JW Planning Pty Ltd

DEVELOPMENT APPLICATION for SUBDIVISION (pursuant to exhibited Part 3A Concept Plan)

Planning Report comprising Environmental Assessment
State Significant Development (SSD 7198) under Part 4 of EP&A Act 1979
(Transitioned from MP09_00167 under Part 3A Major Project per Cl.6 Sch. 6A (EP&A Act) State and Regional Development SEPP)

Proposed 105 Lot Subdivision (including 103 Residential Lots)
Rehabilitation and Dedication of Waterfront Public Reserve
Residential Zoned Land, Coffs Harbour LEP 2000

Lot 1 DP 1097743
Pacific Highway, Moonee Beach

Department of Planning & Environment Ref: SSD 7198
Mooney Parklands Trust
July 2018

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1.0 Introduction

This report has been prepared by JW Planning Pty Ltd on behalf of Moonee Parklands Trust (**applicant**) to inform assessment of an application for the proposed subdivision of Lot 1 DP 1097743, Pacific Highway, Moonee Beach (**site**).

The proposed development is State Significant Development (**SSD**), identified as SSD 15_7198 (formerly MP 09_0067) with the NSW Department of Planning & Environment (**DPE**).

This report presents the final Environmental Assessment (**EA**), details of the subdivision proposal for which Development Consent is sought, and an Environmental Impact Statement to enable conclusion of the DPEs assessment of the SSD application. The content of this report therefore supersedes the original Environmental Assessment (**EA**) Report of June 2013.

The **Attachments** contain final technical investigation reports prepared to inform the EA, the proposal, and development assessment of the proposal.

This application is not proposed as a Concept Development Application, rather an application to carry out subdivision and subdivision works.

1.1 Background

This Development Application concludes a protracted development assessment process that first commenced in 2009 in the form of an application for Concept and Project Approval under the former Part 3A provisions of the Environmental Planning and Assessment Act ('**the Act'**).

The proposal was progressed under Part 3A until it was transitioned to be assessed as State Significant Development following the repeal of Part 3A of the Act.

Amendments to the original 2009 proposal resulted in a Response to Submissions and initial consultation with Council and the relevant state agencies. The nature of amendments are detailed in the description of the proposed development at **Section 3**, and summarised below:

- Removal of Lot 6 DP 1097743 from the proposal
- Realignment of Roads 2 and 6, providing land for additional lots facing east toward Moonee Creek
- Increase in the number of residential lots proposed to 103
- Relocation of infrastructure out of the Moonee Creek buffer, including the stormwater retention basin and sewage pump
- Additional earthworks to provide for redirection of stormwater to the relocated basin
- Alteration of development footprint as a result of the realignment of Road 3.

Apart from addressing any impacts from Lot 1 upon Lot 6, submissions raising issues or concerns with Lot 6 are not matters for further consideration under this application.

1.2 Assessment Chronology

The process of seeking approval and development assessment transpired as follows:

28 September 2009	Confirmation of Part 3A project (Ref 09_0067)
18 November 2009	Request for DGRs Submitted
15 January 2010	DGRs Received
5 June 2013	Documentation submitted for public exhibition
19 June – 2 August 2013	EA for Concept Plan placed on public exhibition
14 October 2014	Preferred Project Report (PPR) provided to DPE incorporating consideration of submissions
12 January 2015	Project transitioned to State Significant Development (SSD 7198) with the repeal of Part 3A of the EPA Act
27 January 2015	Adequacy Review of PPR by DPE
18 April 2016	Advice received from DPE that PPR is to be referred to as a Response to Submissions Report (RTS)
4 May 2016	A revised RTS report was provided to DPE for referral to NSW Government Agencies
30 May 2017	A second, revised RTS report was provided to DPE for referral to NSW Government Agencies
May 2018	Final SSD Response to Submissions for Concept Plan and Development Application with responses to the State Agency referrals
July 2018	Resubmit Final SSD Development Application incorporating responses from the State Agency referrals

1.3 Structure of this Report

This report is structured as follows to facilitate exhibition and conclusion of the development assessment process:

Section 1	Introduction
Section 2	Subject Site and Location
Section 3	Proposed Development
Section 4	Statutory Considerations
Section 5	Environmental Assessment
Section 6	Consultation
Section 7	Response to Submissions
Section 8	Statement of Commitments
Section 9	Conclusion

2.0 Subject Site and Location

The proposed development involves Lot 1 DP 1097743, Pacific Highway, Moonee Beach (**'the site'**). See **Attachment A** – Site Plan. The site is about 12.9ha in area and forms part of the Moonee Beach urban growth area.

Moonee Beach is located equidistant between Coffs Harbour to the south and Woolgoolga to the north. The site is approximately 14 km or 15 minutes' drive time north of Coffs Harbour.
The site is located adjacent to the Pacific Highway, north of the village of Moonee and is currently accessed from the Pacific Highway via an informal gravel driveway (see **Figure 1**).

Figure 1 Site Location

Source: Civiltek

The local site context includes (see **Figure 2**):

- The Glades Estate, an approved 524 lot Part 3A residential development to the north (the Rothwell site);
- A proposed 20 lot residential development to the south of the subject site (the Bateman site);
- Moonee Beach Nature Reserve to the east;
- Solitary Islands Marine Park to east that includes the Moonee Creek estuary; and
- Cunningham's Creek and Moonee village centre to the south.

Figure 2 Site Context

Source: Google Earth annotated by JWP

The land is currently used for uncontrolled grazing and is largely cleared/under scrubbed (see **Figure 3**). As part of the Moonee Beach urban growth area, there is an opportunity to implement protection of the Moonee Creek riparian zone and a wildlife corridor to connect approved Glades Estate to the north to other corridors south of the site.

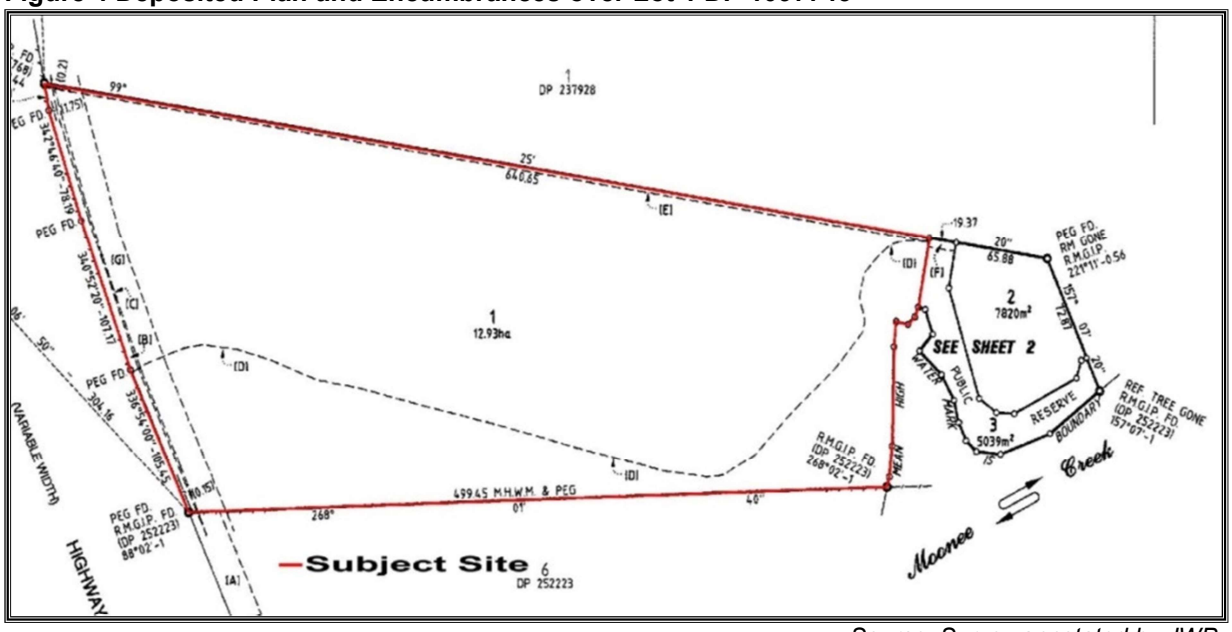
Figure 3 Land the Subject of DA – Lot 1 DP 1097743

Source: Google Earth annotated by JWP

The site forms part of the Moonee Creek catchment that is drained by a series of small intermittent drainage lines, draining into two main creeks. Moonee Creek originates in the north, flowing south past the site until it discharges into the ocean at Moonee Beach.

The Deposited Plan for Lot 1 (see **Figure 4** and **Attachment B**) illustrates a Right of Carriageway (Item D) over Lots 1 and 3 to provide Lot 2 with a legal access to the Pacific Highway. Easements for sewer, water and power are indicated along the western boundary of Lot 1. The Deposited Plan also illustrates the location of the Mean High Water Mark - the eastern boundary of Lot 1 and the western and southern boundaries of Lot 3 (a public reserve).

Figure 4 Deposited Plan and Encumbrances over Lot 1 DP 1097743



Source: Survey annotated by JWP

2.1 Zoning

The proposal was initially lodged at a time when the site was zoned part 2A residential, part 7A Environmental Protection Habitat and Catchment (eastern edge of site and buffer to Moonee Creek), and part Part 7B Scenic Buffer zone (western edge of site along Pacific Highway) under Coffs Harbour Local Environmental Plan 2000 (CHLEP 2000). A draft LEP amendment was then exhibited in 2012 proposing an increase to the 7A zone width (buffer to Moonee Creek) of up to some 185m.

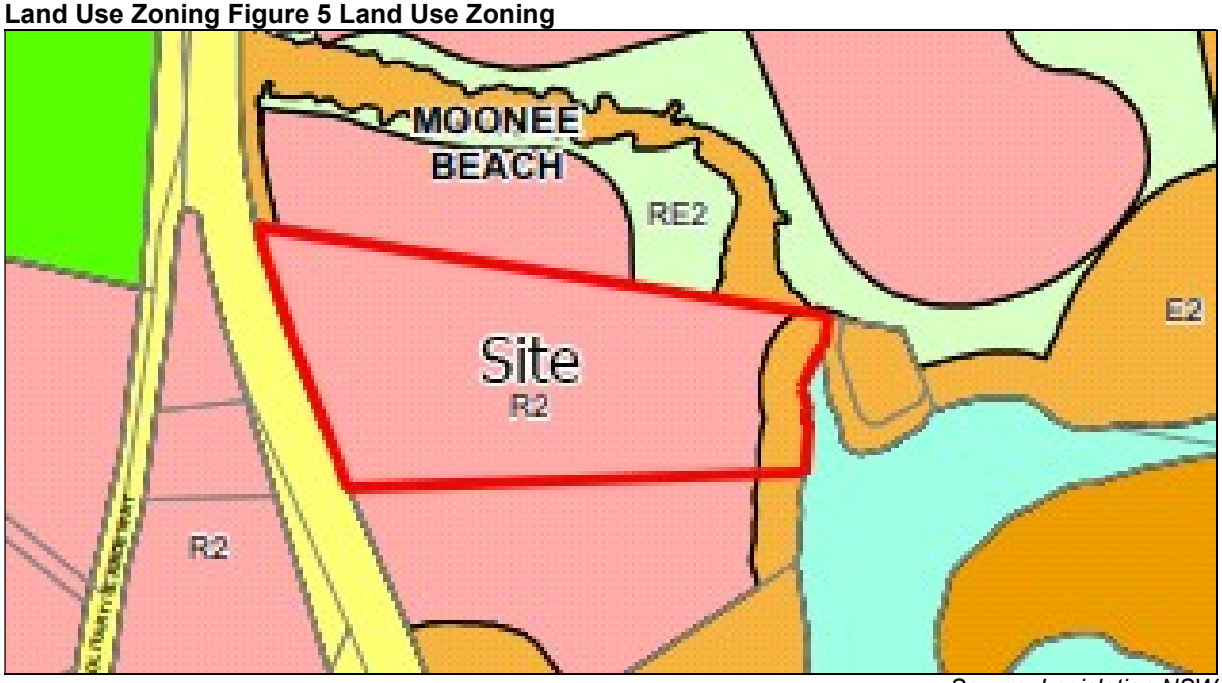
With the draft LEP to increase the 7A zone width unresolved, the Coffs Harbour Standard Instrument LEP 2013 was made, with the site (as with others in the LGA) gazetted as a '*deferred matter'*, leaving the CHLEP 2000 zoning in effect.

Following the adequacy assessment of the Draft PPR by DPE on 27th January 2015 (see **Section 1.2** above) Council adopted a Local Environmental Study (**LES**) on 26th March 2015. The LES was prepared by Monteath & Powys Pty Ltd and David Broyd Consulting Services Pty Ltd (**'Council's consultants'**) on behalf of Council and in consultation with the community.

Council's consultants reviewed all submissions and available technical reports in respect of the *deferred matter* sites and subsequently provided recommendations on zoning, lot size, building height in the LES to then inform a planning proposal to amend the Coffs Harbour LEP 2013 and rezone the *deferred matters*.

Council adopted a planning proposal to rezone the *deferred matters* per the LES on the 9th March 2017, and the land was rezoned to create a 50m wide buffer to Moonee Creek on 27 July 2018 (see **Figure 5**).

Land Use Zoning Figure 5 Land Use Zoning



Source: Legislation NSW

2.2 Site Analysis

The site is located in an area of gently to moderately undulating hills and flatter, low-lying alluvial plains associated with Moonee Creek.

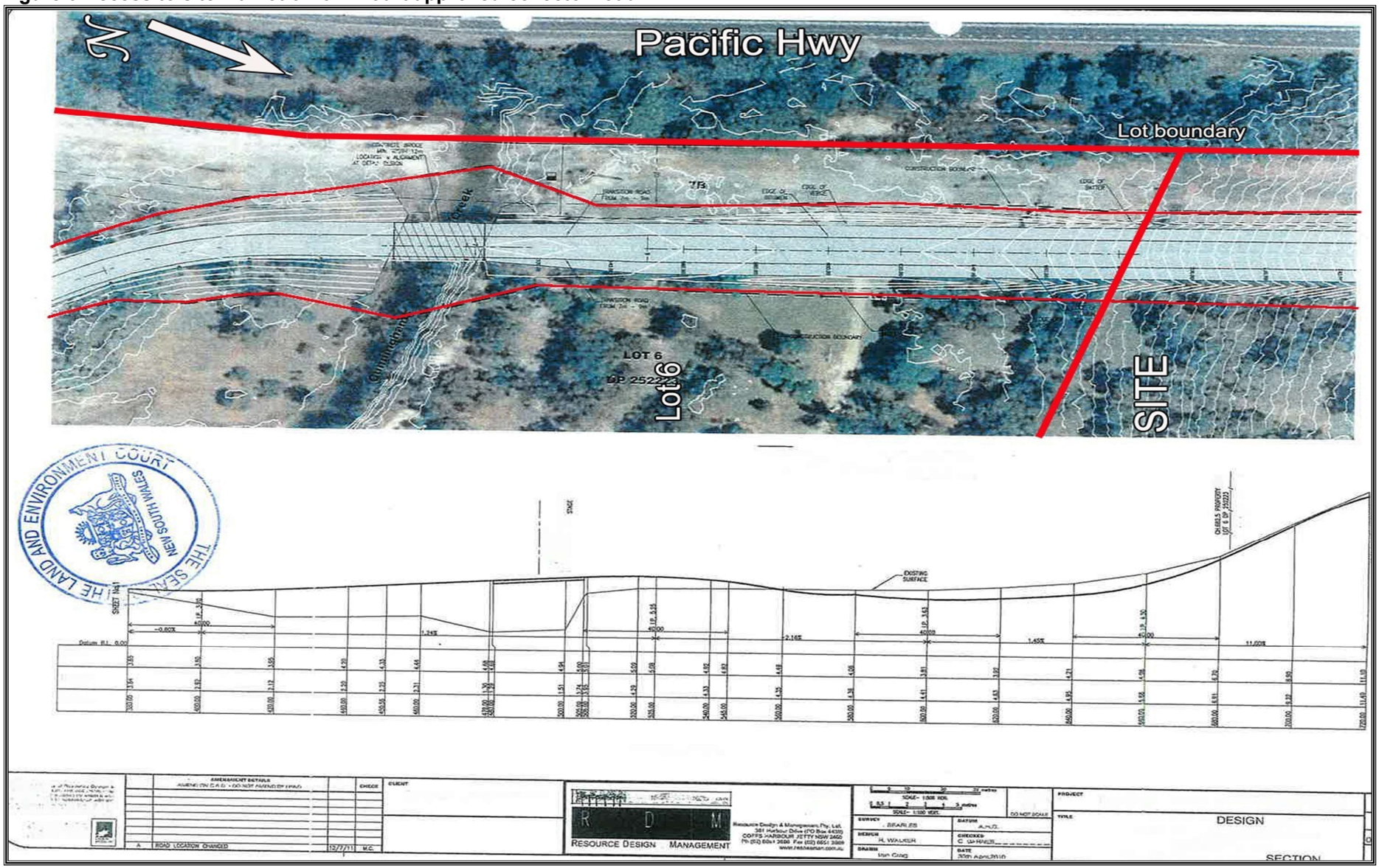
Site elevation ranges between approximately 19m AHD in the west and 2m AHD along the banks of Moonee Creek in the east with slopes of up to 8 degrees (14%) in the west and relatively flat (generally less than 5%) across low-lying areas in the east.

Three man-made drains associated with past grazing activities exist on Lot 1. The waterfront is currently privately owned land. See **Attachment C** – Site Survey.

There are two (2) main tributaries of Moonee Creek relative to the site being; Skinners Creek, to the north of the Glades Estate, which flows east until it joins Moonee Creek, and another minor tributary, an unnamed creek, dissects the north eastern corner of the site.

The site is currently accessed directly off the Pacific Highway, but development of the land will rely on access via a Court approved road through Lot 6 to Moonee Beach village (see **Figure 6**).

Figure 6 Access to site via Lot 6 from Court approved collector road



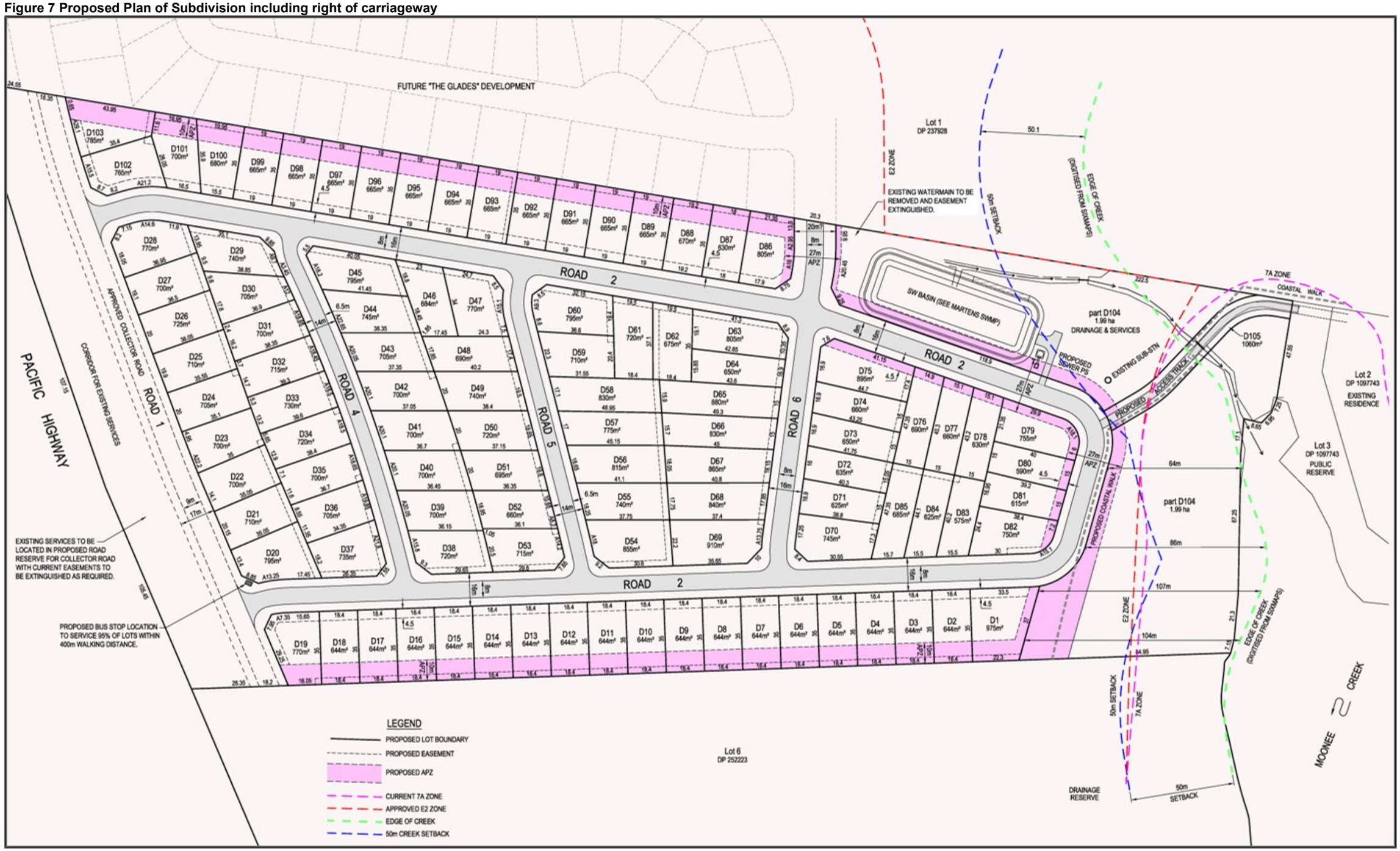
3.0 **Proposed Development**

A Concept Plan based on an *Environmental Assessment Report* (EAR) for the development of the land was placed on public exhibition in mid-2013. Consultation and further information obtained since the exhibition period lead to improvements to the Concept Plan (see **Section 3.1** below) and detailed design was able to proceed to a level that would enable Project Approval to carry out the development.

The resulting detailed design is the basis of the Plan of Subdivision for which approval is now sought (see **Figure 7** and **Attachment D**); the proposed development comprises the following:

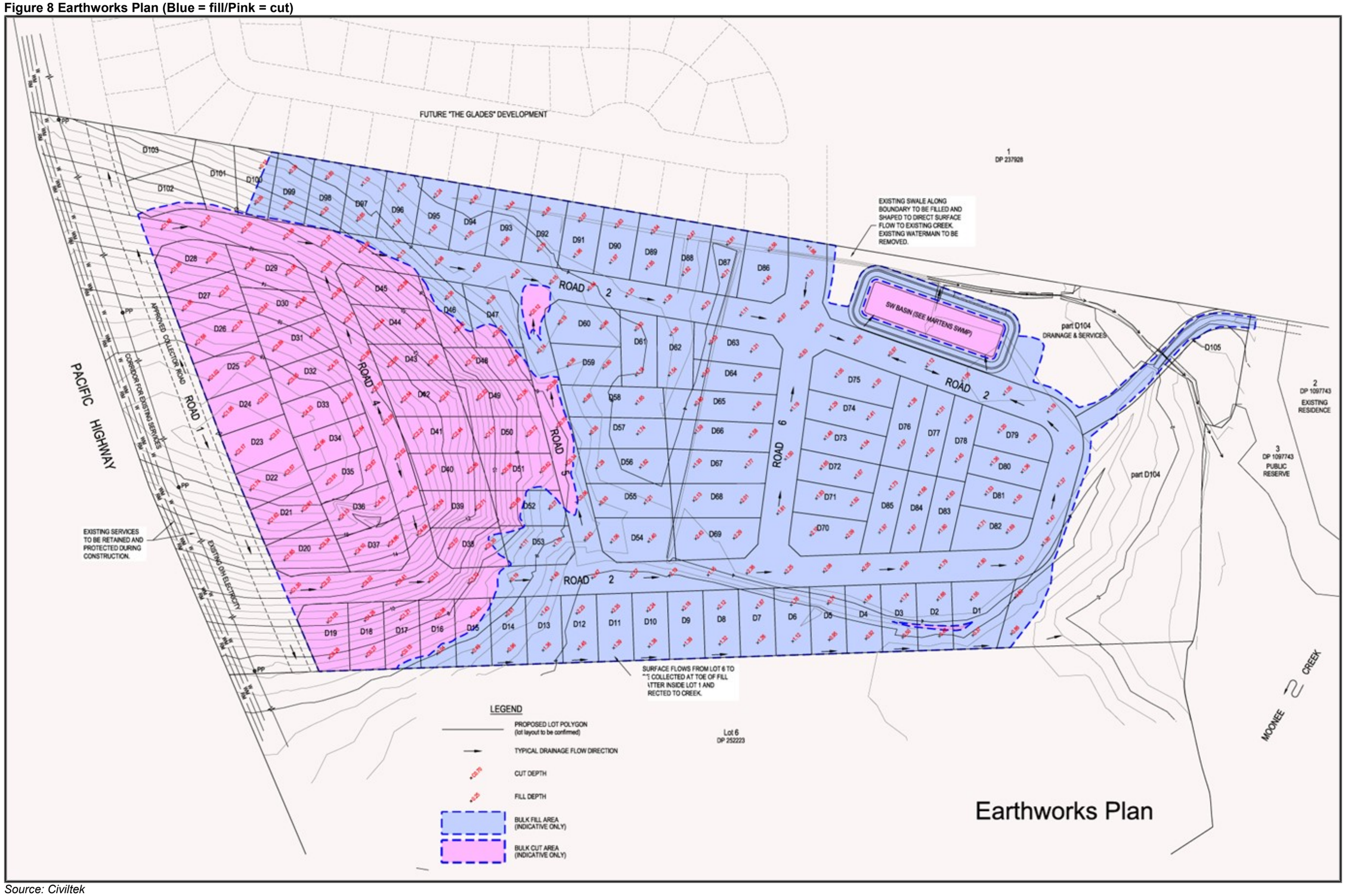
- Four (4) new public roads connected to an approved collector road providing access to the site and an adjoining Part 3A approved residential development;
- Subdivision to create 105 lots comprising:
    - 103 Torrens Title lots for residential purposes;
    - one lot (Lot 105) for future vehicular access through the site to Lot 2 DP 1097743 in lieu of existing access via a Right of Carriageway (refer **Figure 7**); and
    - one lot (Lot 104) for dedication to Council for environmental protection purposes as a public reserve; partly for drainage and services (stormwater detention basin, sewage pump station and electrical substation) outside of Moonee Creek buffer; and partly for the rehabilitated buffer, wildlife corridor, and the public coastal walk (but excluding drainage infrastructure or services);
- Public and subdivision infrastructure;
- Some two hectares of conservation land providing a secure buffer to Moonee Creek and a long term sustainable wildlife corridor connected to off-site corridors approved by the Minister for Planning and Infrastructure for the Glades Estate (north) and to the south of the site. The conservation land and buffer is proposed for rehabilitation, management and dedication to Council post construction for community purposes; and
- A voluntary offer by the applicant under Section 127ZO Effect of issue of bio banking statement—development requiring development consent of the Threatened Species Conservation Act to secure and retire:
    - 291 Blackbutt - Pink Bloodwood shrubby open forest of coastal lowlands of NSW North Coast Bioregion ecosystem credits and 170 Forest Red Gum - Swamp Box of Clarence Valley lowlands of NSW North Coast Bioregion ecosystem credits; and
    - 170 Squirrel Glider (*Petaurus norfolcensis*) species credits.
- Rehabilitation of riparian land degraded by existing rural activities to establish an environmental buffer to Moonee Creek and a long term sustainable biodiversity corridor linking with approved corridors on adjoining land. The buffer is proposed to be between 60m and 85m in width (excluding APZs);
- a pedestrian/cycleway linking the site to the north and south along the collector road(refer **Figure 7**)
- associated bulk earthworks (cut and fill) (refer **Figure 8**);
- associated water and sewer reticulation (refer **Figure 9**);
- associated stormwater drainage works and sewer pump stations in locations on residential zoned land outside the buffer (refer **Figure 10**);
- Sediment and Erosion control plan (refer **Figure 11**)
- landscaping including street tree planting (refer **Figure 12**);
- proposed revegetation of buffer (refer **Figure 13**).

Figure 7 Proposed Plan of Subdivision including right of carriageway



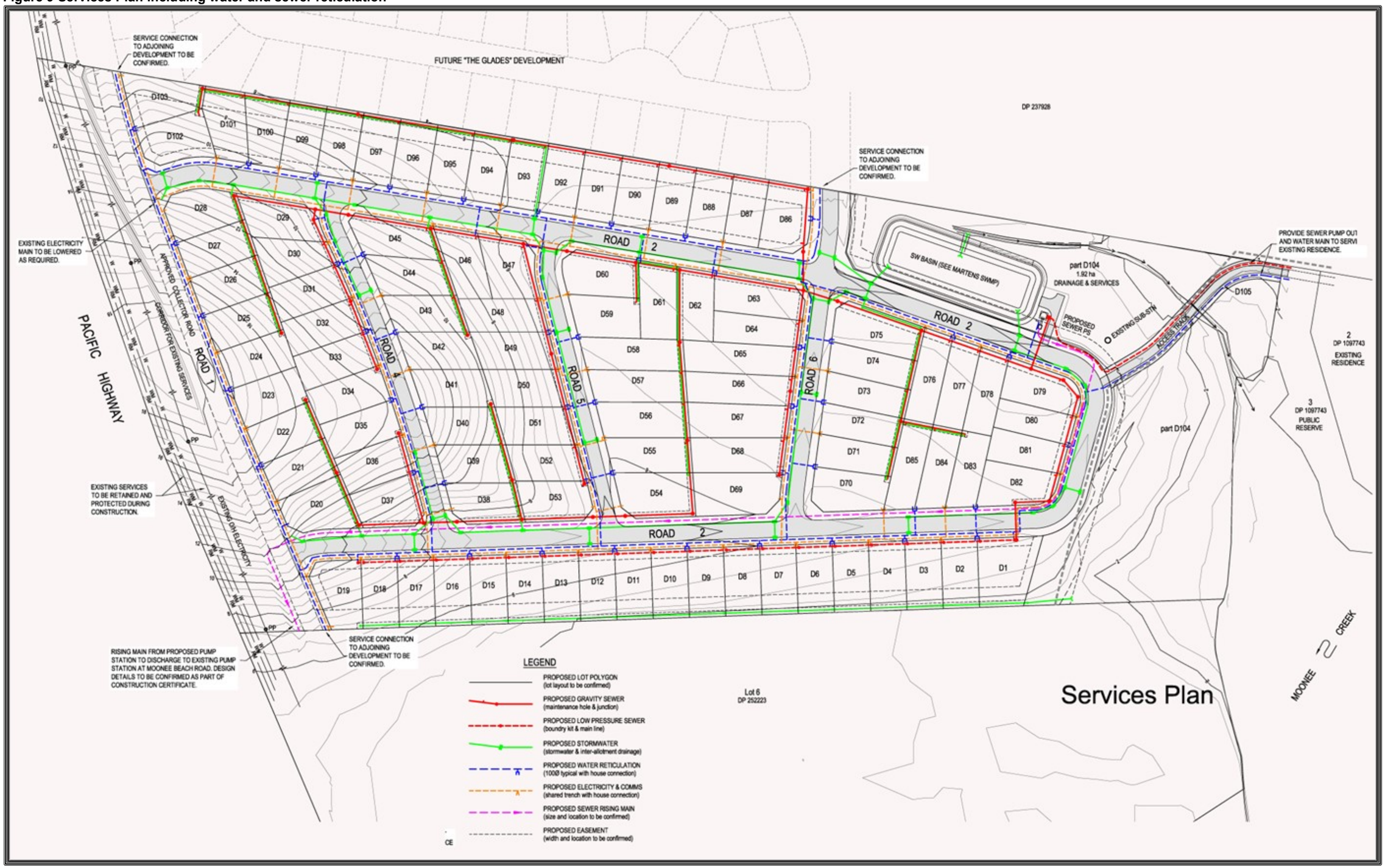
Source: Civiltek

Figure 8 Earthworks Plan (Blue = fill/Pink = cut)



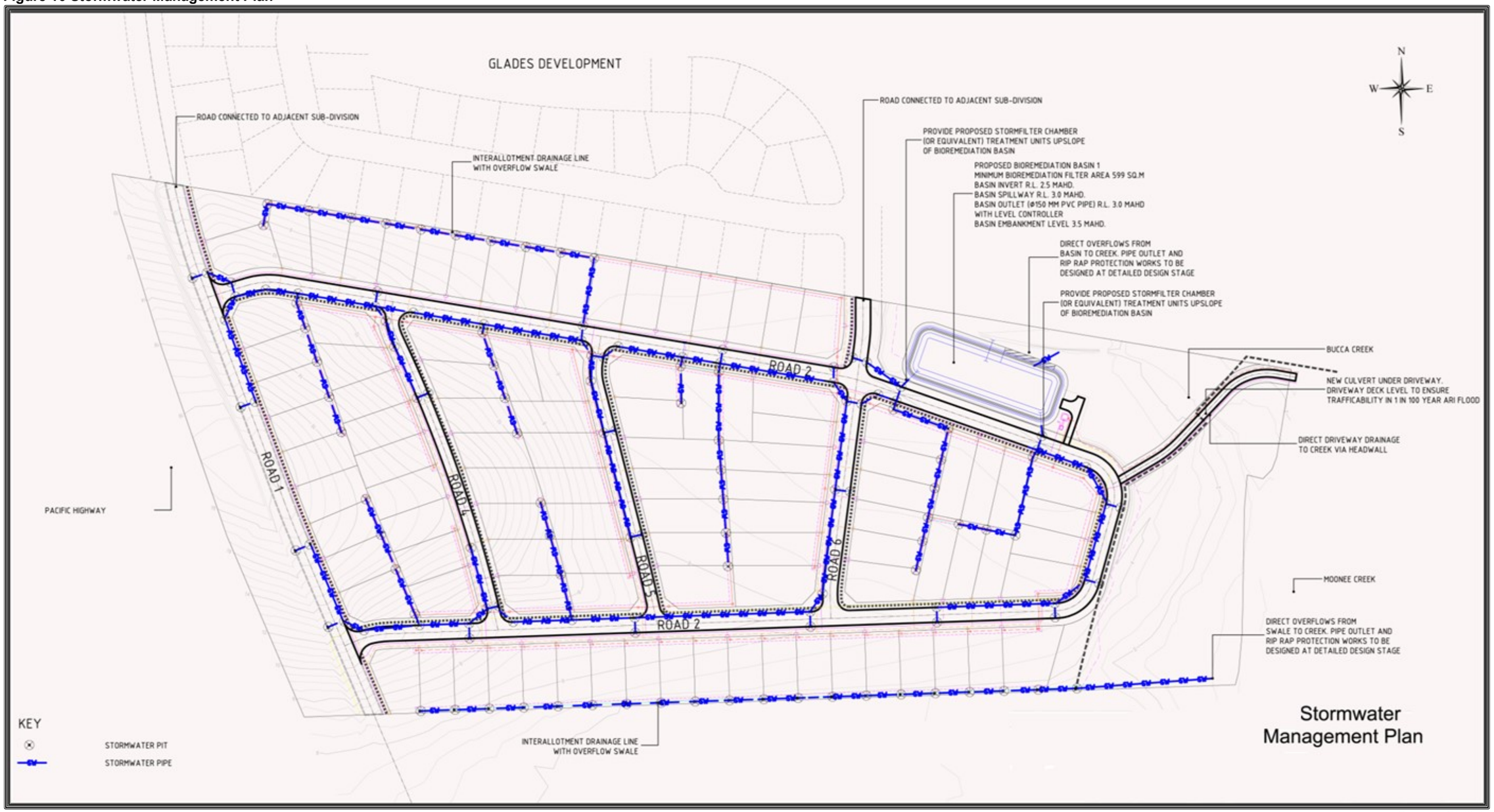
Source: Civiltek

Figure 9 Services Plan including water and sewer reticulation



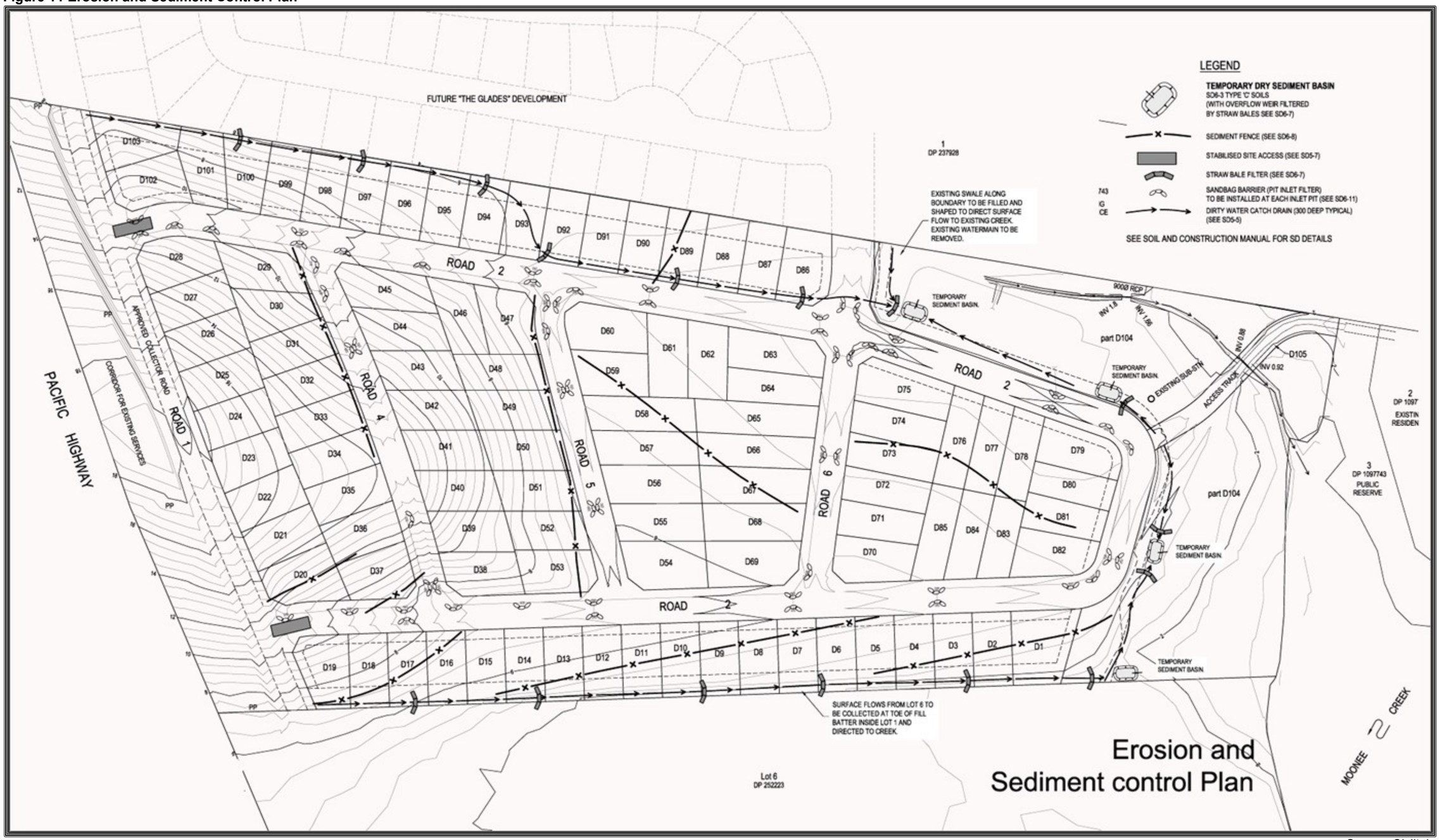
Source: Civiltek

Figure 10 Stormwater Management Plan



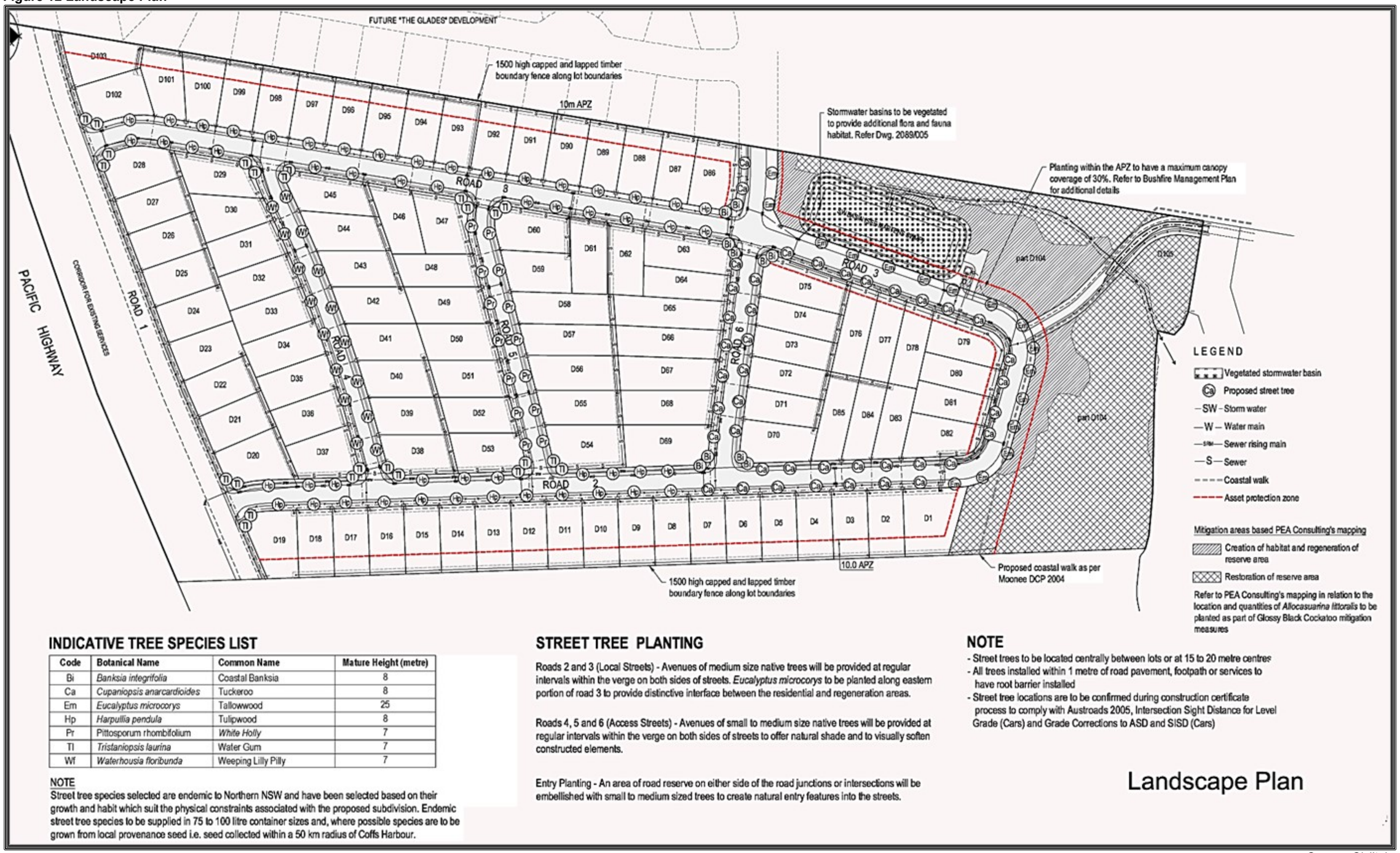
Source: Civiltek

Figure 11 Erosion and Sediment Control Plan



Source: Civiltek

Figure 12 Landscape Plan



INDICATIVE TREE SPECIES LIST

Code	Botanical Name	Common Name	Mature Height (metre)
Bi	*Banksia integrifolia*	Coastal Banksia	8
Ca	*Cupaniopsis anarcardioides*	Tuckeroo	8
Em	*Eucalyptus microcorys*	Tallowwood	25
Hp	*Harpullia pendula*	Tulipwood	8
Pr	Pittosporum rhombifolium	*White Holly*	7
Tl	*Tristaniopsis laurina*	Water Gum	7
Wf	*Waterhousia floribunda*	Weeping Lilly Pilly	7

NOTE
Street tree species selected are endemic to Northern NSW and have been selected based on their growth and habit which suit the physical constraints associated with the proposed subdivision. Endemic street tree species to be supplied in 75 to 100 litre container sizes and, where possible species are to be grown from local provenance seed i.e. seed collected within a 50 km radius of Coffs Harbour.

STREET TREE PLANTING

Roads 2 and 3 (Local Streets) - Avenues of medium size native trees will be provided at regular intervals within the verge on both sides of streets. *Eucalyptus microcorys* to be planted along eastern portion of road 3 to provide distinctive interface between the residential and regeneration areas.

Roads 4, 5 and 6 (Access Streets) - Avenues of small to medium size native trees will be provided at regular intervals within the verge on both sides of streets to offer natural shade and to visually soften constructed elements.

Entry Planting - An area of road reserve on either side of the road junctions or intersections will be embellished with small to medium sized trees to create natural entry features into the streets.

