Reduction Targets

Various measures for reducing pollutant loads in stormwater runoff are available. Commonly a mixture of the following measures are used to achieve the required targets:

- Proprietary Stormwater Quality Treatment devices;
- Bioretention systems;
- Rainwater harvesting

As part of the development of the precinct these measures will be incorporated to ensure that the pollutant reduction targets set by council are met and the water quality discharging into the Georges River is greatly improved.

Erosion & Sedimentation Control

5. Erosion & Sedimentation Control

The control of erosion and sedimentation describes the measures incorporated during and following construction of a new development to prevent the pollution and degradation of the downstream watercourse.

Landcom have published a design guide entitled "Managing Urban Stormwater - Soils and Construction" which is regarded as the standard to which erosion and sedimentation control should be designed to within NSW. Liverpool City Council specifies compliance with the Landcom design guide in there Development Control Plan.

A Soil and Water Management Plan will be prepared as part of the development design documentation and will be submitted to Liverpool City Council for approval prior to the commencement of construction works on site.

Common control measures adopted are:

- Sedimentation fences;
- Sedimentation basins;
- Stormwater drainage inlet protection;
- Overland flow diversion swales;
- Shaker Grids and wash downs for vehicles leaving the construction site;
- Dust control measures.

The maintenance of these control measures throughout their intended lifespan will ensure that the risk of erosion and sedimentation pollution of the downstream watercourse will be minimized.

Appendix A – Flood Planning Matrix

Appendix A – Flood Planning Matrix

Schedule 3
Georges River (including Lower Cabramatta Creek) Floodplain

(Planning & Development Controls)

	Flood Risk Precincts (FRPs)														
	Low Flood Risk					Medium Flood Risk					High Flood Risk				
	Critical Uses & Facilities	Sensitive Uses & Facilities	Subdivision	Residential	Commercial & Industrial	Tourist Related Development	Recreation & Non-Urban	Concessional Development	Critical Uses & Facilities	Sensitive Uses & Facilities	Subdivision	Residential	Commercial & Industrial	Tourist Related Development	Recreation & Non-Urban
Planning Consideration															
Floor Level	3	2.6, 7	5.6, 7	2.6, 7	1.6	4.7			2.6, 7	5.6, 7	2.6, 7	1.6	4.7		1.6, 4.7
Building Components	2	1	1	1	1	1			1	1	1	1	1		1
Structural Soundness	3	2	2	2	2	2			1	1	1	1	1		1
Flood Effects	2	2	2	2	2	2			1	2	2	2	2		1
Car Parking & Driveway Access	1, 3, 5, 6, 7	1, 3, 5, 6, 7	1, 3, 5, 6, 7	1, 3, 5, 6, 7	2, 4, 6, 7	6, 7, 8			1, 3, 5, 6, 7	1, 3, 5, 6, 7	1, 3, 5, 6, 7	2, 4, 6, 7	6, 7, 8		2, 4, 6, 7, 8
Evacuation	2, 3, 4	6	2, 3	1 or 2, 3	2, 3	4, 3	2, 3		6	2, 3	1, 3	2, 3	4, 3	2, 3	4, 3
Management & Design	4, 5	1		2, 3, 5	2, 3, 5	2, 3, 5	2, 3, 5		1	2, 3, 5	2, 3, 5	2, 3, 5	2, 3, 5		2, 3, 5

General Notes

(DRAFT) (4925 RD)

Not Relevant

Potentially Unsuitable Land Use

- Freeboard equals an additional height of 500mm.
- The relevant environmental planning instruments (generally the Local Environmental Plan) identify development permissible with consent in various zones in the LGA. Notwithstanding, constraints specific to individual sites may preclude Council granting consent for certain forms of development on all or part of a site. This matrix identifies where flood risks are likely to determine where certain development types will be considered "potentially unsuitable" due to flood related risks.
- Filling of the site, where acceptable to Council, may change the FRP considered to determine the controls applied in the circumstances of individual applications.
- Refer to Section 2.5 of the DCP for planning considerations for proposals involving only the erection of a fence. Any fencing that forms part of a proposed development is subject to the relevant flood effects and Structural Soundness planning considerations of the applicable land use category.
- Refer to section 2.7 of the DCP for special considerations such as for house raising proposals and development of properties identified for voluntary acquisition.
- Terms in italics are defined in the glossary of this plan and Schedule 2 specifies development types included in each land use category. These development types are generally as defined within Environmental Planning Instruments applying to the LGA.
- From time to time, Council may adopt mapping showing the Boundary of Significant Flow and/or Flood Storage Areas for this floodplain. Refer to Council to find out if these areas have been defined and mapped for this floodplain.

Floor Level

- All floor levels to be no lower than the 20 year flood unless justified by site specific assessment.
- Habitable floor levels to be no lower than the 100 year flood level plus freeboard.
- Habitable floor levels to be no lower than the PMF level. Non-habitable floor levels to be no lower than the PMF level unless justified by a site specific assessment.
- Floor levels to be no lower than the design floor level. Where this is not practical due to compatibility with the height of adjacent buildings, or compatibility with the floor level of existing buildings, or the need for access for persons with disabilities, a lower floor level may be considered. In these circumstances, the floor level is to be as high as practical, and, when undertaking alterations or additions, no lower than the existing floor level.
- The level of habitable floor areas to be equal to or greater than the 100 year flood level plus freeboard. If this level is impractical for a development in a Business zone, the floor level should be as high as possible.
- Non-habitable floor levels to be no lower than the 20 year flood unless justified by site specific assessment.
- A restriction is to be placed on the title of the land, pursuant to S.88B of the Conveyancing Act, where the lowest habitable floor area is elevated more than 1.5m above finished ground level, confirming that the undercroft area is not to be enclosed.

Building Components & Method

- All structures to have flood compatible building components below the 100 year flood level plus freeboard.
- All structures to have flood compatible building components below the PMF level.

Structural Soundness

- Engineer's report to certify that the structure can withstand the forces of floodwater, debris and buoyancy up to and including a 100 year flood plus freeboard.
- Applicant to demonstrate that the structure can withstand the forces of floodwater, debris and buoyancy up to and including a 100 year flood plus freeboard. An engineer's report may be required.
- Applicant to demonstrate that any structure can withstand the forces of floodwater, debris and buoyancy up to and including a PMF. An engineer's report may be required.

Flood Effects

- Engineer's report required to certify that the development will not increase flood effects elsewhere, having regard to: (i) loss of flood storage; (ii) changes in flood levels and velocities caused by alterations to the flood conveyance; and (iii) the cumulative impact of multiple potential developments in the floodplain.
 - The flood impact of the development to be considered to ensure that the development will not increase flood effects elsewhere, having regard to: (i) loss of flood storage; (ii) changes in flood levels and velocities caused by alterations to the flood conveyance; and (iii) the cumulative impact of multiple potential developments in the floodplain. An engineer's report may be required.
- Note:** (1) If a Boundary of Significant Flow has been defined for this floodplain, any development inside this area will normally be unacceptable as it will reduce flood conveyance and increase flood effects elsewhere. (2) If a Flood Storage Area has been defined for this floodplain, any filling of the floodplain inside this area (except where this occurs by compensatory excavation), will normally be unacceptable as it will reduce the volume of flood storage available on the floodplain and increase flood effects elsewhere. (3) Even where a Boundary of Significant Flow and/or a Flood Storage Area have been defined, development outside these areas may still increase flood effects elsewhere and therefore be unacceptable.

Car Parking and Driveway Access

- The minimum surface level of open car parking spaces or carports shall be as high as practical, but no lower than the 20 year flood or the level of the crest of the flood at the location where the site has access. In the case of garages, the minimum surface level shall be as high as practical, but no lower than the 20 year flood.
 - The minimum surface level of open car parking spaces, carports or garages, shall be as high as practical.
 - Garages capable of accommodating more than 3 motor vehicles on land zoned for urban purposes, or enclosed car parking, must be protected from inundation by floods equal to or greater than the 100 year flood.
 - The driveway providing access between the road and parking space shall be as high as practical and generally rising in the egress direction.
 - The level of the driveway providing access between the road and parking space shall be no lower than 0.3m below the 100 year flood or such that the depth of inundation during a 100 year flood is not greater than either the depth at the road or the depth at the car parking space. A lesser standard may be accepted for single detached dwelling houses where it can be demonstrated that risk to human life would not be compromised.
 - Enclosed car parking and car parking areas accommodating more than 3 vehicles (other than on Rural zoned land), with a floor level below the 20 year flood or more than 0.6m below the 100 year flood level, shall have adequate warning systems, signage and exits.
 - Restrictions or vehicle barriers to be provided to prevent floating vehicles leaving a site during a 100 year flood.
 - Driveway and parking space levels to be no lower than the design ground/floor levels. Where this is not practical, a lower level may be considered. In these circumstances, the level is to be as high as practical, and, when undertaking alterations or additions, no lower than the existing level.
- Note:** (1) A flood depth of 0.3m is sufficient to cause a typical vehicle to float. (2) Enclosed car parking is defined in the glossary and typically refers to car parks in basements.