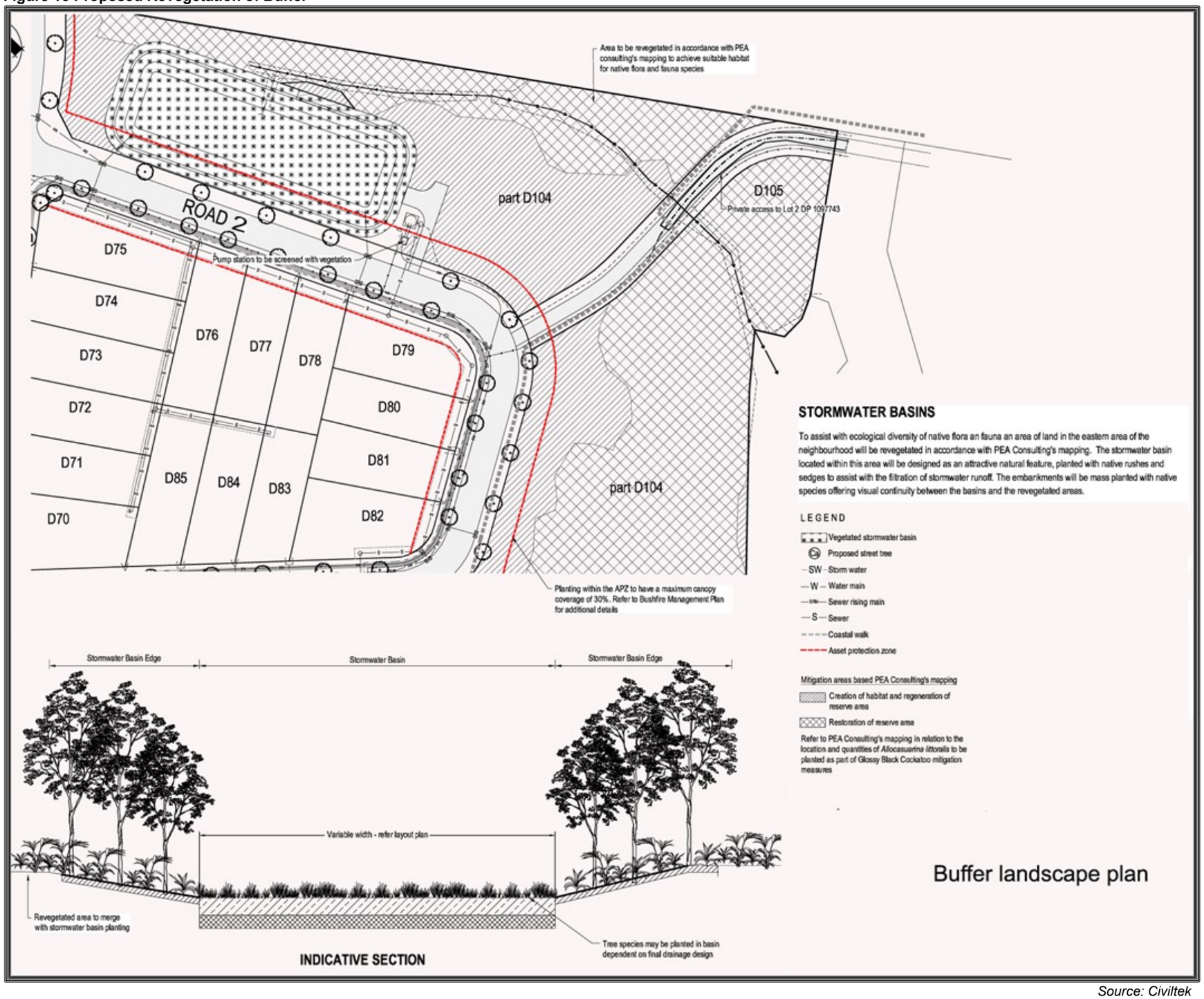
NOTE

- Street trees to be located centrally between lots or at 15 to 20 metre centres
- All trees installed within 1 metre of road pavement, footpath or services to have root barrier installed
- Street tree locations are to be confirmed during construction certificate process to comply with Austroads 2005, Intersection Sight Distance for Level Grade (Cars) and Grade Corrections to ASD and SISD (Cars)

Landscape Plan

Source: Civiltek

Figure 13 Proposed Revegetation of Buffer



Source: Civiltek

Construction of the development is estimated to cost $10 million and create 130 jobs. The subsequent housing construction is expected to be approximately $108 million and create some 1,400 jobs.

Development of the site in the manner proposed is strategically important in that:

- it will remove ongoing rural activities that have evidently degraded the land for decades and are incompatible with the sensitive marine environment adjoining the site;
- it will revert privately owned waterfront land used for unmanaged rural purposes to publicly owned and managed land as a buffer to the Marine Park, at the same time enabling:
    - rehabilitation and establishment of the buffer as a protected, long term sustainable biodiversity corridor;
    - an extension to Council's public Coastal Walk;
    - passive supervision and protection of the foreshore and Marine Park.
- it will provide housing supply and place approximately 280 new residents within walking distance to Moonee Beach Village centre, who will shop and use services at the village and in turn, ensure the long term economic and social sustainability of the local area;
- it will ensure a significant improvement in existing water quality in that all of the land would drain via a bioremediation basin before stormwater enters the adjoining waterways; and
- it will facilitate construction of the approved collector road from Moonee Village through the site to the approved 520 lot Glades Estate residential subdivision to the north and adjoining the site.

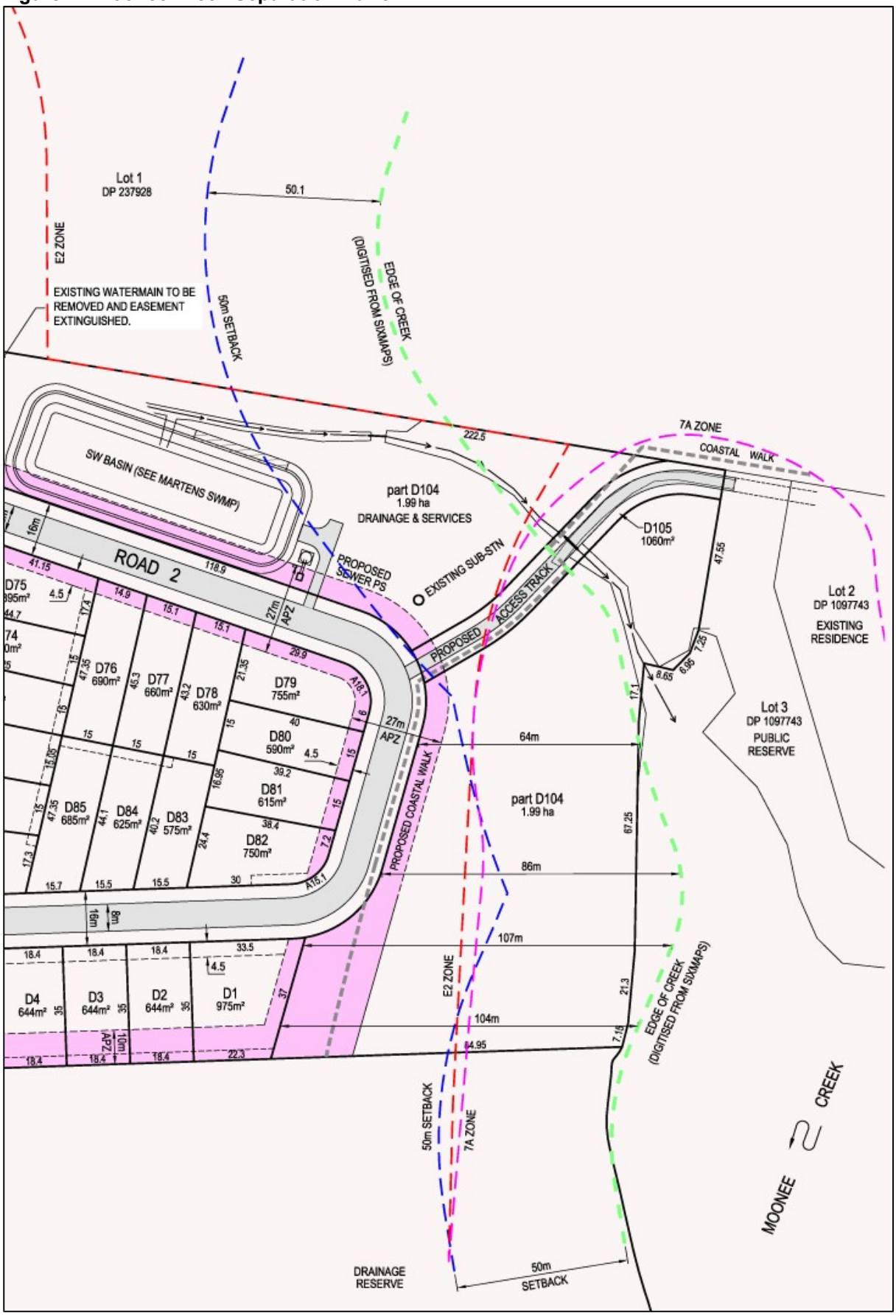
Most notably, the resulting design proposes:

- the privately-owned waterfront land be rehabilitated and placed in to public ownership (at no cost to the public) to create an environmental corridor along the foreshore, per the intent of the LEP; and
- the orderly and efficient use of residential zoned land with physical and visual access to the environmental areas.

Although the recent LEP amendment determined that an appropriate buffer to Moonee Creek is 50m, detailed investigations of the subject site determined that a more significant buffer width of between 60m and 85m ought to apply (an average of 72m wide excluding bushfire APZs and any infrastructure). The width of undeveloped land between Moonee Creek and the edge of the development will be as much as 107m in some parts (inclusive of APZ and coastal walk).

The extent of the subdivision and development proposed under this application relative to the former 7A zone boundary, and the 50m buffer width gazetted in July 2018, is depicted in **Figure 14**.

Figure 14 Moonee Creek Separation Buffer



Source: Civiltek

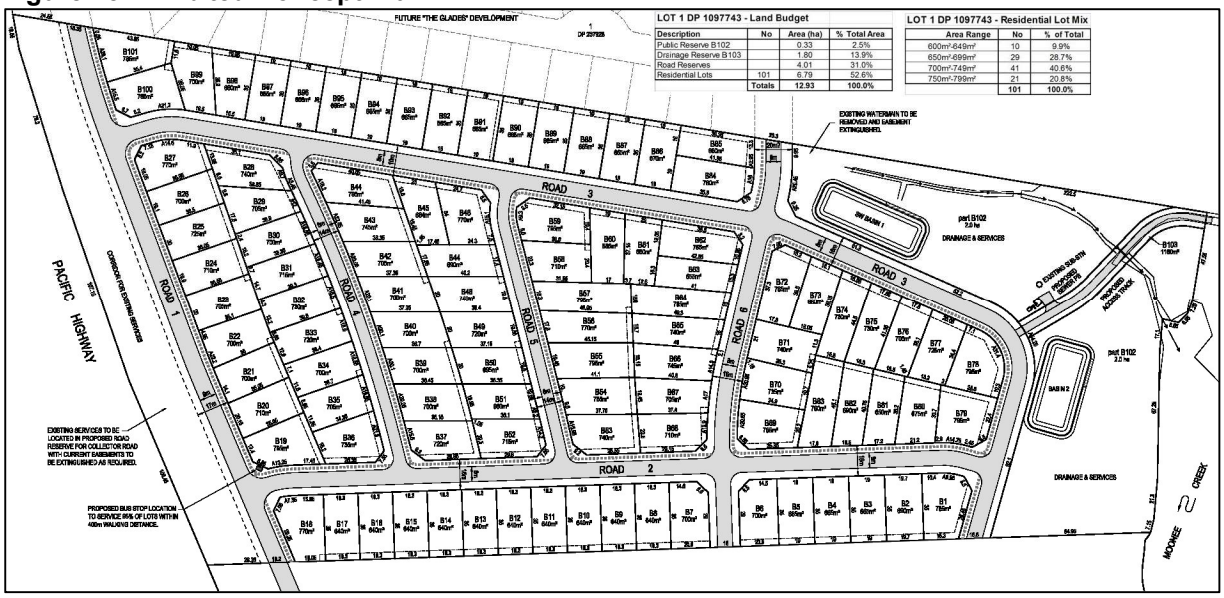
3.1 Consistency with Exhibited Concept Plan

The Environmental Assessment (EA) report publicly exhibited in 2013 comprised a Concept Plan derived from a range of the site specific investigations required by the Director Generals Requirements (DGRs) dated January 2010.

Submissions made during the public exhibition process identified various additional matters for further assessment. The outcomes of that assessment along with a revised Concept Plan were subsequently presented to the NSW DPE in a Response to Submissions (RTS) report in May 2017.

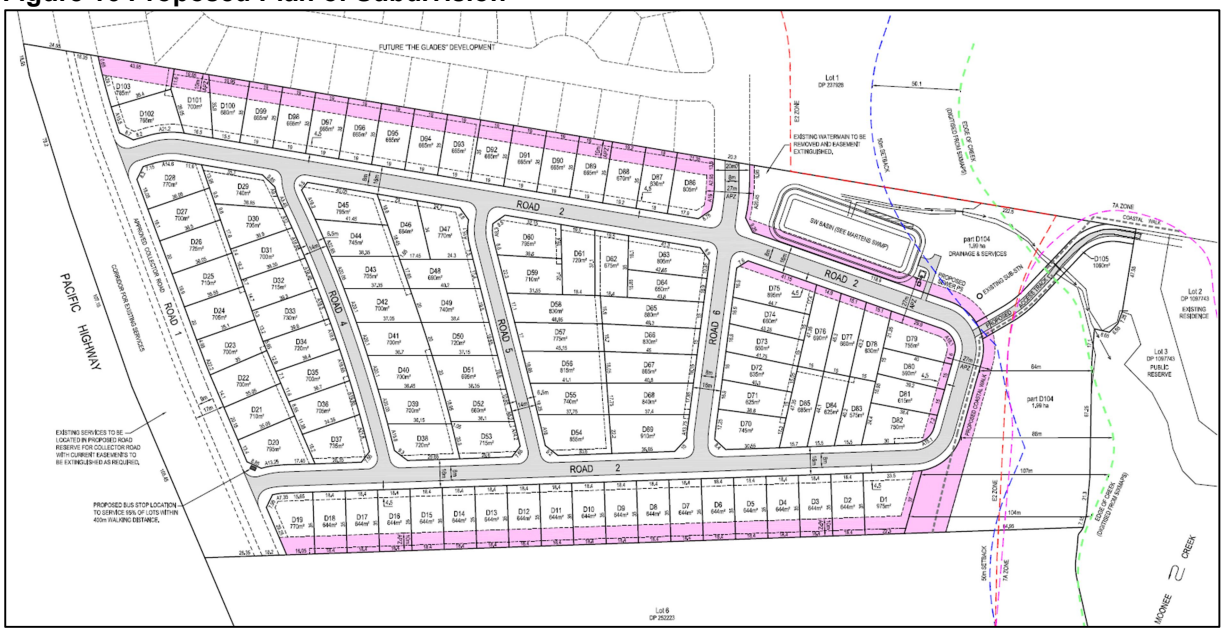
A visual comparison between the exhibited Concept Plan and the proposed Plan of Subdivision under this Development application is provided in **Figure 15** and **Figure 16**. Improvements as a result of consultation and additional information is depicted in **Figure 17** and summarised thereunder.

Figure 15 Exhibited Concept Plan



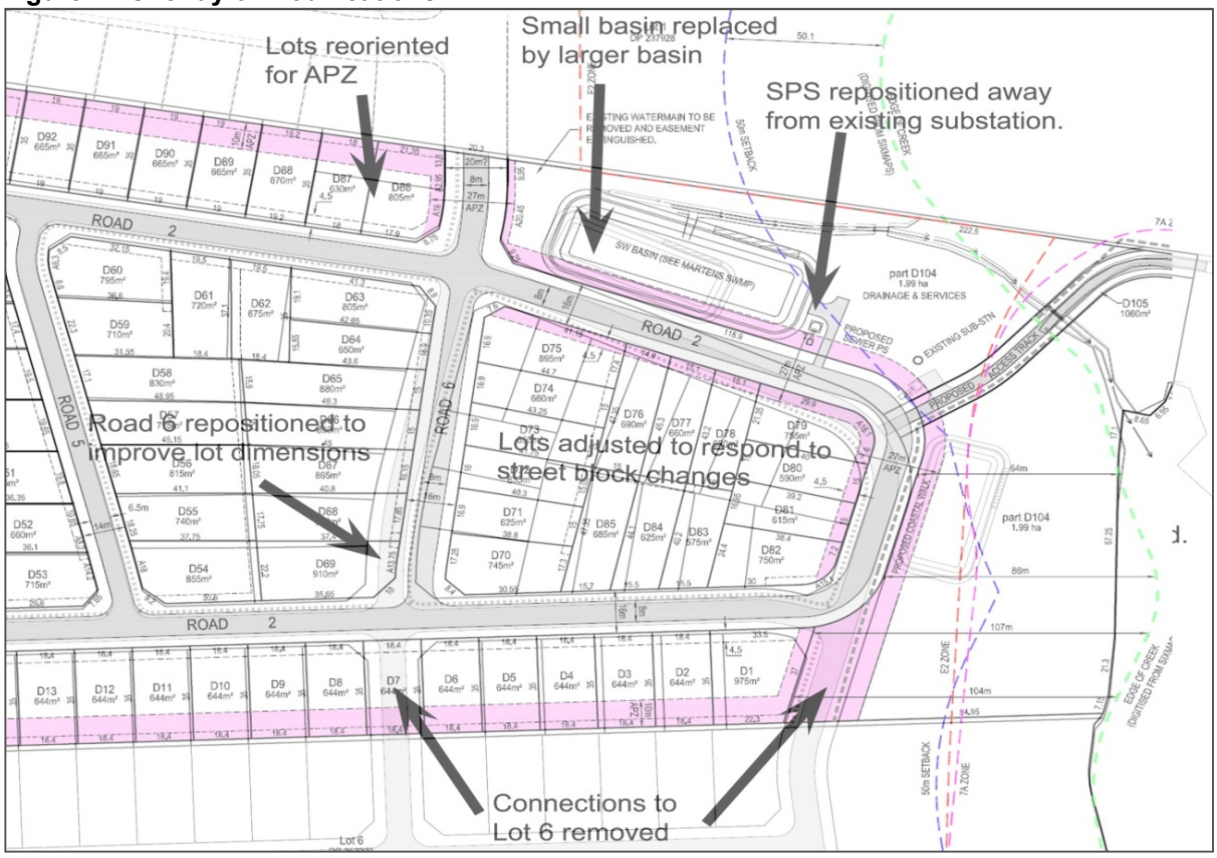
Source: Civiltek

Figure 16 Proposed Plan of Subdivision



Source: Civiltek

Figure 17 Overlay of Modifications



Source: Civiltek annotated by JWP

Other changes include:

- Removal of the adjoining Lot 6 DP 1097743 from the original study area and proposal at the request of that landowner;
- Realignment of Roads 2 and 6, providing additional lots facing east toward Moonee Creek
- Increase in the number of residential lots proposed to 103 (see **Table 1**);
- Relocation of infrastructure out of the Moonee Creek buffer, including the stormwater retention basin and sewage pump
- Additional earthworks to provide for redirection of stormwater to the relocated basin
- Alteration of development footprint as a result of the realignment of Road 3.

Table 1 Land Budget – Exhibited Concept Plan vs Proposed Plan of Subdivision

Description	Concept Lot No's	DA Lot No's	Concept Plan Area (ha)	DA Area (ha)	Concept Plan % Total Area	DA % Total Area
Buffer Reserve (Lot 104)	1	1	1.80	1.99	13.9	15.4%
Access (Lot 105)	1	1	0.33	0.11	2.5	0.8%
Road Reserves			4.01	3.54	31	27.4%
Residential Lots	101	103	6.79	7.29	52.6	52.6%
Totals	103	105	12.93	12.93	100%	100.0%

Density is 7.8 dwellings per hectare

Table 2 Lot Mix – Exhibited Concept Plan vs Proposed Plan of Subdivision

Area Range	Concept Plan	DA	Concept Plan % of Total	DA % of Total
550m²-599m²	0	2	0	1.9%
600m²-649m²	10	22	9.9	21.4%
650m²-699m²	29	25	28.7	24.3%
700m²-749m²	41	31	40.6	30.1%
750m²-799m²	21	12	20.8	11.7%
800m² and greater	0	11	0	10.7%
Total	101	103	100%	100.0%

3.2 Construction Staging

The Development will be carried out in four (4) construction stages beginning in the north-west corner of the land. Construction of Road 1 (the collector road) will be separate to construction of the subdivision and be undertaken by other parties.

Staging in terms of order and scope, is subject to future marketing and finance and other developer considerations. Accordingly, staging of the development will not be precisely ascertained until a construction certificate has been prepared that will include detailed engineering design and be approved by Council.

Preliminary staged works are as indicated in **Attachments E to G** as follows:

Stage 1 – see Figure 18

a. Site preparation and environmental impact mitigation tasks (fence off and protect buffer, implementation of erosion and sediment control plan, commence buffer rehabilitation and planting where practical, nest boxes etc.).

b. Bulk earthworks for the entire 103 lots to reduce costs and disruption/impacts on adjoining residents.

c. Connections to trunk power, water and telecommunication infrastructure located within the collector road.

d. Construction of vehicular access to the proposed sewer pump station as well as to stormwater treatment and detention Basin.

e. Services extended as required and access to the existing residence on Lot 2 maintained.

Stage 2 – see Figure 19

Extension of Roads 4, 5 and 6 with associated services.

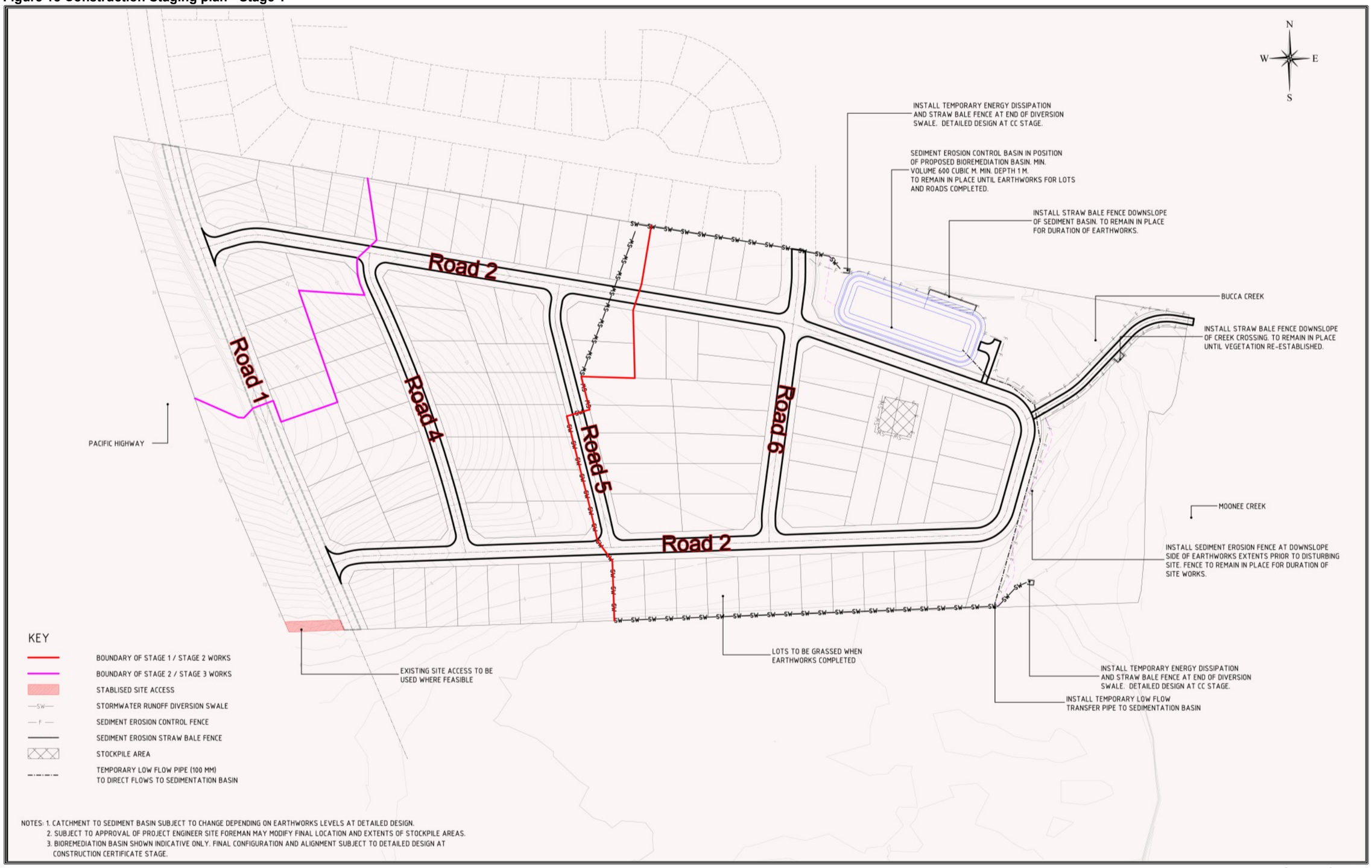
Stage 3 – see Figure 20

Extension of Road 2 (northern) & 6 and partial construction of Road 2 (southern) with associated services.

Stage 4 - Connection of Road 1 and 2 and complete Roads 4 & 5 and associated services.

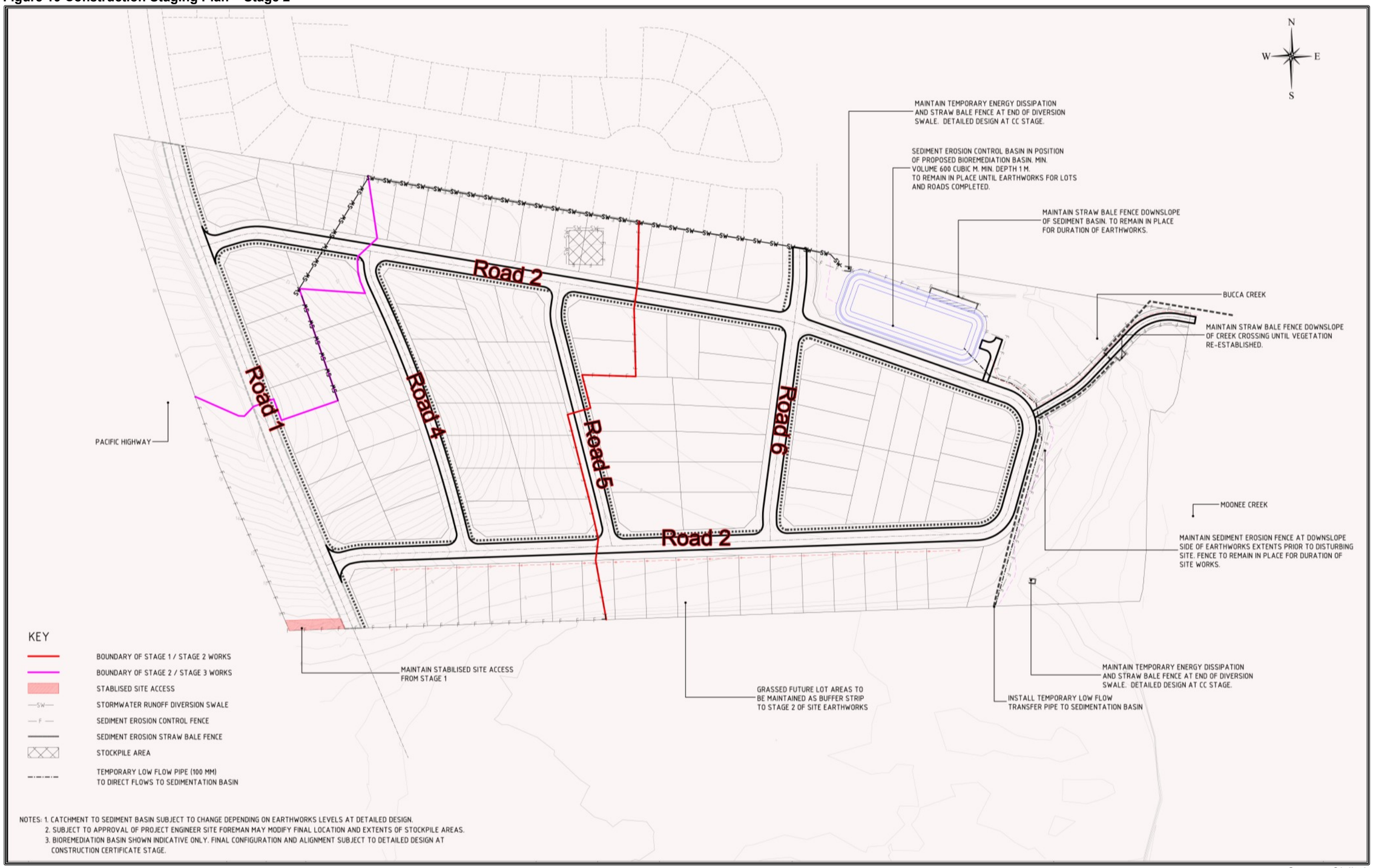
The proposed staging plan aims to provide a cost effective construction sequence while minimising impact on any local residents. Whilst subject to possible variation via more detailed construction certificate design, and market considerations as well as land owner circumstances, the proposed staging is practical and logical.

Figure 18 Construction Staging plan - Stage 1



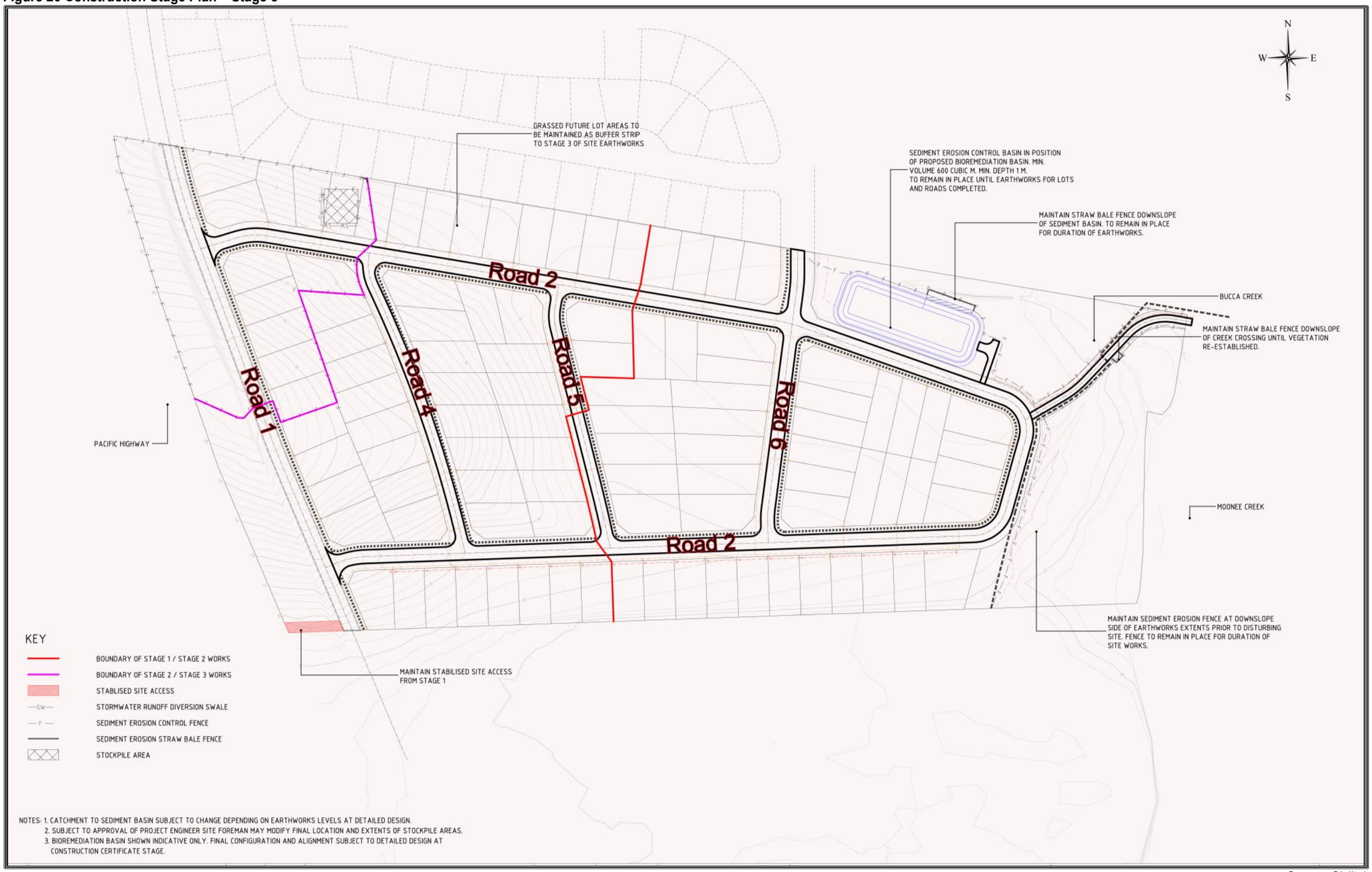
Source: Civiltek

Figure 19 Construction Staging Plan – Stage 2



Source: Civiltek

Figure 20 Construction Stage Plan – Stage 3



Source: Civiltek

3.3 Development Options

The land has been zoned for residential use since 1988, and the Moonee DCP identifies the site as part of the North Moonee Precinct.

The total population for this "village" precinct – which includes the area of the approved Glades concept plan - is identified to be 1,670 persons. The development density for this precinct is identified as 10 dwellings per hectare with a minimum target of 75 dwellings for the subject site. The proposal for 103 lots indicates optimum design and layout efficiency.

The predominant development options for the site from when the site was initially zoned for urban development and till now, is urban development. The technical studies prepared for the plan confirm the appropriateness of retaining the existing residential and environmental protection zone boundary.

A higher density of development in the form of smaller lots and/or different housing typologies is a possible development option for the site under the DCP. However, the location of the site relative to the Central Moonee Precinct (12 dwellings/ha) and the Village Precinct (40 dwellings/ha) and market considerations, indicates that achieving smaller lots, higher dwelling yield, greater diversity of dwelling typology and affordable housing on the site would not be a necessary proposition for this part of the Moonee release area.

3.4 Preferred Option

The proposal involves subdivision of the land to create 103 conventional residential lots, and a conservation area consistent with the zone provisions and/or the recommendations of the site studies prepared to address the DGRs.

It is proposed that the subdivision of the land for low density residential purposes will involve:

- The dedication of land to Coffs Harbour City Council for the purpose of environmental conservation and community purposes. This includes the 7(b) zoned land along the western boundary that contains electrical and telecommunications infrastructure. This land should form part of the western reserve of the collector road;
- The provision of part of a collector road that will link approved residential development to the north of the site (Glades Estate) with the Moonee town centre and the Pacific Highway to the south; and
- The extension of sewer and water infrastructure to service the site and the proposed development to the north.

3.5 Design Guidelines

In a meeting with the Department on 4th October 2013 to discuss preliminary assessment comments, it was discussed and agreed that the proposed design guidelines would not be required.

The lot design is based upon accommodating future detached dwellings. If a dwelling design satisfies the development standards in Part 3 Housing Code of SEPP (Exempt and Complying Development) 2008 then a complying development certificate can be issued by the principal certifying authority. Under the SEPP, lots greater than 300sqm but less than 900sqm can have a minimum front setback of 4.5m. Under Moonee Beach DCP 2015, the minimum front setback is 6m.

If a dwelling design does not satisfy the development standards for complying development, then it will require development consent. The DA would be prepared and determined in accordance with the provisions of the Coffs Harbour LEP 2013 and Moonee Beach Development Control Plan 2015.
The proposed lots are of a size and dimension that would satisfy the development standards of the SEPP and enable future dwellings to be Complying Development. However, it will be up to future lot owners and their dwelling aspirations and expectations that will inform whether individual dwellings on each lot are complying development or require development consent.

4.0 **Statutory Considerations**

Technical assessment of the site and the development proposed was carried out in accordance with Director General's Requirements (DGRs) issued on 8 February, 2010 (see **Attachment H**).

Subsequently, on repeal of Part 3A of the Act, the project was transitioned to become State significant development by Order of the Minister on 12 January 2015. Relevant extracts of the transitional provisions are noted below.

> ***6 Part 3A projects that become State significant development***
>
> *(1) Specified development on specified land that was a project to which Part 3A applied immediately before its repeal may be declared to be State significant development by an order of the Minister (published in the Gazette).*
>
> *(2) Any such development may be declared to be State significant development whether or not the development is a transitional Part 3A project. On the making of the declaration it ceases to be a transitional Part 3A project.*
>
> *(3) For the purposes of Part 4 in its application to any such development:*
>
> > *(b) any environmental assessment requirements, any statement of environmental assessment, any public exhibition, any response to submissions by a proponent or any other action under Part 3A in relation to the development are taken to be environmental assessment requirements, an environmental impact statement, public exhibition, a response to submissions by an applicant or other action taken under the corresponding provisions of Part 4, unless the Secretary directs that any such action be taken again under Part 4.*

As State significant development, the proposal is to be assessed as a Development Application under Part 4 of the Act. Therein, section 4.40 requires that an evaluation of the Development Application is to be undertaken in accordance with section 4.15.

> ***4.15 Evaluation***
>
> ***Matters for consideration—general***
>
> *(1) In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:*
>
> *(a) the provisions of:*
>
> *(i) any environmental planning instrument, and*
>
> *(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and*
>
> *(iii) any development control plan, and*
>
> *(iiia) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4, and*
>
> *(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph),*
>
> *(v) (Repealed)*
>
> *that apply to the land to which the development application relates,*
>
> *(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,*

(c) the suitability of the site for the development,

(d) any submissions made in accordance with this Act or the regulations,

(e) the public interest.

The Environmental Assessments specified within the DGRs are comprehensive and inherently enable an Evaluation of the proposal under section 4.15 of the Act. **Table 3** cross references the relevant sections of this report in response to the DGRs.

Table 3 Director Generals Requirements

General Requirements	Relevant Section
1. An executive summary;	1.0
2. A detailed description of the proposal, including:	3.0
• An outline of the scope of the project;	3.0
• Discussion of different development options considered;	3.3
• Justification for the proposed modification taking into consideration any environmental impacts of the project, the suitability of the site and whether the project is in the public interest; and	Entire Report
• Detail of the proposed changes to staged implementation of the project.	3.2
3. A thorough site analysis including constraints mapping and description of the existing environment;	2.2
4. Consideration of any relevant statutory and non-statutory provisions and identification of any non- compliances with such provisions, in particular relevant provisions arising from environmental planning instruments, Regional Strategies (including draft Regional Strategies) and Development Control Plans;	4.0
5. Consideration of the consistency of the project with the objects of the Environmental Planning and Assessment Act 1979;	4.1
6. Consideration of impacts, if any, on matters of National Environmental Significance under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999;	4.1
7. An assessment of the potential impacts of the project and a draft Statement of Commitments, including a description of mitigation and management options that will be used to avoid, remedy or mitigate identified environmental impacts associated with the project, to reduce risks to human health, and prevent the degradation of the environment. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented;	8.0
8. The plans and documents outlined in the Attachments;	Attached
9. A signed statement from the author of the Environmental Assessment certifying that the information contained in the report is neither false nor misleading; and	Page 2
10. An assessment of the key issues specified below and a table outlining where in the EA these key issues have been addressed.	See below

Key Issues		
The EA must address the following key issues:		
1.	**Strategic Planning**	
1.1	Justify the proposal with reference to relevant local, regional and State planning strategies. In particular provide justification for any inconsistencies with these planning strategies.	3.0
1.2	Consider the consistency of the proposal with the draft Local Environmental Plan for the Moonee area (Amendment 24 to Coffs Harbour Local Environmental Plan 2000), and the Moonee Development Control Plan 2004.	4.2, 4.3
1.3	Consider the provisions of the Moonee Creek Estuary Management Plan in regard to all relevant issues, including but not limited to, water quality/quantity, flooding, flora & fauna.	5.6
1.4	The EA should address how the development will enhance connectivity between proposed developments to the north and south of the subject site – particularly transport connections, services, and open space.	5.16, 5.17
2.	**Subdivision Design, Layout and Desired Future Character**	
2.1	Demonstrate the consistency of the proposed subdivision design and layout with the North Coast Urban Design Guidelines, Coastal Design Guidelines for NSW, NSW Coastal Policy 1997 and SEPP 71 – Coastal Protection.	4.1, 4.3
2.2	Identify the type of subdivision proposed across the site i.e. community title, Torrens, strata. A draft community management statement should be provided if any community title is proposed.	3.0
2.3	Demonstrate that the proposal provides for the establishment of a suitable neighbourhood character for the area. Provide details of potential building envelopes, built form, potential housing typologies, aesthetics, energy and water efficiency, public safety, any proposed design quality controls and the means for implementing them, and identify opportunities to orientate allotment configurations and shapes to maximise solar access, aspect and views.	5.16, 5.17
2.4	Provide details of any staging that demonstrates the lots will be released in an orderly and coordinated manner, including the release of allotments for sale, the installation of services and infrastructure.	3.2
2.5	Outline the long-term management and maintenance of any areas of open space or conservation including ownership and control, management and maintenance funding, public access, revegetation and rehabilitation works and bushfire management.	5.16
2.6	Provide for treatment of the Environmental Protection 7B Scenic Buffer Zone adjacent to Pacific Highway consistent with the aim and objectives of the zone.	5.15
Earthworks		

2.7	Provide an outline of any bulk earthworks required to modify the site to enhance its suitability for residential development. Provide an indicative plan of areas of cut and fill, sediment and erosion controls, pre and post-construction topography, and identify how construction effects will be managed to avoid, remedy or mitigate adverse environmental impacts (i.e the development of a Site Management Plan).	5.10
3.	**Visual Impact**	
3.1	Address the visual impact of the proposal in the context of surrounding development and provide appropriate mitigation measures. In particular address impacts on views from public places, the visual impact of any acoustic measures to mitigate highway traffic noise, and cumulative impacts.	5.11
4.	**Infrastructure Provision**	
4.1	Identify existing capacity of, and requirements for the provision of all appropriate services and infrastructure, including: sewerage, water, stormwater, electricity, waste disposal, telecommunications, gas, open space, roads and transport, pedestrian and cycle-friendly infrastructure, community facilities and social infrastructure. Undertake consultation with relevant agencies and provide evidence of this consultation. Identify and describe staging, if any, of proposed infrastructure works.	5.13
4.2	Address and provide the likely scope of any planning agreements and/or development contributions with Council/ Government agencies (including relevant community/state infrastructure contributions).	NA
5.	**Transport and Accessibility**	
5.1	Prepare a transport and accessibility impact study in accordance with Table 2.1 of the RTA's Guide to Traffic Generating Developments.	5.12
Alternative Modes of Transport		
5.2	Address how the Proposal is consistent with the objectives and principles of the NSW Government's Integrating Land Use and Transport Policy package and the NSW Planning Guidelines for Walking and Cycling.	5.12
5.3	Identify measures to manage travel demand and increase the use of public and non-car transport modes.	5.12
5.4	Outline any proposed cycleways and ensure connectivity with existing or proposed cycleways in the area.	5.12
5.5	Identify the likely transport infrastructure and recurrent servicing costs for Government in proceeding with the development.	5.12

Traffic and Roads		
5.6	Demonstrate that the proposed road layout can achieve a high degree of pedestrian and cycle access, and can support future bus access in accordance with the NSWTI bus planning guidelines for regional areas. Also identify and address how staging of the development will impact on accessibility across different transport modes.	5.12
5.7	Demonstrate that the proposed internal road layout maximises connectivity within the development, to the broader Moonee area, and to the surrounding environment.	
5.8	Address how access will be managed to Lot 2 DP1097743 (K & S Albert).	5.12
5.9	Analyse the impacts of an expected increase in traffic on the existing road network surrounding the site, and provide measures to ensure that traffic impacts on the existing and future local road network are minimised.	5.12
5.9a	Provide details of the proposed staging/timing of the development with respect to the Pacific Highway Upgrade (Sapphire to Woolgoolga), the development of Glades Estate to the north (currently described as Lots 1 & 2 DP725785), and the development of the Bateman site to the south (Lot 5 DP252223). In particular the Glades Estate has triggered interim upgrades to the Moonee Beach Rd/Pacific Highway intersection prior to the construction of the Pacific Highway Upgrade – address how the Proposal will interact with this interim access and outline any arrangements made to facilitate this.	5.12
5.10	Outline any proposed temporary access to the site for construction traffic and provide an assessment of the feasibility and environmental impacts of this access, including: • Provide details of any proposed access to the site for construction purposes e.g. is it proposed to share the existing temporary arrangements to the Glades Estate? • Provide justification for the proposed location and design of the temporary access and its suitability; • identify the expected life of the temporary access and any staging of works and/or construction of the permanent road alignment; • identify how the temporary intersection is proposed to be controlled; • provide an assessment of the safety and capability of the proposed temporary intersection; and address any potential adverse environmental effects (including noise, amenity etc) for adjacent landowners	5.12
Public Access		
5.11	Consider, where appropriate, new opportunities for controlled public access to Moonee Creek. Note the submission from the Land and Property Management Authority (see Attach 4) and address the potential for impacts resulting from unregulated public access to the Creek. Consider access for the disabled, where appropriate.	5.15
5.12	Consider issues associated with an increase in public access to Moonee and Cunningham's Creeks and provide appropriate mitigation/management measures.	5.15