Evacuation

- Reliable access for pedestrians or vehicles required during a 100 year flood.
- Adequate flood warning is available to allow safe and orderly evacuation without increased reliance upon the SES or other authorised emergency services personnel.
- The development is to be consistent with any relevant flood evacuation strategy, Flood Plan adopted by Council or similar plan.
- The evacuation requirements of the development are to be considered. An engineer's report will be required if circumstances are possible where the evacuation of persons might not be achieved within the effective warning time.
- Reliable access for pedestrians or vehicles required to a publicly accessible location above the PMF.
- Applicant to demonstrate that evacuation in accordance with the requirements of this DCP is available for the potential development flowing from the subdivision proposal.

Management and Design

- Applicant to demonstrate that potential development as a consequence of a subdivision proposal can be undertaken in accordance with this DCP.
- Site Emergency Response Flood Plan required where floor levels are below the design floor level, (except for single dwelling houses).
- Applicant to demonstrate that area is available to store goods above the 100 year flood level plus freeboard.
- Applicant to demonstrate that area is available to store goods above the PMF level.
- No storage of materials below the design floor level which may cause pollution or be potentially hazardous during any flood.

Appendix B – Precinct Flood Extent

Appendix B – Precinct Flood Extent



LEGEND

- PROPOSED SITE BOUNDARY
- PROPOSED DEVELOPMENT
- EXISTING BUILDING
- 100 YEAR FLOOD EXTENT (FLOOD LEVEL 9.5m AHD)
- GEORGES RIVER

C	PRELIMINARY ISSUE	CP	HI	24/12/14
B	PRELIMINARY ISSUE	CP	HI	14/08/15
A	PRELIMINARY ISSUE	CP	HI	12/04/15
REV	DESCRIPTION	DRAWN	APP'D	DATE

ARCHITECT

CLIENT

**CORONATION
PROPERTIES**

 WOOD & GREIVE ENGINEERS	Wood & Greive Pty Ltd A/C No. 100 850 000 Level 4, 800 Bays St 201 Pacific Highway, St Leonards NSW 2058 Phone: 02 9345 1000 Fax: 02 9345 1000 Email: info@wge.com.au Web: www.wge.com.au	NAME
		RESPONSIBLE
		DESIGNED
		DRAWN
		CHECKED

PROJECT

SHEPHERD STREET

TITLE

FLOOD EXTENT LAYOUT PLAN
SHEET 1

PRELIMINARY ISSUE

DESIGNED BY	VERIFIED
DRAWN CP	APPROVED FOR TENDER
SCALE 1:500	APPROVED FOR CONSTRUCTION

CAD FILE: 28376-SYD-C-FLR001.dwg

PLOT DATE/TIME: 24/02/16 02:11 PM

PROJECT No	DRAWING No	REVISION
28376-SYD-C	FL01	C



LEGEND

- PROPOSED SITE BOUNDARY
- PROPOSED DEVELOPMENT
- EXISTING BUILDING
- 100 YEAR FLOOD EXTENT (FLOOD LEVEL 9.8m AHD)
- GEORGES RIVER

D	PRELIMINARY ISSUE	CP	W	04/02/24
C	PRELIMINARY ISSUE	CP	W	24/02/24
B	PRELIMINARY ISSUE	CP	W	04/08/23
A	PRELIMINARY ISSUE	CP	W	02/04/23
REV	DESCRIPTION	DRAWN	APP'D	DATE

ARCHITECT

CLIENT

**CORONATION
PROPERTIES**



Wood & Greive Pty Ltd
11/11-11/11 Stirling Rd
Sydney NSW 2015
Phone 02 9439 1000
Fax 02 9439 1001
Email info@wagroup.com.au
Web www.wagroup.com.au

PROJECT

SHEPHERD STREET

TITLE

FLOOD EXTENT LAYOUT PLAN
SHEET 2

PRELIMINARY ISSUE

DESIGNED	W	VERIFIED	
DRAWN	CP	APPROVED FOR TENDER	
SCALE	1:500	APPROVED FOR CONSTRUCTION	

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28376-SYD-C	FL02	D

AT DRAWING - BUILDING SERVICES GROUP



**FLORA & FAUNA SURVEY,
BIODIVERSITY IMPACT ASSESSMENT AND
RIPARIAN ZONE ASSESSMENT
FOR PROPERTY ADDRESSES AT
20, 26, 28, 31, 32-34 AND 33,
SHEPHERD STREET AND MILL PARK
LIVERPOOL**

Prepared for:

CORONATION PROPERTY Co Pty Ltd
9 – 25 Commonwealth Street
Sydney NSW 2000

MARCH 2016

ACS Environmental P/L

Flora and Fauna Surveys, Biodiversity Impact Assessment

Australian Business Number (ABN) 24 154 491 120
3/28 Tullimbar Rd, Cronulla NSW. 2230
7 Townsend Avenue, Frenchs Forest NSW. 2086

Tel: 9527 5262, 9453 9397; Mob: 0403 081902, 0412 217896; Fax: 9527 7454

Email: acs@actinotus.com
Web: www.actinotus.com

Actinotus Environmental Consultants

Peter Stricker BSc. (Hons) (Syd) ^α



Anthony Smith-White BSc. (Syd), CertHEd., MSc., PhD. (UNSW) ^α



^α Member Ecological Consultants Association NSW Inc

Consultants experience

The directors of 'Actinotus Consultancy Services (ACS) – Environmental P/L' (formerly Actinotus Environmental Consultants) have collectively worked in the area of biodiversity impact and bushfire hazard assessment services for a period of greater than 20 years. They also have over 30 years of experience in scientific research (ecological, genetic) and teaching in biological science.

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ABBREVIATIONS

DECCW – State Department of Environment, Climate Change and Water

DoE – Commonwealth Department of Environment

EPA Act – Environment Protection Act

EPBC Act – Environment Protection and Biodiversity Conservation Act

FM Act – Fisheries Management Act

LLEP - Liverpool Local Environment Plan

NPWS – State National Parks and Wildlife Service

OEH – Office of the Environment and Heritage

RC - Riparian Corridor

SJB - SJB Architects

SMCMA – Sydney Metropolitan Catchment Management Authority

SREP - State Regional Environmental Plan

SREP No. 2 - Greater Metropolitan Region No. 2 - Georges River Catchment

TSC Act – Threatened Species Conservation Act

VRZ - Vegetated Riparian Zone

PART A: FLORA AND FAUNA SURVEY & BIODIVERSITY ASSESSMENT AT 20, 26, 28, 31, 32-34, 33 & MILL PARK, SHEPHERD STREET, LIVERPOOL

1. Introduction

ACS Environmental was commissioned by Coronation to undertake flora and fauna surveys and assessments at 20, 26, 28, 31, 32-34, 33, and Mill Park in Shepherd Street, Liverpool. The proposal is for the development of multistorey residential tower blocks at the above addresses with a VPA offer of public domain upgrades to the Shepherd Street, Precinct (Figure 1).

Assessments of riparian buffer zones in relation to the above properties as shown in the SJB Precinct Plan were prepared, in accordance with the NSW Fisheries and NSW Office of Water Guidelines for riparian zones and permissible activities.

Finally, recommendations for suitable vegetative rehabilitation and landscape planting of River-flat Forest and Alluvial Woodland aligned assemblages in relation to proposed development plans for these properties in Shepherd Street, Liverpool, were prepared.



Figure 1 - Area outlined in red included in proposed local Precinct Plan requiring both ecological and riparian studies at Shepherd Street, Liverpool (from SJB 2016).

2. Location and description of subject areas at 20, 28, 31, 32-34 and 33 Shepherd Street and Mill Park, Liverpool

2.1 General location and description

The sites at 20, 26, 28, 31, 32-34 and 33 Shepherd Street and Mill Park occur along a section of the Western perimeter of the Georges River (Figure 2), the properties at 20, 26 and 28 Shepherd Street, Liverpool, have been developed for industrial purposes since well before 1943 (Figure 3).