6.	Hazard Management and Mitigation	
Contamination		
6.1	Identify any deep soil, surface water and groundwater contamination on site and assess appropriate mitigation measures and monitoring program necessary in accordance with the provisions of SEPP 55 – Remediation of Land.	5.5
Acid Sulfate Soils		
6.2	Identify presence and extent of acid sulfate soils and potential acid sulphate soils on the site and, where relevant, provide appropriate mitigation measures for the development's construction and operational stages. Identify the need for an Acid Sulfate Management Plan and prepare if necessary (prepared in accordance ASSMAC Guidelines).	5.4
Bushfire		
6.3	Address the requirements of Planning for Bush Fire Protection 2006 (RFS) and ensure that any proposed Asset Protection Zones do not adversely affect environmental objectives (e.g. buffers) and provision is made for their appropriate management into the future.	5.1
Geotechnical		
6.4	Provide an updated assessment of any geotechnical limitations that may occur on the site and if necessary, appropriate design considerations that address these limitations.	5.3
Flooding		
6.5	Provide an updated assessment of any flood risk on site (for the full range of floods including events greater than the design flood, up to probable maximum flood; and from coastal inundation, catchment based flooding or a combination of the two) and having consideration of any relevant provisions of the NSW Floodplain Development Manual 2005, the NSW Sea Level Rise Policy Statement (DECCW, 2009), the Draft Flood Risk Management Guide: Incorporating Sea Level Rise Benchmarks in Flood Risk Assessments (DECCW, 2009), and the Draft NSW Coastal Planning Guideline: Adapting to Sea Level Rise (DoP, 2009). The assessment should determine: the flood hazard in the area; address the impact of flooding on the proposed development, address the impact of the development (including filling) on flood behaviour of the site and adjacent lands; and address adequate egress and safety in a flood event.	5.6
6.6	Assess the potential impacts of sea level rise and increases in rainfall intensity on the flood regime of the site and adjacent lands.	5.6
7.	**Stormwater**	
7.1	Address stormwater quality and quantity, including lawful points of discharge. A comprehensive stormwater management plan should be provided that allows for the appropriate management of stormwater and ensures there are no adverse environmental impacts as a result of the proposal. The plan must also include a conceptual design layout for the preferred stormwater treatment train showing location, size and key functional elements of each part of the system and identify the anticipated effect of each element.	5.14

7.2	Address and outline measures for Integrated Water Cycle Management based on Water Sensitive Urban Design principles which addresses impacts on the surrounding environment, drainage and water quality and quantity controls for the catchment, so that there is no water pollution resulting from the development.	5.14
8.	**Surface water**	
8.1	In accordance with the correspondence from the NSW Office of Water and DECCW (refer to Attachment 4), provide an assessment of any impacts on surface water (particularly Cunningham Creek and Moonee Creek) as a result of the development, including any impacts on quantity, quality and the functioning of the hydrological regime.	5.14, 5.15
8.2	Provide an assessment of measures to ensure the following water quality objectives for the proposal are met: • There is no pollution of waters during the construction and operational phases; • There is no inconsistency with any Statement of Joint Intent established by the Healthy Rivers Commission; and • Ensure the proposal is not inconsistent with the relevant River Flow Objectives and Water Quality Objectives for the area.	5.14, 5.15
Riparian Areas		
8.3	Identify all riparian areas on site including any creeks, wetlands, drainage lines etc. Address measures to protect, manage and restore the riparian corridor and adjacent aquatic habitats within Moonee Creek and Cunningham Creek (including rehabilitation, planting, monitoring, and ongoing maintenance). The protection and restoration of riparian zones will maintain and improve the ecological functions of watercourses and forms a key part of ensuring appropriate water quality is achieved. If any works are proposed within the riparian areas (such as bridges, culverts, stormwater outlets, walking tracks etc) then this should be identified. Address the comments from the Land and Property Management Authority (LPMA) regarding development of a Vegetation Management Plan.	5.15
9.	**Groundwater**	
9.1	In accordance with the correspondence from the NSW Office of Water (refer to Attachment 4), provide an assessment of groundwater issues associated with the development, the location of the water table, the nature and profile of the groundwater regime, if any works will intercept the water table, any potential contamination issues, any proposed use of groundwater resources, any associated impacts on registered bores, any works that may result in increased groundwater discharge, impact on the stability of potential acid sulfate soils in the vicinity, or affect groundwater dependent native vegetation, and any impacts on the quantity and quality of groundwater.	5.7
10.	**Heritage and Archaeology**	
10.1	Identify whether the site has significance to Aboriginal cultural heritage and identify appropriate measures to preserve any significance. The assessment must address the information and consultation requirements of the draft Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation (DEC 2005).	5.2

10.2	Carry out a detailed heritage assessment by a suitably qualified consultant that includes consultation undertaken with the relevant Local Aboriginal Land Council/s and Aboriginal community groups. The assessment should include: 1. Up to date surveys by suitably qualified archaeological consultants and include evidence of consultation with traditional Aboriginal custodians; 2. Identification of the nature and extent of impacts on Aboriginal Cultural Heritage values across the project area. If impacts are proposed as part of the final development, clear justification for such impacts should be provided; 3. A description of the actions that will be taken to avoid or mitigate impacts of the project on Aboriginal Cultural Heritage values. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented; 4. An assessment of the archaeological and Aboriginal significance of the site's Aboriginal Cultural Heritage values. If impacts on Aboriginal cultural values are proposed as part of the final development, an assessment of the regional significance of the values to be impacted, the extent to which these values are protected elsewhere in the landscape and consideration of the proposed impacts in the context of 'intergenerational equity' should be undertaken; and 5. Evidence that effective community consultation with Aboriginal communities has been undertaken in assessing impacts, developing options and making final recommendations. DECCW supports broad-based Aboriginal community consultation and as a guide the 'Interim Community Consultation Requirements for Applicants' provides a useful model to follow. Identify any items of non-indigenous heritage significance and, where relevant, provide measures for the conservation of such items.	5.2
10.3	Identify any items of non-indigenous heritage significance and, where relevant, provide measures for the conservation of such items.	5.2
11.	**Flora and Fauna**	
11.1	Provide an up-to-date assessment of any potential direct and indirect impacts of the development on flora and fauna, taking into consideration impacts on any threatened species, populations, ecological communities and/or critical habitat and any relevant recovery plan in accordance with the draft Guideline for Threatened Species Assessment (Part 3A) and Threatened Species Assessment Guideline: The Assessment of Significance. Describe the actions that will be taken to avoid or mitigate impacts or compensate unavoidable impacts on native flora and fauna, where relevant.	5.8
11.2	The assessment should specifically report on the guiding principles for threatened species assessment at sect 1.2 of the draft Guideline for Threatened Species Assessment (Part3A).	5.8
11.3	Provide an assessment of the proposal that ensures (if possible) adverse impacts on identified areas of ecological significance are avoided or mitigated (including the adjacent Moonee Creek wetland, Endangered Ecological Communities e.g. coastal saltmarsh, protected ecosystems e.g. mangroves, and threatened species habitat etc), including the establishment of appropriate buffers and other measures.	5.8
11.4	A field survey of the site should be conducted as part of this assessment in accordance with DECCW's Threatened Biodiversity Survey and Assessment Guidelines.	5.8

11.5	Address, where relevant, the provisions of the Moonee Creek Estuary Management Plan, the Coffs City Harbour Council Koala Plan of Management, and the draft Coffs Harbour Priority Habitats and Corridors Strategy.	5.8
11.6	Outline measures for the conservation and management of existing wildlife corridor values and/or connective importance of any vegetation on the subject land.	5.8
11.7	Include provision for appropriate environmental buffers between the development and the Solitary Islands Marine Park (refer to the advice from the Solitary Islands Marine Park Authority in Attachment 4). Address how climate change is accounted for when designing environmental buffers to waterways, and ensure that buffers can maintain their integrity throughout the expected lifespan of the development.	5.8
12.	**Biting Insects**	
12.1	Address the potential for an increase in the impact of biting insects on the amenity of the area, in particular salt marsh mosquitoes. The assessment should address impacts on future residents, and potential increases in mosquito borne disease. Undertake consultation with Council and the NSW Area Health Authority and provide for measures to control and ameliorate their effects, including measures to minimise their breeding habitat. Prepare a biting insect management plan if the problems are considered severe.	5.9
13.	**Noise**	
13.1	Assess any potential noise impacts resulting from, and impacting on, the development. In particular the potential impacts from road traffic noise for future residents from Pacific Highway and the proposed Moonee collector road. Outline appropriate mitigation measures to mitigate noise impacts.	5.11
14.	**Socio-economic Impacts**	
14.1	Provide a social impact assessment for the development. Address the social and economic context of the development in terms of infrastructure requirements, public transport, community services and facilities (including schools and medical services). Identify the need for any additional and/or augmentation of social and community infrastructure and resources. In particular explore the potential and methods for a new educational facility to be provided for.	5.16
14.2	Identify opportunities to incorporate affordable housing into the proposal.	5.16

Consultation	
An appropriate and justified level of consultation with the following agencies during the preparation of the environmental assessment:	6.0
(a) Agencies or other authorities: • Coffs Harbour City Council; • Solitary Islands Marine Park Authority; • Department of Environment, Climate Change and Water; • NSW Office of Water; • Department of Housing; • Northern Rivers Catchment Management Authority; • NSW Rural Fire Service; • Land and Property Management Authority – especially in relation to Crown roads and owners consent issues; • Department of Transport and Infrastructure; • Roads and Traffic Authority; • Department of Health; • Local Aboriginal Land Council; • Department of Education and Training.	
(b) Public: Document all community consultation undertaken to date or discuss the proposed strategy for undertaking community consultation. This should include any contingencies for addressing any issues arising from the community consultation and an effective communications strategy. The consultation process and the issues raised should be described in the Environmental Assessment.	

4.1 Strategic and Statutory Planning Provisions

4.1.1 Relevant Commonwealth Legislation

4.1.1.1 Environment Protection & Biodiversity Conservation Act 1999

Under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), actions that have, or are likely to have, a significant impact on a matter of national environmental significance require approval from the Australian Government Minister for Sustainability, Environment, Water, Population and Communities (the Minister). The minister will decide whether assessment and approval is required under the EPBC Act.

The EPBC Act incorporates an assessment and approvals system for actions that have a significant impact on matters of national environmental significance (NES) and actions that have a significant impact on the environment of Commonwealth land. An action that needs Commonwealth approval is known as a 'controlled action'.

The eight matters of national environmental significance protected under the EPBC Act are:

i. world heritage properties
ii. national heritage places
iii. wetlands of international importance (listed under the Ramsar Convention)
iv. listed threatened species and ecological communities
v. migratory species protected under international agreements
vi. Commonwealth marine areas
vii. the Great Barrier Reef Marine Park
viii. nuclear actions (including uranium mines)

The matters of NES relevant to the site are listed in **Table 4.**

Table 4 Relationship of the Site to Matters of National Environmental Significance

Matter of National Environmental Significance	Application to the Project	Relevant Section
World Heritage Areas	No World Heritage Sites were identified in the MNES search on the site or within the regional area.	Not Applicable
Wetlands protected by international treaty (RAMSAR)	No RAMSAR sites were identified by the MNES search on the site or within the regional area.	Not Applicable
Nationally listed threatened species and ecological communities	This species could potentially be impacted by proposal. Although recommended a referral be made to the Federal Minister for the Environment, it is unlikely that this action would become a controlled action under the Act. This is based upon the national plan for koala, interpretation of the impact assessment guidelines, and the condition of habitat on the site	5.8
Nationally listed migratory species	A number of listed migratory species are known or likely to occur occasionally in the study area, No area of important habitat occurs in the study area for listed migratory species.	5.8
All nuclear actions	Not relevant to this project	Not Applicable
The environment of Commonwealth Marine Areas	The Solitary Islands Marine Reserve (State Park) is located to the east that includes Moonee Creek itself. The closest section of the Commonwealth Reserve is approximately 7 kilometres to the east of the site out to sea surrounding the Solitary Islands.	4.3, 5.8

4.1.1.2 EPBC Koala Assessment

No koala scats were identified within the site. None of the sampled plots had a known koala feed tree representation (this means all types of koala feed tree species) greater than the threshold for koala impact under SEPP 44 of 15%.

While secondary koala habitat is present, there is no evidence that koala use the site, however they are known to inhabit the local Moonee area at low densities. The level of use in the local area is consistent with our current understanding of low density koala population usage and reflects activity levels recorded in similar habitats.

The EPBC Act referral guidelines for the vulnerable koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) indicate that with a low density koala population, the clearing of only 4.9 ha of supplementary koala habitat does not trigger a referral to Commonwealth.

Nonetheless, mitigation measures for the Koala are recommended as part of the proposal – refer **Table 5**.

Table 5 Mitigation Measures for the Koala

Lots to be mitigated	Details of vegetation mitigation	Area of mitigation	Other mitigation	Management	Timing
Reserve Area (regeneration area)	Create habitat & regenerate reserve to achieve example of Broad Leaved Paperbark- Swamp Box Broad Leaved Paperbark- Forest red gum Red Mahogany Transitional Dry open forest of coastal lowlands and valleys	5,360m^2	Area to be fenced to permit animal movement yet restrict human movement	VMP to be prepared for reserve areas.	To be established during construction
Reserve Area (established vegetation)	Restore reserve to achieve example of Broad Leaved Paperbark- Swamp Box Broad Leaved Paperbark- Forest red gum Red Mahogany Transitional Dry open forest of coastal lowlands & valleys	13,100m^2	Area to be fenced to permit animal movement yet restrict human movement	VMP to be prepared for reserve areas	To be established during construction
Landscape tree planting	95 *E. microcorys* & *Robusta* planted as street trees per Figure 4 & maintain 2.5m canopy crown gap for bushfire protection.	95 trees	Prohibit roaming dogs & cats & set 20km/h speed limit to reduce risk of road kill. Backyard pools require safety ropes attached.	VMP	End of construction

4.1.2 Relevant State Legislation

4.1.2.1 Environmental Planning & Assessment Act 1979

The principal State planning legislation for NSW is the *Environmental Planning and Assessment Act 1979* (**'the Act'**), administered by the NSW Department of Planning and Environment.

On 27 September 2009, the Minister for Planning formed a view that the proposal is a project to which Part 3A of the Act applies, and authorised the submission of a Concept Plan. The DGRs were issued in January 2010, and site studies conducted during 2010. With the repeal of Part 3A by the State government in 2011, the project was progressed under transitional arrangements until 2015, when the Minister declared by Order that the project is State significant development (SSD).

As an application for SSD, this report is to be assessed in accordance with Part 4.15 of the Act. In addition, Section 4.12(8) of the Act, and Schedule 1 of the EP&A Regulations 2000 (section 2(1)(e)), provide that among other things, an application for State significant development is to be accompanied by an Environmental Impact Statement prepared in accordance with DGRs that set out the Environmental Assessments required.

4.1.2.2 Threatened Species Conservation Act 1995

Schedules 1, 1A and 2 of the *Threatened Species Conservation Act 1995* (TSC Act) list species, populations or ecological communities of native flora and fauna considered to be threatened in New South Wales as either:

- Endangered (Schedule 1);
- Critically Endangered (Schedule 1A); or
- Vulnerable (Schedule 2).

Section 5A of the EP&A Act specifies that for the purposes of the Act, and in particular the administration of sections 4.12 and 4.15 of the Act, in deciding whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats, seven factors must be taken into account along with any assessment guidelines. This assessment is referred to as the '7 Part Test'.

If a 7 Part Test concludes that a proposal is likely to significantly affect critical habitat of a threatened species, population or ecological community, or is in critical habitat, as defined by Part 3 of the TSC Act, a species impact statement must be prepared to accompany the development application.

An assessment of the impact of the proposed development on threatened species, populations and ecological communities has been undertaken in accordance with the *Guidelines for Survey for the Assessment of Ecological Impacts 2009* prepared by the Department of Environment and Climate Change (now Office of Environment and Heritage) and is provided in **Attachment I**.

The proposal is likely affect four threatened species:

- Koala - *Phascolarctos cinereus*;
- Squirrel Glider - *Petaurus norfolcensis*;
- Glossy Black Cockatoo - *Calyptorhynchus lathami*; and
- Osprey - *Pandion cristatus*.

A 7 Part Test for each of these species was undertaken and, provided that short and long term mitigation measures are implemented, the tests conclude that the proposed development is unlikely to have a significant effect on these species, and a Species Impact Assessment is not required.

4.1.2.3 Biodiversity Conservation Act 2016

The Biodiversity Conservation Act 2016 commenced on gazettal of the associated Regulations on 25 August 2017. Once a six (6) month transitional period ended on 25th February 2018, any new application for development consent or modification to an approved development under Part 4 of the Environmental Planning & Assessment Act 1979 (EP&A Act) became subject to the biodiversity assessment requirements of the Biodiversity Conservation Act 2016.

The Minister for Environment also made an amendment to the BC (S&T) Regulation to declare the Coffs Harbour local government area, among others, as an *Interim Designated Area*, meaning applications for development consent under Part 4 of the EP&A Act will continue to be assessed under former planning provisions until the 24 November 2018.

Although the former planning provisions continue to apply, the applicant voluntarily offers (under Section 127ZO Effect of issue of bio banking statement - development requiring development consent of the Threatened Species Conservation Act) and in accordance with the Biodiversity Offsetting Strategy prepared by GHD (**Attachment Q)** to secure and retire:

- **291** Blackbutt - Pink Bloodwood shrubby open forest of coastal lowlands of NSW North Coast Bioregion ecosystem credits and **170** Forest Red Gum - Swamp Box of Clarence Valley lowlands of NSW North Coast Bioregion ecosystem credits; and
- **170** Squirrel Glider (*Petaurus norfolcensis*) species credits.

The OEH has endorsed the offsetting proposal.

4.1.3 Relevant State Environmental Planning Policies (SEPPs)

4.1.3.1 State Environmental Planning Policy 44 – Koala Habitat Protection and Coffs Harbour City Koala Plan of Management

SEPP 44 encourages the proper conservation and management of areas of vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline.

This policy applies to all local government areas within the known state-wide distribution of the koala, including the Coffs Harbour local government area. However, with the Director of Planning endorsing the *Coffs Harbour Comprehensive Koala Plan of Management* (CKPOM, 1999 and prepared under Part 3 of the SEPP) the plan of Management now applies instead of the SEPP.
Site investigations did not record the presence of koalas on the site.

An assessment of the impact of the proposed development on Koala habitat has been undertaken (refer Section 6.6). The ecological value of some 50 koala habitat trees of the 200 trees in the western and southern areas of the site has been significantly compromised by the presence of and the upgrade to the Pacific Highway now underway. This major barrier prevents the east/west movement of fauna.

Therefore, the retention of vegetation in this part of the site (albeit scattered trees with little to no mid storey or ground storey native vegetation) with land zoned for residential development to the north and south of the site, would have limited long term value for koalas.

The focus therefore, is upon long term habitat reconnection and management in accordance with the CKPoM and includes:

- compensatory planting of koala habitat trees in the eastern portion of the site as part of the revegetation and establishment of the north to south wildlife corridor that connects the approved Glades concept plan ecological areas and environmental protected areas to the south through to Moonee village;

- no restricting fencing along the western boundary of the wildlife corridor; and
- street network particularly along the eastern portion of the proposed development area where traffic speeds are no greater than 40kph.

4.1.3.2 State Environmental Planning Policy 55 – Remediation of Land

Clause 7 of SEPP 55 requires a consent authority to consider the likely contamination of land before consenting to an application for development that would involve a change of use of land that may be contaminated. In such a case, the consent authority is to consider the findings of a preliminary investigation of the land concerned carried out in accordance with the *Contaminated Land Planning Guidelines*.

Agricultural activities are listed as an activity that may cause contamination in Table 1 of the *Guidelines.* A preliminary investigation was undertaken by Martens (refer **Section 5.5**) and they concluded that the site is unlikely to be contaminated or warrant remediation.

4.1.3.3 State Environmental Planning Policy 71 – Coastal Protection

SEPP 71 aims to ensure that development in the NSW Coastal Zone is appropriate and suitably located and that there is a consistent and strategic approach to coastal planning and management. SEPP 71 applies to the site as the site is located within the 'coastal zone' of New South Wales.
Part 2, clause 7(a) of SEPP 71 specifies the matters listed in Clause 8 that should be taken into consideration by a consent authority when it determines a DA to carry out development on land to which the SEPP applies. These matters for consideration are listed in **Table 6** and are considered with respect to the project.

Table 6 SEPP 71 Matters for Consideration under Clause 8

Consideration	**Comments**
(a) Clause 2 Aims of the SEPP	
(a) To protect and manage the natural, cultural, recreational and economic attributes of the New South Wales coast.	Residential development of the site would enhance the cultural and economic attributes of the Moonee area through the provision of new dwellings and associated increase in population. The eastern portion of the site is proposed to be protected and revegetated in accordance with the environmental zone and to facilitate a wildlife movement corridor.
(b) To protect and improve existing public access to and along coastal foreshores to the extent that this is compatible with the natural attributes of the coastal foreshore.	Residential development of the site will not provide direct access to the Moonee Creek. It is considered inappropriate and undesirable to encourage human activity across the proposed wildlife corridor to the sensitive riparian zone. A public coastal walk will connect with the approved Glades development to the north through the site and southward to Moonee Village in accordance with the Moonee D.C.P.
(c) To ensure that new opportunities for public access to and along coastal foreshores are identified and realised to the extent that this is compatible with the natural attributes of the coastal foreshore.	Refer above.

(d) To protect and preserve Aboriginal cultural heritage, and Aboriginal places, values, customs, beliefs and traditional knowledge.	An Aboriginal Cultural Heritage Assessment (refer Section 5.2) identifies some aboriginal artefacts have been detected on site. The report, including aboriginal consultation, concludes that these artefacts are not significant but will be subject to a management plan that either leaves them in situ or relocates them to an area on site that will not be impacted by the proposal.
(e) To ensure that the visual amenity of the coast is protected.	The expected visual impacts of the proposed residential development will generally restricted to within the site. The development will be partially visible from the Pacific Highway but not visible from Moonee Village or Emerald Beach to the north. Glimpses of the site from Moonee Beach Nature Reserve would be distant and obscured
(f) To protect and preserve beach environments and beach amenity.	Site is approximately 1.25kms west of Moonee Beach with the Moonee Beach Nature Reserve intervening. The development will not facilitate access to Moonee Beach and hence the amenity and environment of the beach will not be impacted.
(g) To protect and preserve native coastal vegetation.	Refer Section 6.6. Sensitive coastal vegetation is proposed to be protected along the Moonee Creek riparian area that includes an EEC separated by a wildlife corridor and perimeter road and dwellings facing onto this area. This and the coastal path provide casual surveillance over this area and assist in preventing dumping and other inappropriate activities within the environmental zone. The concept plan will impact on grassland and scattered trees but this loss is minor.
(h) To protect and preserve the marine environment of New South Wales.	Stormwater management measures are proposed to minimise impacts on receiving environments. Runoff will be directed to bio-retention swales where it will pass through vegetation filters prior to being released into natural drainage lines. (refer Section 5.15)
(i) To protect and preserve rock platforms.	No rock platforms are located within the vicinity of the site.
(j) To manage the coastal zone in accordance with the principles of ecologically sustainable development (within the meaning of section 6(2) of the Protection of the Environment Administration Act 1991).	The proposed development seeks to optimise the site's potential whilst protecting environmentally sensitive areas.
(k)To ensure that the type, bulk, scale and size of development is appropriate for the location and protects and improves the natural scenic quality of the surrounding area.	Housing within the development will be of the type, bulk, scale and size that complements the coastal setting of the Moonee area and be in accordance with Moonee D.C.P.
(l)To encourage a strategic approach to coastal management.	Site zoned for residential development in the Coffs Harbour City LEP 2000 and is identified in the Mid North Coast Regional Strategy and Our Living Settlement Strategy for urban development. This strategic approach is maintained in the Draft Coffs Harbour LEP 2012 (deferred for the site and the Moonee undeveloped urban areas).

(b) Existing public access to and along the coastal foreshore for pedestrians or persons with a disability should be retained and, where possible, public access to and along the coastal foreshore for pedestrians or persons with a disability should be improved.	There is no existing public access to the foreshore for pedestrians or persons with a disability.
(c) Opportunities to provide new public access to and along the coastal foreshore for pedestrians or persons with a disability.	The proposed coastal walking path is likely to be of an acceptable grade to facilitate access by persons with a disability. Actual alignment and grade will be determined in the Construction Certificate.
(d) The suitability of development given its type, location and design and its relationship with the surrounding area.	Council has reconsidered the zoning of the site under the draft Coffs Harbour LEP 2012 and has deferred the site from the draft LEP until the completion of this Part 3A development plan. The ecological and environmental investigations undertaken for the Plan confirm the site's suitability for residential development (including the zone boundary in the eastern portion of the site) These assessments are included in the technical reports in **Attachment I**.
(e) Any detrimental impact that development may have on the amenity of the coastal foreshore, including any significant over-shadowing of the coastal foreshore and any significant loss of views from a public place to the coastal foreshore.	The development of the site for residential purposes is of sufficient distance from Moonee Beach and of a low scale so that it would not affect the amenity of the coastal foreshore.
(f) The scenic qualities of the New South Wales coast, and means to protect and improve these qualities.	Apart from the Pacific Highway, the site is not visible or only partially visible from Moonee Beach one kilometre to the east. The intervening Moonee Beach Nature Reserve has a width and length such that the scenic qualities of the coast are sufficiently protected and will not be significantly impacted on by the proposed development.
(g) Measures to conserve animals (within the meaning of the Threatened Species Conservation Act 1995) and plants (within the meaning of that Act), and their habitats.	Refer Section 5.8. The proposed development is unlikely to have a significant effect on threatened species or their habitats. Proposed mitigation measures
(h) Measures to conserve fish (within the meaning of Part 7A Fisheries Mgmt Act 1994) & marine vegetation (within the meaning of that Part) and their habitats.	The proposed development will not impact on fish and marine vegetation. (Refer Section 5.14). This includes the proposed stormwater management system and the treatment of water quality.
(i) Existing wildlife corridors and the impact of development on these corridors.	The site itself occurs within the Wedding Belles – Moonee Beach Regional Corridor which links Moonee Beach Nature reserve and Skinners Creek. The northern and eastern revegetated parts of the site will revegetated to re-establish the wildlife corridor.
(j) The likely impact of coastal processes and coastal hazards on development and any likely impacts of development on coastal processes and coastal hazards.	The flood study (Section 5.6) has identified likely flood events including Probable Maximum Flood and projected sea level rise. The proposed filling of low hazard flood affected land is required to achieve flood freeboard for lots and dwellings. This will not adversely affect flooding upstream and downstream and will not significantly impact upon groundwater levels on the site. The current and future coastal processes and hazards have been considered in the design.

(k) Measures to reduce potential for conflict between land-based and water-based coastal activities.	The proposal would not result in any conflict between land-based and water-based coastal activities as the proposed development is located a sufficient distance from the coastal foreshore.
(l) Measures to protect cultural places, values, customs, beliefs and traditional knowledge of Aboriginals.	A management plan that either leaves Aboriginal artefacts in situ or relocates them to an area on site that will not be impacted by the proposal.
(m) Likely impacts of development on the water quality of coastal waterbodies.	The likely development impacts on the quality of ground and surface water has been assessed and considered to be acceptable (refer Section 5.15)
(n) The conservation and preservation of items of heritage, archaeological or historic significance.	A post approval management plan will be prepared for the artefacts detected on site as per Aboriginal community requirements with ongoing consultation with Aboriginal community throughout the development process
(o) Only in cases in which a council prepares a draft local environmental plan that applies to land to which this Policy applies, the means to encourage compact towns and cities.	Not applicable to this proposal.
(p) Only in cases in which a development application in relation to proposed development is determined:	
i. The cumulative impacts of the proposed development on the environment.	Loss of remnant vegetation supplemented by the re-establishing of the wildlife corridor by revegetation with appropriate native species and its management. The long term impacts are likely to be an improved biodiversity corridor superior to that currently on the site.
ii. Measures to ensure that water & energy usage by the proposed development is efficient.	Residential development on the site will comply with BASIX requirements.

Part 3 relating to significant coastal development applies as the proposal involves the construction of buildings or development within 100 metres below mean high water mark. The development is in the form of the perimeter road, two detention basins and a raised access road to Lot 2 DP 1097743.
Part 4 relates to development control on land to which the SEPP applies and contains the following provisions:

iii. ***flexible zone provisions*** *of an environmental planning instrument are not to apply to development within the coastal zone*. The proposed development is not relying on flexible zone provisions and is permissible with consent within the existing 2(a) zone;

iv. ***public access*** *is not to be impeded or diminished to or along the coastal foreshore.* The proposed development will not provide physical public access to Moonee Creek but the wildlife corridor is proposed to be dedicated to Council in accordance with Moonee DCP;

v. ***effluent*** *is not to be disposed of by a non-reticulated system if it is likely to have a negative effect on the water quality of the sea or any nearby beach, or an estuary, a coastal lake, a coastal creek or other similar body of water, or a rock platform.* Effluent is to be disposed by way of a reticulated system; and

vi. ***untreated stormwater*** *is not to be discharged into the sea or other coastal water body or onto a rock platform.* Stormwater will be treated in the 2 bio remediation basins proposed before slowly discharging into Moonee Creek. Section 5.14 indicates that the post development quality of stormwater discharge will be significantly higher than stormwater discharge for existing conditions.

Part 5 relates to master plans. Clause 18 specifies that a consent authority must not grant consent for certain forms of subdivision within the coastal zone unless the Minister for Planning has adopted a master plan for the land.

Planning Circular PS05_008 states that the transitional provisions in the Act construe any requirement for a master plan in an environmental planning instrument in force at the Act's commencement to be a requirement for a DCP under section 74D of the Act.

The need for a D.C.P. can be satisfied by the approval of a concept plan under the now repealed Section 75M (4).

4.1.3.4 New South Wales Coastal Policy 1997

The site is located within the Coastal Zone and the NSW Coastal Policy applies. The Coastal Policy establishes the following actions apply:

- *Development proposals will have to conform with specified design and planning standards to control height, setback and scale to ensure public access and to ensure that beaches and foreshore open spaces are not overshadowed;*
- *The use of good design principles… to ensure more compact human scale towns are developed with their own character within the constraints of existing infrastructure;*
- *Identify and consider significant views and vistas within and from towns, including street patterns and layout and items of heritage significance;*
- *To promote compact and contained planned urban development in order to avoid ribbon development, unrelated cluster development and continuous urban areas on the coast;*
- *To provide for choice in housing and lifestyles; and*
- *To increase public access to foreshores when feasible and environmentally sustainable options are available.*

These Actions have been considered during the design of the proposed subdivision. The proposed development does not impact on the nearby coastal foreshore area, the layout takes into account the natural constraints of the site such as vegetation and bushfire hazard and the street and lot layout is consistent with the street and lot pattern of coastal towns.

4.1.3.5 Coastal Design Guidelines for NSW

The Coastal Design Guidelines for NSW was adopted by the NSW government in 2003 to ensure that future developments are sensitive to the unique natural and urban settings of coastal places in NSW. The Guidelines establish five principles for coastal settlement structure, namely:

- defining the footprint and boundary of the settlement;
- connecting open space;
- protecting natural edges;
- reinforcing the street pattern; and
- appropriate buildings in a coastal context.

Consistency of the plan with the desired future character for new coastal settlements described on pages 32 and 33 of the Guidelines is provided in **Table 7.**

Table 7 Coastal Design Guidelines for NSW

Desired Future Character	Comments
1. Relationship to the environment *a. New development avoids areas of ecological value and respects setbacks between natural areas.* *b. Wildlife corridors, existing mature*	**1. Relationship to the environment** a. plan respects the ecological limits of the site and generally avoids ecologically sensitive areas. The proposed lots are setback from the proposed wildlife corridor and public reserve by a perimeter road. The corridor will be

trees, rivers, streams, lakes and natural features are incorporated into green space networks, reserve areas, riverine and foreshore corridors. *c. Aboriginal and European places, relics and items are protected.* *d. Foreshore and estuarine vegetation is protected.* *e. The potential disturbance to acid sulphate soils is managed.* *f. Original native landscape is maintained and reinstated.* *g. Waterways and coastal lakes are protected through water sensitive urban design and total cycle water management.* *h. Degraded natural areas are rehabilitated.* *i. Vegetation is maintained whilst managing asset protection areas for bushfire protection.* *j. Land swaps, community stewardship programs, transferable development rights and voluntary conservation agreements provide opportunities to sensitively locate development and protect ecosystems and views* *k. Native vegetation is preferred on public and private land.* *l. Land is revegetated with species native to the local area.*	revegetated to re-establish a vegetation link from the south to the corridors to the north as approved in the Glades Estate. b. Trees within the development foot print cannot be retained as the requirement to fill the lower levels of the site will source fill from the upper levels of the site. It is impractical to retain these trees with such works as well that these trees will die from changes to the root and trunk systems of each tree through excavation and filling around these trees. A wildlife corridor has been incorporated into the plan to protect sensitive riparian corridor of Moonee Creek, provide a buffer to the creek itself and to connect to the wildlife corridor in the approved Glades development to the north and to the corridor to the south of the site identified in the Moonee Beach DCP. c. The artefacts found on the site, whilst likely transported to the site in the road base that forms the access to Lot 2 DP 1097743, - will be moved and relocated to a more appropriate area within the site in accordance with a recommended management plan. d. The riparian habitat and top of bank of Moonee Creek and subsequent ecological buffer area have been identified by the ecologist and mapped by the surveyor. This has then supplemented with more land to the west to form a north/south wildlife riparian corridor. This corridor – which requires supplementary planting – provides adequate protection to the estuarine vegetation of Moonee Creek. e. The lower elevated parts of the site are proposed to be filled to 1 to 1.5m. Likelihood of disturbing acid sulfate soils (particularly for construction of gravity and rising sewer mains) is unlikely to expose such soils at 2.5 to 3m below surface. f. The vegetation on site has been significantly modified such that 200 trees will be impacted. These trees, scattered across the site, are predominantly on the southern and western edges. Development requirements do not allow the retention of trees and their long term survival. However, the corridor on the eastern edge of the site is proposed to be reinstated through revegetation. g. A buffer to Moonee Creek from the eastern lot boundary is proposed. The buffer ranges from 60 to 82m wide to the eastern side of perimeter road and protects the riparian zone. Two bio retention basins are proposed to be located adjacent to the perimeter road to retain and treat stormwater from the entire site. Martens have advised that Onsite Stormwater Detention for each proposed lot – in addition to the BASIX requirement for 3000 litre rainwater tanks for each dwelling - is not required. h. Approximately 1.01ha of cleared and underscrubbed land along the eastern boundary is proposed to be rehabilitated through replanting and managed for conservation purposes. 9920m2 of residential zoned land that partly contains an EEC will be revegetated. The total land to be revegetated and managed to restore the wildlife corridor and be dedicated to council totals 2ha. i. The placement of a perimeter road along the eastern boundary acts as a buffer to the proposed rehabilitation area and Moonee Creek but also as an APZ for bushfire. j. The conservation area is proposed to be dedicated to

	council consistent with the requirements of the Moonee D.C.P. k. Cut and fill to achieve flood free development levels for the lower parts of the site does not provide opportunities for vegetation retention. However, 9920m2 of 2A zoned land is proposed to be dedicated to council in addition to 10120m2 of 7A zoned land. l. The revegetation is proposed to be revegetated with species native to the Moonee Beach area
2. Visual sensitivity *a. Views to and along the foreshore align with streets.* *b. Views and vistas of the foreshore and natural features in or surrounding the site are aligned with public streets.*	**2 Visual Sensitivity** a. Street 2 allows views eastward down and over Moonee Creek. Streets 4, 5 and 6 allow lots and dwellings to step down the slope in a consistent and orderly manner. The perimeter road provides; the public with the amenity of Moonee Creek; a strong edge to the wildlife corridor; and bushfire protection to the dwellings. b. Street 2 aligns with the low hill in the western portion that is the only elevated natural feature of the site.
3. Edges to the water and natural areas *a. In new coastal settlements the centre and surrounding residential areas are separated from the foreshore by a parkland or roadway or nature reserve.* *b. Setbacks from the coastal edge and other surrounding natural areas, such as reserves and lakes, respect environmental constraints and protect properties from coastal hazards.* *c. Public access along the foreshore is generally located on the boundary between public and private land and along streets.* *d. Pathways through foreshore vegetation are restricted to ensure the ecological integrity is not degraded.* *e. Foreshore vegetation is not removed to create views.* *f. Land is not filled to promote views.*	**3 Edges** a. the Moonee Creek riparian zone is separated from the development by the proposed conservation area and perimeter road. b. The lot layout respects the constraints, particularly flooding and ecology. The proposed filling of the lower portion of the site will protect properties from flooding and projected sea level rises as well as integrate with the levels of the approved Glades Estate to the north. c. No public access is proposed into the riparian zone for safety and ecological reasons. However, the perimeter road and the coastal walk as required by DCP are generally located along the public and private land boundary and along the perimeter road. d. No pathways to Moonee Creek. e. No vegetation is proposed to be removed in the riparian zone. The filling of the lower portions of the site is to achieve road and dwelling floor levels above 1:100 flood events including projected sea level rise only and to integrate with the levels of the approved Glades Estate and the Collector.
4. Streets *a. New coastal settlements have a street pattern similar to coastal hamlets or coastal villages. They present an ideal opportunity to provide a street pattern responding to the landform, views and permitting a high level of visual, pedestrian, cycle and vehicular permeability.* *b. The street pattern also:* *- creates public neighbourhood centres and a main street* *- avoids privatised enclaves by providing direct access to the foreshore* *- provides an interconnected and permeable street pattern* *- responds to pedestrian and cycle distances and connects to a local and regional network.*	**4 Streets** a. Street layout responds to the landform and allows pedestrians to gain views to areas outside of the site – opposite to the effect of curvilinear streets in conventional development. Relatively short street blocks and intersections create desire lines to encourage walking and cycling and control traffic speed to acceptable levels within the street hierarchy. b. - N/A - Wildlife corridor will be publicly owned and visual access to it will be via public streets and coastal walk. - Street network connects from that approved in the Glades development through the site and upto the collector road. - Streets are cycle and pedestrian friendly and connect to the designated cycle path on the collector road to Moonee Beach village only 1000m away.

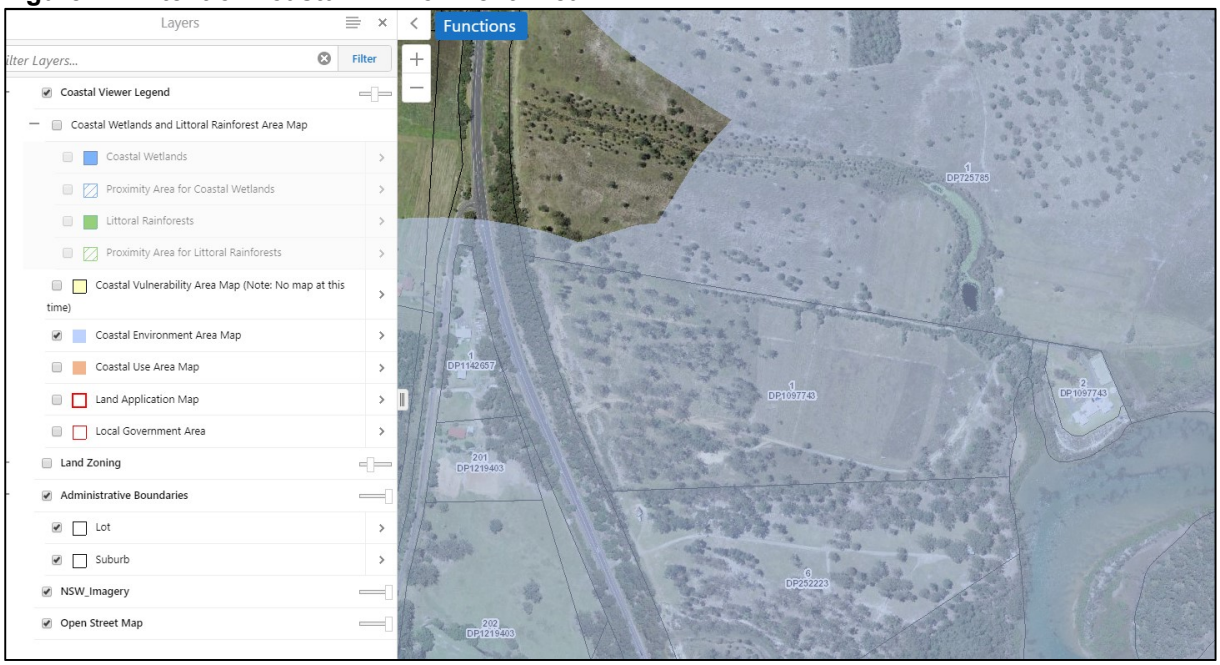
5. Buildings *a. The pattern of land development within the settlement is designed to provide amenity.* *b. The settlement has a compact footprint to reduce land take.* *c. Blocks and streets are walkable and safe.* *d. The neighbourhood centre has commercial, retail, education and civic buildings and some shop-top housing.* *e. Buildings address the street.* *f. Tourist developments integrate into the settlement's street pattern and define the edge between public and private land.* *g. Lot sizes and configurations are designed to support a range of housing types that integrate into the street pattern and the location of functions throughout the settlement.* *h. Residential areas consist of coastal cottages, detached and semi-detached houses, town houses and terraces.* *i. A diversity of lot and housing types are developed to accommodate various household sizes and types.* *j. Buildings are designed to suit the climate and use environmentally sustainable building design and materials.* *k. Housing types optimise visual and acoustic privacy, integrate passive solar design principles, minimise water use, and seek to achieve architectural distinction and excellence.*	**5. Buildings** a. Street layout and dimensions, whilst satisfying various engineering standards, have been designed to facilitate walking and amenity. b. The development footprint and lot yield are an efficient use of land based upon environmental constraints and engineering and planning legislation requirements and market. c. Street blocks are mostly 70 x 170m in length with inter sections for choice in desire lines and encourage walking and cycling. Street dimensions, intersections and the curve radius of the perimeter road are to slow traffic down and subsequently create safe streets for pedestrians of all ages. d. N/A – residential development only. e. Lots have been oriented to the higher order streets and the perimeter road so that dwellings address the street. f. N/A tourist development not proposed. g. Diversity of lot sizes and housing type should increase relative to the proximity of a centre and its physical, social and economic size for transport and services. Moonee DCP states target densities of 75 lots for Lot 1 at 10 dwellings per ha. h. Plan proposes lots from 650 to 795m2 to accommodate detached dwellings. This is considered appropriate for the site given its location from the Moonee village centre. i. Proposed lot type and size is appropriate for the site and is consistent with the Moonee D.C.P. j. N/A k. N/A
6. Height *a. Residential buildings are one to two storeys.* *b. The neighbourhood centre or the main street has buildings up to two storeys.* *c. Where visual prominence is not apparent three storey buildings may be appropriate.* *d. Heights are subject to place-specific urban design studies.*	**6 Height** a. N/A – dwellings subject to separate applications and in accordance with state and local planning controls for housing applying to the site. b. N/A c. N/A d. N/A

4.1.3.6 State Environmental Planning Policy (Coastal Management) 2018

The aim of this Policy is to promote an integrated and coordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the Coastal Management Act 2016, including the management objectives for each coastal management area.

As the development area is located within the Coastal Environment Area (refer **Figure 21**) and Coastal Use Area (refer **Figure 22**), this SEPP applies.

Figure 21 Extent of Coastal Environment Area



Source: DoPE Planning Portal

Land in the Coastal Environment Area is subject to section 13 of the SEPP:

13 Development on land within the coastal environment area

(1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following:

(a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment,

(b) coastal environmental values and natural coastal processes,

(c) the water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1,

(d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms,

(e) existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,

(f) Aboriginal cultural heritage, practices and places,

(g) the use of the surf zone.

(2) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:

(a) the development is designed, sited and will be managed to avoid an adverse impact referred to in subclause (1), or

(b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or

(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.

The proposal responds to these provisions accordingly:

(1)(a) The likely development impacts on the quality of ground and surface water has been assessed and considered to be acceptable (refer **Sections 5.6, 5.7 and 5.14**).

(1)(b) The flood study (**Section 5.6)** has identified likely flood events including Probable Maximum Flood and projected sea level rise. The proposed filling of low hazard flood affected land is required to achieve flood freeboard for lots and dwellings. This will not adversely affect flooding upstream and downstream and will not significantly impact upon groundwater levels on the site. The current and future coastal processes and hazards have been considered in the design.

(1)(c) Not applicable.

(1)(d) Refer **Section 5.15**. Sensitive coastal vegetation is proposed to be protected along the Moonee Creek riparian area that includes an EEC separated by a wildlife corridor and perimeter road and dwellings facing onto this area. This and the coastal path provide casual surveillance over this area and assist in preventing dumping and other inappropriate activities within the environmental zone.

The proposal will impact on grassland and scattered trees in a minor manner. Stormwater management measures are proposed to minimise impacts on receiving environments. Runoff will be directed to bio-retention swales where it will pass through vegetation filters prior to being released into natural drainage lines. No rock platforms are located within the vicinity of the site.

The proposed development is unlikely to have a significant effect on threatened species or their habitats. The proposed development will not impact on fish and marine vegetation. This includes the proposed stormwater management system and the treatment of water quality. The site itself occurs within the Wedding Belles - Moonee Beach Regional Corridor which links Moonee Beach Nature reserve and Skinners Creek. The northern and eastern revegetated parts of the site will revegetated to re-establish the wildlife corridor.

(1)(e) Residential development of the site will not provide direct access to the Moonee Creek. It is considered inappropriate and undesirable to encourage human activity across the proposed wildlife corridor to the sensitive riparian zone. A public coastal walk will connect with the approved Glades development to the north through the site and southward to Moonee Village in accordance with the Moonee D.C.P. There is no existing public access to the foreshore for pedestrians or persons with a disability. The proposed coastal walking path is likely to be of an acceptable grade to facilitate access by persons with a disability. Actual alignment and grade will be determined in the Construction Certificate.