Figure 2 - Location of subject properties at 20, 28, 31, 32-34 and 33 Shepherd Street and Mill Park occurring along a section of the Western embankment of the Georges River, Liverpool (SIX MAPS).



Figure 3 - The site has largely been cleared and developed including for industrial uses except for a narrow strip of vegetated land along its eastern boundary with the Georges River since well before 1943 (SIX maps).

2.2. Description of vegetation occurring along the Georges River embankment

The current vegetated landscape that occurs along the western riverbank of the Georges River to the rear of the subject properties consists of patches of tall scrub and occasional trees mostly comprising woody noxious weeds smothered with invasive noxious weedy vines (Figures 4, 5 & 6 depict characteristic assemblages of weed-infested scrub in the north at the rear of 20 Shepherd Street, at the rear of 28 Shepherd Street and at the rear of 33 Shepherd Street, Liverpool, respectively).

Small patches of Common Reed (*Phragmites australis*) occur along the edges of the river.

Appendix 1 lists the floristic species recorded within and at the rear of the properties at 20, 28, 31, 33 and at Mill Park in Shepherd Street, Liverpool.



Figure 4 - Exotic clumps of woody weeds and small trees at the rear of 20 Shepherd Street, Liverpool, including Green Cestrum, Lantana, Morning Glory and Balloon Vine. A small individual of Jacaranda is evident in the background.



Figure 5 - Clumps of woody weeds and small trees such as Large-leaved Privet smothered in Morning Glory and Balloon Vine characterise the weed-infested vegetation at the rear of 28 Shepherd Street, Liverpool.



Figure 6 - Clumps of woody weeds and small trees such as Cockspur Coral Tree smothered in Morning Glory and Balloon Vine characterise the weed-infested vegetation at the rear of 33 Shepherd Street, Liverpool.

3. Description of subject areas at 20, 26, 28, 31, 32-34, 33 Shepherd Street and Mill Park, Liverpool

3.1 20 Shepherd Street, Liverpool

The site at 20 Shepherd Street had until recently been utilised as an industrial site with very little vegetation remaining within the site (Figure 7) (Appendix 1).

Exotic species

A small strip of grassy vegetation dominated by Kikuyu and Tall Fleabane occurs within the northern boundary with a patch of herbaceous weeds established in the north-western corner of the property. Common weeds occurring at this location include Castor Oil Plant (appears to have been controlled by spraying), Ink Weed, Indian Mustard, Black Nightshade, Kikuyu and Red-flowered Mallow (Appendix 1).

As described in Section 2.2 and depicted in Figure 4, the rear of the property is infested with weedy shrubs and climbers. Other common weeds occurring at the rear of the property

include Potato Weed, Cobblers Pegs, Common Sowthistle, Morning Glory, Green Cestrum, Blackberry and Black Nightshade, among others (Appendix 1).

Indigenous species

Indigenous species occur in relatively sparse frequency. They include Bracken Fern, a mature individual of Snow-in-Summer in poor condition at the edge of the river-bank smothered in weedy climbers, a small sapling of Cheese Tree and patches of Common Reed established at the river edge (Appendix 1).



Figure 7 - Property at 20 Shepherd Street, Liverpool recently used as an industrial site. The building at the far north-western section of the site has been demolished and an assemblage of weeds has established in this area.

3.2 26 Shepherd Street, Liverpool

The site at 26 Shepherd Street is currently being used as a storage yard for motor vehicles involved in accidents. The site has in the past been cleared of all vegetation and currently supports only sporadic incursions of opportunistic weed species. (Figure 8) (Appendix 1). These include Red-flowered Mallow, Paddy's Lucerne, Pigweed, Jimson Weed, Black Nightshade, White Clover and African Lovegrass.



Figure 8 - The site at 26 Shepherd Street is currently being used as a storage yard for motor vehicles involved in accidents.

3.3 28 Shepherd Street, Liverpool

The site at 28 Shepherd Street is currently not in commercial use and is over-run with unmanaged weed growth, unmanaged exotic grassland and remnant ornamental trees smothered in invasive noxious vines (Figure 9) (Appendix 1).

Exotic species

Areas of exotic grassland are comprised mostly of Kikuyu, Paspalum, Rhodes Grass and Common Couch, with herbaceous species such as Purple-top, Cobblers Pegs, Crofton Weed and Fennel also very common.