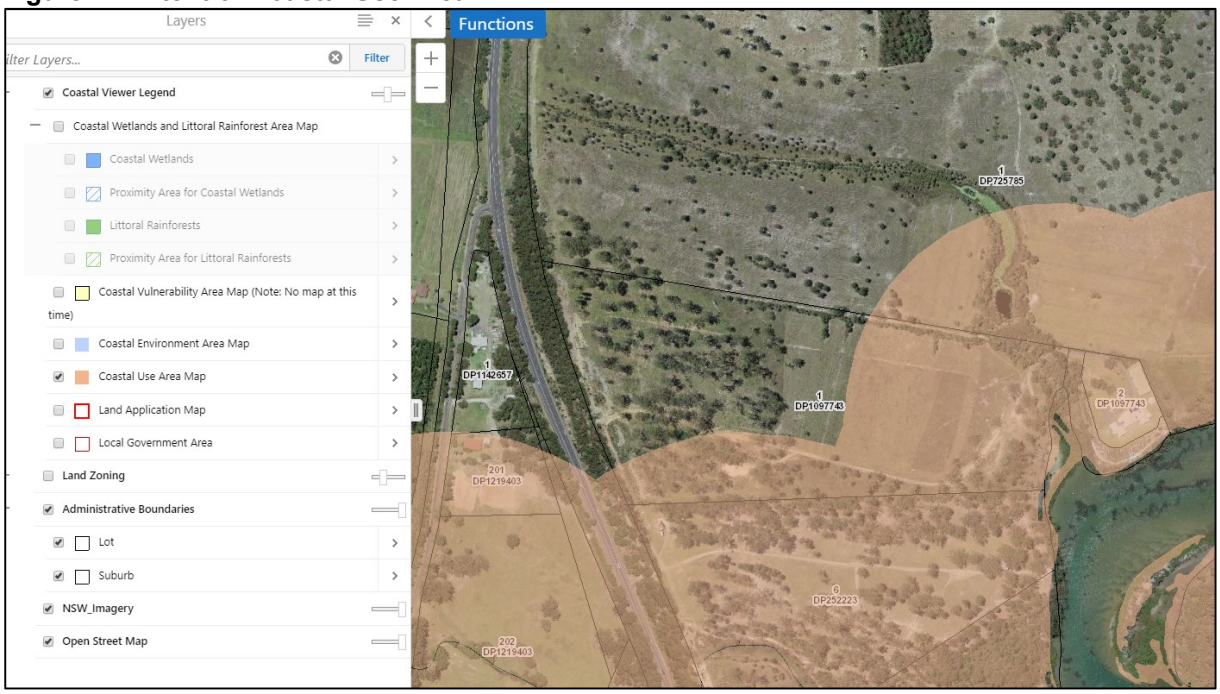
(1)(f) Refer to **Section 5.2**. An Aboriginal Cultural Heritage Assessment identifies some aboriginal artefacts have been detected on site. The report, including aboriginal consultation, concludes that these artefacts are not significant but will be subject to a management plan that either leaves them in situ or relocates them to an area on site that will not be impacted by the proposal.

(1)(g) Not applicable.

(2)(a) Although Council's recent LEP amendment determined that an appropriate buffer to Moonee Creek is 50m, site specific investigations of the subject site determined that a more significant buffer width of between 60m and 85m ought to apply. The width of undeveloped land between Moonee Creek and the edge of the development will be as much as 107m in some parts (inclusive of APZ and coastal walk).

The design, siting and management of the proposal will remove existing rural activities that has evidently degraded the land for decades and is incompatible with the sensitive marine environment adjoining the site.

Figure 22 Extent of Coastal Use Area



Source: DoPE Planning Portal

Land in the Coastal Environment Area is subject to section 14 of the SEPP:

14 Development on land within the coastal use area

(1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority:

(a) has considered whether the proposed development is likely to cause an adverse impact on the following:

(i) existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,

(ii) overshadowing, wind funnelling and the loss of views from public places to foreshores,

(iii) the visual amenity and scenic qualities of the coast, including coastal headlands,

(iv) Aboriginal cultural heritage, practices and places,

(v) cultural and built environment heritage, and

(b) is satisfied that:

(i) the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a), or

(ii) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or

(iii) if that impact cannot be minimised—the development will be managed to mitigate that impact, and

(c) has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.

The proposal responds to these provisions accordingly:

(1)(a)(i) Residential development of the site will not provide direct access to the Moonee Creek. It is considered inappropriate and undesirable to encourage human activity across the proposed wildlife corridor to the sensitive riparian zone. A public coastal walk will connect with the approved Glades development to the north through the site and southward to Moonee Village in accordance with the Moonee D.C.P. There is no existing public access to the foreshore for pedestrians or persons with a disability. The proposed coastal walking path is likely to be of an acceptable grade to facilitate access by persons with a disability. Actual alignment and grade will be determined in the Construction Certificate.

(1)(a)(ii) Street 2 allows views eastward down and over Moonee Creek. Streets 4, 5 and 6 allow lots and dwellings to step down the slope in a consistent and orderly manner. The perimeter road provides; the public with the amenity of Moonee Creek; a strong edge to the wildlife corridor; and bushfire protection to the dwellings. Street 2 aligns with the low hill in the western portion that is the only elevated natural feature of the site.

(1)(a)(iii) The expected visual impacts of the proposed residential development will generally restricted to within the site. The development will be partially visible from the Pacific Highway but not visible from Moonee Village or Emerald Beach to the north. Glimpses of the site from Moonee Beach Nature Reserve would be distant and obscured

(1)(a)(iv) Refer to **Section 5.2**. An Aboriginal Cultural Heritage Assessment identifies some aboriginal artefacts have been detected on site. The report, including aboriginal consultation, concludes that these artefacts are not significant but will be subject to a management plan that either leaves them in situ or relocates them to an area on site that will not be impacted by the proposal.

(1)(a)(vi) Not applicable.

(1)(b)(i) Although Council's recent LEP amendment determined that an appropriate buffer to Moonee Creek is 50m, site specific investigations of the subject site determined that a more significant buffer width of between 60m and 85m ought to apply. The width of undeveloped land between Moonee Creek and the edge of the development will be as much as 107m in some parts (inclusive of APZ and coastal walk).

The design, siting and management of the proposal will remove existing rural activities that have evidently degraded the land for decades and are incompatible with the sensitive marine environment adjoining the site. The proposal will revert privately owned waterfront land used for unmanaged rural purposes to publicly owned and managed land as a buffer to the Marine Park.

(1)(c) The proposal is consistent with the land use intentions under the LEP and DCP, and the surrounding coastal and 'approved' built environment has provided a framework for the proposed development and proposed conservation outcomes.

The consent Authority can be satisfied that the proposal is consistent with the Coastal Management SEPP.

4.1.3.7 New South Wales Coastal Policy 1997

The site is located within the Coastal Zone and the NSW Coastal Policy applies. The Coastal Policy establishes the following actions apply:

- Development proposals will have to conform with specified design and planning standards to control height, setback and scale to ensure public access and to ensure that beaches and foreshore open spaces are not overshadowed;
- The use of good design principles… to ensure more compact human scale towns are developed with their own character within the constraints of existing infrastructure;
- Identify and consider significant views and vistas within and from towns, including street patterns and layout and items of heritage significance;

- To promote compact and contained planned urban development in order to avoid ribbon development, unrelated cluster development and continuous urban areas on the coast;
- To provide for choice in housing and lifestyles; and
- To increase public access to foreshores when feasible and environmentally sustainable options are available.

These Actions have been considered during the design of the proposed subdivision. The proposed development does not impact on the nearby coastal foreshore area, the layout takes into account the natural constraints of the site such as vegetation and bushfire hazard and the street and lot layout is consistent with the street and lot pattern of coastal towns.

4.1.3.8 Coastal Design Guidelines for NSW

The Coastal Design Guidelines for NSW was adopted by the NSW government in 2003 to ensure that future developments are sensitive to the unique natural and urban settings of coastal places in NSW. The Guidelines establish five principles for coastal settlement structure, namely:

- defining the footprint and boundary of the settlement;
- connecting open space;
- protecting natural edges;
- reinforcing the street pattern; and
- appropriate buildings in a coastal context.

Consistency of the plan with the desired future character for new coastal settlements described on pages 32 and 33 of the Guidelines is provided in **Table 8**.

Table 8 Coastal Design Guidelines for NSW

Desired Future Character	Comments
1. Relationship to the environment	1. Relationship to the environment
a. New development avoids areas of ecological value and respects setbacks between natural areas.	m. plan respects the ecological limits of the site and generally avoids ecologically sensitive areas. The proposed lots are setback from the proposed wildlife corridor and public reserve by a perimeter road. The corridor will be revegetated to re-establish a vegetation link from the south to the corridors to the north as approved in the Glades Estate.
b. Wildlife corridors, existing mature trees, rivers, streams, lakes and natural features are incorporated into green space networks, reserve areas, riverine and foreshore corridors.	n. Trees within the development foot print cannot be retained as the requirement to fill the lower levels of the site will source fill from the upper levels of the site. It is impractical to retain these trees with such works as well that these trees will die from changes to the root and trunk systems of each tree through excavation and filling around these trees. A wildlife corridor has been incorporated into the plan to protect sensitive riparian corridor of Moonee Creek, provide a buffer to the creek itself and to connect to the wildlife corridor in the approved Glades development to the north and to the corridor to the south of the site identified in the Moonee Beach DCP.
c. Aboriginal and European places, relics and items are protected.	o. The artefacts found on the site, whilst likely transported to the site in the road base that forms the access to Lot 2 DP 1097743, - will be moved and relocated to a more appropriate area within the site in accordance with a recommended management plan.
d. Foreshore and estuarine vegetation is protected.	p. The riparian habitat and top of bank of Moonee Creek and subsequent ecological buffer area have been identified by the ecologist and mapped by the surveyor. This has then supplemented with more land to the west to form a north/south wildlife riparian corridor. This corridor – which requires supplementary planting – provides adequate protection to the estuarine vegetation of Moonee Creek.
e. The potential disturbance to acid sulphate soils is managed	q. The lower elevated parts of the site are proposed to be filled to 1 to 1.5m. Likelihood of disturbing acid sulfate soils (particularly for construction of gravity and rising sewer mains) is unlikely to expose such soils at 2.5 to 3m below surface.
f. Original native landscape is maintained and reinstated.	r. The vegetation on site has been significantly modified such that 200 trees will be impacted. These trees, scattered across the site, are predominantly on the southern and western edges. Development requirements do not allow the retention of trees and their long term survival. However, the corridor on the eastern edge of the site is proposed to be reinstated through revegetation.
g. Waterways and coastal lakes are protected through water sensitive urban design and total cycle water management.	s. A buffer to Moonee Creek from the eastern lot boundary is proposed. The buffer ranges from 60 to 82m wide to the eastern side of perimeter road and protects the riparian zone. Two bio retention basins are proposed to be located adjacent to the perimeter road to retain and treat stormwater from the entire site. Martens have

	advised that Onsite Stormwater Detention for each proposed lot – in addition to the BASIX requirement for 3000 litre rainwater tanks for each dwelling - is not required.
h. Degraded natural areas are rehabilitated.	t. Approximately 1.01ha of cleared and underscrubbed land along the eastern boundary is proposed to be rehabilitated through replanting and managed for conservation purposes. 9920m2 of residential zoned land that partly contains an EEC will be revegetated. The total land to be revegetated and managed to restore the wildlife corridor and be dedicated to council totals 2ha.
i. Vegetation is maintained whilst managing asset protection areas for bushfire protection.	u. The placement of a perimeter road along the eastern boundary acts as a buffer to the proposed rehabilitation area and Moonee Creek but also as an APZ for bushfire.
j. Land swaps, community stewardship programs, transferable development rights and voluntary conservation agreements provide opportunities to sensitively locate development and protect ecosystems and views	v. The conservation area is proposed to be dedicated to council consistent with the requirements of the Moonee D.C.P.
k. Native vegetation is preferred on public and private land.	w. Cut and fill to achieve flood free development levels for the lower parts of the site does not provide opportunities for vegetation retention. However, 9920m2 of 2A zoned land is proposed to be dedicated to council in addition to 10120m2 of 7A zoned land.
l. Land is revegetated with species native to the local area.	x. The revegetation is proposed to be revegetated with species native to the Moonee Beach area
2. Visual sensitivity	2 Visual Sensitivity
a. Views to and along the foreshore align with streets.	a. Street 2 allows views eastward down and over Moonee Creek. Streets 4, 5 and 6 allow lots and dwellings to step down the slope in a consistent and orderly manner. The perimeter road provides; the public with the amenity of Moonee Creek; a strong edge to the wildlife corridor; and bushfire protection to the dwellings.
b. Views and vistas of the foreshore and natural features in or surrounding the site are aligned with public streets.	b. Street 2 aligns with the low hill in the western portion that is the only elevated natural feature of the site.
3. Edges to the water and natural areas	3 Edges
a. In new coastal settlements the centre and surrounding residential areas are separated from the foreshore by a parkland or roadway or nature reserve.	b. the Moonee Creek riparian zone is separated from the development by the proposed conservation area and perimeter road.
b. Setbacks from the coastal edge and other surrounding natural areas, such as reserves and lakes, respect environmental constraints and protect	f. The lot layout respects the constraints, particularly flooding and ecology. The proposed filling of the lower portion of the site will protect properties from flooding and projected sea level rises as well as integrate with the

properties from coastal hazards. c. Public access along the foreshore is generally located on the boundary between public and private land and along streets. d. Pathways through foreshore vegetation are restricted to ensure the ecological integrity is not degraded. e. Foreshore vegetation is not removed to create views. f. Land is not filled to promote views.	levels of the approved Glades Estate to the north. g. No public access is proposed into the riparian zone for safety and ecological reasons. However, the perimeter road and the coastal walk as required by DCP are generally located along the public and private land boundary and along the perimeter road. h. No pathways to Moonee Creek. i. No vegetation is proposed to be removed in the riparian zone. j. The filling of the lower portions of the site is to achieve road and dwelling floor levels above 1:100 flood events including projected sea level rise only and to integrate with the levels of the approved Glades Estate and the Collector.
4. Streets a. New coastal settlements have a street pattern similar to coastal hamlets or coastal villages. They present an ideal opportunity to provide a street pattern responding to the landform, views and permitting a high level of visual, pedestrian, cycle and vehicular permeability. b. The street pattern also: - creates public neighbourhood centres and a main street - avoids privatised enclaves by providing direct access to the foreshore - provides an interconnected and permeable street pattern - responds to pedestrian and cycle distances and connects to a local and regional network.	4 Streets c. Street layout responds to the landform and allows pedestrians to gain views to areas outside of the site – opposite to the effect of curvilinear streets in conventional development. Relatively short street blocks and intersections create desire lines to encourage walking and cycling and control traffic speed to acceptable levels within the street hierarchy. d. - N/A - Wildlife corridor will be publicly owned and visual access to it will be via public streets and coastal walk. - Street network connects from that approved in the Glades development through the site and upto the collector road. - Streets are cycle and pedestrian friendly and connect to the designated cycle path on the collector road to Moonee Beach village only 1000m away.
5. Buildings a. The pattern of land development within the settlement is designed to provide amenity. b. The settlement has a compact footprint to reduce land take.	5. Buildings l. Street layout and dimensions, whilst satisfying various engineering standards, have been designed to facilitate walking and amenity. m. The development footprint and lot yield are an efficient use of land based upon environmental constraints and engineering and planning legislation requirements and

	market.
e. Blocks and streets are walkable and safe.	n. Street blocks are mostly 70 x 170m in length with inter sections for choice in desire lines and encourage walking and cycling. Street dimensions, intersections and the curve radius of the perimeter road are to slow traffic down and subsequently create safe streets for pedestrians of all ages.
f. The neighbourhood centre has commercial, retail, education and civic buildings and some shop-top housing.	o. N/A – residential development only.
	p. Lots have been oriented to the higher order streets and the perimeter road so that dwellings address the street.
e. Buildings address the street.	
f. Tourist developments integrate into the settlement's street pattern and define the edge between public and private land.	q. N/A tourist development not proposed.
g. Lot sizes and configurations are designed to support a range of housing types that integrate into the street pattern and the location of functions throughout the settlement.	r. Diversity of lot sizes and housing type should increase relative to the proximity of a centre and its physical, social and economic size for transport and services. Moonee DCP states target densities of 75 lots for Lot 1 at 10 dwellings per ha.
	s. Plan proposes lots from 650 to 795m2 to accommodate detached dwellings. This is considered appropriate for the site given its location from the Moonee village centre.
h. Residential areas consist of coastal cottages, detached and semi-detached houses, town houses and terraces.	
i. A diversity of lot and housing types are developed to accommodate various household sizes and types.	t. Proposed lot type and size is appropriate for the site and is consistent with the Moonee D.C.P.
j. Buildings are designed to suit the climate and use environmentally sustainable building design and materials.	u. N/A
k. Housing types optimise visual and acoustic privacy, integrate passive solar design principles, minimise water use, and seek to achieve architectural distinction and excellence.	v. N/A
6. Height	6 Height
a. Residential buildings are one to two storeys.	a. N/A – dwellings subject to separate applications and in accordance with state and local planning controls for housing applying to the site.
b. The neighbourhood centre or the main street has buildings up to two storeys.	b. N/A
c. Where visual prominence is not apparent three storey buildings may be appropriate.	c. N/A
d. Heights are subject to place-specific urban design studies.	d. N/A

4.1.3.9 State Environmental Planning Policy (Major Projects) 2005

This SEPP is repealed, but the instrument was in force when the DGRs were issued. For this reason, the Development is now State Significant Development

4.1.3.10 State Environmental Planning Policy (Infrastructure) 2007

SEPP Infrastructure establishes the planning framework for the permissibility and assessment and consultation requirements for specific infrastructure and services across NSW.

Clause 101 Development with frontage to classified road requires the consent authority to not approve development on land that has a frontage to a classified road, in this instance the Pacific Highway, unless it is satisfied that vehicular access is provided by a road other than a classified road and that the ongoing safety, efficiency and operation of the classified road will not be adversely affected by the development.

The approved Glades development to the north of the site is required to achieve access to the Pacific Highway by way of a collector road running southward through the site to the Moonee Interchange that is now being constructed as part of the upgrade of the Pacific Highway as a dual carriageway through Moonee. The approval for the collector road itself was made by the Land and Environment Court in July 2012 (see **Figure 6**). The plan provides for the collector road along the western boundary of the site and therefore satisfies Clause 101.

Clause 102 Impact of road noise or vibration on non-road development requires residential development on land adjacent to a road corridor with an annual average daily traffic volume of more than 40,000 vehicles. Under the *Development near Rail and Busy Roads – Interim Guidelines 2008* (PS 08-016 – DoPI) and advice from Wilkinson Murray (refer to **Section 5.11**), lots on the western side of the site that front and are near to the Pacific Highway can be attenuated. The attenuation required is so that LAeq levels in any bedroom do not exceed 35dB(A) between 10pm and 7am and to not exceed 40dB(A) elsewhere in the dwelling at any time. Therefore Clause 102 is satisfied.

Clause 104 Traffic-generating development requires development of specific type and size and type listed in Schedule 3 of the SEPP is likely to generate significant traffic and is to be referred to the Roads and Maritime Services.

Schedule 3 Column 2 lists subdivision of land creating 200 or more lots and the opening of a public road. The concept plan proposes the creation of 105 lots and therefore referral to the RMS is not required.

Column 3 of Schedule 3 lists the subdivision of land to create 50 of more lots is to be referred to the RMS if the site connects to a classified road if access is within 90m of connection measured along the alignment of the connecting road. The distance of the site from Moonee Creek Drive that connects to Moonee Beach Road is some 600m. Therefore, referral to the RMS is not required.

4.1.3.11 North Coast Regional Plan 2036

The *North Coast Regional Plan 2036* was adopted by the NSW Government in 2017 to guide local planning in the region including the Coffs Harbour LGA.

A key purpose of the Plan is to support sustainable growth by ensuring that adequate land is available and appropriately located to accommodate the projected housing and employment needs of the Region's population until 2036. For the Coffs Harbour sub region, the Plan identifies a need for an additional 8,950 dwellings for this period.

The Plan is supported by *Settlement Planning Guidelines* (2007) and the *North Coast Urban Design Guidelines* (2009) as resource documents to assist councils to achieve the desired planning outcomes and advance quality urban design in the region respectively.

The proposed development has been prepared consistent with the principles and intended outcomes of these guidelines and therefore, will contribute to achieving the projection and desired outcomes of the Regional Plan.

4.2 Local Planning Instruments

4.2.1 Coffs Harbour Local Environmental Plan 2013

Clause 2.3 Zone Objectives and Land Use Table
As indicated in **Figure 5**, the site is part zoned R2 Low Density Residential and part E2 Environmental Conservation Zone.

Zone R2 Low Density Residential

1 Objectives of zone

- *To provide for the housing needs of the community within a low density residential environment.*
- *To enable other land uses that provide facilities or services to meet the day to day needs of residents.*

2 Permitted without consent

Building identification signs; Home-based child care; Home occupations

3 Permitted with consent

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Business identification signs; Caravan parks; Centre-based child care facilities; Community facilities; Dual occupancies; Dwelling houses; Emergency services facilities; Environmental facilities; Environmental protection works; Exhibition homes; Exhibition villages; Flood mitigation works; Group homes; Health consulting rooms; Home businesses; Home industries; Hostels; Kiosks; Neighbourhood shops; Places of public worship; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Shop top housing; Water storage facilities

4 Prohibited

Any development not specified in item 2 or 3

Response - the proposal involves the subdivision of land for residential dwellings, and the provision of roads and associated utilities which are activities permissible with consent under the LEP. The proposal involves creating a low density residential environment that can be serviced by infrastructure, consequently satisfying the objectives of the zone.

Zone E2 Environmental Conservation

1 Objectives of zone

- *To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.*
- *To prevent development that could destroy, damage or otherwise have an adverse effect on those values.*

2 Permitted without consent

Building identification signs; Environmental protection works; Extensive agriculture; Home occupations

3 Permitted with consent

Bed and breakfast accommodation; Bee keeping; Business identification signs; Camping grounds; Community facilities; Dwelling houses; Eco-tourist facilities; Emergency services facilities; Environmental facilities; Flood mitigation works; Home-based child care; Home businesses; Information and education facilities; Research stations; Roads

4 Prohibited

Business premises; Hotel or motel accommodation; Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Restricted premises; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3

Response: no residential lots or dwellings are proposed within the E2 zone. Based upon technical investigations and a balanced consideration of flooding and ecology issues, the development footprint of the proposed subdivision is away from the E2 zone boundary. This widens the wildlife corridor advocated by Moonee DCP and widens the buffer to Moonee Creek and the Solitary Islands Marine Park.

The E2 zoned land is bound the perimeter road to enable its dedication to Council consistent with the intent of the Moonee DCP. It is also proposed to create a lot (proposed Lot 105) within the E2 zone to secure future access to an existing dwelling on Lot 2 DP 1097743 across Lot 3 DP 1097743 to perimeter Road 3. These lots will be consolidated to ultimately provide road access to Lot 2 (which currently relies on access via a Right of Carriageway over Lot 1).

Prior to dedication to Council, the lot proposed to contain the E2 zoned land (Lot 104) will be revegetated to re-establish a wildlife corridor in accordance with the Moonee DCP.

The development plan is consistent with the objectives of the E2 zone.

Clause 7.2 Earthworks

(1) The objective of this clause is to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land.

(2) Development consent is required for earthworks unless:

(a) the earthworks are exempt development under this Plan or another applicable environmental planning instrument, or

(b) the earthworks are ancillary to development that is permitted without consent under this Plan or to development for which development consent has been given.

(3) Before granting development consent for earthworks (or for development involving ancillary earthworks), the consent authority must consider the following matters:

(a) the likely disruption of, or any detrimental effect on, drainage patterns and soil stability in the locality of the development,

(b) the effect of the development on the likely future use or redevelopment of the land,

(c) the quality of the fill or the soil to be excavated, or both,

(d) the effect of the development on the existing and likely amenity of adjoining properties,

(e) the source of any fill material and the destination of any excavated material,

(f) the likelihood of disturbing relics,

(g) the proximity to, and potential for adverse impacts on, any waterway, drinking water catchment or environmentally sensitive area,

(h) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.

Response: The development plan proposes to fill parts of the site that are flood liable in a 1 in 100 year flood event allowing for sea level rise. The filling is to mitigate the threat of very occasional, minor flooding where the land is otherwise unconstrained and would enable a more efficient urban form (see **Section 5.10**).

To avoid the need to transport fill to the site (and a corresponding reduction in financial and energy costs) and to benefit from the preparation of the upper levels of the site for development, the bulk earth works plan proposes to shift earth from the upper levels down on the lower levels of the site. The corresponding changes in finished site levels:

- Will prevent the retention of trees within the development footprint as either tree root zones will be compromised by exposure and soil drainage changes or the trunks will be subject to fungal attack and disease;
- Have considered impacts along the northern boundary to ensure that stormwater onto and potential flooding of the adjoining lot to the north is not exacerbated whilst accommodating the approved residential subdivision on this lot;
- Will not have adverse impacts upon flooding upstream of downstream of the site. This is based upon flooding data and advice from Martens that has also lead to reducing the overall development footprint in the north eastern portion of the site;
- Will be achieved whilst controlling soil erosion and sedimentation during construction through the implementation of a soil and water environmental management plan.

The proposed modification to the landform on the site will not adversely affect the natural environment.

Clause 7.8 Koala habitat

(1) The objective of this clause is to provide for the protection of koalas and their habitat.

(2) Development consent must not be granted to development on land to which this Plan applies unless the development is in accordance with Coffs Harbour City Koala Plan of Management, ISBN 0 7313 6050 8, published in November 1999.

Response: Refer to **Section 5.8.**

Clause 7.11 Essential Services

Development consent must not be granted to development unless the consent authority is satisfied that any of the following services that are essential for the development are available or that adequate arrangements have been made to make them available when required:

(a) the supply of water,

(b) the supply of electricity,

(c) the disposal and management of sewage,

(d) stormwater drainage or on-site conservation,

(e) suitable vehicular access.

Response: Water and sewage infrastructure easements are located along the western boundary within the site.

A sewer pump station is proposed to be located adjacent to the existing electrical substation on the site just north of the proposed lot that will provide access to Lot 2 DP 1097743. The pump station will pump sewage collected by gravity feed from the proposed lots up Road 2 to the sewage line along

western boundary to discharge to existing pump station at Moonee Beach Road some 815 metres to the south.

The presence of sewer and water infrastructure easements and the subdivision services plan confirms that this infrastructure is available and satisfies the clause objective.

Clause 4.1A Minimum subdivision lot sizes for certain split zones

(1) The objectives of this clause are as follows:

(a) to provide for the subdivision of lots that are within more than one zone,

(b) to ensure that the subdivision occurs in a manner that promotes suitable land use and development.

*(2) This clause applies to each lot (an **original lot**) that contains:*

(a) land in a business, industrial, recreation, residential, rural or special purpose zone, and

(b) land in Zone E2 Environmental Conservation.

*(3) Despite clause 4.1, development consent may be granted to subdivide an original lot to create other lots (the **resulting lots**) if:*

(a) in the case of a resulting lot that contains land in a rural zone—the land that is in the rural zone in the resulting lot is not less than the minimum size shown on the Lot Size Map in relation to that land, or

(b) in the case of a resulting lot that contains land in a residential zone—the land in the residential zone in the resulting lot is not less than the minimum size shown on the Lot Size Map in relation to that land, or

(c) in the case of a resulting lot that contains land in a business, industrial, special purpose or recreation zone—the consent authority is satisfied that the area of the resulting lot, excluding any land in Zone E2 Environmental Conservation, is suitable for a use permitted in the relevant zone.

(4) Before granting consent to development to which this clause applies the consent authority must be satisfied that the subdivision will not compromise the continued protection and long-term maintenance of any land in Zone E2 Environmental Conservation in the resulting lots.

Response: The proposed conservation reserve involves land zoned part R2 and part E2 land that is to be dedicated to Council. No dwelling entitlement is sought for the E2 zoned land. Therefore consent may be granted to the subdivision of the proposed conservation area as it is necessary for achieving the long term management of this land.

The proposed Lot 103 is to ensure; legal access to Lot 2 1097743 (via right of way over Lot 3 DP 1097743 – a public reserve); service authority access to the proposed sewer pump station and a public Right of Way to allow the implementation of the coastal walk as per the Moonee DCP.

Clause 5.10 Heritage conservation

(1) Objectives

The objectives of this clause are as follows:

(a) to conserve the environmental heritage of Coffs Harbour,

(b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,

(c) to conserve archaeological sites,

(d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

(2) Requirement for consent

Development consent is required for any of the following:

(a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):

(i) a heritage item,

(ii) an Aboriginal object,

(iii) a building, work, relic or tree within a heritage conservation area,

(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,

(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,

(d) disturbing or excavating an Aboriginal place of heritage significance,

(e) erecting a building on land:

(i) on which a heritage item is located or that is within a heritage conservation area, or

(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,

(f) subdividing land:

(i) on which a heritage item is located or that is within a heritage conservation area, or

(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.

Response: The *Heritage Map Sheet HER_005* contained in the Coffs Harbour LEP 2013 does not identify that the site has heritage significance.

Clause 7.1 Acid sulfate soils

(1) The objective of this clause is to ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage.

(2) Development consent is required for the carrying out of works described in the Table to this subclause on land shown on the Acid Sulfate Soils Map as being of the class specified for those works.

Class of land	*Works*
1	*Any works.*
2	*Works below the natural ground surface.* *Works by which the watertable is likely to be lowered.*
3	*Works more than 1 metre below the natural ground surface.* *Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.*
4	*Works more than 2 metres below the natural ground surface.* *Works by which the watertable is likely to be*

	lowered more than 2 metres below the natural ground surface.
5	*Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum and by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.*

(3) Development consent must not be granted under this clause for the carrying out of works unless an acid sulfate soils management plan has been prepared for the proposed works in accordance with the Acid Sulfate Soils Manual and has been provided to the consent authority.

(4) Despite subclause (2), development consent is not required under this clause for the carrying out of works if:

(a) a preliminary assessment of the proposed works prepared in accordance with the Acid Sulfate Soils Manual indicates that an acid sulfate soils management plan is not required for the works, and

(b) the preliminary assessment has been provided to the consent authority and the consent authority has confirmed the assessment by notice in writing to the person proposing to carry out the works.

Response Refer **Section 5.4**.

Clause 7.3 Flood Planning

(1) The objectives of this clause are as follows:

(a) to minimise the flood risk to life and property associated with the use of land,

(b) to allow development on land that is compatible with the land's flood hazard, taking into account projected changes as a result of climate change,

(c) to avoid significant adverse impacts on flood behaviour and the environment.

(2) This clause applies to land at or below the flood planning level.

(3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:

(a) is compatible with the flood hazard of the land, and

(b) is not likely to significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and

(c) incorporates appropriate measures to manage risk to life from flood, and

(d) is not likely to significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and

(e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.

(4) A word or expression used in this clause has the same meaning as it has in the Floodplain Development Manual (ISBN 0 7347 5476 0), published in 2005 by the NSW Government, unless it is otherwise defined in this clause.

(5) In this clause:

***flood planning level** means the level of a 1:100 ARI (average recurrent interval) flood event plus 0.5 metre freeboard.*

Response: Refer to **Section 5.6**. The development plan will not:

- adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties;
- significantly alter flow distributions and velocities to the detriment of other properties or the environment of the floodplain;
- significantly detrimentally affect the floodplain environment or cause avoidable erosion, saltation, destruction of riparian vegetation or a reduction in the stability of the river bank or watercourse;
- be likely to result in unsustainable social and economic costs to the flood affected community or general community, as a consequence of flooding, and
- is compatible with the flow conveyance function of the floodway,
- will enable safe occupation of the flood prone land; and
- is compatible with the flood hazard within the floodway.

Clause 6.1 Arrangements for designated State Public Infrastructure
(1) The objective of this clause is to require satisfactory arrangements to be made for the provision of designated State public infrastructure before the subdivision of land in an urban release area to satisfy needs that arise from development on the land, but only if the land is developed intensively for urban purposes

Response: Not applicable as the site has not been identified as an Urban Release Area in the Coffs Harbour LEP 2013 (as amended).

4.3 Development Control Plans, Council Guidelines and Policies

4.3.1 Coffs Harbour Development Control Plan 2015

The relevant planning controls and an assessment of the proposed development as relevant is provided in **Table 9**.

Table 9 Compliance with Coffs Harbour DCP 2015

Planning Controls	Proposed Subdivision
C1 Subdivision of Land	
C1.1 Subdivision – General Design Requirements	
Lots are to be of regular shape and comprise a suitable frontage to depth ratio to enable future development that is responsive to the lands characteristics.	Compliant
Subdivisions are not to comprise an access handle where more than two access handles will directly adjoin.	Compliant
Road networks, subject to topographic constraints, are to be based on a grid pattern to encourage pedestrian connectivity.	Compliant
Road hierarchy, layout and construction shall be designed in accordance with Council's Development Specifications.	Compliant

Access points off major roads are to be rationalised where practical.	Road access not proposed from major roads.
Pathways are to be provided as an accessible integrated network of walking and cycling routes for safe and convenient travel.	Compliant. See Landscaping Plan **Figure 12** and **Figure 13**.
Subdivisions comprising steep land shown on the Steep and Highly Erodible Land Map are to be designed so that smaller lots are located on north facing slopes and larger lots are located on south facing slopes.	Not applicable
Subdivisions are to be designed to integrate with existing or proposed development on adjacent sites.	Compliant
Threshold and pavement treatments are to be designed to create an attractive streetscape.	Compliant. See Landscaping Plan **Figure 12** and **Figure 13**.
The use of cul-de-sacs in the design of subdivisions should be minimised.	Compliant
C1.2 Subdivision – Design Requirements for Certain Residential Zones	
Subdivision proposals are to demonstrate that development can be accommodated on the resulting lot(s) in accordance with the Density Map and relevant built form controls contained within this Plan.	Compliant
Where a common driveway serves more than two resulting lots, the driveway is to be paved with a minimum width of 4.5 metres at the street frontage, continuing at this width to a depth of six metres, and thereafter at a minimum width of three metres. The driveway is to be constructed prior to the issue of Subdivision Certificate.	Not applicable
Where a common driveway serves more than two resulting lots, an adequate area is to be provided at the public road frontage within common property for required services (postal, metering, etc.).	Not applicable
The width of any access handle for a battle-axe lot is not to be less than four metres, for the entire length of the access handle.	Not applicable
The public road frontage of any resulting lot is not to be less than four metres, except for where requirement (6) of this control applies.	Compliant
The public road frontage of any lot fronting a cul-de-sac is not to be less than 10 metres, with a driveway being located to one side of the road frontage to provide for visitor car parking and to maintain streetscape integrity.	Not applicable

Resulting lots with a public road frontage to a lane are to incorporate a minimum two metre wide fenced and paved frontage to a primary road to provide access to visitor parking, postal services and utility services, unless the exception provided below is satisfied.	Not applicable
Unless site conditions dictate, streets should run in a north/south and east/west pattern with lots orientated to provide the long axis within the range N20°W to N30°E or E20°N to E30°S.	Compliant
Subdivisions are to be designed to maximise solar access and minimise overshadowing from future development. Roads are to be designed so that the majority of their length is within the range N20°W to N30°E or E20°N to E30°S.	Compliant
C1.7 Infrastructure Requirements for Certain Subdivisions	
The following infrastructure is to be provided as part of subdivision proposals in accordance with Council's Development Specifications: a) roads; b) bus bays; c) cycleways; d) footpaths; e) kerb and gutter; f) drainage; g) street lighting.	Compliant. See Servicing Plan (**Figure 9**) and Landscaping Plans (**Figure 12** and **Figure 13**).
The following additional infrastructure is required to be provided in accordance with Council's Development Specifications as part of subdivision proposals comprising lane access: a) Full width lane construction extending from the nearest cross street or from an existing constructed section of the lane, including kerb guttering and drainage.	Not applicable
The following services are to be extended to all resulting lots in accordance with Council's Development Specifications: a) Council's water main; b) Council's sewer main; c) Telecommunications; d) Electricity; e) National Broadband Network (where available).	Compliant

Separate water meters are to be provided to all resulting lots subdivided under community and strata title schemes in accordance with Council's Development Specifications, including lots comprising existing development.	Not applicable
Underground reticulated services are to be provided to: a) greenfield subdivisions; and b) infill subdivisions with existing underground services in accordance with Council's Development Specifications.	Compliant
Subdivision proposals are to be designed so that the minimum target lot yield specified in any relevant Developer Contributions Plan is achieved for the land.	Compliant
C1.9 Water Management Requirements	
Stormwater drainage is to be provided in accordance with Council's Development Specifications.	Compliant. See Servicing Plan (**Figure 9**).
Development applications for subdivision proposals are to be supported by concept stormwater drainage designs.	Compliant. See Stormwater Management Plan (**Figure 10**).
Stormwater is to be gravity drained to Council's drainage system (where available).	Compliant
Where a subdivision proposal requires drainage works over adjoining properties, the respective development application is to be supported by land owners consent from the affected properties to the lodgement of the development application, including written agreement to the creation of easements on title for interallotment drainage purposes.	Not applicable
Stormwater drainage design is to reflect the pre-existing or natural situation of the land in terms of location, quantity, quality and velocity of water, and may require on-site stormwater detention.	Compliant. See Stormwater Management Plan (**Figure 10**).
Water sensitive urban design is to be incorporated into the design of subdivisions comprising more than two resulting lots in accordance with Council's Water Sensitive Urban Design Guidelines.	Compliant
C1.9 Erosion and Sediment Control Requirements	
Erosion and sediment control measures are to be provided in accordance with the document Managing Urban Stormwater – Soils & Construction Volume 1 (Landcom 2004) for subdivision proposals comprising earthworks.	Compliant. See attached Hydrogeological and Bulk Earthworks Plans (**Figure 8**).

Development applications for the subdivision of land comprising earthworks are to be accompanied by supplementary information in accordance with the following table:	Compliant
Basic Erosion and Sediment Control Plans are to be prepared in accordance with the principles of Best Practice Management for Small Areas of Disturbance.	Compliant
Erosion and Sediment Control Plans are to be prepared in accordance with the document Managing Urban Stormwater – Soils & Construction Volume 1 (Landcom 2004)).	Compliant
Soil and Water Management Plans are to be of a scale 1:500 or larger and are to be prepared in accordance with the document Managing Urban Stormwater – Soils & Construction Volume 1 (Landcom 2004).	Compliant
C1.11 Environmental Requirements	
Development applications for subdivision proposals comprising land with a final slope >20% shall provide for the following: a) building envelopes of functional proportions, not less than 250m2 in size; and b) building envelopes that do not exceed a maximum grade of 20%; and c) a concrete access driveway for each resulting lot at a grade ≤ 20%.	Not applicable
Subdivision proposals are to comply with the relevant controls of E1 Biodiversity of this Plan.	E1.1 Trees identified for removal are assessed in the attached Ecological Assessment. E1.2 Not applicable E1.3 Buffer widths proposed and compliant. See Subdivision Plan. E1.4 Compliant. See Ecological Assessment. E1.5 Compliant. See attached Subdivision Plan and Ecological Assessment. E1.6 Compliant. See attached Subdivision Plan

Subdivision proposals on land comprising a riparian zone are to be designed to: a) ensure that the slope and orientation of resulting lots provide for the long term conservation of the riparian zone; and b) enable access for future management of the riparian zone; and c) avoid impacts on the riparian zone; and d) enable opportunities for future solar access; and e) enable adequate drainage and urban filtration through water sensitive urban design techniques; and f) ensure that associated infrastructure and services are located outside of the riparian zone.	Compliant. See attached Subdivision Plan, Servicing Plan and Landscape Plan (**Figures 9, 12** and **13**).
C1.12 Flood Requirements	
Subdivisions are to comply with the relevant controls of E4 Flooding of this Plan.	E4.1 Compliant. See Flood Study. E4.8 Compliant. See LEP Section above.
C1.13 Coastal Hazard Requirements	
Subdivisions are to comply with the relevant controls of E2 Coastal Hazards of this Plan.	This item is Deferred.
C1.14 Land Dedication	
Land that is unable to be developed due to significant environmental constraints or that is of public benefit may be dedicated to Council via a voluntary planning agreement or other suitable arrangement in accordance with Council's Dedication of Land Policy.	Compliant. See attached Subdivision Plan (**Figure 7**)
C1.15 Street Tree Planting	
Development applications for subdivisions on greenfield sites comprising the provision of a public road (or certain community title schemes) are to be accompanied by a street tree masterplan in accordance with Council's requirements.	Compliant. See Landscaping Plans (**Figure 12** and **Figure 13**).
C1.16 Amenity Requirements	
Development applications comprising the subdivision of land in or adjacent to the Pacific Highway and/or in or adjacent to a rail corridor are to be accompanied by sufficient information to demonstrate that resulting lots proposed for future residential uses can equitably satisfy the following criteria:	

a) in any bedroom in the building - 35 dB(A) at any time between 10.00pm and 7.00am; and b) anywhere else in the building (other than a garage, kitchen, bathroom or hallway) - 40 dB(A) at any time.	Compliant. See **Attachment S** Noise Assessment.
C1.17 Heritage Requirements	
Subdivision proposals are to accord with the relevant controls of F2 Heritage Conservation of this Plan.	F2.1 Compliant. See **Attachment K** Archaeological Assessment.
G6 East Moonee	
G6.1 Masterplan	
Development and subdivision proposals are to comply with the principles of: a) the East Moonee/Sapphire Beach Masterplan; and b) the Hearnes Lake/Sandy Beach Masterplan.	Compliant. See attached Subdivision Plan (**Figure 7**)
G6.2 Infrastructure Requirements	
Subdivision proposals are to accord with the requirements of relevant controls within Chapter C1 Subdivision.	Compliant. See above.
Reticulated water and sewerage services are to be provided within the release area by the developer in accordance with Council's Development Servicing Plans and Development Specifications.	Compliant. See Servicing Plan (**Figure 9**).
Where services identified in Council's Development Servicing Plans are not in place at the time of development, it is the developer's responsibility to forward fund such services.	Compliant
A collector road link from Moonee Beach Road to the southern boundary of Lot 1 DP 725785 is to be constructed at no cost to Council prior to the subdivision of land.	Not applicable
A bus turning area is to be provided on Hearnes Lake Road as shown on the Hearnes Lake Road Bus Turning Bay Plan.	Not applicable
Future road upgrades along Solitary Islands Way are to accord with the Solitary Islands Way Road Upgrade Plan and the relevant Developer Contributions Plan.	Not applicable

Pedestrian, Shared Paths and Cycleways are to be provided at no cost to Council in accordance with East Moonee/Sapphire Beach Masterplan and the Hearnes Lake/Sandy Beach Masterplan (unless otherwise specified in the Moonee Area or the Hearnes Lake Sandy Beach Developer Contributions Plans).	Compliant. See **Figure 12** and **Attachment P** Landscaping Plan.
Neighbourhood open space areas (including playgrounds) are to be provided at no cost to Council in accordance with Council's Development Specifications (unless otherwise specified in the Moonee Area or the Hearnes Lake Sandy Beach Developer Contributions Plans).	Compliant. See **Figure 7** and **Attachment D** Subdivision Plan.
Bus bays (including bus shelters and bus stops) are to be provided within the urban release area at no cost to Council in accordance with Council's Development Specifications and Chapter C1 Subdivision of this Plan (unless otherwise specified in the Moonee Area or the Hearnes Lake Sandy Beach Developer Contributions Plans).	Compliant
Reticulated water and sewerage services are to be provided within the release area by the developer in accordance with Council's Development Servicing Plans and Development Specifications.	Compliant. See **Figure 9** and **Attachment U** Servicing Plan.
Where services identified in Council's Development Servicing Plans are not in place, it is the developer's responsibility to forward fund such services.	Compliant
Stormwater drainage within the East Moonee/Sapphire Beach urban release area is to be provided in accordance with C1.9 Water Management Requirements of this Plan and Council's Development Specifications.	Compliant. See **Figure 10** and **Attachment V** Stormwater Management Plan.
Stormwater drainage within the Hearnes Lake/Sandy Beach urban release area is to be provided in accordance with C1.9 Water Management Requirements of this Plan, Council's Development Specifications and the following: a) development is to achieve the modified source and conveyance control treatment strategy detailed in the report prepared by WBM Oceanics: MUSIC Modelling of Hearnes Lake Catchment, including: i. rainwater tanks; ii. filter strips; iii. vegetated swales; iv. bio-retention swales; and v. downstream storage.	Compliant. See **Figure 10** and **Attachment V** Stormwater Management Plan.

b) stormwater infrastructure is not to be provided within the riparian buffer zone specified for Hearnes Lake and Double Crossing Creek in E1.3 of this Plan; c) stormwater infrastructure is not to be provided within bush fire asset protection zones; and d) stormwater requirements are to cater for cumulative impacts and shall include treatment measures designed for the ultimate fully developed condition of the land.	Compliant. See **Figure 10** and **Attachment V** Stormwater Management Plan.
G6.3 Environmental Requirements	
Subdivision and development proposals are to comply with the relevant controls of E1 Biodiversity of this Plan.	Compliant. See addressed above.
Development should be excluded from areas with a high water table where there is likely to be adverse impacts on groundwater or surface water quality.	Compliant
Development should be excluded from land within 100m from any identified Osprey nest.	Compliant. See **Attachment I** Ecology Assessment.
Where practicable, seek to incorporate environment protection areas into the Coffs Coast Regional Park.	Not applicable
Manage foreshore areas in consultation with the Marine Parks Authority and ensure that education and/or interpretation signage is provided for residents and visitors to the area.	Compliant. See addressed below in **Section 4.3.2.**
Development applications for development and subdivision proposals are to include an assessment of the ecological attributes of the land such as Endangered Ecological Communities, Over Cleared Vegetation Types, Koala Habitat, Potential Moonee quassia Habitat; High Value Arboreal Habitat taking into consideration Council's Fine Scale Vegetation Mapping.	Compliant. See **Attachment I** Ecology Assessment.
Development applications for development and subdivision proposals are to take in consideration Coffs Harbour City Koala Plan of Management 1999.	Compliant. See **Attachment I** Ecology Assessment.
G6.4 Land Dedication	
Land that is unable to be developed due to significant environmental constraints or that is of public benefit may be dedicated to Council via a voluntary planning agreement or other suitable arrangement in accordance with Council's Dedication of Land Policy (unless otherwise specified in the Moonee Area or the Hearnes Lake Sandy Beach Developer Contributions Plans).	Compliant. See **Attachment D** Subdivision Plan.

Where land identified in requirement number (1) above is to be retained in private ownership, development applications are to be accompanied by sufficient information to demonstrate that the subdivision will not compromise the continued protection and long term maintenance of high conservation value land under Coffs Harbour LEP 2013.	Not applicable.

4.3.2 Marine Parks Act and the Solitary Islands Marine Park Management Plan

According to the DCP, urban development should be excluded from within 100 metres of Moonee Creek to protect riparian vegetation, maintain water quality and provide habitat linkages. It is understood that the 100m buffer control is derived from Marine Park Authority advice to Council concerning the protection of the Solitary Islands Marine Park.

In the DGR advice to the DoPI, the MPA indicate that a 100m buffer is ideal but acknowledges that a lesser buffer may be appropriate if the objects of the Marine Parks Act and Solitary Islands Marine Park Management Plan can be met. The protected vegetation within the creek buffers is protected from urban development.

The development plan for the perimeter road and residential lots are set back further from Moonee Creek than identified by the E2 zone boundary under the Coffs Harbour LEP 2013. The distance is 84.95m along the southern boundary and 64m at its narrowest point. The effect of the setting back of the development ensures that there is no disturbance to the riparian corridor of Moonee Creek. The distance of a riparian corridor is recognised in guidelines under the Water Management Act as being 40m measured from the top of the bank for a Level 4 river.

Within the wildlife corridor are located two bioremediation basins for the capture and treatment of stormwater. The quality of stormwater exiting the site via the basins will improve existing water quality for; phosphorous by 11%, nitrogen 25%, total suspended solids 79% and gross pollutants by 28%. Hence the ecological processes within the Solitary Island Marine Park are maintained and are not interfered by the proposed development such to be contrary to the objects of the Marine Park Act.

4.3.3 Our Living City Settlement Strategy to 2031 (2008)

The *Our Living City (OLC) Settlement Strategy* was prepared in accordance with the requirements of the former North Coast Regional Environmental *Plan (REP) 1988 to provide an approved urban* land release strategy to guide future rezoning for urban purposes within the Local Government Area to 2031.

The site - already zoned for urban development under the Coffs Harbour LEP 2013 – is recognised in the Strategy. Development of the site as per the development plan is consistent the objectives and principles of the Strategy and will contribute to the supply of residential lot to meet current and future demand.

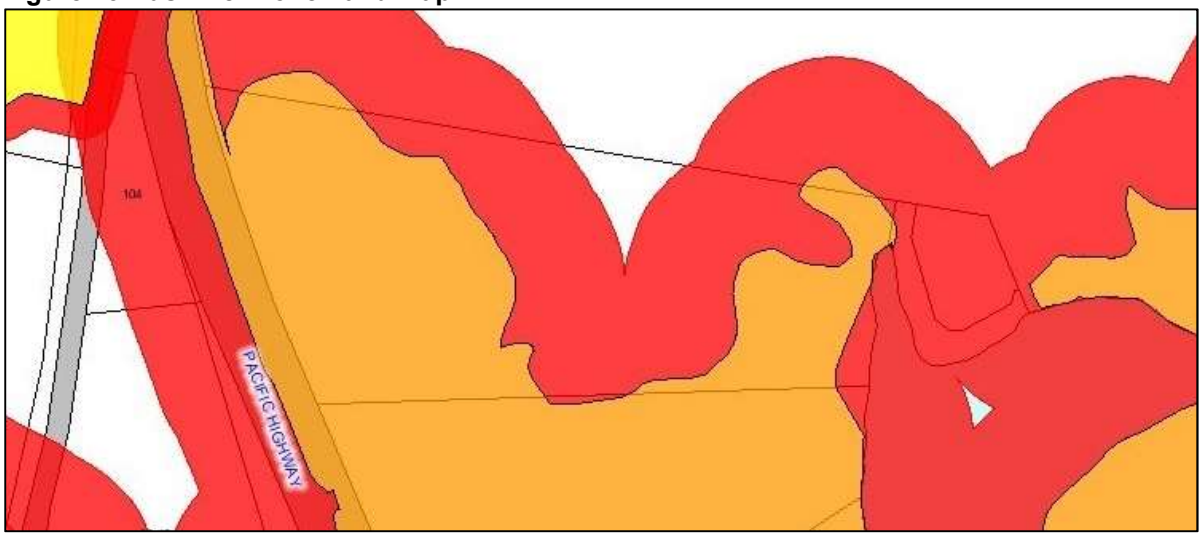
5.0 Environmental Assessment

The Environmental Assessment is informed by a range of technical studies carried out in response to the DGRs, which were extended or updated further to public exhibition of the Concept Plan in 2013, and/or subsequent assessment by relevant agencies and stakeholders. The outcomes of the final assessments are presented hereunder, with the source reports contained in the Attachments.

5.1 Bushfire Hazard Assessment

Coffs Harbour Council's Bushfire Prone Land Map identifies that the site contains Category 1 Vegetation and its associated 100 metre buffer zone (refer **Figure 23**). Any development therefore needs to meet the requirements of Planning for Bush Fire Protection 2006 and the construction requirements of Australian Standard 3959 'Construction of buildings in bushfire-prone areas'.

Figure 23 Bushfire Prone Land Map



Source: Legislation NSW

The vegetation identified as a potential bushfire hazard is located to the northeast within a yet to be rehabilitated wildlife corridor running from the approved Glades development to the north, east within a proposed public wildlife corridor and south within Lot 6 in DP 252223.

A Bushfire Hazard Assessment has been prepared by Building Code & Bushfire Hazard Solutions Pty Limited (refer **Attachment J**). The assessment has been prepared in accordance with the relevant sections of the EP&A Act, Rural Fires Act 1997 and Planning for Bushfire Protection Guidelines 2006.

The recommendations from this Assessment are:

<u>General</u>

1. That the proposed development complies with the 'Proposed Subdivision Lot Layout' prepared by Civil Tech Consulting Engineers, Dwg No. 1227-DR1, Sheet 1 of 8, Issue F.

<u>Asset Protection Zones</u>

2. That all grounds not built upon within proposed Lots 1-103 are to be maintained in accordance with an Asset Protection Zone as detailed in the NSW Rural Fire Service document 'Standards for Asset Protection Zones' and Planning for Bush Fire Protection 2006.
3. That the land designated as an APZ within proposed Lot 104 is to be maintained in accordance with an Asset Protection Zone as detailed in the NSW Rural Fire Service document 'Standards for Asset Protection Zones' and Planning for Bush Fire Protection 2006.
4. At the issue of a subdivision certificate, suitable instruments shall be created pursuant to section 88B of the Conveyancing Act 1919 which prohibit the construction of buildings other than Class 10 structures within the Asset Protection Zones (APZ) as identified on the 'Proposed Subdivision

Lot Layout' prepared by Civil Tech Consulting Engineers, Dwg No. 1227-DR1, Sheet 1 of 8, Issue F. The name of the Authority empowered to release, vary or modify the instruments shall be Coffs Harbour City Council. NOTE: The instruments for the northern and southern APZs can be dissolved at the time of the future residential developments to the north and south are implemented and the hazard removed.

Access

5. That all new internal roads comply with the requirements for public roads as detailed within section 4.1.3(1) of Planning for Bush Fire Protection 2006.

Water Supply

6. That the new hydrant sizing, spacing and pressures must comply with AS2419.1-2005.

In relation to recommendation 4 (above), as only Lots 1-19, 75-82, 86-101 and 103-104 are identified as being subject to the proposed APZ on the subdivision plan, it is suggested that only these lots are required to have a restriction imposed on an 88B instrument.

The remainder of the recommendations have been accepted and incorporated into the development and reflected in the Statement of Commitments in **Table 32**.

5.2 Aboriginal Cultural Heritage

Myall Coast Archaeological Surveys (MCAS) were engaged in 2012 to assess the potential impacts of the proposed development on Aboriginal Cultural Heritage (refer **Attachment K**). The assessment was carried out in accordance with the Department of Environment and Conservation (DEC) Interim Community Consultation Requirements for Applicants (2005).

The site was first assessed in 2006 in relation to a Development Application for subdivision. The Coffs Harbour Aboriginal Land Council undertook the initial assessment and found the land to be disturbed and indicated that, whilst it may be possible for artefactual evidence to randomly occur within the study area, such evidence would have lost any contextual integrity. Their observations in 2006 did not reveal any evidence.

5.2.1 Predictive Modelling of Landscape

The 2012 assessment undertook a landscaped approach to determine any potential Aboriginal archaeological evidence, rather than only attempting to identify individual sites across the study area. This required the identification of the range of landscape units likely to contain Aboriginal archaeological evidence.

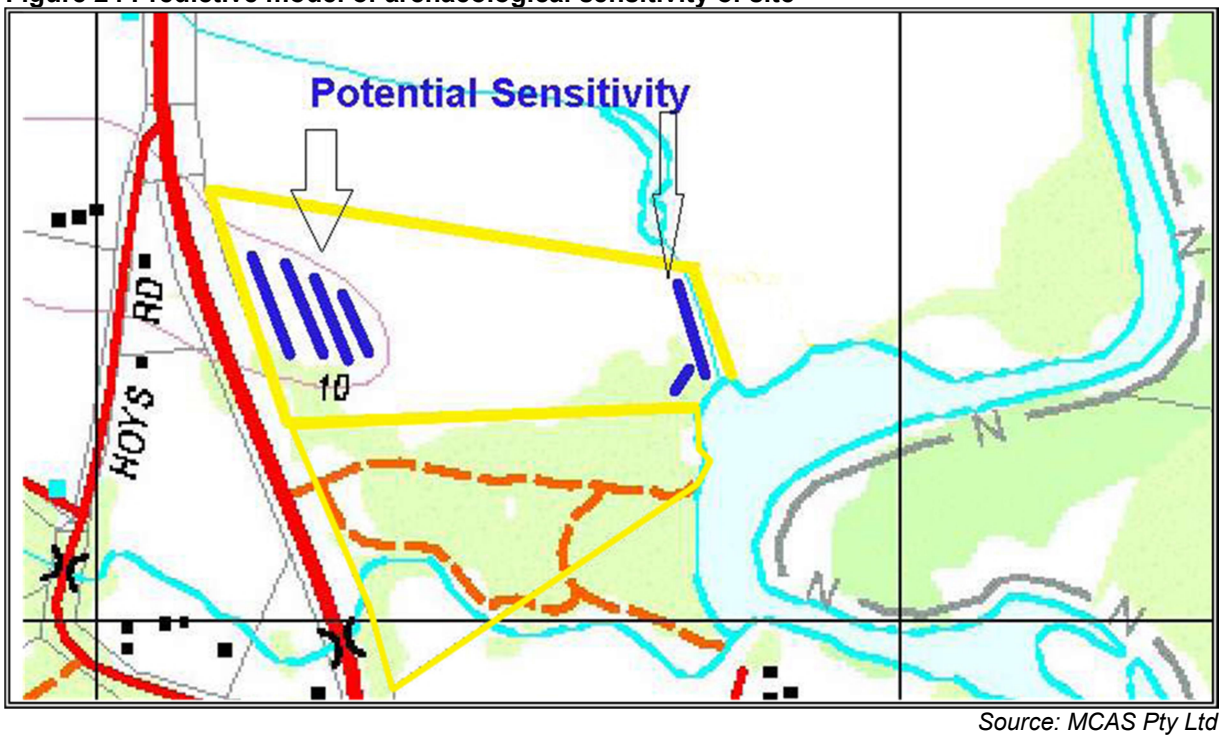
This ensures that the landscape context is assessed for significance and a predictive model of Aboriginal occupation of the study area is determined.

Aboriginal Heritage is centred on Moonee Creek, its tributaries particularly the confluence with Skinners Creek and more importantly, Yellow Waterholes. Moonee Beach and the coastline was also a favoured area. The study area is but part of the wider landform centred on Monee Beach and Yellow Waterholes; a substantial occupation area for Aboriginal people. Whilst all landscapes are of significance to Aboriginal people, there are no areas of archaeological or cultural significance within the study area.

5.2.2 Predictive Modelling of Artefacts

The predictive model to identify site type, location and density of isolated stone artefacts, stone artefact scatters, scarred trees and middens, indicates two areas of the site have potential for having archaeological evidence as indicated in Figure 24.

Figure 24 Predictive model of archaeological sensitivity of site



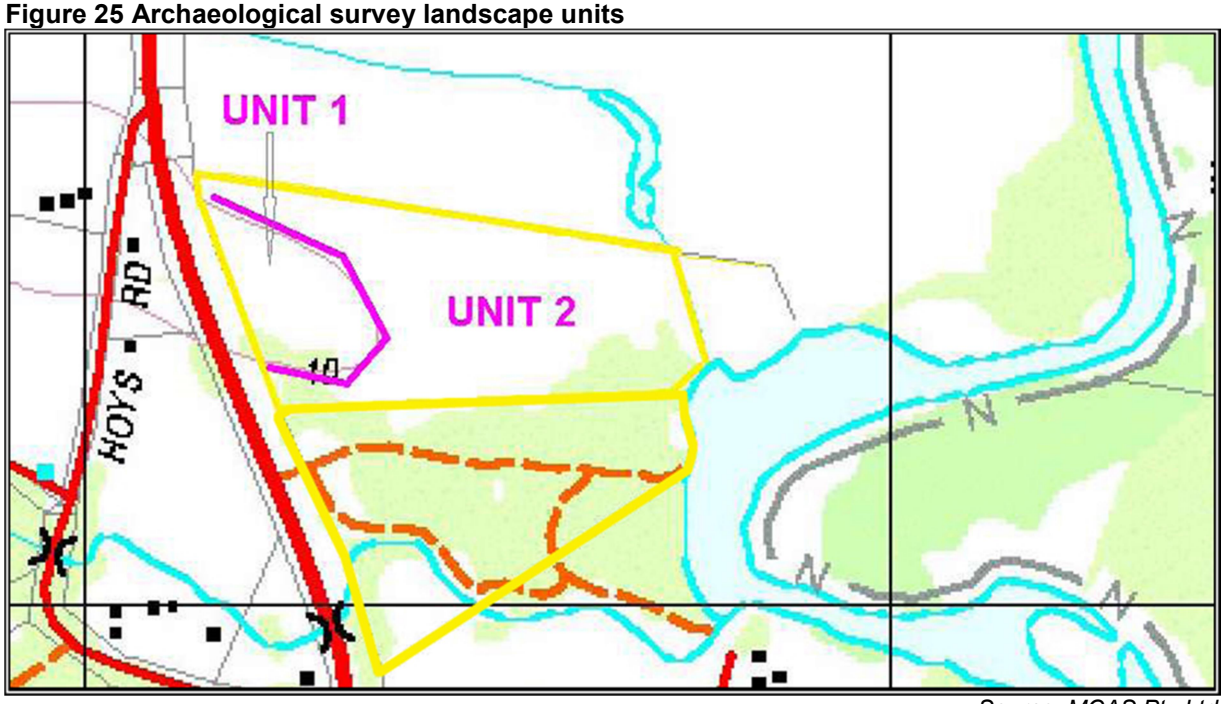
Source: MCAS Pty Ltd

5.2.3 Site Inspection

A site inspection was undertaken on 30 November 2012 by MCAS in conjunction with Mr Ian Brown, Mr Mark Flanders and Mr Josh Anderson from LALC, Mr EJ Williams representing Yarra group and Mr Cecil Laurie from the Garby Elders.

As the proposed development footprint is over 2 distinct landform units, estuarine flat and small rise, the development footprint was broken into 2 survey units - Unit 1 Rise and Unit 2 Estuarine flat. Each unit was considered separately (refer **Figure 25**).

Figure 25 Archaeological survey landscape units



Source: MCAS Pty Ltd

Only Unit 1 contained an artefact scatter of interest. The individual artefacts consisted of a red silcrete flake, a greywacke flake, a baked greywacke flake and a white quartz core. The red silcrete flake was only 3m distant from the others which were in close proximity to one another. The finds were in a gravel driveway. The site had been levelled and appeared to have been used in the past as a log dump for timber getting. The artefacts were located within in a very disturbed context. There was very little topsoil, if any at all and the underlying soil composition appeared to be bedrock.

As the artefacts were in a context of spread gravel, it is likely that the artefacts were imported with the gravel. One of the members from the CHLALC who inspected the area in 2006 remembers examining the Unit 1 area carefully and is confident the artefacts were not there then and the land has not changed since (See 2006 CHLALC report Appendix B). The landowner advises that the road was re-sheeted with gravel a few years ago from a quarry on Bucca Road 2km to the west. An examination of that quarry indicates that it overlooks the headwaters of Skinners Creek and the landform indicates probable extensive Aboriginal Occupation.

Previous archaeological reports and the landform tend to indicate Aboriginal use of the area and it was expected that artefacts would be found. A very thorough search of the unit was undertaken and no other artefacts were identified. There is no evidence of any form of gravel or stones within the unit except for the driveway and immediate surrounds. The knowledge holders present did not attribute any special significance to the artefacts as they were neither unusual nor rare. They were also poor examples of Aboriginal Objects.

Unit 2 consists of the area east of the driveway towards the river, and whilst not part of the proposal, it is considered to be a potential archaeological deposit. However, it was not inspected and could not be conclusively determined as such. The area is a conservation area not subject to development, and as such, investigation is neither warranted nor necessary.

5.2.4 Aboriginal Community Consultation

In accordance with the Office of Environment and Heritage (OEH) requirements, Aboriginal community consultation was undertaken to advise, consult and oversee the Aboriginal Cultural Heritage Assessment for the project.

- An advertisement was placed in the Coffs Coast Independent on the 24/5/2012.
- Letters written to Aboriginal people and organisations identified through agency response seeking an expression of interest in the project.
- Coffs Harbour LALC responded and was registered as a stakeholder for the project.
- Several further attempts were made to obtain additional stakeholders but no response was received. This was probably because the area in question was not necessarily an area of interest and secondly and perhaps more importantly, a good relationship exists between the various family groupings and the Land Council and the families are content for the Land Council to manage the cultural heritage matters.
- Initial meeting held with the LALC to explain the project and seek information about the area. It was revealed at that meeting that an inspection had been undertaken some years ago and it was considered disturbed land.
- Visual inspection of the study area was conducted with representatives of the land council and other community representatives Draft report forwarded to LALC for comment and feedback on 1/2/2013
- Cultural report received from stakeholders

The consultation process provided confirmation that the proposal, implemented in accordance with the recommendations, will not impact on the Aboriginal Cultural Heritage values of the area.

5.2.5 Proposed Management of Artefacts

There is no need for any offsets as the only Aboriginal Objects that will be impacted directly or indirectly by the proposal will be subject to a management plan that either leaves them in situ or relocates them to an area on site that will not be impacted by the proposal.

All known areas, objects and features of value to the Aboriginal community are outside footprint of the proposed development.

It is expected that a condition of consent will apply to require work to stop and notify OEH, should any items of potential Aboriginal significance be found.
The following management of Aboriginal heritage values is proposed:

- A post approval management plan to be prepared for the Aboriginal objects as per Aboriginal community requirements with ongoing consultation with Aboriginal community throughout the development process.
- The management plan is to be prepared in consultation with the Aboriginal stakeholders to consider preservation and protection of key Aboriginal heritage values and to deal with measures to be taken in the event that new Aboriginal objects of significance or a nature not anticipated, such as burials or ceremonial items are discovered during construction.

This plan may include and not be limited to:

- The bagging, tagging and collection of any artefacts that may be unearthed during the construction process and kept with CHLALC until an appropriate keeping place is determined by the management plan;
- An Aboriginal Cultural Education Program e developed by the proponent for the induction of personnel involved in the construction activities in the project area in consultation with KLALC.

It is noted that all known areas, objects and features of value to the Aboriginal community are outside footprint of the proposed development.

5.2.6 European Heritage

There are no items of European Heritage listed on the Heritage Schedule to the Coffs Harbour LEP either on the site or in the vicinity of the site. There are no items listed on the State Heritage Register for the Moonee locality. Site inspections have confirmed that there are no items of European heritage on site or in the immediate vicinity of the site.

5.3 Soils and Urban Capability

Martens and Associates Pty Ltd were engaged to undertake soils and geotechnical investigations (refer **Attachment L**) to determine the following in respect of the site:

- General sub-surface conditions across the site including soil type and rock depth
- Soil and rock strength properties for foundations and pavement design
- Groundwater conditions
- Excavation requirements
- Site classification in accordance with AS 2870 (1996)
- Slope stability and hazard risk assessment

The field investigations were undertaken 26 to 28 July 2010 and included:

- Walkover inspection of the site assess existing site conditions and local topography, geology, soil conditions and vegetation;

- Drilling of 14 boreholes to between 0.6 – 9.2 m depth using a hydraulic auger to allow for the characterisation of underlying soils and geology;
- Dynamic Cone Penetration (DCP) testing at 13 borehole locations to determine indicative strengths of sub-surface materials in accordance with AS 1289.6.3.2 (1997);
- Installation of groundwater monitoring wells at 8 borehole locations (BH1, BH2, BH3, BH4, BH6, BH7, BH8 and BH13);
- Collection of 4 bulk soil samples from 4 boreholes for the purposes of CBR testing (Californian Bearing Ratio);
- Collection of 5 bulk soil samples from 3 boreholes for the purposes of testing shrink/swell properties; and
- Collection of seventy-five soil samples from thirteen boreholes for potential acid sulfate soils testing.

Borehole investigations indicate that the site soil profile generally consists of stiff – very stiff, moderately plastic grey clays with up to 1.5 m of sand overlying clays in some parts of the site. Sandy deposits are thicker at lower elevations and absent on the lower slopes in the north-west of the site (above approximately 5m AHD). No bedrock was detected to a depth of 9.2m below ground surface.

Preliminary site classification in accordance with AS 2870 (2011) and based on the depth of clay in the soil profile, and groundwater levels, is H1 on the alluvial plain, and H2 on the lower slopes. The relatively shallow groundwater table on the low-lying alluvial plains generally reduces site classification.

There is no evidence of subsidence or recent gross slope instability on-site.
Rotational slide and soil creep are considered hazards at the site, primarily on the lower hill slopes in the north-west. Recommended treatment measures for these hazards are as follows:

- Rotational slide/slump – Good hill slope engineering practice (Guidelines for Hillside Construction from AGS, 2007); and
- Soil Creep – Maintain vegetation wherever possible and ensure appropriate foundations and footings design.

The proposed sub-division constitutes a very low risk to life and property resulting from geotechnical hazards and is acceptable provided the recommendations of the geotechnical report are implemented.

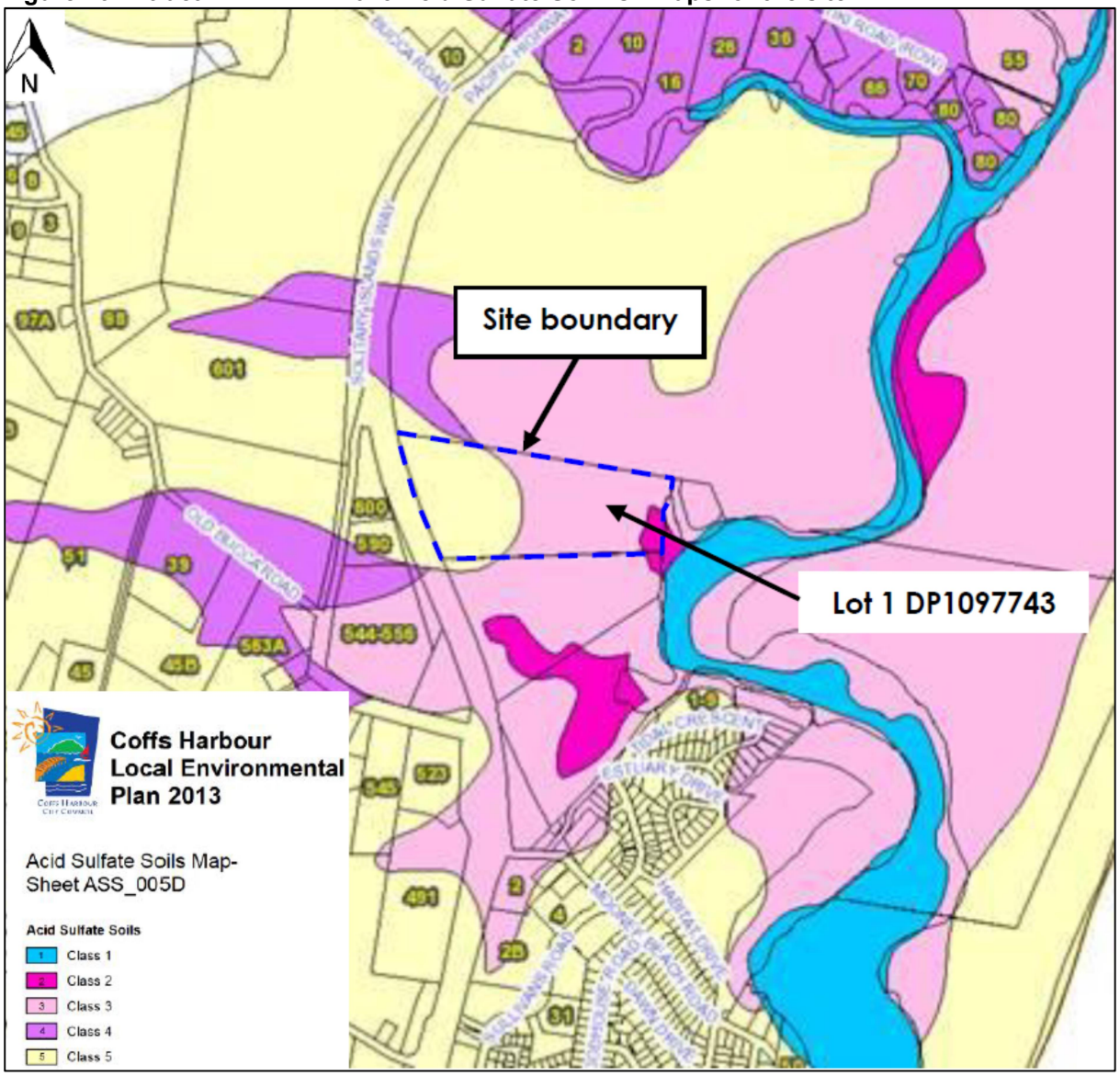
The report includes a number of geotechnical Risk Management recommendations and recommended works prior to the issue of a Construction Certificate for the development. These include:

1. Evaluation of engineered soil batter options within the context of the proposed site design or layout requirements; and
2. Preparation of a sediment and erosion control plan.

5.4 Acid Sulfate Soils

The Coffs Harbour Local Environmental Plan 2013 Acid Sulfate Soils Map identifies the site as prone to acid sulfate soils, namely Class 2, 3 and Class 5 (refer **Figure 26**).

Figure 26 Extract CHCC LEP 2013 Acid Sulfate Soil risk maps for the site



Source: Legislation NSW

An acid sulphate soils investigation was undertaken on the site by Martens and Associates (refer **Attachment L**) in accordance with NSW Acid Sulfate Soil Management Advisory Committee (ASSMAC, 1998).

The Preliminary Assessment found in-situ acidic soils and potential acid sulfate soils on the site. These soils were at levels that warrant a site-specific acid sulfate soils management plan. This Plan has been included within the Martens assessment.

The report noted that, "*provided the management plan was implemented, acidic soil conditions should not restrict the proposed development*". Further however, should the construction works require excavations greater than 3m in depth, then additional testing is recommended.

5.5 Potential Land Contamination

A preliminary land contamination investigation was undertaken by Martens and Associates Pty Ltd (refer **Attachment M**). Prepared in accordance with NSW EPA (2000) Guidelines for Consultants Reporting on Contaminated Sites, the purpose of the assessment was to detail the suitability of the site for the proposed development and to determine if further site assessment (Stage 2 soil sampling

and testing) is required. The Stage 1 assessment was based on a historical review of site land use and does not involve soil sampling.

- NSW EPA/DECC Contaminated Land Record

Review of the NSW EPA/DECC contaminated land record shows that the subject site has not been regulated by the EPA in regards to contaminated land. No site within the suburb of Moonee was listed on the register.

- Development Application History

DA and building plan records kept by Coffs Harbour City Council back to approximately 1990 indicate that all previous DA have been in relation to residential use or sub-division.

- Historical Aerial Photograph Analysis

Historical aerial photographs taken of the site during 1954, 1964, 1974, 1989, 2000 and 2008 indicate that the site has not sustained any intensive land use except for possibly grazing pasture after 1954.

- Walkover Site Inspection

A site inspection completed 28 July 2010 noted several stockpiles of local soil created from minor earthworks such as cutting of dirt access roads on-site. No other evidence of potential contamination such as soil staining, unnatural odours or plant stress was observed on-site.

The results of the preliminary site investigation indicate that the site has been used for residential purposes and possibly grazing after 2000. On this basis, the site is unlikely to be contaminated and further site assessment (sampling and laboratory testing) is not considered necessary. If excavated material is to be removed from the site, a waste classification assessment will be required.

5.6 Flood Assessment

A flood assessment of the site and the proposed development was undertaken by Martens and Associates Pty Ltd (refer **Attachment N**).

The purpose of this assessment is to provide details of flood heights and extents for the 1 in 100 year ARI and the Probable Maximum Flood (PMF) events for existing and developed conditions. The assessment included projected sea level rise and increased rainfall intensities associated with climate change.

The following documents were considered in the flood assessment (and implemented in development plan):

- Coffs Harbour City Council DCP (2012)
- NSW Department of Environment and Climate Change (2007) Floodplain Risk Management Guideline Practical Consideration of Climate Change
- NSW Department of Environment Climate Change and Water (2010) Draft Flood Risk Management Guide: Incorporating sea level rise benchmarks in flood risk assessments
- Coffs Harbour City Council (2009) Engineering Development Specification Design – 0074 Stormwater drainage Design

5.6.1 Previous Flood Studies

Moonee Creek Flood Study (GHD 1994) undertaken for the Heritage Park development 2km north determined flood levels in Moonee Creek using a 1D hydraulic model (HEC-2) (refer **Table 10**).

Table 10 Flood levels from 1994 Moonee Creek Flood Study

HEC-2 Section	Existing Flood Levels m AHD		Flood Levels After Development m AHD 100 year ARI
	20 year ARI	100 year ARI	100 year ARI
7	2.80	3.23	3.24
8	2.91	3.36	3.36
9	3.08	3.53	3.53

Source: Martens Engineering

Moonee Creek Flood Study (Paterson Consultants 1998) prepared for council utilised a MIKE 11 model of Moonee Creek and its tributaries. Peak flood levels for varying durations during the 1 in 100 year ARI flood for Moonee Creek and Cunninghams Creek in the vicinity of the site are summarised in **Table 11.**

Table 11 Flood levels from 1998 Moonee Creek Flood Study

Location			Storm Duration (hrs)			
2	3	4.5	6	9		12
Moonee Creek						
at Cunninghams Creek	2.64	2.50	2.62	2.62	(2.69)	2.62
Cunninghams Creek						
u/s Pacific Highway	(2.83)1	2.67	2.71	2.67	2.76	2.74

Source: Martens Engineering

A series of flood maps showing flood characteristics for the 1 in 100 year ARI flood (heights and hazards) were produced that show a peak flood level of approximately 2.8 m AHD in Moonee Creek adjacent to the site and levels ranging from 2.8m AHD to approximately 4.0 m AHD along the northern site boundary in Bucca Creek. Hazard mapping showed the site to be largely outside of existing 1 in 100 year ARI flood extents, with some portions of the site identified as having a "Low Hazard" rating.

Coffs Creek Floodplain Risk Management Plan (Bewsher Consulting, 2005) prepared for council details a floodplain risk management plan for Coffs Creek. Whilst Moonee Creek and its tributaries were not included in this assessment, a flooding and hazard extents map was prepared for areas to the north of Coffs Creek, based on the previous assessment conducted by Paterson Consultants (1998). This map shows that a portion of the site is affected by the 1 in 100 year ARI peak flood extents and that the area affected is considered to be a 'low flood extent' area.

Moonee Creek Estuary Process Study (WBM Oceanics, 2005). This assessment determined hydraulic characteristics (tidal movement and water levels) for Moonee Creek. The assessment used levels recorded by the NSW Department of Commerce Manly Hydraulic Laboratory (MHL) for a site located approximately 1.9 km from the mouth of Moonee Creek and approximately 0.8 km from the subject site. Recorded water levels are summarised below in **Table 12**.

Table 12 Summary of water levels in Moonee Creek from 2005 estuary processes study

Water Levels	Moonee Creek	Ocean (Coffs Harbor)
Maximum Water Level	1.17m AHD	1.23m AHD
Minimum Water Level	-0.1m AHD	-0.18m AHD
Median Water Level	0.24m AHD	-0.04m AHD
Median High Water Level	0.56m AHD	0.56m AHD
Median Low Water Level	0.11m AHD	-0.59m AHD

Source: Martens Engineering

The Glades, Moonee Beach – Hydraulic Assessment (Cardno Lawson Treloar, 2007) was prepared for the approved Glades development north of the site. This assessment utilised the MIKE – 11 model developed in the *Moonee Creek Flood Study* (Paterson 1998), supplemented with additional cross-

sections and the addition of the Pacific Highway bridge over Skinners Creek to improve model accuracy in the vicinity of the development.

The assessment considered three flood simulations (i.e. flood envelope) to determine the 1% AEP flood event envelope curve as follows:

- 1% AEP flood event, normal high tide level as boundary conditions (0.6 m AHD).
- 5% AEP flood event, 5% AEP tide level as boundary conditions (adopted as 2.3m AHD).
- 20% AEP flood event, 1% AEP tide level as boundary conditions (adopted as 2.6m AHD).

The development was modelled by assuming that all developed areas would be filled to be above the 1 in 100 year ARI flood level, and modelling results showed that the effects of the adjacent development on local flooding levels were contained within the relevant site. Flood hazard mapping showed that there are some small areas of the subject site closest to Moonee Creek that are classified as “High Flood Risk Precinct”, a high hydraulic hazard.

Modelling results indicated that downslope of Moonee Creek section 6580 (upslope of the site), peak flood levels resulted from the high tailwater scenarios rather than the peak flood flow scenario. Flood level results of the assessment for sections close to the site are summarised in **Table 13**.

Table 13 Peak flood levels in Moonee Creek and Bucca Creek for the Glades development

Creek / Model Branch	**Section Chainage**	**1% ARI Water Surface Level Envelope (m AHD)**	
		Existing Conditions	Proposed Conditions
Moonee Creek	6900	2.69	2.69
	7200	2.65	2.65
	7280	2.64	2.64
	7400	2.64	2.64
Bucca Creek	800	3.92	3.98
	810	3.91	3.98
	840	3.85	3.97
	866	3.77	3.81
	900	3.71	3.77
	1030	3.46	3.51
	1100	3.22	3.34
	1270	3.01	3.03
	1350	2.84	2.87
	1520	2.68	2.68
	1800	2.65	2.65

Source: Martens Engineering

5.6.2 Flood Assessment Methodology and Assumptions

The flood assessment for the subject site was undertaken in relation to Lot 1 DP1097743. The assessment used the SMS Tuflow two-dimensional hydraulic modelling package and results of hydrological modelling undertaken using the RAFTS program to determine flood characteristics for existing and proposed conditions (pre and post development, respectively).

In accordance with the NSW Department of Environment and Climate Change (2010) Draft Flood Risk Management Guideline, the following scenarios were assessed to determine the peak 1 in 100 year ARI flood characteristics for Moonee Creek and Bucca Creek at the site:

- Scenario 1 – 1% ARI ocean level with 5% ARI catchment flooding with coincident peaks.
- Scenario 2 – 1% ARI catchment flooding with 5% ARI ocean level with coincident peaks.
- Scenario 3 – 11%r ARI catchment flooding with neap tide cycle with coincident peaks.

The flood characteristics of the PMF have been assessed assuming PMF catchment flooding coinciding with peak neap tide. The effects of climate change on results were also assessed.

The study used the following computer models to determine site flood characteristics:

- RAFTS hydrological modelling package to determine existing and post-development peak flow rates and sub-catchment hydrographs for the critical duration 1 in 20 year; 1 in 100 year ARI and Probable Maximum Precipitation (PMP) storms for use in the flood modelling. Design rainfall data used in the model were sourced from NSW Bureau of Meteorology and are considered to be consistent with figures provided by Council.
- Tuflow 11.0.10 1D / 2D hydraulic modelling package to determine existing and post-development flood characteristics and potential effects of proposed development on adjacent properties and infrastructure.

Models were based on a draft concept plan, surveyed site levels, LiDAR data, and drainage information provided by Council, along with various assumptions in the RAFTS model and the *Tuflow Model.*

5.6.3 Hydrological Modelling

RAFTS modelling conducted for this study generated results in terms of peak flow discharged from the sub catchments are summarised in **Table 14.** Comments by Martens on the hydrological modelling include:

- The critical storm duration for the overall catchment is the 9 hour storm event for the 1 in 20 year ARI, 1 in 100 year ARI and PMP events. Sub-catchment hydrographs for these event were used in the hydraulic model; and
- Peak flows obtained from the model for the 1 in 100 year ARI and 1 in 20 year ARI are comparable to the results obtained in the CLT (2007) flood assessment for “The Glades” development using the calibrated MIKE-11 model.

Table 14 Summary of results of RAFTS hydrological modelling

Duration (minutes)	1 in 20 Year ARI Peak Discharge (m3/s)	1 in 100 Year ARI Peak Discharge (m3/s)	PMF Peak Discharge (m3/s)
10	112.7	147.3	-
15	141.8	183.6	644.3
20	137.0	180.7	-
25	170.8	214.6	-
30	159.3	203.8	775.0
45	139.7	216.9	1,026.8
60	178.5	258.4	1,260.6
90	217.9	326.1	1,387.1
120	243.1	374.7	1,505.2
180	273.9	410.6	1,399.8
270	285.3	421.3	-
360	305.0	444.6	1,459.2
540	379.5	547.0	1,685.1
720	346.8	510.5	1,675.8
1080	304.1	429.5	1,448.8
1440	363.3	503.9	1,094.8

Source: Martens Engineering

Note: Highlighted rows are critical storm duration.

5.6.4 Site Flooding Assessment

The existing and proposed conditions models were set-up with the assumptions and conditions referred above. Sea levels adopted at model boundaries for each scenario are summarised in **Table 15.**

Table 15 Summary of sea level boundary conditions adopted in hydraulic modelling

Scenario	Sea Level adopted at model boundary (m AHD)
1 (1 in 100 year ARI sea level)	2.40
2 (1 in 20 year ARI sea level)	2.10
3 (neap tide)	0.60
4 (PMF flood – adopted as neap tide)	0.60
5 (climate change – 1 in 20 year ARI level with additional 0.91 m)	3.01

Source: Martens Engineering

The results of hydraulic flood modelling with peak flood levels for each scenario modelled summarised in **Table 16.**

Table 16 Summary of peak flood levels (m AHD) per scenario modelled

Observation Point	Scenario Modelled						Adopted 1 in 100 Year ARI Level	
	1		2		3			
	Existing Conditions	Proposed Conditions	Existing Conditions	Proposed Conditions	Existing Conditions	Proposed Conditions	Existing Conditions	Proposed Conditions
1	2.76	2.76	2.90	2.90	2.80	2.80	2.90	2.90
2	2.76	2.76	2.90	2.90	2.80	2.80	2.90	2.90
3	2.76	2.76	2.90	2.90	2.80	2.80	2.90	2.90
4	2.76	2.76	2.90	2.90	2.80	2.80	2.90	2.90
5	2.76	2.76	2.90	2.90	2.80	2.80	2.90	2.90
6	2.76	2.76	2.90	2.90	2.80	2.80	2.90	2.90
7	4.12	4.12	4.16	4.16	4.16	4.16	4.16	4.16
8	3.10	3.10	3.12	3.12	3.12	3.12	3.12	3.12
9	3.24	D1	3.27	D1	3.27	D1	3.27	D1
10	D1	D1	D1	D1	D1	D1	D1	D1
11	2.78	2.78	2.94	2.94	2.84	2.84	2.94	2.94

Source: Martens Engineering

Note 1: Observation Points; 2 = eastern site boundary; 3 = bridge access to Lot 2; 5 = Bucca and Moonee Creek junction; 9 = Northern boundary

Note 2: Highlighted rows relevant to subject site.

The following general comments are made:

- Results show that proposed site filling has no significant adverse effects on existing flood behaviour (height and extents) on adjacent properties (upslope and downslope) during the 1 in 100 year ARI and PMF flood events. Increases are within the margins of error for the model.
- Results indicate minimal change in velocity of floodwater as a result of site filling for both the 1 in 100 year ARI and PMF events. Changes to flood velocity appear to be generally confined to the area downslope of the driveway access to Lot 2 DP 1097743.
- 1 in 100 year ARI flood hazard mapping for the site indicates that inundated areas of the site for post-development conditions generally experience flows with velocity of less than 0.4 m2/s, indicating that hydraulic hazard across the site is generally low. Areas within Bucca Creek and adjacent to the eastern site boundary along the edge of Moonee Creek experience high hydraulic hazard flows. Hazard extents do not appear to change significantly for post-development conditions.

- The access to Lot 2 in DP1097743 (west of the subject site) will be inundated for the 1 in 100 year ARI flood event for existing conditions.
- Raising the access and the provision of new culverts underneath the driveway where it crosses Bucca Creek is recommended to ensure that the driveway is trafficable during the 1 in 100 year ARI for existing climate conditions.
- The identified flood heights, velocities and extents of this flood assessment are consistent with other accepted flood models of Moonee Creek.

5.6.5 Climate Change and Sea Level Rise

In the *Floodplain Risk Management Guideline -- Practical Consideration of Climate Change* (2010) sea level rise along the NSW coast is expected to be in range of 0.18m to 0.90m by the year 2090 to 2100. To assess the likely impact of sea level rise on site flooding, the hydraulic model was re-run for the adopted 1 in 100 year ARI flooding scenario with the downstream boundary condition of the 1 in 20 year ARI sea level (i.e. scenario 2) increased by 0.91 m.

Results show that flood levels at the site (for the year 2100) generally increase by 0.14 – 0.50 m with sea level rise (refer **Table 17**). Peak velocities in the lower Moonee Creek system for climate change conditions are generally increased over the floodplain areas and decreased in the main channel. Flood hazard increases with increased depth and the site access driveway to Lot 2 DP1097743 will be inundated to a greater depth and for a longer period of time.

Table 17 Summary of peak flood levels for climate change - sea level rise

Observation Point	Existing Conditions (mAHD)	Proposed Conditions (mAHD)	Change in level from existing climate conditions (m)
1	3.39	3.39	0.49
2	3.40	3.40	0.50
3	3.40	3.40	0.50
4	3.40	3.40	0.50
5	3.40	3.40	0.50
6	3.40	3.40	0.50
7	4.16	4.16	0.00
8	3.41	3.40	0.29
9	3.41	D1	0.14 (Existing only)
10	D1	D1	-
11	3.42	3.42	0.48

Source: Martens Engineering

Modelling indicates that the development has minimal impact on flooding (compared to existing ground conditions) for climate change flood events modelled.

The hydrological and hydraulic models were re-run for the 1 in 100 year ARI storm events including the effects of climate change by increasing the rainfall intensities of existing 1 in 100 year ARI storms by 10% by 2030 and 2070 (in accordance with the Floodplain Risk Management Guideline – Practical Consideration of Climate Change (2010)).

Results of the hydrological model show that the 9 hour storm event is the critical storm duration (refer **Table 18)**.