To the rear of the property, a distribution of exotic woody weeds includes Large-leaf Privet, Small-leaf Privet, Camphor Laurel, Green Cestrum, African Boxthorn, Lantana, Golden Wreath Wattle and Mulberry (naturalised in area). Invasive vines covering and smothering the ground surface and individuals of woody weeds most commonly include Balloon Vine and Morning Glory (Figure 5).

A total of 30 exotic plant species were recorded at the site. Appendix 1 lists the species comprising the weed-infested vegetation.

Exotic herbaceous species number about 15 and there are 4 species of exotic grasses.

Exotic plant species include 6 species of noxious woody weeds including Green Cestrum, Large-leaf Privet, Small-leaf Privet, Blackberry, African Boxthorn and Lantana (Appendix 1).

Indigenous species

Small patches of the native chenopod species Climbing Saltbush (*Einadia nutans*) occur in the rear, eastern section of the site.



Figure 9 - Site location at 28 Shepherd Street, Liverpool, an abandoned warehouse facility, the eastern boundary contiguous with vegetation along a section of the western embankment of the Georges River

3.4 32-34 Shepherd Street, Liverpool

The site at 32-34 Shepherd Street is currently being utilised as an industrial site with only the front setback from Shepherd Street vegetated. (Figures 10 & 11) (Appendix 1). This area

is largely maintained as mown grass area with Kikuyu, Buffalo and Common Couch components. Landscape plantings include Orange Jessamine, Jacaranda, Pepper Tree and Bangalay (2 trees <18m)(Figure 11).

Exotic species

The front mown grass area of Kikuyu, Buffalo and Common Couch components includes numerous weed species. Specific species occurring randomly are Cobblers Pegs, Panic Veldt Grass, Catsear, Paspalum, Slender Pidgeon Grass, Red-flowering Mallow, Common Thistle and Prickly Sowthistle (Appendix 1).

As described in Section 2.2 and depicted in Figure 4, 5 & 6 the rear of the property is infested with weedy shrubs and climbers. Other common weeds occurring at the rear of the property include Japanese Honeysuckle, Morning Glory and Ballon Vine among others (Appendix 1).

Indigenous species

Planted indigenous species beyond the rear of the property include Bluegum, Bluegum x Bangalay and Hills Weeping Fig (<15m). Common Reed occurs at the river edge (Appendix 1).



Figure 10 - Property at 32-34 Shepherd Street, Liverpool currently in use as an industrial site.



Figure 11 - The site at 32-34 Shepherd Street is currently being utilised as an industrial site with only the front setback from Shepherd Street vegetated.

3.5 31 Shepherd Street, Liverpool

The site at 31 Shepherd Street has previously been used for light industrial purposes with an access road to the Casula Power House traversing the site. The facility is currently occupied by a community group. The site includes landscaped gardens and planted roadside embankments utilising mainly non-locally occurring indigenous species (Appendix 1). The site has no contiguity with the Georges River (Figure 12).

Exotic, ornamental and indigenous species

The site with landscaped gardens and roadside embankment contains relatively few weeds, with only a low frequency of Cobblers Pegs occurring among the landscaped embankment assemblage and small trees of Tobacco Bush and Large-leaved Privet established within the grounds of the facility (Figure 12).

Most of the plants used in landscaping are non-locally occurring indigenous species, and except for Sickle Wattle, Blackthorn, Kangaroo Grass and possibly White Dogwood, are more associated with sandstone substrates. Exotic ornamentals include species such as Photinia, Juniper, Wallangarra White Gum, Norfolk Island Pine, Cotoneaster and Queen Palm, (Appendix 1).



Figure 12 - Site location at 31 Shepherd Street, Liverpool, set back to the rear of 33 Shepherd Street, indicating landscaped gardens and a section of landscaped embankment.

3.6 33 Shepherd Street, Liverpool

The site at 33 Shepherd Street is currently utilised as an operational factory facility that backs onto and is contiguous with weed-infested vegetation occurring on the western bank of the Georges River (Figures 5 & 13) (Appendix 1).

There is no vegetation within the site except for a small patch of managed grassland seeded to Kikuyu (Appendix 1).

Exotic species

Clumps of woody weeds and small trees such as Cockspur Coral Tree and Large-leaved Privet smothered in Morning Glory and Balloon Vine characterise the weed-infested vegetation at