Table 18 Summary of peak flow rates for increased rainfall intensities

Duration (minutes)	1 in 100 Year ARI with Climate Change Peak Discharge (m3/s)
10	164.80
15	203.84
20	202.72
25	239.16
30	227.31
45	247.77
60	295.78
90	369.02
120	422.97
180	459.22
270	470.66
360	495.98
540	607.08
720	567.22
1080	472.49
1440	554.68

Source: Martens Engineering

The hydraulic model was re-run using the hydrographs generated by the 1 in 100 year ARI with climate change 9 hour storm event, in conjunction with the 1 in 20 year ocean peak level with climate change as the downstream boundary condition. A summary of peak flood heights and change in flood heights at the site is provided in **Table 19.**

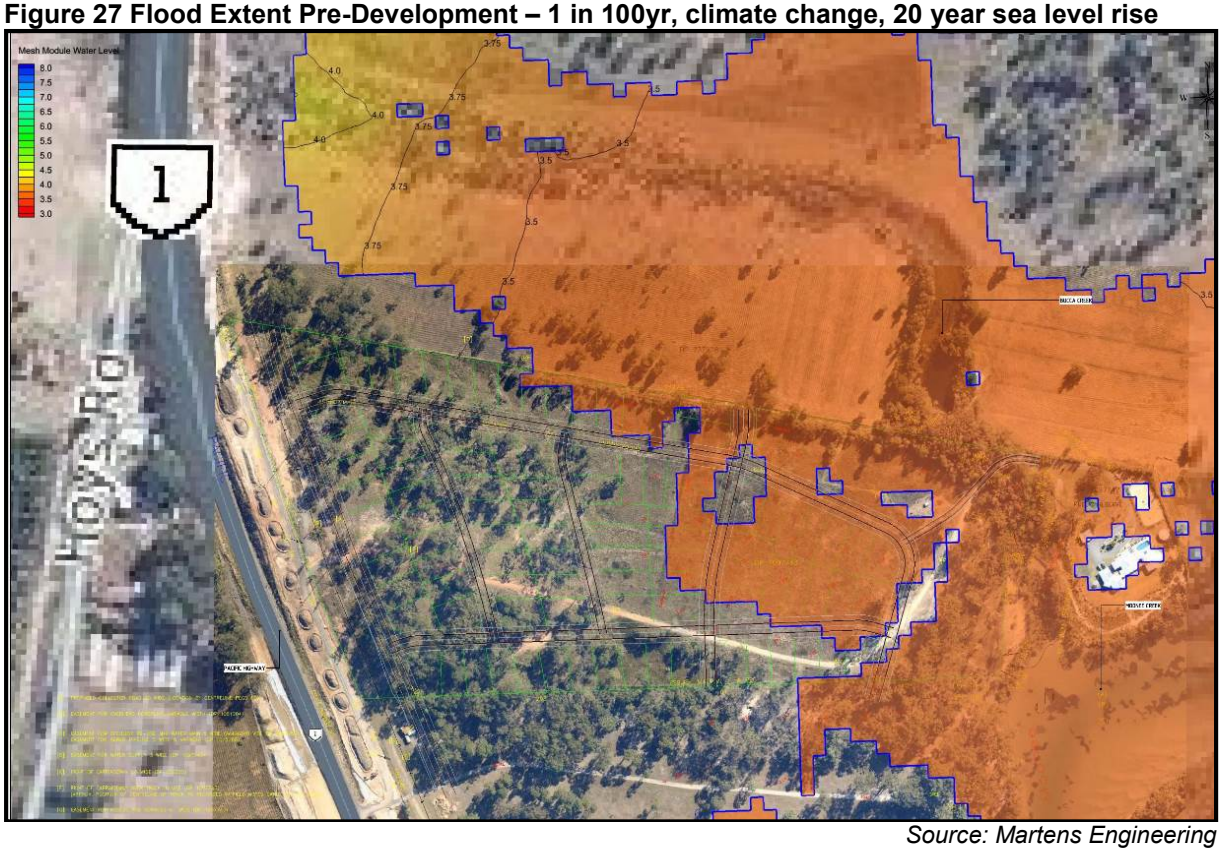
Table 19 Peak flood levels for climate change – rainfall intensity increase and sea level rise

Observation Point	Existing Conditions (mAHD)	Proposed Conditions (mAHD)	Change in level from existing climate conditions (m)
1	3.39	3.39	0.49
2	3.40	3.40	0.50
3	3.40	3.40	0.50
4	3.40	3.40	0.50
5	3.40	3.40	0.50
6	3.40	3.40	0.50
7	4.16	4.16	0.00
8	3.41	3.40	0.29
9	3.41	D1	0.14 (Existing only)
10	D1	D1	-
11	3.42	3.42	0.48

Source: Martens Engineering

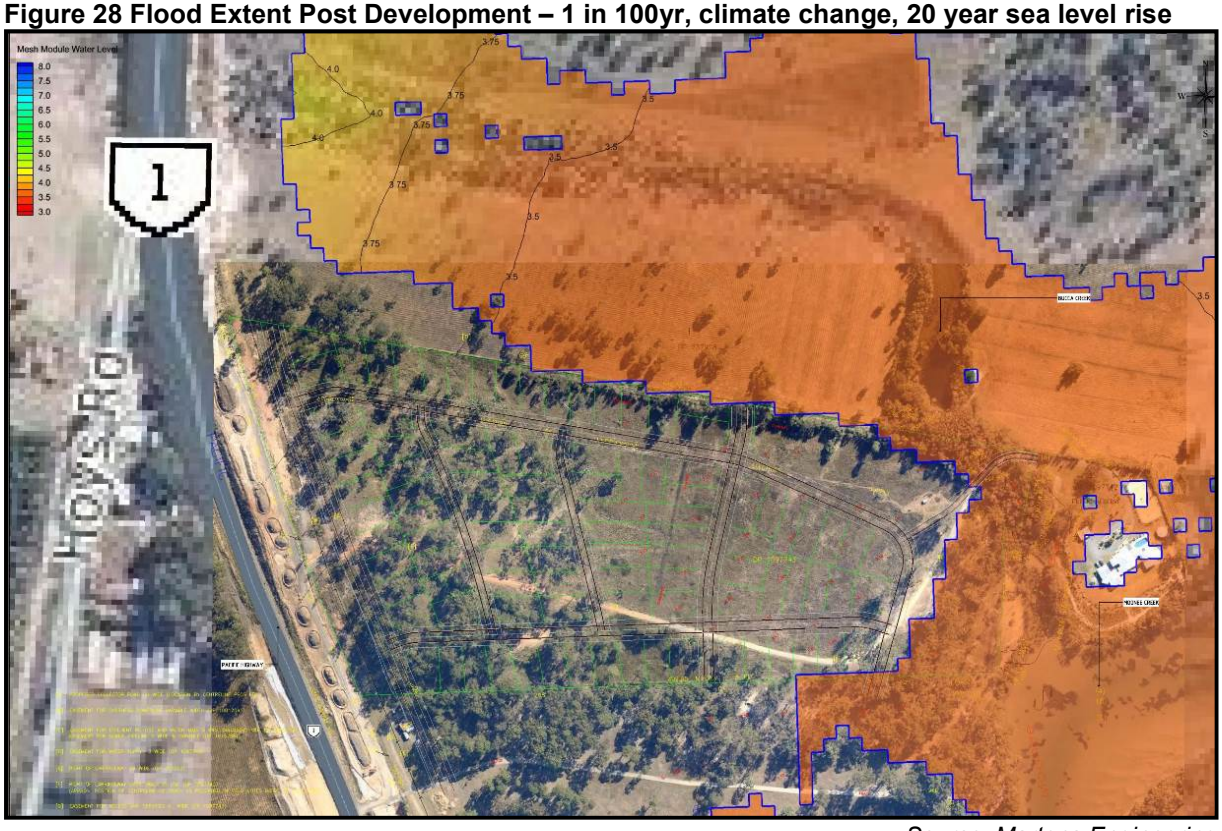
Results of the modelling indicate that the major factor in increased flood levels at the site as a result of climate change will be sea level rise as opposed to increased rainfall intensity (refer **Figures 27 -28**). This result is expected given the sites close proximity to the Pacific Ocean and relative site levels.

Figure 27 Flood Extent Pre-Development – 1 in 100yr, climate change, 20 year sea level rise



Source: Martens Engineering

Figure 28 Flood Extent Post Development – 1 in 100yr, climate change, 20 year sea level rise



Source: Martens Engineering

5.6.6 Flood Planning Level

Council's (2009) Engineering Design guidelines require a freeboard of 0.5 m from site floor levels to the 1 in 100 year ARI level in open channels. Martens recommend that the Flood Planning Level (FPL) for the site be set at 3.97m AHD. This is derived from the 1 in 100 year with climate change flood level (1 in 100 year ARI rainfall plus 10% intensity and 1 in 20 year ARI sea level with sea level rise) in Moonee Creek adjacent to the site (3.47m AHD) plus a freeboard of 0.5 m.

The flood assessment concludes:

- All flooding impacts arising from the proposed development are contained within the subject site.
- Effects of climate change on existing (pre development) conditions and proposed (post development) conditions will raise flood levels by as much as 0.5m based on sea level rise only, and by as much as 0.57 m based on sea level rise and a 10% increase in rainfall intensities. There is no significant effect of the development on flood behaviour for climate change events modelled.
- FPL for the site should be set at 3.97m AHD based on 1 in 100 year ARI with climate change peak flood level in Moonee Creek adjacent to the site plus 0.5 m freeboard.

5.6.7 Additional Flood Modelling

Following the exhibition of the application, additional flood modelling was requested. The additional modelling involved the following:

- Additional RAFTS modelling to determine the impacts of the change in site impervious area on flood peak flow rates and to determine the design hydrographs for the critical duration 1 in 20 year ARI, 1 in 100 year ARI and PMF specifically for the Bucca Creek catchment.
- Additional DRAINS modelling to determine minimum trunk drainage requirements and the effect of the proposed bioremediation basin on peak discharge rates from the site.
- Additional SMS Tuflow modelling of shorter duration flood events for the Bucca Creek catchment and review and amendment of previous flood model including design surface levels in the adjacent Glades Development, amended design ground levels within the site and amended driveway access across Bucca Creek.

Five flooding scenarios, detailed in the Development Plan flooding investigations, were rerun for existing and proposed conditions implementing the above modifications. Five (5) additional scenarios were run for the short duration Bucca Creek-specific flooding assessment. The 10 scenarios are as follows:

a. 1:20yr ARI Moonee Creek c'ment flood with 1:100yr ARI ocean boundary cond (2.4m AHD).

b. 1:100yr ARI Moonee Creek c'ment flood with 1:20yr ARI ocean boundary cond (2.1m AHD).

c. 1:100yr ARI Moonee Creek c'ment flood with neap tide ocean boundary cond (0.6m AHD).

d. PMF Moonee Creek c'ment flood with neap tide ocean boundary cond. (0.6 m AHD).

e. 1:100yr ARI with climate change Moonee Creek c'ment flood with 1:20yr ARI with climate change ocean boundary cond. (3.01m AHD).

f. 1:20 yr. ARI Bucca Creek c'ment flood with 1:100yr ARI ocean boundary cond. (2.4 m AHD).

g. 1:100yr ARI Bucca Creek c'ment flood with 1:20yr ARI ocean boundary cond. (2.1m AHD).

h. 1:100 yr. ARI Bucca Creek catchment flood with neap tide ocean boundary cond (0.6m AHD).

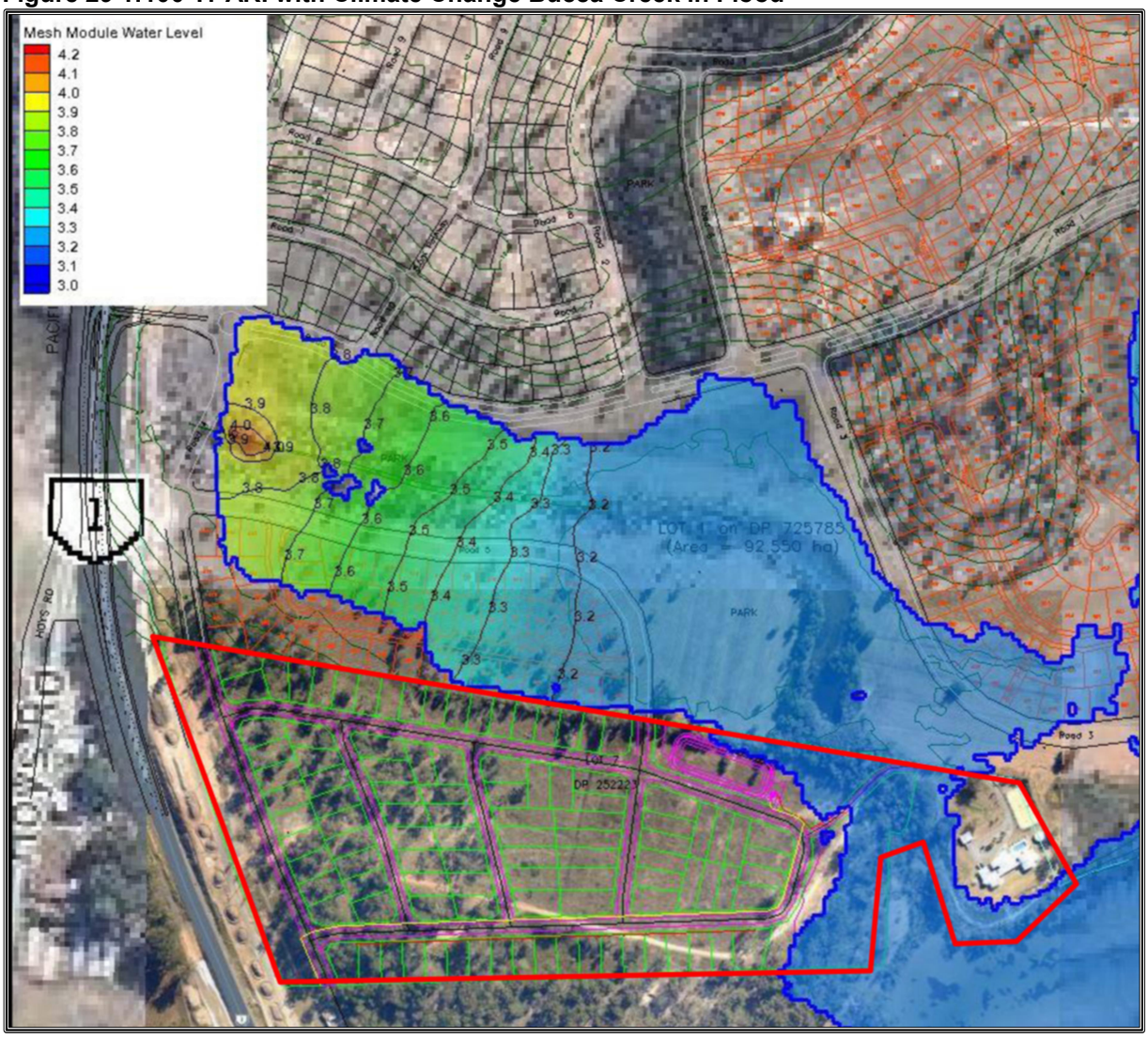
i. PMF Bucca Creek catchment flood with neap tide ocean boundary cond (0.6 m AHD).

j. 1:100 yr. ARI with climate change Bucca Creek c'ment flood with 1:20yr ARI with climate change ocean boundary cond. (3.01m AHD).

Results of the additional hydraulic modelling are summarised as follows:

- Changes to site levels have not significantly changed previous results for all Moonee Creek flooding events (Scenarios 1 – 5).
- Bucca Ck catchment specific modelling showed that peak flood levels are lower adjacent to site for the Bucca Ck specific 90min. storm events as compared with the 9hr Moonee Ck specific critical duration events for all average recurrence intervals. This indicates that the Bucca Ck floodplain peak flood levels are influenced by the flood levels in Moonee Ck more than the peak flows direct to Bucca Ck (hence critical Moonee Ck flood duration also gives the peak flood levels in Bucca Ck adjacent to site).
- Scenario 7 gave the highest peak flood levels adjacent to site for the 1:100 yr. analyses. This is the same for the Moonee Ck critical duration flood events modelled previously.
- Impacts of site development on flood levels on the adjacent properties appear to be nil to negligible. Minor increases in the peak flood level on the Bucca Ck floodplain occur during the PMF. However these increases are generally less than 0.015 m which is considered to be within the margins of error for the model.
- Depth, velocity and hazard mapping indicate that the access to Lot 2 DP1097743 will be trafficable up to and including the 1 in 100 year ARI at a level of 2.7m AHD. This may be achieved by minor earthworks and the provision of multiple box culverts under the access to convey flows in Bucca Ck or the provision of a small bridge.
- Depth, velocity and hazard mapping indicate during the PMF, the access to Lot 2 DP1097743 will be untrafficable and that residents of Lot 2 DP1097743 will need to either evacuate early in the event or shelter in place. Results of modelling suggest that hazard on the subject site is less than 0.4 m2/s at the peak of the PMF which should allow for site evacuation to the Pacific Highway where necessary.
- **Figure 29** indicates the peak water level for the 1:100 yr. ARI with climate change flood with 1:20yr ARI. This indicates that the predicted impact of sea level rise by the year 2100 will be contained within the buffer to Moonee Ck.

Figure 29 1:100 Yr ARI with Climate Change Bucca Creek in Flood



Source: Martens Engineering

5.7 Ground water

A hydrogeological (groundwater) study of the site and the proposed development was undertaken Martens and Associates Pty Ltd (refer **Attachment O**).

The purpose of the assessment was to provide details of the existing ground water regime, determine the site aquifer properties, develop a calibrated steady state finite difference ground water flow models for existing and developed conditions, and to assess any changes to ground water levels/flow directions due to development.

5.7.1 Field investigations

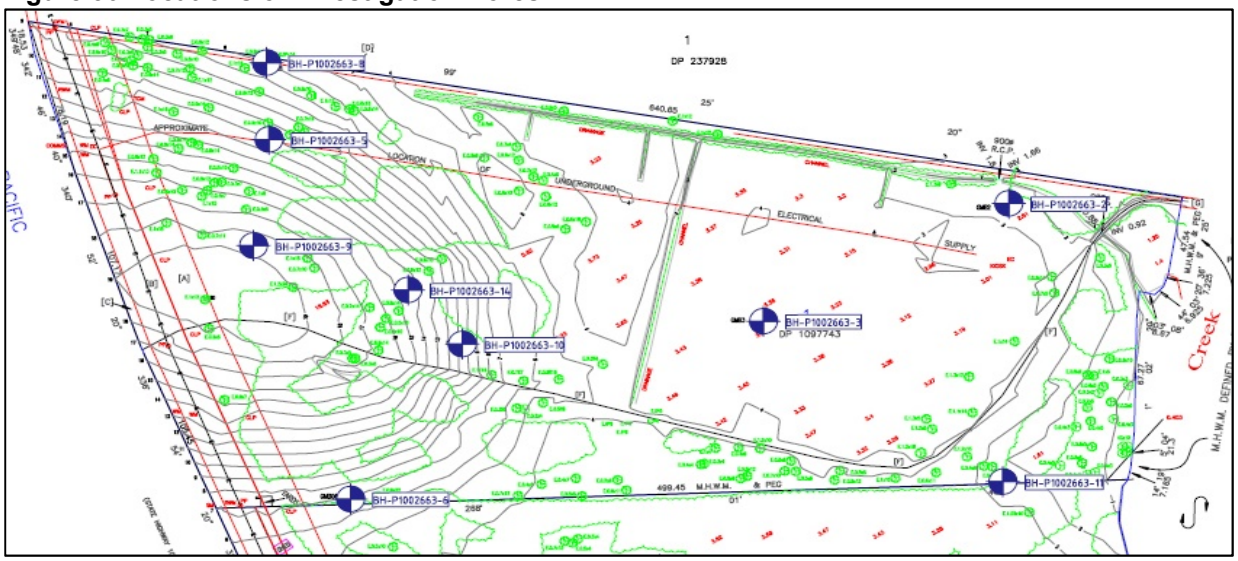
Fieldwork undertaken 26 July to 28 July 2010, and 29 September 2010 included the following:

- Walkover inspection of the site to assess existing site conditions and local topography, geology, soil conditions and vegetation;
- Excavation of 14 boreholes to between 0.6m – 9.2m depth using a hydraulic auger to allow for the characterisation of underlying soils and geology;
- Installation of GMBs at BH1, BH2, BH3, BH4, BH6, BH7, BH8 and BH13. GMBs were assigned an identification number which corresponded to the borehole in which the GMB was installed; and

- Installation of data loggers.

Locations of subsurface investigations are shown in **Figure 30**.

Figure 30 Locations of Investigation Bores



Source: Martens Engineering

5.7.2 DGRs

The Hydrogeological Assessment specifically addressed the Director General Requirements in **Table 20.**

Table 20 Project DGRs and Responses

DGR	Response
Provide an assessment of groundwater issues associated with development	Done throughout report
Water table location	Provided through groundwater monitoring (Section 3.4) and modelling (Section 4.5)
Nature/profile of groundwater regime	Provided throughout Section 3
Interception of water table	Addressed in Section 4.8
Potential contamination issues	None foreseeable
Proposed use of groundwater resource	None proposed
Impact on registered bores	None foreseeable – bores are located at considerable distance from the site and access the lower shale aquifer (Section 3.2)
Works that will result in increased groundwater discharge	None foreseeable
Impact on stability of acid sulphate soils	Maximum modelled drawdown across the site is 0.5 m and is within the range of natural groundwater level variation. Consequently, any acid sulphate soils across the bulk of the site will not be impacted by the proposed development.
Impact on Groundwater Dependent Ecosystems (GDEs)	This is not directly assessed in this investigation as GDE mapping was not provided to Martens and Associates. However, based on the minimal drawdown, impact to any GDEs (if present) is likely to be minimal and within the range of natural groundwater level variations
Impact on quantity/quality of groundwater	Quantity shall decrease due to the predicted site drawdown of approximately 0.5 m. No impacts to quality are likely as the proposed stormwater system is pit and pipe

Source: Martens Engineering

5.7.3 Results

The modelling conducted suggests that the development will generally result in minimal change the existing, observed, hydrogeological conditions.

5.8 Flora and Fauna

Pacific Environmental Associates were engaged to undertake a terrestrial and aquatic ecological assessment of the site (refer **Attachment I**). PEA Consulting Pty Ltd were re-engaged to respond to the DPEs adequacy review in January 2015; this required further consultation and field work to supplement that undertaken for the EA report and Development Plan. The results of this work are now noted in Appendix B of the Ecological Assessment.

5.8.1 Survey Results

Field surveys were conducted over a two year period (winter 2010 and March-October-December 2011) and included a range of detailed surveys. These surveys were designed to identify the ecology of the site, and if present, significant threatened species, populations, communities or their habitats.

The surveys were undertaken within lands proposed to be cleared (the "impact site") and lands that are proposed for conservation.

The main findings were:

- In total, the site is 12.9 ha, of which 6.9 ha comprises managed/disturbed native vegetation (approx. 50%) and 6 ha of cleared land.
- The proposal aims to retain 1.8 ha of native vegetation and create 0.4 ha of native forest habitat on cleared land and restore 1.5 ha of disturbed native forest onsite. Resulting in a net loss of 4.1 ha of managed/disturbed native vegetation.
- The lands onsite which directly adjoin Moonee Creek provide an important buffer to the estuarine system and provide important habitat for a range of significant species;
- Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions was recorded within the site, this area will be entirely retained within the proposed reserve area;
- The remainder of the site which includes low lying wet pasture and upland pasture with scattered trees provides habitat for a range of native species, but the extent of past clearing and the ongoing management of this area has reduced its ecological value, nonetheless, TSC listed fauna species were recorded in this area;
- Moonee Creek is part of a healthy estuarine system that provides habitat for a wide range of significant bird species, provides important nursery habitat for local fish populations, and supports large seagrass beds. To maintain and improve these habitats all upstream development (including this site) will need to use best practice water treatment and dispersal methods;
- In total, 16 hollow bearing trees were recorded on the site none of these trees were identified as significant or were observed as den trees for significant species. In total, on two trees can be retained within the proposal and the hollows unable to be retained will be salvaged and erected within the reserve areas;
- The significant bird species Osprey was recorded roosting on the site on one occasion. It was frequently recorded in the local area during surveys and an Osprey nest was observed on the seaward side of Moonee Creek on the sand barrier system;
- Arboreal trapping on this site resulted in the capture of Squirrel glider (No=2). Trapping also captured individuals to the south of the site;
- Nocturnal surveys recorded an individual Koala in local habitat approximately 500m to the south of the site. Extensive surveys of the site failed to find any evidence of use by koala. To facilitate local movements of koala (away from the Pacific Highway), a safe link along Moonee Creek buffer, which is protected from traffic has been incorporated into the design;
- Crushed Allocasuarina fruits were recorded along the northern boundary of the site. This is consistent with the feeding behaviour of Glossy-Black Cockatoo and based on the amount of feeding it is considered to be more than an occasional visitor to the site. Two individuals were also recorded 100 metres south of the site feeding in similar habitat;

- Little Bent wing Bat and Eastern Bent wing Bat were identified using echolocation recording. These significant bat species were recorded foraging over most of the site during walking transects;
- The Pacific Highway upgrade included the installation of a rope bridge (glider and Koala bridge) 1.2 kilometres to the south of the site. There is a continuous vegetation link (broken by minor road crossing) from this site to the bridge and this connection links the populations of Squirrel glider and Koala on both sides of the highway. This installation reduces the risk of local population extinctions on the eastern side of the highway (which includes this site);
- No Endangered populations or Endangered Ecological Communities were recorded within the site.
- Significant marine species habitat is identified in Moonee Creek and the regional importance of the Moonee Estuary system is considered very high.
- Vegetation that provides important habitat onsite on the northern and southern boundary should ideally be retained. However, there are existing development approvals (i.e. development adjoining the site and a collector road crossing the site) and associated engineering and bushfire constraints that make its retention impractical. The area of vegetation along the northern and southern boundaries will need to be filled to a depth of 1.3 metres with integrated drainage swales to facilitate drainage toward a bio-retention basin to protect the adjoining Moonee Creek from poor quality stormwater runoff. This constraint is equally imposed on the design of adjoining development. If this vegetation was retained it would also pose a bushfire threat to the site and the adjoining approved development.

5.8.2 Management Recommendations

Section F of the Ecological Assessment report provides recommendations for the management of construction and operational impacts upon the site.

The proposed general recommendations and applicant comments are provided in **Table 21** below.

Table 21 General Management Recommendations

No.	Recommendation	Comment
1	Placing of felled trees between areas of remnant bushland to provide runways of ground cover for the dispersion of animals;	This information may be included within the Restoration Plan provided with the application for the Construction Certificate.
2	Supplementary planting of locally occurring native species (using local provenance) in landscape areas;	A Landscape Plan has been provided as **Attachment P** which incorporates native plant species.
3	Introduction of additional nest/roost boxes (>40);	This information may be included within the Restoration Plan provided with the application for the Construction Certificate.
4	Development of a clearing management plan by an experienced ecologist;	A Clearing Management Plan can be provided with the application for the Construction Certificate.
5	Development of a restoration plan by a suitably qualified ecologist;	A Restoration Plan can be provided with the application for the Construction Certificate.

No.	Recommendation	Comment
6	Development of a best-practice erosion and sediment control plan.	An Erosion and Sediment Control Plan can be provided with the application for the Construction Certificate.
7	Provide appropriate stormwater and nutrient control systems designed to reduce the effects of runoff and ensure water flowing from the site does not enter Moonee Creek directly and when it does get there it is of a suitable “best practice” quality.	This information may be included within the Erosion and Sediment Control Plan provided with the application for the Construction Certificate.
8	The construction site should be managed to ensure that there is no accidental incursions into wetlands or any other areas which are not subject to the proposal.	This information may be included within the Clearing Management Plan provided with the application for the Construction Certificate.
9	Any landscaping associated with the proposal including street trees, should comprise endemic native plants and where possible these should be sourced from local seed stock to ensure that genetic viability is maintained.	A Landscape Plan has been provided as **Attachment P** which incorporates native plant species.
10	Where possible suitable tree hollows removed from the Subject Site should be re-erected to retained forests on the subject site. In addition to this, supplementary habitat (nest boxes) should be installed to mitigate the loss of hollows which are unable to be re-erected. Hollows which cannot be re-erected should be placed on the ground within the retained forests on the subject site to provide habitat for terrestrial fauna.	This information may be included within the Restoration Plan provided with the application for the Construction Certificate.
11	Glossy Black Cockatoo and Squirrel glider feed tree species should be planted within the buffer area and as street trees.	A Landscape Plan has been provided as **Attachment P** which incorporates native plant species.
12	Dogs and swimming pools should be prohibited from the estate;	This recommendation is difficult to implement and enforce. It is suggested that an Instrument be produced which requires lots with pet dogs or cats to install koala fencing.
13	A traffic management plan for koala should be established	This information may be included within a Traffic Management Plan provided with the application for the Construction Certificate.
14	The vegetation being retained on the subject site should be effectively managed to enhance and maintain the ecological integrity of this area.	This information may be included within the Restoration Plan provided with the application for the Construction Certificate.

No.	Recommendation	Comment
15	The regeneration plan of the site should include habitats for koala, squirrel glider, glossy-Black Cockatoos and Osprey;	This information may be included within the Restoration Plan provided with the application for the Construction Certificate.
16	The approval and implementation of the restoration plan including a bond should be in place prior to the release of construction certificates.	This information and any security mechanisms may be included within the Restoration Plan provided with the application for the Construction Certificate.
17	The reserve habitats will be regenerated consistent with a detailed restoration plan specifically for Koala.	This information may be included within the Restoration Plan provided with the application for the Construction Certificate.

Table 22 below lists the Management Recommendations which are specific to the reserve area for incorporation in to a Vegetation Management Plan as per the DCP.

Table 22 Reservation Area Management Recommendations

No.	Recommendation	Comment
1	That all physical structures that can be removed from the reserve area are removed and placed within the development footprint;	This information may be included within the Vegetation Management Plan provided with the application for the Construction Certificate.
2	Structures that are man-made “natural” structures, e.g. swales and detention basins must meet the like-for like test of the ecological communities being created;	This information may be included within the Vegetation Management Plan provided with the application for the Construction Certificate.
3	These structures should also be a shape that does not prevent the movement of organisms through the corridor; ideally, these structures will be linear running north-south, thus, allowing for the creation of a continuous forested corridor.	This information may be included within the Vegetation Management Plan provided with the application for the Construction Certificate.

Table 22 below lists the Management Recommendations specific to the reserve area and Buffers for Wetlands.

Table 23 Reservation and Wetland Buffer Management Recommendations

No.	Recommendation	Comment
1	The edge shall be a mix of hard and soft natural and made-made structures of a width at least 4 metres wide that effectively limits access by means of deterrence and visual interference, that is, “a way in” cannot be seen.	This information may be included within the Restoration Plan provided with the application for the Construction Certificate.

No.	Recommendation	Comment
2	There will be no “garden” edge to the boundary and this area can only be maintained by regenerators. Maintenance by mowing and slashing can only occur beyond the edge.	This information may be included within the Restoration Plan provided with the application for the Construction Certificate.
3	No storm water or landfall (diffuse) flow should pass from the site across this boundary. To prevent this on the eastern edge of the perimeter road a higher swale will direct flow into the storm water system away from the edge.	This information may be included within the Restoration Plan provided with the application for the Construction Certificate.
4	The restoration design and regeneration program within the reserve must include details of edge management and design, specifically targeting the minimization of movement across the barrier, including humans, nutrients, and water.	This information may be included within the Restoration Plan provided with the application for the Construction Certificate.
5	Vegetation establishment within the reserve must focus on limiting movement and providing fauna habitat, not to provide visual amenity for residents.	This information may be included within the Vegetation Management Plan provided with the application for the Construction Certificate.
	Once the rehabilitation is established it shall be managed by ongoing physical maintenance for a period of 5 years consistent with an approved restoration and management plan.	This information may be included within the Vegetation Management Plan provided with the application for the Construction Certificate.

The applicant generally accepts and has incorporated the recommendations of the Ecological Assessment. These actions have now been included in the Statement of Commitments.

5.8.3 NSW Biodiversity Offsets Policy for Major Projects

The applicant engaged GHD to investigate and prepare a biodiversity offsets strategy. The assessor Daniel Williams (GHD, Assessor Accreditation No:082) consulted with OEH late 2016 where it was agreed the project was not required to complete a Biodiversity Assessment Report in accordance with the FBA as the PEA Report (2013) had adequately considered the site’s biodiversity values.

DPE and OEH agreed that a BOS be prepared, giving consideration to the requirements and application of the FBA in relation to biodiversity offsets only (refer **Attachment Q**).

A summary of the strategy is provided in **Table 24.**

Table 24 Ecosystem and species credits required

Ecosystem credits required			
Plant Community type		Area (ha)	Credits created
Blackbutt - Pink Bloodwood shrubby open forest of coastal lowlands of NSW North Coast Bioregion		6.23	291.00
Forest Red Gum - Swamp Box of Clarence Valley lowlands of NSW North Coast Bioregion		5.08	170.22
Total		11.31	461
Species credits required			
Common name	Scientific name	Extent of impact Ha or individuals	No. species credits created
Squirrel Glider	Petaurus norfolcensis	7.71	170

Source: GHD

Accordingly, the applicant volunteers to enter into a Bio banking Agreement to retire these credits. Via condition of consent, these credits are to be secured and retired prior to the issue of a construction certificate.

5.9 Mosquito Management

The management of mosquitos will be undertaken and applied at the appropriate development stage and process as follows:

Table 25 Mosquito Management Recommendations

No.	Recommendation	Development Stage
1	All dwellings will be at >50m away from Moonee and Bucca Creeks and potential mosquito breeding areas.	As a Condition of associated Development Consents.
2	The bio remediation basin will have edges with a minimum 45 degrees slope.	As a Condition of this Consent and subsequent Construction Certificates.
3	Site preparation to ensure ponding of water doesn't occur after rain	As a Condition of this and other subsequent Development Consents and Construction Certificates.
4	All dwellings will be equipped with effective screens on all windows, doors and openings	As a Condition of associated Development Consents or Complying Development Certificates.
5	All rainwater tanks and fabricated water storage structures will be equipped with effective screens on all openings	As a Condition of associated Development Consents or Complying Development Certificates.

5.10 **Earthworks**

Post development ground surface levels are governed by a combination of:

- The ground surface levels required by both the subject site and the adjoining (northern) Part 3A approved project to mitigate flood inundation in a 1 in 100 year event (allowing for sea level rise and finished floor levels); and
- The need to integrate with design levels for the court approved collector road and other internal roads, stormwater drainage and the utilities services associated with the adjoining Part 3A approved project.

Civiltech Pty Ltd, in consultation with the engineers preparing detailed engineering plans for the adjoining Part 3A approved development to the north, have determined that filling of up to 2 metres in depth is required on the eastern half of the subject site. A bulk earthworks plan proposes that fill material be obtained from the elevated areas in the western half of the site (refer **Attachment R**).

The proposed cut to fill ratio is approximately 82,000m^3 of cut to 74,000m^3 fill with the additional material allowing for unsuitable material and compaction. Cuts of up to four metres will be required for integrating the proposed lots on the western end of the site with the approved collector road.

The subdivision earthworks proposed will not require the construction of major retaining walls or steep allotment batters. It is not envisaged that any fill will be required to be imported to the site or exported from the site, thereby avoiding unnecessary impacts associated with additional truck movements, greenhouse emissions and use of fossil fuels.

Earthworks will be carried out under the control of a suitably qualified geotechnical engineer and certified to Level 1 construction monitoring and testing as defined in AS3798-1996 – Guidelines for Earthworks for Commercial and Residential Developments.

Table 11 of the *Geotechnical and Acid Sulfate Soils Assessment (*Martens Mar. 2013) indicates that inorganic clays with high plasticity on site are unsuitable in their natural state for fill; however, *Section 4 Geotechnical Risk Management Recommendations Section 4.2 Fill Material* of the report identifies the methods and the Australian Standards to be complied and documented at construction certificate stage.

Section 4.2 is provided in its entirety as follows:

> ***4.2 Fill Material***
> *We recommend that fill in excess of 0.5m be suitably engineered to ensure good stability, compaction and water exclusion and/or drainage. The placement of fill is to be performed in accordance with* ***Australian Standard 3798 (2007****). This* ***compliance will be outlined in CC documentation.***
>
> *If fill from off-site is utilised, it should be suitable in accordance with AS 3798 (2007), be well graded, have a maximum particle size of 75mm and be certified as free of unsuitable material.* ***Site sub-soils are not likely to be suitable for use as engineered fill without treatment and/or re-engineering.***
>
> *All earthworks are to be undertaken in accordance with AS 3798 (2007). Proof rolling of sub-grades should be conducted before placement of any fill, and this should be closely monitored by the site supervisor to identify sub-surface moisture issues and soft / unstable layers. Fill should be free of organics, deleterious substances such as wood, metal, boulders and plastic. Fill should be placed in 150 – 200mm layers. Preliminary site compaction criteria and frequencies of compaction testing for different types of placed fill are outlined below:*
>
> *1. Building pads: minimum dry density (MDD) of 98% standard (for clay soils), or minimum density index (ID) of 75% for cohesion less soils (silts and sands), with moisture variation not to exceed +/- 2% of optimum moisture content (OMC).*

2. Site pavements: MDD of 98% modified, ID of 75%, with moisture not to exceed 2% of OMC.

3. Other controlled non-load bearing fill: MDD of 95% standard, ID of 70%, with moisture not to exceed 2% OMC.

4.3 Sub-grade Preparation
We recommend that any stripping of topsoil or unsuitable sub-grades (CBR < 4) be undertaken at the onset of excavation and suitably stockpiled for on-site non-engineering uses (landscaped mounds or topsoil re-use) or off-site disposal to a suitable location.

For all areas where fill is to be placed to raise site levels and where on-grade slabs or pavement are to be constructed, preparation of sub-grade should consist of:

1. Stripping of topsoil, unsuitable material and trimming to desired levels providing level foundation keys.

2. Compact sub-grade to achieve a minimum density of 98 % Standard Maximum Dry Density (SMDD) for cohesive soil ; and

3. Proof roll the sub-grade with a minimum 12 tonne deadweight smooth drum roller.

Proof rolling should be closely monitored by the site supervisor and confirmed by geotechnical engineer to detect soft or unstable areas which should be removed and replaced with engineered fill.

Attachment R indicates the eastern extent of fill is the eastern boundary of the perimeter road and well outside of the buffer.

5.11 **Noise**

Wilkinson and Murray were engaged to provide advice (refer **Attachment S**) on the impact of noise from the operation of the Pacific Highway on the western border of the site that is currently under construction to dual carriageway.

State Environmental Planning Policy (Infrastructure) 2008 sets internal noise criteria which must be met by new developments to ensure that sustainable higher density living can occur along major transport routes whilst maintaining an acceptable level of amenity for residents.

The Development near Rail and Busy Roads – Interim Guidelines 2008 were produced to support the SEPP for developments near specific highly trafficked roads (daily traffic volume of more than 40,000 vehicles). The guideline recommends that it is advisable for new developments on moderately busy roads (where daily traffic volume of more than 20,000 vehicles) follow the design advice offered in the SEPP.

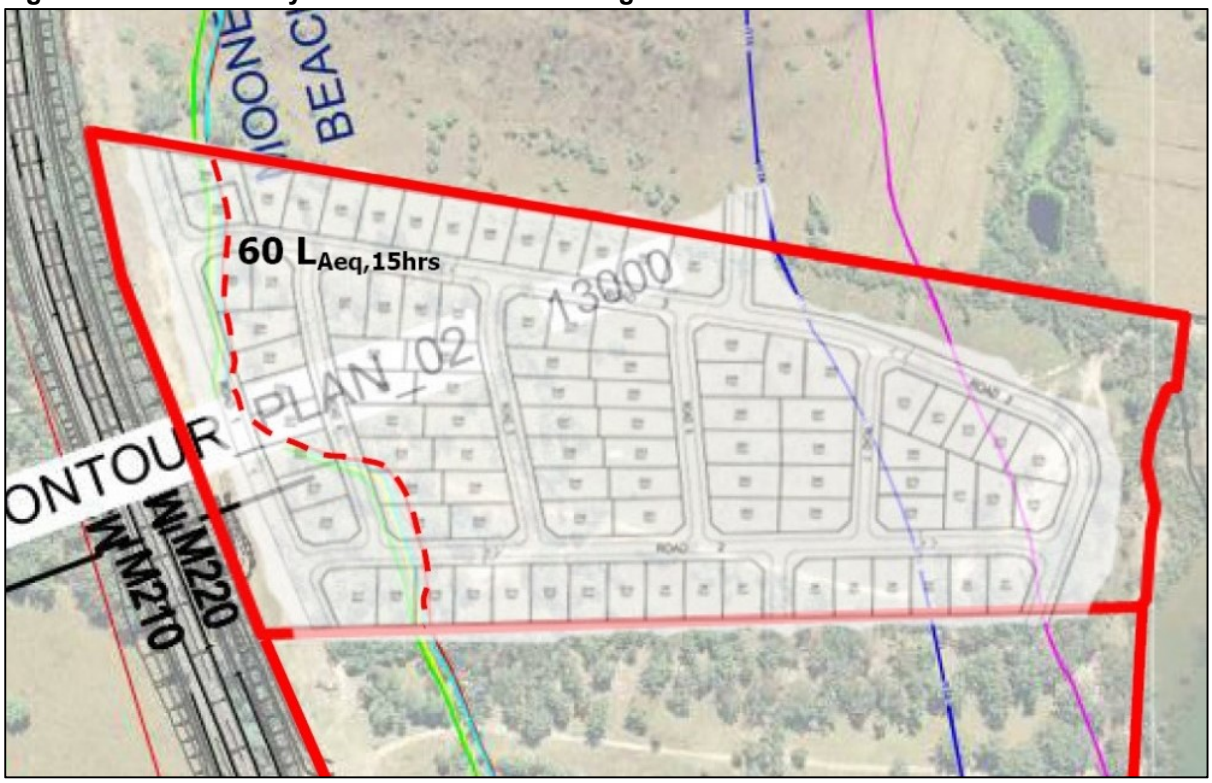
According to the Roads and Maritime Services Traffic Volume Data for the Hunter and Northern Regions (RMS website accessed 20th March 2013), the Pacific Highway just south of Moonee Beach achieved Annual Average Daily Traffic of 20,868 vehicles in 2004. The Pacific Highway is therefore deemed a “moderately busy road”, and Wilkinson Murray has advised that the development plan meets the requirements of the Infrastructure SEPP. The “Development near Rail and Busy Roads – Interim Guidelines 2008” confirms that the noise criteria are calculated as LAeq,9hr for night and LAeq,15hr for day.

The Pacific Highway past the site is currently being upgraded and is due for completion by 2014. It was not practical to conduct traffic noise measurements on site, as it would be corrupted by noise from the construction works.

RMS have prepared an operational noise management plan for the project which specifically identifies predicted traffic noise levels affecting the site to 2024 (10 years after completion of the upgrade). Noise levels have been predicted using the CoRTN traffic noise prediction algorithms as implemented in the Soundplan noise model.

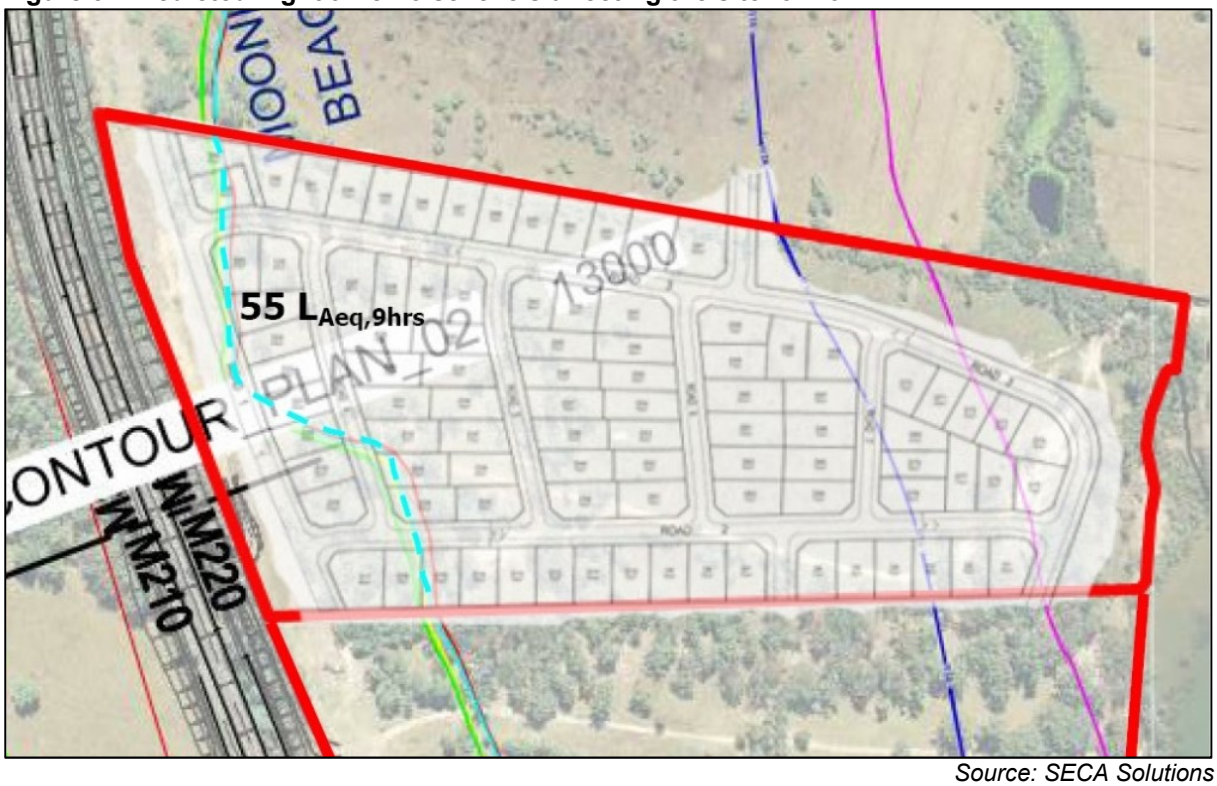
The calculations were conducted by AECON. The results of site noise modelling are presented in **Figures 31** and **32** for day and night time, respectively.

Figure 31 Predicted daytime noise levels affecting the site for 2024



Source: SECA Solutions

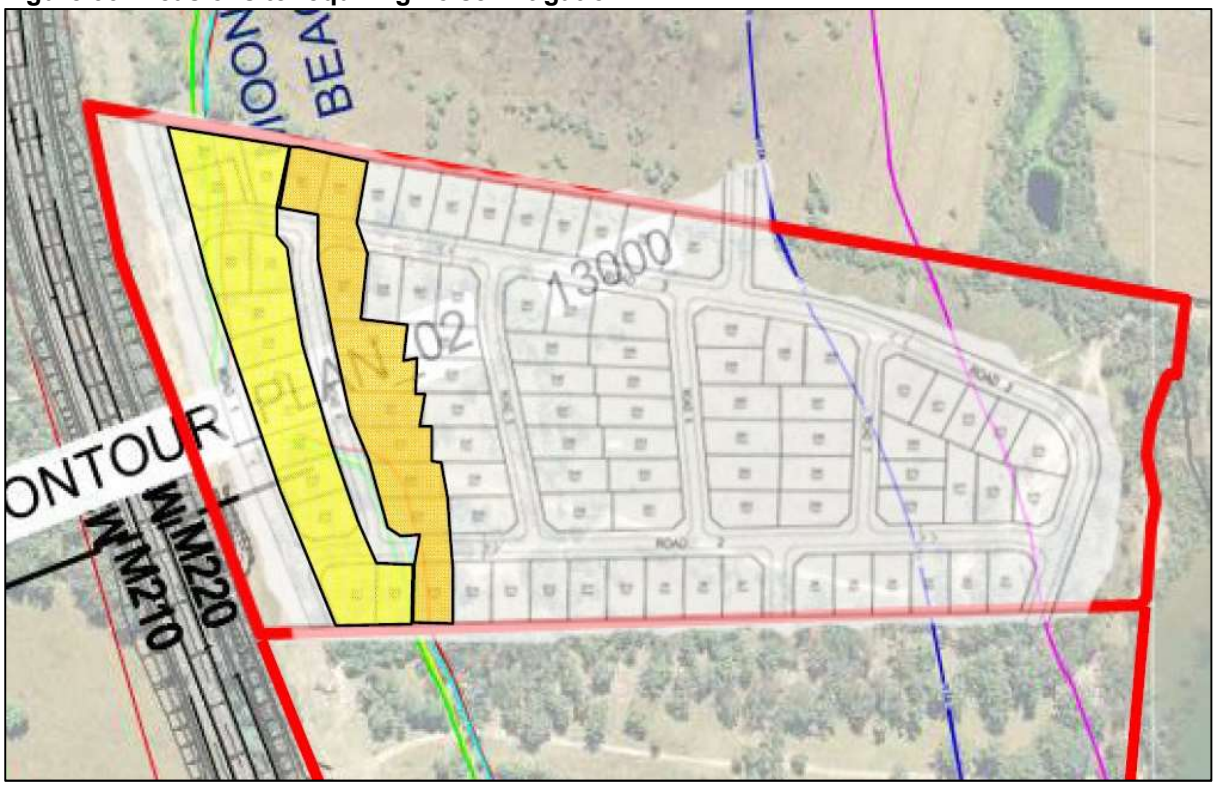
Figure 32 Predicted night time noise levels affecting the site for 2024



Source: SECA Solutions

The intrusion of noise into the site requires mitigation to achieve the day and night noise criteria established by the SEPP. The extent of Lot 1 requiring attenuation is provided in **Figure 33**.

Figure 33 Areas of site requiring noise mitigation



Source: SECA Solutions

The conventional approach to mitigating road noise from residential dwellings is via a noise wall. However, under the SEPP, meeting the noise criteria in the bedrooms and habitable rooms - other than laundries and kitchens - between 10pm and 7am can also be achieved via building design and insulation. This also improves the thermal performance of the building.

5.11.1 Noise Attenuation

Wilkinson Murray advise that typically the first row of houses provides up to 8dB to 10dB shielding. Once a row of houses is built near the Pacific Highway, the LAeq contours in **Figure 31** and **Figure 32** will be much closer to the highway.

The yellow zone in **Figure 33** shows the proposed lots bordering the Pacific Highway that would be limited to 1 storey and require noise treatments on the facades including walls windows, doors, roofs, eaves and slab on ground flooring. In the orange zone, houses can be two stories with the ground floor not needing acoustic treatment as it will be shielded by the houses in front.

The indicative costs for noise attenuation of dwellings in the yellow and to a lesser degree orange areas are as follows:

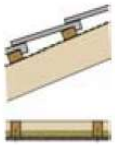
Glazing:	$2,500 (2 up graded windows)
Ventilators:	$2,000 (not air conditioning)
Door	$500
Total	$5,000

Noise attenuation will also provide thermal attenuation and a reduction in the use of electrical heating and cooling. It is also a more economical and aesthetically sensitive solution than to construct a noise wall along the western edge of the collector road. Noise attenuation of the dwelling and the front yard of the affected lots can be achieved through the placing of masonry fences and gates (1.2m solid up to a maximum of 1.5m transparent) and landscaping.

5.11.2 Post-Consultation Measures

Wilkinson Murray reviewed the submissions from Council and RMS concerning noise emanating from the Pacific Highway and the proposed collector road within the western boundary of the site. **Table 26** indicates the standard mitigation measures for future dwellings in the yellow mitigation zone. A full copy of Wilkinson Murray's advice is provided in **Attachment S**.

Table 26 Standard Acoustic Treatments for Dwellings

Building Element	Standard constructions	Example
Windows/sliding Doors	Openable with minimum 10.38mm laminated glass and full perimeter acoustic seals	
Frontage facade	Brick veneer construction: 110mm brick, 90mm timber stud or 92mm metal stud, minimum 50mm clearance between masonry and stud frame, 10mm standard plasterboard internally.	
	Or Double brick cavity construction: 2 leaves of 110mm brickwork separated by 50mm gap	
Roof	Pitched concrete or terracotta tile or sheet metal roof with sarking, 2 layer of 10mm sound-rated plasterboard fixed to ceiling joists, R2 insulation batts in roof cavity.	
Entry Door	45mm solid core timber door fitted with full perimeter acoustic seals	
Floor	Concrete slab floor on ground	

Source: Wilkinson Murray

5.12 **Traffic**

Better Transport Futures were engaged to provide traffic advice (refer **Attachment T**) for the development plan, in particular the provision of access to the site from the Pacific Highway that is currently being upgraded to a dual carriageway, and a grade separated interchange at Moonee Beach Road, some 400m to the southwest of the site.

5.12.1 **Access and Pacific Highway Upgrade**

From BTFs review of the local road network, the works proposed along the Pacific and the future subdivisions proposed in the locality, the following advice is provided in regard to access to the site:

a) Direct access to the site from the Pacific Highway will be prohibited for residential development. A central median will also remove the opportunity for right turns to the site for residential development.

b) Where access is provided, these will be restricted to left in and left out typically and allow for limited access e.g. typically access to a rural property or similar. These access points allow for low traffic flows (typically less than 50 per day).

c) As part of the safety measures adapted by the RMS as part of the Pacific Highway upgrade, the RMS is working towards having service roads running parallel to the highway that allow for access to a number of lots that then gain access to the Pacific Highway via appropriate major intersections such as that proposed at Moonee Beach Road.

d) In line with Council's S94 plan and the Land and Environment Court proceedings for the land to the south, a network of local roads are proposed that will allow for future connection to the residential subdivisions proposed in the locality, including the site. This is considered appropriate as access to the Pacific Highway will then be provided via the new grade separated interchange at Moonee Beach Road. This intersection will provide the highest level of road safety for the connection between these two roads and there will be no capacity issues associated with the future operation of this grade separated interchange.

e) A review of the local roads to the immediate south of the site show that the collector road currently provides a stub that allows for a future road connection to the north. Therefore, the collector road will connect with Moonee Creek Drive to the south and then connect with Moonee Beach Road via a 4-way roundabout.

f) The collector road and the length of Estuary Drive that connects to Moonee Beach have been built to a local road standard with an overall carriageway width of 8.0m and an off road shared path.

g) Existing traffic flows along Estuary Drive and the collector road have been observed during both the morning and afternoon peak periods and the flows are reasonably low. The two way flow on the collector road, where it connects with Moonee Beach Road, are less than 100 vehicles per hour 2 -way.

h) According to the RMS Guide to Traffic Generating Developments, the capacity for a road such as the collector road is given as 500 vehicles per hour two -way. This is the maximum desirable traffic flow on this road but it is not the absolute maximum flow. The Guide also indicates that the maximum capacity for a single lane is 900 vehicles per hour. With the existing traffic flows on this road during the peak periods being less than 100 vehicles per hour, this indicates that this road has capacity for at least 400 additional traffic movements per hour two-way based upon the desirable criteria of 500 vehicles per hour.

Seca Solutions undertook a Traffic Impact Assessment following advice from Roads and Maritime Services and following the completion and opening of the Pacific Highway dual carriageway after the submission of the Concept Plan. This advice has been included in **Attachment T**.

Extracts from this Assessment are provided as follows:

a) Daily traffic flows

Based on peak hour flows typically representing some 10% of the daily flows, this would indicate that the daily 2-way traffic movement on Moonee Beach Road between the highway and the roundabout could be in the order of 3,570 whilst on Estuary Drive could be in the order of 595 vehicles per day 2-way in this location (refer **Table 27**).

Table 27 Peak traffic flows on existing nearby roads

Street	Direction	Direction	2-way
Moonee Beach Road	160 AM west 305 PM east	124 AM west 125 PM east	284 AM 430 PM
Estuary Drive	11 AM north 43 PM north	35 AM south 30 PM south	46 AM 73 PM

Source: Seca Solutions Pty Ltd

b) Current Road Network Operation

Observations on site during the morning and afternoon peak periods show that the intersection of Moonee Beach Road and Estuary Drive works well with minimal delays. There are no delays for traffic entering or exiting the Pacific Highway, due to the grade separated intersection design

c) Site Distances

The internal roads connect at right angles to maximise visibility and as such the 80 metres visibility requirement will be met. For the intersection of Estuary Drive and Moonee Beach Road, roundabout is well laid out and provides good visibility on the approaches. Once on the immediate approach to the roundabout, visibility for 80 metres is available on all legs.

d) Internal Bus Movements

The layout of the site allows for a bus to circulate around the site.

e) Traffic Generation

The daily rate is given at 7.4 trips per dwelling. For the 104 lot development, this gives additional flows of 74 in the AM peak, 81 in the PM peak and 770 per day.

f) Traffic Distribution and Assignments

All traffic will access the site via the roundabout controlled intersection of Moonee Beach Road and Estuary Drive. The majority of traffic will then head towards the Pacific Highway to access the numerous facilities within Coffs Harbour.

g) Origin / destinations assignment

Assumed all traffic will travel via the above roundabout and that 90% of traffic will then use the Pacific Highway to access Coffs Harbour.

h) Impact on daily traffic flows

RMS guide states that for a local street, maximum environmental limit is 300 vehicles per hour. It can be seen that the flow of 154 vehicles is well within this limit and therefore acceptable.

i) Peak Hour Impacts on Intersections

The major impact of the redevelopment of the subject site would be at the roundabout controlled intersection of Moonee Beach Road and Estuary Drive. Observations on site show that this roundabout currently operates very well with minimal delays and congestion.

j) Sidra modelling – intersection of Moonee Beach Road and Estuary Drive

The current traffic flows surveyed by Seca Solutions were used to assess the current operation of the roundabout at the intersection of Moonee Beach Road and Estuary Drive (refer **Table 28)**

Table 28 Current operation of roundabout at Moonee Beach and Estuary Drives

Approach	Level of service	Delay (seconds)	Queue (metres)
Access to shopping centre	A / A	5.4 / 5.4	1.2 / 3.0
Moonee Beach Road east	A / A	5.1 / 5.8	2.1 / 1.9
Estuary Drive	A / A	8.8 / 8.8	1.0 / 1.0
Moonee Beach Road west	A / A	7.3 / 7.3	4.0 / 8.9
Note: results for AM / PM peak			
The above results confirm the on-site observations with minimal delays and congestion for road users.			
Table 3 - Current operation of roundabout at Moonee Beach Drive / Estuary Drive plus development traffic			
Approach	**Level of service**	**Delay (seconds)**	**Queue (metres)**
Access to shopping centre	A / A	5.6 / 5.4	1.3 / 3.2
Moonee Beach Road east	A / A	5.3 / 5.9	2.2 / 1.9
Estuary Drive	A / A	8.8 / 8.8	2.3 / 1.3
Moonee Beach Road west	A / A	7.3 / 6.8	4.2 / 11.2
Note: results for AM / PM peak			

Source: Seca Solutions Pty Ltd

The above results demonstrate that the roundabout will continue to operate to a very high standard with minimal delays and congestion.

k) Modelling of roundabout with additional traffic allowances:

- Traffic movements right in and left out of the access to the shopping centre were increased by 25% per annum, giving a 250% increase over current demands inclusive of the development traffic.
- Traffic movements turning left in and right out of Estuary Drive were increased by 25% per annum, giving a 250% increase in current demands inclusive of the development traffic.

The results of this Sidra analysis are presented in **Table 29**.

Table 29 Roundabout at Moonee Beach & Estuary Dr's + development + 25% growth pa

Approach	Level of service	Delay (seconds)	Queue (metres)
Access to shopping centre	A / A	7.5 / 5.4	3.1 / 13.2
Moonee Beach Road east	A / A	8.6 / 10.9	4.8 / 6.1
Estuary Drive	A / A	11.4 / 14.0	13.0 / 11.7
Moonee Beach Road west	A / A	7.9 / 8.4	18.2 / 96.5
Note: results for AM / PM peak			

Source: Seca Solutions Pty Ltd

The above results demonstrate that the roundabout will continue to have adequate capacity over the 10 year design horizon, allowing for significant increases in traffic flows associated with ongoing development within Moonee Beach. This level of growth assessed would allow, for example, for another 250 residential lots to be developed off Estuary Drive and demonstrates that the current roundabout will continue to provide a good level of operation for road users.

l) Impact of Construction Traffic

Majority of construction work contained within site so minimal impact upon external road network. There will be a requirement for construction machinery to access the site and traffic associated with workers. A Traffic Management Plan may be required for work on site and access controls. This will be completed as part of the design process by the contractor on site.
All contractor vehicles will be able to park within the site, with no impact upon the external road network.

m) Improvements to External Road Network

None required as the future traffic flows associated with the development are within the capacity of the existing road network. The key intersection of Moonee Beach Road and Estuary Drive has been assessed with Sidra and shows that the roundabout will continue to operate well with minimal delay and congestion.

The connection of Moonee Beach Road to the Pacific Highway is a grade separated intersection providing a high quality connection with considerable capacity. The network modelling completed as part of the upgrade of the Pacific Highway in this location allowed for the continual development along the Pacific Highway corridor and caters for the additional traffic associated with the development of the subject site.

The Guide to Traffic Generating Developments indicates that the typical peak hour generation rate for a residential subdivision is 0.85 trips per lot per hour.

Using this rate, the spare capacity of 400 vehicle movements equates to some 470 residential lots that could potentially be developed off the collector road.

A review of the development plan indicates that there will be in the order of 103 residential lots developed. This is well below the limit of 470 lots identified above, which equates to some 86 vehicle movements 2-way during the traditional morning and afternoon peak periods. This shows that the development of this land does not require any upgrade of the collector road.

The roundabout at the Moonee Beach Road and Estuary Drive intersection will have adequate capacity to cater for the additional traffic movements associated with the site. The roundabout will have capacity beyond the requirements of the subject site and as such will not require any upgrade over the existing layout.

On 5th March 2009 the Minister granted project approval for the 524 lot residential subdivision to the north of the site. In Part B of the Project Approval are 3 conditions to be satisfied prior to issue of a construction certificate for the subdivision (refer **Figure 34**).

Figure 34 Part 3A Conditions of approval for Access to Glades Estate

PART B—PRIOR TO ISSUE OF CONSTRUCTION CERTIFICATE

Provision of Access to the site

B1 Access via Northern Collector Road

1) Access to the site shall be provided via the northern collector road (generally as identified in Moonee Development Control Plan 2004 or as otherwise agreed to by the Department) from its existing northern limit (near Tidal Crescent) to the southern boundary of the site, over Lot 5 DP 252223, Lot 6 DP 252223, and Lot 1 DP 1097743.

2) Prior to the issue of any Construction Certificate for the project the proponent shall provide to the satisfaction of Council and the Certifying Authority evidence of appropriate legal agreements being signed with landowners of Lot 5 DP 252223, Lot 6 DP 252223, and Lot 1 DP 1097743, as well as creation of any relevant easements or instruments on title, for the construction of the northern collector road and associated project infrastructure works, over the respective lots.

   The proponent shall also provide to the satisfaction of Council and the Certifying Authority evidence of any relevant assessments and approvals required under the Act and the *Roads Act 1993* being in place to enable commencement of the construction of the northern collector road (generally as identified in Moonee Development Control Plan 2004 or as otherwise agreed to by the Department).

3) The funding of the road is subject to agreements with the landowners of Lot 5 DP 252223, Lot 6 DP 252223, and Lot 1 DP 1097743 and also subject to the provisions of Moonee Developer Contributions Plan 2008 and any agreed credits for 'works-in-kind', refer to condition **E18.**

These conditions were satisfied when Rothwell Boys for the Glades Estate prepared and submitted a DA for the Collector road to Council in 2011. Due to the refusal of the NSW Office of Water to issue its General Terms of Approval, Council had to refuse the DA.

On appeal, the Land and Environment Court approved the road connecting the Moonee Beach village across 3 parcels of land including the site to connect the approved project for the Glades Estate. *Rothwell Boys Pty Ltd v Coffs Harbour Council & Ors* [2012] NSWLEC 1152 was approved by the court on 6th June 2012. In its decision, the court noted that Rothwell Boys had negotiated with all relevant landowners for the construction of the collector road culminating in deeds of agreement with each land owner. The terms of these deeds include that Rothwell Boys will pay for the construction of the road including all ancillary works as required by the consent, Council and the service authorities. The court recognised that the Project Approval for the Glades Estate (MP 06_0143) as modified requires construction and dedication of the collector road before the issue of any Subdivision Certificate for any of the lots in the approved subdivision.

The applicant has renegotiated a Deed with Rothwell Boys (8th December 2014) for the express purposes of satisfying Part B B1.2) and 3) of the Glades Project Approval.

DPE, in its adequacy assessment advice dated 15 December 2015, requested further consideration of the implications for servicing and access to the site should development on Lot 6 not proceed as well as a copy of the aforementioned deed.

In short, these are not development assessment matters but private matters between landowners who wish to implement the development consent. In *Rothwell Boys Pty Ltd v Coffs Harbour Council & Ors* [2012] NSWLEC 1152 it was stated:

A grant of development consent has no impact upon proprietary rights. In particular, if the result of the present appeal to this Court is that development consent is granted to construction of the collector road, that consent, of itself, will afford no right to Rothwell to enter upon Lot 6 and undertake road construction. In that regard the observations of Cripps CJ in Wharf 11 Pty Ltd v Sydney City Council [1991] NSWLEC 21 are relevant to be noticed. His Honour there said:

A development consent raises a regulatory prohibition, namely, that development cannot be undertaken unless consent is given by a local authority. A development consent does not authorise development. Generally speaking, ***the process is not concerned with relations between owners and other people who wish to implement the development consent.***

This legal approach is consistent with the Minister's Determination of the Glades Estate (MP 06_0143), where it was deemed that the conditions of approval for access to Glades Estate were sufficient to allow the approval of the project. Uncertainties on whether a private land owner did not wish to develop and the implications of servicing and access were not matters for development assessment of the project but for subsequent processes and approvals under the Environmental Planning and Assessment Act. By extension, this is the same situation for the current DA.

It is within the context of the court approval, the aforementioned deeds of agreement to implement the construction of the collector road and the conditions of approval of MP06_0143, that approval is sought, and it is requested that a condition be provided in the Development Consent that the construction and dedication of the collector road be made over the site before the issue of any Subdivision Certificate for any of the lots in the approved subdivision.

5.12.2 Public Transport

The site is on the Coffs Harbour to Grafton route serviced by Ryans Bus Services that detours into Moonee Beach. Restricted access to the upgraded Pacific Highway means that the entire public transport servicing of the Moonee Beach urban growth area is dictated by the grade separated interchange at Moonee Beach, currently under construction, and the court approved collector road.

Combined with the approved Glades Estate, the proposed development has the potential to improve the viability of public transport services in the area and with increasing population; the frequency of the service is likely to increase. However, uptake of a provided service is dependent upon not only frequency of services but also duration of journey in competition with that of a private motor vehicle. Hence, directness of bus routes between origin and destination is important.

Within this context, the development plan proposes a bus route along the collector road only with a simple informal grid pattern of streets and footpaths to allow patrons an easy 5 minute walk to the proposed bus stop.

5.12.3 Pedestrians and Cyclists

The proposed pedestrian and cycle path network is illustrated in **Section 5.15** and includes:

- a shared pedestrian/cycle link to Council's Coastal Walk, connecting the site to Moonee village to the south and to the approved Glades Estate to the north;
- one footpath on each street to create a walkable street network to the collector road and to the Coastal Walk;
- a shared pedestrian/cycle route along the main collector road.

The Coastal Walk has been located outside of the conservation reserve and on the eastern edge of the perimeter road as this is the best location for residents to access this path. If the path was located in accordance with the DCP this would lead to residents creating their own path from the perimeter road to the Walk and hence impact upon the conservation values of the corridor. In this way, the ecologically sensitive banks of Moonee Creek are also avoided.

The proposed network of paths compliments Council's traffic and transport strategy for the Moonee area and is generally consistent with the Moonee DCP.

5.13 Services & Utilities

The approved 520 residential lot Glades Estate proposes to extend infrastructure northward from Moonee Beach through the subject site. The development plan proposes to contribute to, and connect with, this infrastructure. The capacity for the site to be physically connected to services is illustrated in **Attachment U**.

5.13.1 Sewerage and Water Services

A gravity main will collect sewage from all lots to a proposed sewage pump station located at the eastern end of the site before being pumped via a rising main up to the south western corner of the site and then to the Moonee Beach pump station.

The Moonee sewerage scheme serves the Moonee and Emerald Beach areas. The scheme comprises a tertiary sewage treatment plant with a capacity of 7,000 EP and discharges reclaimed water to the reclaimed water system with excess going to the deep sea release in Coffs Harbour.

The *Coffs Harbour City Council Strategic Business Plan for Water Supply and Sewerage* (May 2012) indicates that current population of Moonee Beach area is 1,419 persons (2011) and is projected to growth to 4,931 persons by 2041 with a 5.17% average annual growth rate. This report indicates that water supply and sewerage services to Moonee Beach are both satisfactory and that any new development will have water supply and sewerage services provided and financed by the developer & S94 plans.

The dwelling on Lot 2 DP 1097743 is proposed to be connected to the Sewage Pump Station. The pump station is proposed adjacent to the existing electrical substation.

Water supply will connect to the existing water main and easement located along the western boundary of the site to Moonee Beach and to the existing reservoir at Maccues Road.

Construction of the sewer lines will involve some areas of cut to 4.5m deep on the elevated parts of the site. For the less elevated portions, this will have up to 2m fill. Therefore, some of the sewer lines will be up to 3.5m deep from the proposed levels or up to 1.5m below the existing surface level. The acid sulfate soil investigations (refer **Section 5.13**) indicated that excavation greater than 3m from the existing surface will require further investigations and testing. However, the excavation for the laying of sewer lines is unlikely to achieve this depth. Implementation of the Acid Sulfate Soils Management Plan will manage the unlikely exposure of acid sulfate soils.

5.13.2 Electricity and Communications Utilities

Electricity and communications infrastructure are able to be extended to the site for the purpose of residential development. This was confirmed by both Country Energy and Telstra during the preparation of the Moonee DCP.

An electrical kiosk exists on Lot 1 and is connected via underground cable to the overhead powerlines located in an easement along the western boundary of the site.
It is understood that this kiosk was installed as part of previous subdivision development proposals for the site. As part of the Construction Certificate, necessary details to upgrade the capacity of this kiosk will be provided.

Optical fibre and Telstra infrastructure are provided in easements along western boundary of the site. It is expected that by mid-2013, Sapphire, just south of the site, will have gained access to the National Broadband Network. Extension of the network to the Moonee Beach urban growth area is likely to be brought forward with the approval and commencement of construction of the release area.

5.13.3 Waste Disposal

Coffs Coast Waste Services (CCWS) (partnership between Handybin Waste Services, Coffs Harbour City Council, Bellingen and Nambucca Shire Council) undertakes the collection of household waste on the Coffs Coast. The site and other urban zoned and undeveloped land will be serviced by CCWS.

5.14 Stormwater Management

Martens and Associates Pty Ltd have prepared a Concept Stormwater Management Plan for the site (refer **Attachment V**).

A number of planning controls, principles and performance criteria were considered and implemented in the development of site stormwater management solutions and assessment. These include *Coffs Harbour City Council Development Control Plan (2013) – Parts B1 (Sub-division), C8 (Integrated (Natural) Water Cycle Management), D1 (Erosion and Sediment Control for Development) and E6 (Moonee); Coffs Harbour City Council*'s Development Design and Construction Specification (2008), *Coffs Harbour City Council Engineering Design Specification – 0074 Stormwater Drainage (2009) and Coffs Harbour City Council Water Sensitive Urban Design (2009) Policy*

5.14.1 Onsite Stormwater Detention Requirements

Martens and Associates advise that OSD is not necessary for the development for the following reasons:

- Council's (2009) engineering design specifications state that installation of Stormwater Detention is required on redevelopment sites within the Council area where under capacity drainage systems exist. As the site drains directly to Moonee Creek and is downslope of the Pacific Highway, no existing Council drainage infrastructure will be impacted by the development.
- Post-development peak site discharge is slightly reduced for the critical duration (9 hours) 1 in 100 year ARI Moonee Creek catchment flood event. Increases noted in other storm events modelled are minimal when compared with total discharge rates for the overall Moonee Creek catchment.
- The site's location near to the catchment outlet suggests that site peak discharges occur on the rising limb of the hydrograph for the overall Moonee Creek catchment and that detention of flows from the site may adversely impact on the peak catchment flows by releasing water closer to the peak which would otherwise have been released earlier in the flood event.

It is also reasonable to anticipate that the proposed rainwater tanks, as required by BASIX for individual dwellings, will have an attenuating effect on site peak stormwater discharges and are likely to reduce flood runoff volumes for short duration storm events, depending on antecedent storage levels. This information has been confirmed via email from Council (J. Park, 21/2/2013).

5.14.2 Proposed Stormwater Management System

The proposed stormwater management system for the site includes the following:

- Stormwater drainage network including pits, pipes, culverts and headwalls (where necessary) and associated outlet energy dissipation and erosion protection works.
- Stormwater bioremediation basins positioned to capture surface and piped stormwater flows from the site and upslope catchments for treatment and possible re-use. These shall be located as shown on the attached site plans.
- Rainwater tanks consisting of 5 KL (minimum) rainwater tank(s) per allotment to reduce stormwater runoff and provide non-potable re-use for landscaping, *etc.*
- Site earthworks and landscaping designed specifically to minimise the concentration of runoff, minimise flood hazard, direct runoff to proposed stormwater bioremediation basins and to minimise potential erosion from site surface flows and overflows from stormwater bioremediation basins.

5.14.2.1 Methodology and Assumptions

Using a conceptual layout, site survey data, LiDAR data and drainage information provided by Council, the following computer models were used to determine preliminary recommendations for site stormwater quantity and quality control measures.

- DRAINS hydrological and hydraulic modelling package to determine existing and post-development peak flow rates to size minor (pit and pipe) and major (overland flow path) stormwater system components for the critical duration 1 in 5 and 1 in 100 year ARI storms respectively. Design rainfall data used in the model were sourced from Council and are considered to be consistent with Council's (2009) Engineering Design Specifications.
- MUSIC 5.00.11 water quality modelling package to determine effects of proposed stormwater harvesting dams on site post-development water quality. Design pollutant generation rates are consistent with Council's WSUD (2009) guidelines and rainfall and evapotranspiration data were sourced from eWater (2013) and Bureau of Meteorology (2001) respectively.

The report and modelling also draws on findings from the site flooding assessment (refer **Section 5.6**) with respect to flood levels and behaviour in the Moonee Creek, Cunninghams Creek and Bucca Creek catchments. This data was used to set levels for site bioremediation basins and for designing site drainage infrastructure.

The flooding assessment utilised the following models:

- RAFTS hydrological modelling package to determine peak flow rates from sub-catchments within the Moonee Creek catchment for the 1 in 20 year ARI, 1 in 100 year ARI, Probable Maximum Flood (PMF) and 1 in 100 year ARI with climate change events (rainfall data used in the model sourced from Council and is consistent with Council's (2008) Engineering Specifications.
- Tuflow 11.0.10 1D / 2D hydraulic modelling package to determine existing and post-development flood characteristics and potential effects of proposed development on adjacent properties and infrastructure.

Results (in terms of total peak flow discharged from the site) are summarised in **Table 30**.

Table 30 Summary of results of DRAINS hydrological modelling for 1 in 100 year ARI storms

Duration (minutes)	Existing Peak Discharge (m3/s)	Post-Development Peak Discharge (m3/s)	Change in Peak Discharge (m3/s)
540(9 hr critical duration)	3.32	3.25	-0.07
720	3.49	3.35	-0.14
1080	2.50	2.41	-0.09
1440	2.42	2.35	-0.07

5.14.2.2 Site Stormwater Quality

Results of the MUSIC model are summarised in **Table 31** and **Table 32**.

Results indicate that post development water quality objectives will be met by the proposed treatment train (i.e. an improvement in stormwater quality of discharges from the site and minimum pollutant retention targets).

The model suggests that a significant amount of sediment and gross pollutants will be captured by the stormwater bioremediation basins and shall need to be periodically removed to maintain basin aesthetics and preserve treatment efficiency.

Table 31 Summary of MUSIC modelling results – NorBE (total residual loads)

Model	Total Suspended	Total	Total	Gross

	Solids (kg/year)	Phosphorus (kg/year)	Nitrogen (kg/year)	Pollutants (kg/year)
Existing Conditions	16,300	17.2	140	102
Post-development Conditions	3,430	15.3	104	72.7
Reduction (%)	79.0	11.0	25.7	28.7

Table 32 Summary of MUSIC modelling results – Pollution retention rates

Model	Total Suspended Solids (kg/year)	Total Phosphorus (kg/year)	Total Nitrogen (kg/year)	Gross Pollutants (kg/year)
Post-development –generated	23,300	44.6	240	2,190
Post-development –discharged	3,430	15.3	104	72.7
Retention rate (%)	85.3	65.7	56.7	96.7

The MUSIC modelling results in **Table 33** shows that Council stormwater pollutant retention targets will be met by the proposed water quality treatment measures.

Table 33 Music modelling results of water quality post development

Parameter	Sources	Residual Load	Reduction (%)	Reduction Target CHCC(%)
Flow (ML/yr.)	122	108	10.9	-
Suspended Solids (kg/yr.)	20,900	2,860	86.3	85.0
Phosphorus (kg/yr.)	41	14.3	65.2	65.0
Nitrogen (kg/yr.)	247	99.9	59.5	45.0
Gross Pollutants (kg/yr.)	2,130	137	93.6	90.0

Assessment of the average annual site discharges compared to existing conditions (completed using MUSIC model) shows that the development will increase stormwater discharges to Moonee Ck by approximately 29.5 ML/year. The site soils indicate that these flows would have otherwise reached Moonee Ck via groundwater. The increased surface runoff from the proposed development is not anticipated to impact negatively on existing creek water quality as this runoff is to be treated by the stormwater treatment measures outlined above. As this water would have reached the creek via groundwater, the results suggest that the hydrological regime of both Moonee and Cunninghams Ck is unlikely to be adversely impacted by site development.

MUSIC modelling results suggest that the average site discharge of 108 ML/year is approximately 0.6% of the total average catchment discharge (18.2 GL/year) and the increase in surface flows from the development constitute an average increase of approximately 0.2%.Size of the catchment upslope of the site (approximately 29.5 km2) compared to the site area (approximately 12.9 ha or 0.4% of total catchment) indicates that increases to existing environmental flows in the creek will be minor compared to the overall catchment discharge.

Local creek systems should be capable of accepting any additional flows without suffering any adverse impacts as a result. It is also not anticipated that there will be any significant change to creek salinity levels as a result of the development.

The development does not propose any significant building within 70m of Moonee Ck, and access to Lot 2 DP1097743 already exists. Exfiltration and infiltration rates for bioremediation basin (i.e. into and from ground water) will be nil as the basin will be lined.
Final levels and stormwater design of the development direct all stormwater to the proposed basin for treatment prior to release to Moonee Ck.

5.14.2.3 Minimum Basin Requirements – Site Flooding

Consultation with Council officers has established that the proposed site bioremediation basins should be flood-proofed to the 1 in 20 year ARI peak flood level for Moonee and Bucca Creeks adjacent to the site. The Tuflow model run for the site flood assessment (refer **Section 5.6**) was re-run to determine the 1 in 20 year ARI peak flood height adjacent to the site. The model was re-run with a downstream boundary condition of 1.8m AHD (1 in 5 year ocean level).

The peak 1 in 20 year ARI flood level adjacent to the site was modelled to be 2.43m to 2.50m AHD depending on site position.

Site bioremediation basins are therefore designed with base surface levels at 2.50m AHD, spillway and surface pipe outlet levels at 3.00m AHD and top embankment levels of 3.50m AHD. This will ensure that the basins have no adverse impacts (e.g. backwater effects) on the proposed trunk drainage network and will flood-proof the basins to at least the 1 in 20 year ARI level.

5.14.2.4 Construction Phase Sediment and Erosion Control

An Erosion and Sediment Control Plan (ESCP) has been prepared for the construction phase of works at the site (refer **Attachment W)**. Council's (2009) policy requires that sediment basins be provided with a minimum volume of 250m3/ha of disturbed area with upslope diversion bunds/swales in place to divert surface flows around the works area.

The draft ESCP proposes the following measures:

a) Proposed site clearance and bulk earthworks are to be undertaken in three stages and allow for a maximum of 4.8 ha to be disturbed at any given time and for proposed bioremediation basins to be configured as sedimentation basins during the initial earthworks phase.

b) Proposed bioremediation basins are to be configured as sedimentation basins during site earthworks. Proposed spillway and embankment levels are to be set 0.5 m higher than eventual design level with internal and external batters steepened to 1:3 internal and 1:2 external respectively. This shall give basins a minimum volume of 600 m3 each, allowing for 2.4 ha of disturbed area to be treated during each stage.

c) Diversion bunds / swales are to be constructed as shown on the plans to direct surface flows around disturbed site areas.

d) Sediment fencing is to be used at the downslope end of the site for the duration of all earthworks. Where concentrated surface flows are expected (such as at downslope end of diversion swales, basin outlets and at the driveway crossing over Bucca Creek) and straw bales supported by 1.0 m star pickets driven a minimum of 0.6 m into the ground are to be included and remain in place until vegetation is established.

e) All site stockpile areas are to include diversion bunds upslope and sediment fencing downslope of them.

f) Stabilised site access is to be used at all times during construction phase. The existing site access is to be used where feasible.

5.15 Management of the Riparian Zone

The Survey Plan identifies the riparian areas along the eastern and north eastern boundaries of the site reflecting the presence of Moonee Creek and the unnamed creek respectively. The top of bank was derived from detailed ecological investigations identifying riparian vegetation and survey data and measured 40m wide from top of bank in accordance with the Water Management Act.

Outside of the riparian areas are proposed two bioremediation stormwater basins. These basins are oriented parallel to the wildlife corridor and allow for the increase in the eventual tree canopy over the basins and native ground cover around the basins. Tables 18 and 19 identify that the performance of these two basins will improve water quality currently achieved under existing conditions. This demonstrates that the proposed buffer to Moonee Creek and the unnamed creek and to the Solitary Islands Marine Park to protect water quality and riparian processes is adequate.

Access to the dwelling to the east of the site will be improved by placing a culvert within the riparian area over the unnamed creek and accommodate flood levels up to 1:100. The proposed conservation areas include the riparian areas and ensure that this sensitive part of the site is protected from urban development.

The landscape plan identifies the conservation/riparian areas to be revegetated via a Vegetation Management Plan (VMP). The VMP is to be required as a condition of consent for subdivision that will identify the rehabilitation, planting, monitoring and ongoing maintenance of the riparian areas as part of the North/South wildlife corridor.

5.15.1 Buffer to Moonee Creek

5.15.1.1 Delineation of Buffer

Riparian corridors are typically measured from the top of bank cf. Water Management Act. It is understood the 100m buffer is derived from Marine Park Authority advice to Council concerning the protection of the Solitary Islands Marine Park. However, planning decisions by Council and Gateway Determination have determined the appropriate buffer to Moonee Creek to be 50m in width.

Figure 32 illustrates the buffer delineated by the underlying 7A zone and proposed E2 zone boundary, and the distance the proposed subdivision from the top of the bank. It can be seen that the subdivision is setback from the zone boundary providing a wider buffer than currently provided by the 7A environmental zone, and the draft E2 zone. No infrastructure is proposed within the buffer with the exception of maintaining the existing vehicle access to existing Lot 2 (via Lot 105) and an existing electricity substation.

In fluvial geomorphological terms, if sea levels rise were to occur to the predicted levels, riparian zone migration will vary along the entire extent of Moonee Creek to accommodate an increase in volume of water.

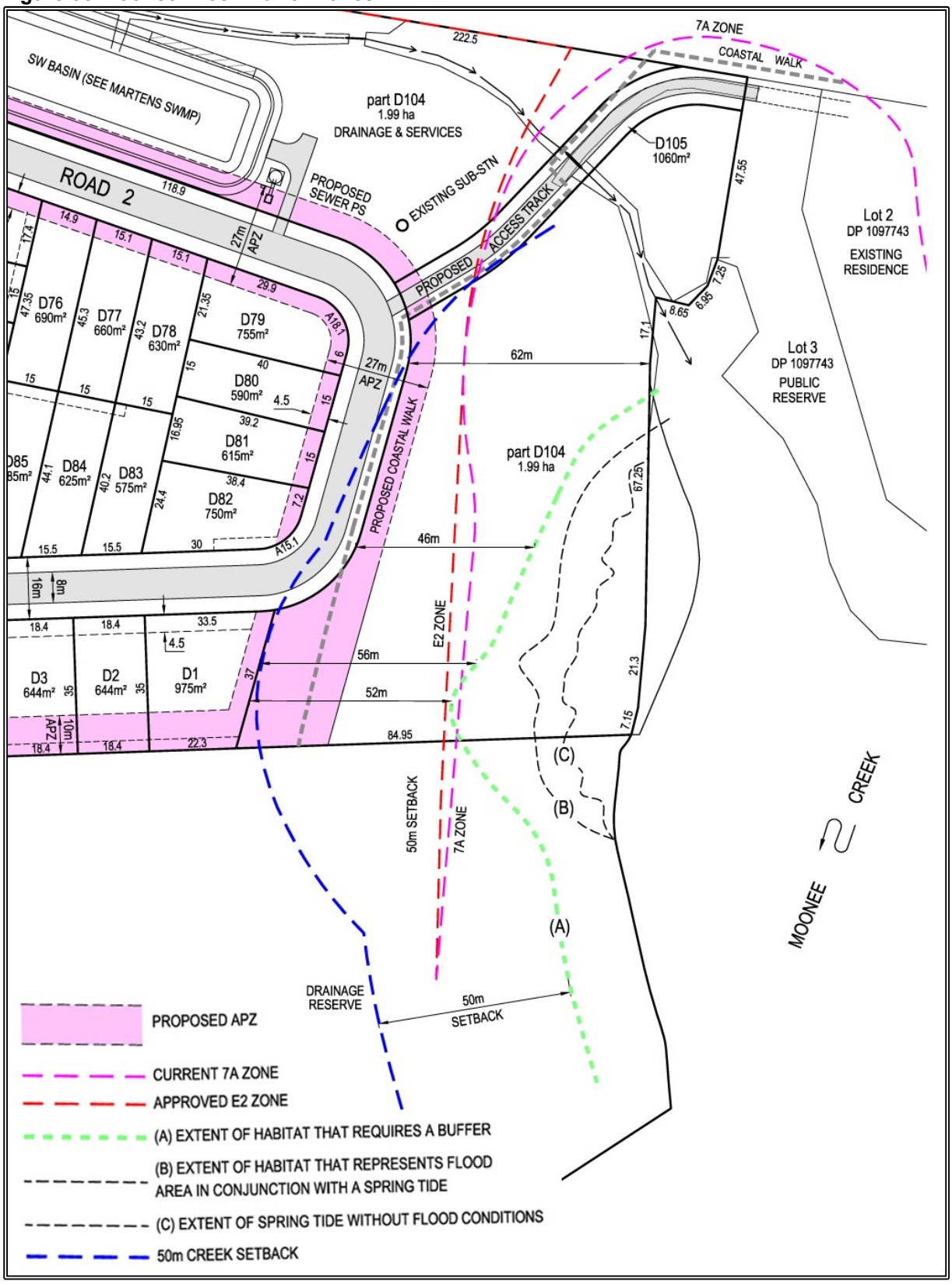
Therefore, if there were to be a physical restriction on riparian zone migration on the site by (natural or constructed), the displaced tidal waters would disperse across the entire tidal zone in places where the creek banks would be lower and where riparian zone migration will naturally occur. There is also considerable capacity for shoreline movement over time within the buffer.

The proposed development does not propose nor seek to encourage access to the Creek. Access into the marine park and the regulation of boating and fishing activities within the marine park are regulated by the Marine Parks Authority under the revelation legislation and are outside the scope of this document.

DPI Fisheries were directly consulted on the buffer and their interpretation of Highest Astronomical Tide in accordance with DPI Policy and Guidelines. Following submission of **Figure 35** to DPI (revised mapping using existing data), DPI Fisheries advised:

> *"the proposed buffer is generally consistent with the Department's policy and guidelines for fish habitat conservation and management contingent upon any approval for this development requiring;*
>
> - *rehabilitation and sound management of the buffer zone undertaken consistent with best practice techniques; and*
> - *dedication of the buffer zone to Coffs Harbour City Council."*

Figure 35 Moonee Creek Buffer Zones



Source: Civiltek annotated JWP

5.15.1.2 Infrastructure in Buffer

At Councils request, the coastal walk – a 2.5m concrete path - has been located along the western interface of the buffer with Road 2 to both provide a hard edge to the buffer, to contribute to the APZ (i.e. additional perimeter road edge), and to provide casual surveillance by future residents of the lots looking on to the buffer and the walk.

Street trees can be planted between the coastal walk and the perimeter road provided that the canopy does not exceed 30% for an outer protection area. However, no under scrubbing would be required as this stretch of the coastal walk would be directly accessed by pedestrians from the perimeter road and form the eastern verge of the road reserve.

As the creek is part of the Solitary Islands Marine Park under the management of the Marine Park Authority and consistent with minimising infrastructure in the buffer, no access is proposed through the buffer to the Creek. Council has the capacity to reconsider strategic access points along the entire proposed coastal walk to Moonee Creek to address this issue prior to construction and in consultation with the Park Authority.

The Water Services Association Australia Sewer Pump Station Design guideline provides details on emergency overflow storage volume. Typically, horizontal round concrete pipe storage is used which is normally designed at the CC stage. These guidelines are consistent with EPA Licensing Guidelines for Sewage Treatment Systems (July 2003).

5.15.2 Marine Parks Act and the Solitary Islands Marine Park

The MPA advised DPE concerning the major project, (12th January 2010 - Doc10/1339) that a 100m buffer is typically asked but 'if a buffer less than this is proposed the Applicant needs to show how the proposal meets the objects of the Marine Parks Act and the objects of the SIMP zoning of the Moonee Creek system (page 3)'.

Marine Parks Act 1997 has been replaced by the Marine Estate Management Act 2014 No 72 (MEMA). The objects under Section 3 of the Act are addressed as follows:

> *(a) to provide for the management of the marine estate of New South Wales consistent with the principles of ecologically sustainable development in a manner that:*
>
> *(i) promotes a biologically diverse, healthy and productive marine estate, and*
>
> *(ii) facilitates:*
>
> - *economic opportunities for the people of New South Wales, including opportunities for regional communities,*
>
> *And*
>
> - *the cultural, social and recreational use of the marine estate,*
>
> *and*
>
> - *the maintenance of ecosystem integrity,*
>
> *and*
>
> - *the use of the marine estate for scientific research and education,*
>
> *(b) to promote the co-ordination of the exercise, by public authorities, of functions in relation to the marine estate,*
>
> *(c) to provide for the declaration and management of a comprehensive system of marine parks and aquatic reserves.*

The site is currently degraded from decades of rural activity which continue under existing use rights (notwithstanding the former 7A Environmental Zone). In effect, there is no formal buffer in place to protect the adjoining waterways. The land is privately owned and managed up to the mean high water mark without routine or passive supervision of land use activities near the creek(s).

The development will establish a public owned and managed riparian area that at its narrowest, introduces a 60m vegetated buffer to the Creek (the buffer has an average width of 72m). The narrowest point is some 10m wider than Council's independently prepared LES recommended to Council in March 2015 following a review of relevant matters in consultation with state agencies. The LES concluded this site, that a 50m buffer should be applied, although the recommendations of the site specific assessments that inform the RTS have led to a design and layout with a wider buffer (up to 107m in places) to avoid adverse impact on the biological diversity of the marine park estate or the health and productivity of the marine estate.

The proposed development provides for economic development in the locality by way of housing for the Moonee Beach locality and support for the businesses, jobs and services located in the Moonee Beach village centre.

The proposal does not propose access to the marine estate and with appropriately designed stormwater management carried out as proposed, and a long term sustainable buffer to the adjoining creeks, the proposal will not conceivably impact on the economic opportunities associated with the marine estate.

No recreational uses of the park are facilitated by the proposed development as no public access is proposed from the site into the marine park. However, in accordance with the Moonee Beach DCP, a Coastal Walk is proposed on the western boundary of the buffer that will facilitate cultural and social use and appreciation of the park.

The Solitary Islands Marine Park zones Moonee Creek as a "habitat protection zone". This zone conserves marine biodiversity by protecting habitats and reducing high impact activities. There do not appear to be objects available for this zone prepared by the MPA. Regardless, the site investigations indicated that measures proposed by the Project will improve, and not adversely affect, marine biodiversity or habitats within Moonee Creek.

The integrity of the SIMP ecosystem is maintained. The riparian corridor of Moonee Creek is maintained (as recognised in guidelines under the Water Management Act being 40m measured from the top of the bank for a Level 4 river). Runoff from the entire development (including those parts of the development closest to the Creek will be captured and treated by the proposed bioremediation basin. The quality of stormwater exiting the site via the basin will improve existing water quality to the following extent:

- phosphorous reduced by 11%
- nitrogen reduced by 25%
- total suspended solids reduced by 79%
- gross pollutants reduced by 28%

5.16 Social & Economic Environment

The site is part of the Moonee Beach undeveloped urban area. As a consequence, the area has been strategically identified by Council and the NSW government for population growth and change.

5.16.1 Projected Dwelling and Population Increase

The projected population increase, household size, dwelling number and occupancy rates for Moonee Beach area to year 2031 are indicated in **Table 34**. The proposed creation of 103 lots will lead to the subsequent creation of 103 detached dwellings. At an average of 2.75 persons per dwelling this will total approximately 283 persons. This will positively contribute to population, household and dwelling growth for Moonee Beach.

Table 34 CHCC Population Forecast for Moonee Beach

Moonee Beach	Forecast year				
	2011	2016	2021	2026	2031
Population	1,611	1,923	2,619	3,411	4,222
Change in Population (5yrs)	321	312	696	792	811
Average Annual Change (%)	4.54	3.6	6.37	5.43	4.36
Households	559	698	973	1,258	1,576
Average Household Size (persons)	2.88	2.75	2.69	2.67	2.65
Population in non-private dwellings	0	0	0	50	50
Dwellings	601	750	1,045	1,352	1,694
Dwelling occupancy rate	93.01	93.07	93.11	93.05	93.03

Source: iD Forcast

The proposed lots will provide for the construction of single and two storey detached dwellings. This is generally consistent with the objectives of the Moonee Beach DCP where increased housing type and smaller size is focussed around the Moonee Beach village.

The trend of decreasing average household size is a national social and economic trend. The development plan is a response to this trend and to accommodate market demands. Like with any green release area, the first residents are likely to be predominantly educated and qualified young families as first home buyers and families up grading to a new and larger dwelling and relocating from within Moonee Beach or other parts of the LGA. As the development ages over time relative to new stages being released, then the socio economic profile of residents will begin to diversify consistent with broader socio economic trends across Coffs Harbour and the north coast region. Profile of Future Residents

Future residents of the development are likely to be educated; older families with parents between 40 and 60 years with teenage children; high household incomes; mobile; currently paying off their mortgage and looking to upsize or step up the housing investment ladder.

5.16.2 Impact of Additional Residential Lots

5.16.2.1 Market Supply

Once the site is developed, it will increase the available land stock by 103 lots and will supply the demand for residential land in Moonee Beach and in the Coffs Harbour LGA. The lot size and dimensions will facilitate mostly large single dwelling homes consistent with the objectives of the 2A Residential Low Density zone under the Coffs Harbour LEP 2000.

The proposed 103 residential lots is on top of the 523 residential lots that have been approved by the Minister for Planning and Infrastructure in the Glades development to the north. This land has not been able to be developed due to issues in achieving the construction of the collector road. The approval of the collector road by the Land and Environment Court in June 2012 - to run from the Glades across the site and southward to Moonee Beach village - and the approval of the additional lots in this development plan will significantly increase the momentum of achieving land owner arrangements to commence construction of the road.

5.16.2.2 Employment

The proposed development will provide employment during the civil works and housing construction phases of the development.

The Australian Bureau of Statistics (ABS) and the Indicative Planning Council for the Housing Industry have established economic multiplier effects for residential development in Australia (HIA Economics Group Research Note: *The Economic Multiplier Effects of Housing, December 2006*). For every $1 million of housing construction output, tens of thousands of dollars are spent on primary materials, transport and property services. The total civil construction cost for the development is expected to be

in the order of $10 million, whilst the total housing construction cost is expected to be approximately $108 million (Washington Brown.com.au – medium quality finishes – site accessed 24th March 2013). According to the Indicative Planning Council, every $1 million of construction generates 13 jobs - seven direct construction jobs, four jobs in material manufacturing and two jobs in industries that supply industries that supply construction.

For the development plan, the capital investment value of $10million on subdivision construction will generate 130 jobs – 70 in direct construction, 40 jobs in materials manufacturing and 20 jobs in down the chain supply industries.

The $108 million spent on housing construction will generate some 1404 jobs – 756 jobs in construction, 432 jobs in building manufacturing and 216 jobs in industries that supply construction. These employees will shop and use services at Moonee Beach village and hence increase profitability and capacity for expansion of existing businesses and generate new businesses.

5.16.2.3 Economic Multiplier

The *Economic Multiplier Effects of Housing Research Note* by the HIA Economics Group (2010) states that every $1 million injected into housing construction generates $2.9 million of demand for mining products; wood and wood products; non-metallic mineral products; fabricated metal products; other machinery and equipment; property and business services; and transport and storage services. Likewise, for every $1 million injected into the economy as a result of the civil construction works, a similar multiplier effect can be expected.

5.16.2.4 Employment for new residents

Recent unemployment employment data for the Coffs Harbour LGA (Coffs Harbour Economic Profile 2010, CHCC 2010) indicates that the LGA is performing better than the Mid North Coast Region overall but underperforming against the state and national average unemployment figures. This data, somewhat typical of non-metropolitan coastal areas, indicates the increasing strength, diversity and resilience of larger towns over smaller towns and the corresponding increases in employment numbers and diversity of employment type.

For the initial stages of the development of the site and for the adjoining Glades Estate, employment opportunities for new residents (those 15yrs and older) will be elsewhere in the LGA with an obvious concentration in the Coffs Harbour city itself to the south and other towns through the LGA. As the construction of the site progresses, there will be a corresponding increase in the population of the primary trade area of the Moonee Beach village and hence an increase in the number and range of businesses and activities and employment opportunities to service this population growth and increase.

The location of the site relative to Coffs Harbour and its high quality amenity indicates that future residents are likely to be economically productive persons as opposed to economically dependent persons. The ratio of economically productive versus economically dependent persons is likely to be lower and hence there is less strain on the productive persons to the upbringing and pensions of the economically dependent. Again, like the unemployment rates, recent dependency ratio data in Coffs Harbour LGA has been lower than the Mid North Coast Region and higher than the State. (Coffs Harbour Economic Profile 2010, CHCC 2010).

The employment sectors that future residents are likely to be employed in includes; Healthcare & social assistance; Education & training; Public administration & safety; Professional, scientific & technical services; Accommodation & food services; Retail trade; Construction; and Manufacturing.

5.16.3 Impact of Additional Residents

Post construction, the impacts on the wider economy will be in retail, education and health, transport, recreation and finance. The 2009-10 ABS Household Expenditure Survey found the average Australian weekly household expenditure was $1236 and for non-metropolitan areas an average of $1107 per week. The annual household expenditure generated from 103 households in the

development plan is likely to be some $6,210,240. This will clearly provide positive economic benefits to the local economy.

5.16.4 Social Infrastructure, Recreation and Community Services

The development will result in an increase in demand for certain facilities, service and infrastructure. This will include an increased demand for recreational facilities, schools, health infrastructure, emergency services, public transport, open space and community facilities.

Goodstart Early Learning Centre and *Moonee Beach Veterinary Surgery* with other services in the Moonee Beach Shopping Centre, will be the location for local facilities and services for future residents.

Consistent with the Moonee DCP 2004, the development plan proposes a coastal walk along the eastern perimeter road and along the proposed access to Lot 2 DP 1097743. Moonee DCP identifies a park located near the northern boundary of the site. Due to this approved park, and based upon Council advice, a park for the site is not required. Furthermore, whilst there is some merit for a small park as a focus point for the future residents of the site as a suburban neighbourhood, this would conflict with the ecological mitigation measures recommended concerning land to the east of the proposed perimeter road.

The Moonee to Skinners Creek Coastal Walk has been incorporated into the proposed development to link via a shared cycle pedestrian path future development from the south and through the site and connect to Recreation Node 1 in the approved Glades development.
The open space network is generally in accordance with the Moonee DCP, namely the protection of the environmental areas in the NE corner and along the eastern boundary (Moonee Creek and riparian vegetation).

An underappreciated element of conventional subdivision that forms an important component of the proposed open space network is the proposed street network. Based upon the premise of slow speed streets with regular/frequent intersections, footpaths, drainage swales, minimum driveway widths over the road reserve and the encouragement of low fences delineating the front property boundary of residential lots, the street network and the streetscape are designed to encourage residents to walk and cycle around their neighborhood and socially interact to create a sense of place and community.

No other recreation or community facilities are proposed within the development plan. Consultation with council in November 2012 indicated that any facilities proposed on the site would be additional to that approved by the Glades Estate, would be a duplication and are undesirable for Council to own and maintenance. In particular, a park was initially considered in the north east corner of the site. However, council's views and prevailing ecological issues lead to the park being removed from the development plan.

Therefore, future residents within the development plan will use the facilities in the Glades Estate including open space areas, pedestrian trails and boardwalks, picnic shelters and BBQ areas, a basketball court, children's play equipment, fitness equipment and a canoe launch jetty.
The proponent for the subdivision of the development plan will pay section 94 contributions towards the provision of public facilities and services in accordance with Council's applicable Developer Contributions Plans.

5.16.4.1 Pedestrian Access to Moonee Creek and Solitary Island Marine Park

No access is proposed in the development design in accordance with MPA requirements in the DGRs. Council will be the future land owner of the buffer whilst the MPA is the manager of the Moonee Creek as part of the Solitary Islands Marine Park. Accordingly, access to and regulation of, these two areas are the responsibility of each respective authority. However, to assist the management of this issue the following is proposed:

a. location of the coastal walk close to the perimeter street to contribute to a hard edge to the buffer, limit impact of coastal walk on buffer and provide casual surveillance of the path and safety to users;

b. Provide a timber post and rail fence on eastern side of coastal walk (including driveway access to Lot 2) to restrict people from walking within the buffer and into Moonee Creek.

5.17 Built Environment

5.17.1 Public Streets

The proposed development consists of 6 street blocks that are mostly 150-190m in length and 70m in depth to achieve a regular street network. This creates a street network that is then differentiated by widths and landscaping according to its role in the street hierarchy. The intent is to achieve a unified streetscape throughout but subtly and sufficiently varied to create identity and way finding for residents, cyclists and pedestrians.

5.17.2 Private Buildings

All residential dwellings requiring consent will be in accordance with Coffs Harbour Local Environmental Plan 20013 and Moonee DCP 2015. All complying dwellings will be in accordance with either council's existing complying development controls or SEPP Exempt and Complying Development 2008 and the Residential Housing Code.

To ensure market sensitivity, it is proposed that design guidelines be issued at the point of sale for each individual lot. These guidelines are aimed at ensuring a high standard in the development of the built form and associated landscaped areas visible from public streets or parks.

The guidelines will cover elements such as:

- building form;
- setbacks;
- vehicle accommodation;
- external finishes;
- driveways;
- fencing and retaining walls;
- landscaping to front gardens;
- letterboxes

5.17.3 Landscaping

Geolink were engaged to prepare a landscape plan for the site (refer **Attachment P**). The landscape plan was required to:

- address the site's location in the landscape and ecology;
- provide shade for pedestrians;
- frame the street for pedestrians, cyclists and drivers, emphasise view corridors along streets;
- where appropriate, achieve a partially closed canopy over the street to contribute to creating a slow vehicle speed environment;
- replace trees lost by the proposed development both physically and to offset increased carbon emissions; and
- contribute to creating a desirable amenity for individual lots and future residents.

The Landscape Plan identifies the landscaping of the public streets plus the rehabilitation of the conservation area and detention basin, and the subsequent management program to ensure these assets are suitable for dedication to council.

Moonee Parklands Trust will construct all landscaping and undertake necessary rehabilitation of the conservation area identified in the Landscape Concept Plan. All works will be maintained by the Trust until dedicated to Council. The dedication of the conservation area will take place upon registration of the linen plan at the relevant stage of the subdivision.

The outcomes of the landscape are as follows:

1. The use of appropriate native species;
2. A simple low maintenance scheme;
3. Each street has tree species and habit that reflects the street hierarchy in dimensions and movement:
    - Collector road (Road 1) is proposed as a formal avenue of tall trees (12m high) at regular intervals to emulate the existing landscape character and define the road;
    - Local streets (Roads 2 and 3) are proposed as avenues of medium sized trees (7 to 8m high) provided at regular intervals within the verge on both sides;
    - Access streets (Roads 4, 5 and 6) avenues of small to medium size trees.
4. Entry planting Gateways to the site;
5. Subject to a Vegetation Management Plan, revegetate the eastern portion of the site for a wildlife corridor;
6. Treatment of detention basins that allow them to achieve their hydrological function within the wildlife corridor;
7. Incorporate the coastal walk into the road reserve of Road 3 and the proposed public right of way for the access to Lot 2 DP 1097743 to connect with coastal walk in the approved Glades Estate.

The approved lots from the Glades Estate back onto the northern boundary of the site. Accordingly, proposed Lots 87 to 103 will back onto the Glades Estate lots and hence the northern boundary fence line will not be visible from any proposed public streets in the site or from the Glades Estate.

Lot 6 to the south is zoned for development and backs onto proposed lots 1 to 19. Council has maintained this zoning following its adoption of a planning proposal for the deferred matters in the Coffs Harbour LEP 2013 early in 2015. Accordingly, when Lot 6 is subdivided in the future, lots created will ultimately back onto Lots 1 to 19.

As an interim measure and to address the visual impacts of rear boundary fences visible from the approved Collector Road (primarily proposed Lots 15 to 19 (as remaining proposed lots along boundary will be screened by existing native vegetation in Lot 6)), a capped and lapped timber fence will be constructed along the entire southern boundary. This will also apply to the northern boundary. The Rural Fire Service has required 10m Asset Protection Zones at the rear of proposed lots along the northern and southern boundaries. Requiring landscaping in the private back yards of these lots would conflict with this requirement.

Furthermore, prescribing landscaping for private back yards would be inappropriate. If in the event such landscaping were to be prescribed in the development consent and implemented by the developer at subdivision construction stage, future owners of each affected lot would likely change or remove such landscaping to their own satisfaction.

The landscape plan species list has been amended to only include endemic local species, no koala feed trees are proposed in the western portion of the site adjacent to the Highway and no planting of large trees is proposed along the southern and northern site boundaries.

6.0 CONSULTATION

6.1 Agencies and Other Authorities

During preparation of the Director General Requirements, the Department of Planning and Infrastructure consulted the following organisations:

- Coffs Harbour City Council;
- Department of Natural Resources;
- Department of Environment and Conservation;
- Department of Lands;
- Department of Primary Industries/Fisheries;
- Roads and Traffic Authority;
- NSW Rural Fire Service;
- Solitary Islands Marine Park Authority;
- Country Energy;
- Telstra; and
- Local Aboriginal Lands Council/s.

The issues raised by various agencies have been taken into account by the Department of Planning and Infrastructure in formulating the DGRs for the EA.

On lodgement of the initial EA in 2013 in response to the DGRs, DPE undertook an adequacy review and further consultation with the relevant state government agencies and Coffs Harbour Council. DPE provided the outcomes of that review in a letter to JW Planning dated 27th January 2015 with a further adequacy letter review dated 15th December 2015.

Following submission of the Response to Submissions to DPE on 4th May 2016, further consultation was undertaken with DPI Fisheries and OEH on the buffer to fisheries habitat, offsetting the impacts of the proposed development under the Threatened Species Conservation Act, and clarification of Aboriginal archaeological requirements and protocols post consent.

A summary of key issues raised in the DGRs, as well as the relevant section of the EA where they are addressed, is provided in **Section 4.0**.

6.2 Proponent Consultation

6.2.1 Coffs Harbour City Council

Representatives of JW Planning and the proponent consulted with the Technical Liaison Committee of the Coffs Harbour City Council on the 22nd November 2012. A working version of the development plan layout was tabled and issues were discussed accordingly. The terms of reference for the Committee in discussing the draft development plan was primarily the Moonee DCP 2004. The views of the committee have been incorporated, where appropriate, into the development plan and this report.

6.2.2 Department of Planning and Environment

Four meetings have been undertaken with the Major Assessments Section of the Department on the development plan during 2012 and 2013. This consultation concerned the repeal of Part 3A and

administrative, policy and consultation issues surrounding the transitional arrangements for Part 3A concept plans where DGRs have been issued.

On the 22nd November 2012, JW Planning met with representatives of the Department's Grafton office. The Departmental officers indicated that Council had been advised during the draft LEP 2012 process that the Part 3A process is the preferred process for determining zone boundaries and that Council should adjust its LEP to ensure consistency with Part 3A approvals by the Minister for Planning and Infrastructure.

In the interim, the Grafton office of the Department would wait for the submission of the concept plan and EA report and the Department's own internal processes in due course.

6.2.3 Office of Environment and Heritage

OEH were provided a draft copy of the development plan including early working draft ecological and aboriginal cultural heritage reports in early March 2013. OEH comments and a response to these issues are provided in **Table 35.** These reports were early working drafts that had not been thoroughly reviewed to confirm accuracy and consistency.

Table 35 Preliminary Consultation with OEH

Issue raised	Response
Ecology	
Consideration of excluding development from Coastal Floodplains and Swamp Oak Floodplain Forest EEC	No development is proposed in the EEC. Perimeter road is at a minimum of 50m from the EEC boundary.
Implement 100m buffer to Moonee Ck would ensure consistency of OEH support of Moonee DCP and exclude urban development from within the buffer to • protect riparian vegetation, • maintain water quality and • provide habitat linkages.	Refer Section 5.15. • No urban development proposed within the proposed buffer; • No riparian vegetation proposed to cleared within 40m of the creek (from the top of the bank for a fourth order river as per NSW Office of Water Guidelines for riparian corridors on waterfront land; • 2 bio remediation basins will treat stormwater and significantly improve stormwater quality to that currently entering the creek • Habitat linkages are provided by the setting back of the development from the eastern and northern boundaries greater than that established by the environmental protection zone boundary.
Create a setback from Solitary Islands Marine Park and consider increasing the buffer to 100m.	See above.
Current proposal does not adequately address the avoidance of significant impacts: it does not justify how these impacts will be adequately mitigated and does not propose any offset for the proposed impact.	The ecological report 7 part test concludes that the proposed development is unlikely to have a significant effect on threatened species, populations or ecological communities, or their habitats.

The sites connectivity values have been addressed in part; however the development layout does not incorporate existing vegetation areas which form part of the broader wildlife corridor network.	The presence of the upgraded dual carriageway Pacific Hwy and the identified fauna habitat linkages to the north and along the southern end of the site, cancels out the feasibility of an east/west corridor. The remnant vegetation (MU1) in Lot 1 has been slashed and grazed and its size, location and floristical structure has been severely compromised. Incorporating this vegetation into a North/south corridor would not be sound ecological landscape planning and would be contrary to the objectives of the 2A Residential zone under LEP 2000.
There is greater importance on providing further extended buffers to the environmentally sensitive areas of the subject property and to the adjoining properties which also contain significant biodiversity values.	The environmentally sensitive areas of the site have been identified as the EEC in the NE corner and the riparian corridor to Moonee Creek along the eastern boundary. Extending the proposed buffer further westward would be into mostly cleared land with a small number of remnant trees. The biodiversity values of the adjoining property to the north have been assessed and determined by the Minister for Planning and Infrastructure in approving the Glades Estate concept plan and project plan. The setbacks and wildlife corridors in that development plan integrate with that under the proposed development plan.
All development infrastructure such as APZ, playgrounds and access tracks should be located outside of the 7A area	A 20 metre APZ is located within the 16m perimeter road reserve and within the 5m front setback of adjoining lots. No playground is proposed within the 7A nor within the current 2A zoned land that is to form part of the wildlife corridor to be dedicated to council.
The proposal should include a rehabilitation and maintenance plan	As a condition of approval, this to be prepared by a suitably qualified and experienced ecologist at Construction Certificate.
Aboriginal Cultural Heritage Assessment	
Incomplete Aboriginal site records. Additional site recordings required by the proponent.	These comments refer to a draft report that has now been updated and finalised.
Incomplete preparation of preferred management strategies in the likely event that Aboriginal objects will be impacted by the development proposal	
Incomplete evidence of the Aboriginal community consultation process. Additional information is required in support of the consultation process.	

6.2.4 Solitary Islands Marine Park – Department of Primary Industries

On the 27th March 2013, the Solitary Islands Marine Park provided comments to JW Planning**.** The issues raised and responses are provided in **Table 36.**

Table 36 Preliminary issues raised by MPA

Issue raised	Response
Flood assessment	
Concern on location of SPS and bioremediation basins and flooding and sea level rise and within an area set aside for environmental protection.	The SPS is proposed to be located adjacent to an existing electrical substation. Martens have advised that the location of the proposed infrastructure is acceptable in terms of risk from flooding and sea level rise. Engineering details at CC stage can ensure that switch gear, wet well roof slab and electrical switchboard cabinet are appropriately placed above the 100 year flood level plus sea level rise. The location of infrastructure in this location is outside of the 7(a) environmental protection zone**.**
Modelling in the flood assessment is likely to give a false idea of the effects of flooding on the development site and in particular the pump station and water quality basins.	Martens are recognised experts in flood modelling and stormwater management. The site is proposed to be filled to a level above the 1:100 year flood event plus sea level rise and accommodate the pump station and water quality basins.
Flood modelling has not considered the impact of flooding and sea level rise upon the riparian zone and require a 100m buffer to allow riparian zone retreat.	Martens have demonstrated that this will not impact on flood volumes or behaviour upstream or downstream from the site. An adequate buffer (wider than the existing environmental protection zone) has been established to protect the riparian zone and water quality to Moonee Creek (refer Section 6.10). The *NSW Coastal Planning Guideline: Adapting to Sea Level Rise* (DoPI, Sept 2010) makes no reference to "riparian zone retreat".
Ecology	
Confusing references to Solitary Islands Marine Park and Solitary Islands Marine Reserve (Cth Waters)	EA report refers to the Solitary Islands Marine Park under the jurisdiction of the NSW Department of Primary Industries.
Ecology report – species list includes fish that are not likely to be found in Moonee Creek whilst some species have been left out.	Noted. No urban development proposed within the riparian zone and there is unlikely to be impacts upon Moonee Creek ecosystem. The proposed bioremediation basins have been modelled to significantly improve water quality post development to that experienced under existing conditions.

6.2.5 Fisheries NSW – Department of Primary Industry

On the 27th March 2013, Fisheries NSW provided comments to JW Planning**.** The issues raised and responses are provided in **Table 37.**

Table 37 Preliminary Issues raised by Fisheries NSW

Issue raised	Response
Site adjacent to key fish habitats and a Habitat Protection Zone in Solitary Islands Marine Park warrants a 100m buffer zone	Refer to Section 5.15.
ICOLL Entrance Management	Noted.
Waterway crossings – Bucca Creek	Upgraded crossing of creek to Lot 2 DP 1097743 will satisfy fish passage requirements at CC stage.
Foreshore access	No foreshore access proposed.

6.2.6 Adjoining landowner consultation

The integration of the development plan subdivision design has required consultation with the Rothwell Boys Pty Ltd - owners of the approved Glades Estate – and their consultant to ensure that fill levels along the northern boundary between the two lots are consistent for stormwater drainage, fencing and street connections and that Streets 2 and 3 and lots connecting and fronting the collector road have the correct alignment and elevation to integrate with the Court's approval.

6.2.7 Public Exhibition

The *EP&A Act* requires that this report be submitted to the Department of Planning and Environment who will advertise and exhibit the EA for a period of no less than 30 days. Further consultation with the public, relevant government authorities and agencies will be undertaken during this period.

7.0 RESPONSE TO SUBMISSIONS

The following is an outline of submissions made in respect of the proposed Development during public exhibition and more recently, in DPEs consultation with relevant state agencies. Responses are provided in respect of each issue to enable assessment of the Development Plan and the Development Application. A detailed summary and response to all submissions both during and post the public exhibition are included at **Table 35** below.

This report contains the following to address the adequacy review comments by DPE and agencies during 2014, and consultation with Council, OEH, DPI Fisheries and Marine Park Authority in early 2015 and 2016:

7.1 Summary of Submissions

Nine (9) submissions were received from Council and government agencies during the public exhibition period, including:

- Department of Planning and Environment (DPE);
- Coffs Harbour City Council (CHCC);
- Office of Environment and Heritage (OEH);
- Rural Fires Service (RFS);
- Agriculture NSW;
- Fisheries NSW;
- NSW Office of Water (NoW);
- Department of Primary Industries (DPI);
- Roads and Maritime Services (RMS);
- Marine Park Authority (MPA).

Of the 36 submissions, 133 issues were raised. Many issues overlap or are duplicates and do not numerically indicate 133 separate matters requiring individual consideration. The issues can be grouped into following six categories:

i. Adequacy of information for part of the site (14 issues);
ii. Ecological impacts (43 issues);
iii. Buffer to Moonee Creek and Solitary Island Marine Park; (10 issues);
iv. Roads and access to the site from the Pacific Highway (8 issues);
v. Noise from the Pacific Highway (7 issues);
vi. Flooding and stormwater management (5 issues).

7.1.1 Submissions from the Public

There were 12 submissions made by members of the public, including builders and professionals interested in, or trying to establish a business or build a home, Moonee. The submissions supported the proposed development as it would provide more lots, houses and people for Moonee and support the existing infrastructure and services that were provided in anticipation of significant growth in population e.g. Moonee Shopping Centre.

A petition was submitted by the owner of Lot 6 DP 252223 to the south of the site objecting to the EA claiming it was misleading and unfairly impacting upon Lot 6. Lot 6 was been removed from the application.

7.1.2 Submission from Owner of the Glades Estate

Winten Property Group, on behalf of the owner of the approved Glades Estate subdivision adjacent and north of the site, support the proposal provided that the proposed streets align with those of the Part 3A Project Approval for subdivision and the court approved collector road.

Table 38 Response to Submissions

Item	Summary of Issue	JW Planning response
Department of Planning & Environment		
1. Cut and fill, Acid Sulfate soils	Address cutting and filling in PPR & pinpoint the relevant sections where it is addressed	Refer to Section 5.10 & 5.4
	Review the adequacy of the ASS assessment	Refer to Section 5.10
2. Staging of development	Stage description & Final Treatment & visual character, southern edge of development	Refer Section 3.2
	Specify the proposed number of stages	Refer Section 3.2
3. Servicing and Access	SoC16 states Applicant will facilitate construction of water main within collector road reservation.	Refer to Section 5.13
4. Other issues	Design Guidelines and Mosquito Management Plan have not been addressed	Refer Section 3.9 and 5.9
5. Buffer to Moonee Creek	Identify removal of infrastructure from buffer and address adequacy of buffer with reference to plan	Refer Section 5.15
	Statement of commitments 8 relates to Lot 104 but refers to the dedication of Lot 105	Typo corrected.
	Attach A & PPR should pinpoint sections which address issues and by a plan illustrating removal of infrastructure	Refer **Figure 14** and Section 5.15
6. Ecological assessment	Habitat mapping – identify section of PPR which reviews OEH submission [EA report]	Refer **Attachment B** in **Attachment I** Ecological Assessment Report.
	Habitat mapping	Refer to **Attachment I**
	Habitat mapping – Section 3 Impact on Vegetation does not address the issue	Refer **Attachment I**
	Habitat mapping – Attach E to provide assessment of receiving environments to accommodate compensation planting	Revegetate Lot 104 to reinstate native veg. No known factors that prevent this.

Item	Summary of Issue	JW Planning response
	Koala management - explain any differences between the terms “favoured” and “preferred”	“Preferred” in CHCKPOM 1999 - “favoured” not but known as food source by ecologist & CHKPOM.
	Koala mgmt. - Reference relevant mapping of preferred feed trees recorded on site & individual trees & secondary koala habitat proposed to be removed.	Refer **Attachment I**
	Squirrel Glider habitat mapping – Section 4.2.7 of PPR (not listed in Took) refers Figure 18 Proposed Mitigation measures for Squirrel Glider without any discussion.	Refer **Attachment I**
	State whether landscape plan contains all endemic species using local provenance.	Landscape Plan amended - refer **Attachment P**
	Attachment A should also refer Attachment D.	All Attachment references amended
	OEH requirements for offsetting in accordance with Biodiversity Offsets Policy for Major Projects;	Refer **Attachment Q**
7. Flooding and Drainage	Sec 4.1 include additional flood modelling under taken & flooding scenarios developed for Cunningham Ck.	Refer Section 5.6
	Clarify if DCP/ SEPP (Exempt & Complying Development) setbacks apply.	Refer Section 4.1 & 4.3
8. Bushfire	Provide details of landscaping along Nthn & Sthn perimeter of site & over part of proposed Lot 104.	Not proposed on perimeter. Refer **Attachment P**
	Provide a separate plan showing proposed APZs	**Attachment D** shows APZs.
	Clarify the proposed staging.	Refer Section 3.2
9. Staging	Identify how SoC has changed from EA version.	Refer Section 3.1
10. Statement of Commitments (SOC)	Address interaction of basin water with groundwater	Refer Section 5.7
	Provide further details of responsibility & timing of SoC 9	Refer to **SoC 8**
	When the Applicant will revegetate the buffer	Refer to **SoC 8**
	Reference relevant drawings	Noted
	Whether Council agrees to accept dedication	Yes. Refer Section 4.2.1
	Timing of VMP or dedication of Lot 104	VMP prior to CC for Stage 1.

Item	Summary of Issue	JW Planning response
	Summarise amended project in Executive Summary	Refer Executive Summary.
11. Project Description	Provide development data table (No. of lots, buffer width, staging etc.) & plan of proposed subdivision comparing exhibited & preferred projects e.g. an overlay	Refer Section 1.0 and **Figure 1**
	Provide full details and copies/citations of relevant plans in cross references	Noted.
12. Cross referencing	Figures undated, poor resolution, contain discrepancies, inadequate legend details & don't delineate site.	Noted
13. Formatting	Various sections contain inconsistencies	Noted
	Identify figure numbers where referenced in text.	Noted.
14. Address OEH & DPI Fisheries issues	Ecological offsetting and Aboriginal Cultural Heritage and adequacy of buffer to fish habitat in Moonee Creek.	Refer **Attachment Q, K** and **S** and Section 6.2.5
Department of Primary Industries (Fisheries)		
15. Buffer	Removal infrastructure from buffer satisfies Policy & Guide lines - Aquatic Habitat Mgmt. & Fish Conservation	Noted
	Buffer shouldn't be used for APZs or mosquito mgmt. which requires under scrubbing.	Eastern boundary of buffer delineated by coastal walk.
	Rehabilitation of buffer in earliest stages of development.	Noted
	Buffer width be measured from highest astronomical tide	Refer Section 5.15
	Construction & operation stormwater does not compromise key fish habitats or values of Solitary Islands Marine Park.	Refer Section 5.15
16. Waterway Crossing	SoC to satisfy Sect 4.2 of Policy & Guidelines for Aquatic Habitat & Fish Conservation	Refer to SoC No. 11
Marine Parks Authority		
17. Protection Key Habitats	How development will impact estuarine ecosystem via increased fishing pressure, impacts of increased boating on sea grass adjacent to site & how access to estuary will be managed & banks & riparian veg. not impacted	Access into park & regulation of boating & fishing activities within regulated by MPA & are outside scope of project.

Item	Summary of Issue	JW Planning response
18. Buffers	Buffer should be measured from predicted 2100 shoreline to enable migration of riparian zone when sea levels rise.	Refer Section 5.15
19. Sewer Pump Station	PPR should state what measures have been taken to manage overflows of pump station.	Refer Section 5.13
NSW Office of Water		
20. Ground water	Line basin to prevent ground water interaction	Stormwater basin to be lined
	Stormwater treated at source and/or diverted through stormwater treatment process designed for site, prior to discharge to surface water & groundwater receivers.	Levels & stormwater design direct storm water to basin for treatment prior to release to Moonee Creek.
	Works in riparian areas in accordance with NoW's Guidelines for Controlled Activities	Noted.
	Must obtain licences – if required.	Noted
NSW Office of Environment and Heritage		
21. Biodiversity	Provide suitable quantified offsets for impacts on bio diversity not been addressed. Recommend use of Bio- banking Methodology	Refer **Attachment Q**
	Targeted surveys for Spider Orchid inadequate –acceptable as per 16 June 2016 submission	Refer Section 5.8, Table 9 in **Attachment I**
	Applicant will implement VMP & be included as a condition.	Noted
	Koala impact assessment is adequate	Noted
	Footprint to reduce impact of the subdivision on Squirrel Gliders inadequate	Refer **Attachment I**
	Mitigation measures and offset requirements for loss of Squirrel Glider habitat inadequate	

Item	Summary of Issue	JW Planning response
	Nest boxes & other compensatory measures for impacts on fauna & fauna habitat in form of offsets inadequate.	
	Offsets and replacement plantings for the loss of Glossy Black Cockatoo feed trees inadequate.	
	Reduce footprint & impacts on threatened species	Refer **Attachment I**
	Remaining biodiversity impacts should be offset	Refer **Attachment I**
	Consideration of Wallum Froglet habitat addressed.	Noted
	Conservation reserve in SE area for koala habitat protection & reduction of edge effects not considered.	Lot 6 not part of proposed development
	Detailed description of conservation reserve fencing plans inadequate	CC matter. Timber post & rail fencing identified in ecology report
	Preparation of PoM for reserve is adequate	Noted.
22. Aboriginal Cultural Heritage	RTS silent on stop work protocols in event of identification of Aboriginal objects during construction.	Refer Section 5.2
	RTS does not provide protocol in event of discovery of human remains	
	RTS does not identify protocol on Aboriginal Cultural Heritage Induction Program.	
23. Flooding and estuarine systems	Exclusion of infrastructure from buffer adequate	Noted
	Size and management of ecological buffer inadequate	Refer Section 5.15
	Buffer requirements to Cunningham Ck not addressed	Ck runs through Lot 6. Not part of DA
	Flood mapping appears inconsistent with statements concerning cumulative impacts have been assessed.	Noted

Item	Summary of Issue	JW Planning response
Roads and Maritime Services		
24. Collector rd. constructed & dedicated	Request consent condition that construction & dedication of collector rd. prior to issue of subdivision certificate and connection to local rd. network prior to issue of any subdivision certificate.	Agreed.
25. Access via local road network and interchange	Future operational traffic from subdivision must access Hwy via local road network & Moonee Beach Rd interchange. No direct access to hwy for operational traffic supported. Left in/left out temporary construction access must be physically & legally closed prior to issue of SC	Agreed
26. Works in hwy road reserve	All works to reinstate Hwy road reserve are responsibility of developer at no cost to RMS & be completed to RMS satisfaction & approval under Roads Act.	Agreed.
27. Traffic impact assessment	Traffic Impact Assessment 30 Sept. 2014 doesn't justify methodology used to assess cumulative impact of development on local road network. A council matter.	Noted
28. Highway road noise	RMS reiterates requirement subdivision and/or future dwellings are designed to mitigate impact of road traffic noise. All mitigation measures are responsibility of developer at no cost to RMS.	Agreed. Refer **Section 5.11**
Coffs Harbour City Council		
29. Public reserve	Ecological report refers to Lot 1 being in public reserve but landscape & subdivision plans show a residential lot.	Ecology report amended.
	VMP should commence Stage 1 with initial works and maintenance completed prior release of Stage 1 CC	Refer **Soc 8** Maintenance period 5 yrs after completion of final stage.
	Reserve should be dedicated with Stage 1	Refer to **SoC 8**
	SoC should include commitment by developer to be responsible for all costs until dedication	Refer **SoC 8**

Item	Summary of Issue	JW Planning response
30. Coastal Walk	Relocate coastal walk further within buffer area with fencing to prevent indiscriminate access.	Contrary to requiring infrastructure out of buffer. Located to limit impact, access & allow surveillance
31. Creek access	Access to creek from future residents to be accommodated & managed & addressed in future applications.	Noted.
32. Access Lot 2	Access through buffer not supported. RoW over Council reserve or a separate lot? Prefer access via Glades Nth.	Refer **Attachment D** RoW for access to Lot 2. Access via Glades would introduce new impacts to buffer.
33. Fill batters	Unclear if there will be impact on buffer from proposed filling of site.	Refer **Attachment W**. "Spillage" of fill is incorporated by coastal walk.
34. Acid sulfate soils	Detailed ASS Mgmt. Plan required future DAs	Noted.
35. Water quality, WSUD & Music modelling	use 10k litre in modelling when BASIX require 4 -5kl	MUSIC model rerun with 5kl tanks.
	Council does not support Enviropods due to maintenance burden. WBM report identified natural water quality treatment measures should be employed.	No enviropods proposed.
	Type of basin be identified to cater for high groundwater table and ASS	Basin lined to prevent exfiltration and infiltration. Refer **SoC 9**.
	Basin to demonstrate how pH of 4 - 5.5 is maintained for Wallum Froglet	Requirement to line basin & OEH advice on species - measure removed.
36. Roads and services	Roads 4 and 5 are not of sufficient width	Roads are sufficient width.
	Collector road to be provided with a bus bay	Court approved the collector road.
	For all stages, Cul de sacs and services downstream installed to standards are required	Noted.
	Lots 88 to 92 to be sewered at front due to fall	Noted

Item	Summary of Issue	JW Planning response
	Proposal fails to identify arrangements for construction	Refer Section 6.2
	No evidence of land owner agreements for easements to allow access to construct collector rd. & services	
Coffs Harbour Council Letter No. 2		
37. Osprey nest	Further details on proposed nesting structure. Is a nest being relocated?	No nest relocated or new one proposed.
38. Hollows	Hollow replacement ratio of 1:3 = 45 artificial hollows.	Refer SoC No. 6
39. Landscape Plan	Remove koala resource trees adjacent highway Amend species list -endemic local species	No koala trees planted adjacent to Hwy.
40. Concerns with ecology report	No detail supplied on loss of squirrel glider resources – hollows and foraging	Refer 7 part test in **Attachment I**
	Planting large trees along rear of lots along southern & northern boundaries questionable.	10m APZ prohibits planting trees or retain vegetation on boundary.
	Basin not used as Wallum froglet compensatory habitat	Agreed.
	Basin located within 100m buffer to Moonee Ck.	Basin outside buffer. Refer **Attachment D**
	Restrictions under S88B to be applied and where.	Refer **Attachment D** for APZ
	Retention of trees on Lots 100-104, 88-95 and 2-20	Trees not retained due to competing engineering & bushfire requirements.
41. Moonee Estuary Mgmt. Plan	64 to 86m buffer with average of 78 m not consistent with EMP 100m average nor consistent with adjacent development approvals. Buffer to be widened	Adopted Coffs Harbour Deferred Matters LES retains existing zone boundary under LEP 2000.
42. VMP requirements	Targeted threatened species habitat resource provision as outlined in PEA report	Noted.
	Protection details for sensitive environs onsite i.e. for wetland	Refer to **SoC No. 6**

Item	Summary of Issue	JW Planning response
	Hollow resources, design, location, management, maintenance and monitoring	
	Identify works required prior to commencement of works e.g. clearing hollow bearing trees & replacement with nest boxes etc.	
	Works under VMP to have10 yr. lifespan.	Refer SoC No. 8
Rural Fire Service		
43. APZs	10m APZ within northern and southern boundary and 27m APZ for E and NE lots	Refer **Attachment D**
44. PBP Guide lines	Conditions 1 to 9 listed by RFS to be included in Conditions of consent concerning PBP guidelines 2006	Agreed.

Response to comments concerning noise from Pacific Highway	
Council comments	**Wilkinson Murray response**
Properties along boundary have "direct line of sight" & require further assessment and may extend to southern lots.	Assessment consistent with SEPP & DPE "*Development near Rail and Busy Roads – Interim Guidelines 2008*". Lots on northern and southern side identified as noise impacted……and have a "direct line of sight" with Hwy. Actual angle of view of rd. is much reduced thus resulting in lower level of noise exposure. Additional assessment not required as it was considered in initial noise assessment.
Report specifies only the façade is to be treated however depending on the final house design this may need to extend to the flanks of the building. Further assessment is required	Assessment identified lots that require consideration of noise mitigation and typical mitigation necessary to meet ISEPP. Specific noise mitigation would be identified during DA depending on house design and orientation. Design for dwellings might require some noise mitigation on the "flanks". Dwellings in yellow zone should be required to submit a noise report identifying specific noise mitigation requirements for specific house design.

Unreasonable to limit housing in “yellow mitigation zone” (fronting collector rd.) to single storey when the planning controls allow for more than single storey housing.	“Yellow mitigation zone” should apply to both levels. As first storey of house in this area would be exposed to higher noise levels as it would have a greater view of Hwy it would require a higher level of mitigation when compared to ground floor. **Table 22** sets out standard treatment for sleeping areas/habitable areas for 1st floor of houses located in yellow mitigation zone.
Unreasonable to require mechanical ventilation systems to affected housing to allow windows to be shut to meet ISEPP requirements as this is contrary to sustainable housing design principles.	Mitigation based on windows and external doors closed consistent with “*Development near Rail and Busy Roads – Interim Guidelines 2008*”. For each DA with a specific house design consideration of ventilation requirements for noise-exposed rooms will be required to meet BCA provisions. 3 possible ventilation options stated in the noise assessment. Other possible ventilation solutions could be developed during detailed design of house by a mechanical engineer.
Housing on collector rd. will not necessarily precede other housing in the subdivision, thereby allowing other housing to be impacted acoustically (see staging plan).	Unreasonable to impose cost for additional noise mitigation on other dwellings for a temporary impact. 1st row of houses out of noise mitigation zone would have rear of lot facing hwy. These lots outside of the zone should be required to install fencing to a height of 1.8m to shield noise to the house prior to occupation certificate.
Additional impact of noise from collector road upon adjacent dwellings – more detail required.	Assessment consistent with SEPP and DPE guidelines which only requires consideration of high traffic roads >20,000 vehicles p.d. Hwy has 20,000+ vpd & trucks driving at 100km/hr. Collector rd. may have up to 4,000 vpd at 50 km/hr. Noise contribution of Collector Rd would be approx. 8-10dB less than hwy & wouldn’t contribute significantly to traffic noise. Consideration of Collector Rd would not change previous noise recommendations.
RMS Comments	**Wilkinson Murray response**
……projected future noise envelopes for Hwy…does not include additional impact that collector Rd traffic will have…it would appear that this hasn’t been taken into account.	See above.

8.0 **Statement of Commitments**

A revised and final Statement of Commitments (SoC) is provided in **Table 39**. The revised SoC has been compiled based on the environmental assessment undertaken in the preparation of the EA and following review and consideration of issues raised in agency and community submissions following public exhibition of the Concept Plan and PPR (revised RTS). This includes:

- Consultation with Council, OEH and MPA in February 2015 as part of the adequacy assessment of PPR by DPE in their letter to the applicant on 27th January 2015; and
- Consultation during 2016 with OEH and DPI Fisheries concerning offsets and Aboriginal cultural heritage and buffer distances from the Highest Astronomical Tide.

The Final Statement of Commitments has greater emphasis on implementation issues concerning the management and eventual dedication of the buffer to Council, and legal access over this land by the owner of existing Lot 2.

In its letter of advice of 15th December 2015, the Department requested clarification on the timing for the satisfaction/implementation of SOC 8 concerning *VMP - Revegetate buffer and transfer to Council.*

The timing for the commencement and completion of the revegetation of the buffer is subject to the issue of the first construction certificate and prior to the dedication of Lot 104 to Council. These matters are future issues that cannot be locked in but can only be subject to procedural requirements and hence SoC 8 is recommended as appropriate and effective.

Table 39 Statement of Commitments

Item	Commitment	Responsibility	Timing
1. Scope of Development	Development will be carried out in accordance with plans and documentation mentioned below, except where amended by Dept. of Planning & Environment's conditions of approval: • Environmental Assessment report prepared by JW Planning (July 2018); and • Revised Response to Submissions prepared by JW Planning (May 2017) and this Statement of Commitments. • Should Council plans and policies conflict or be inconsistent with the above mentioned plans and documentation, then the latter shall prevail to the extent of the inconsistency.	Applicant	Ongoing.
2. Staging	Indicative staging of proposed subdivision provided in **Attachment D**. This staging may change depending on development performance.	Applicant	As required.
3. Statutory Requirements	All necessary licences, permits and approvals will be obtained once project approval is granted and maintained for the development, including: • Construction Certificates for engineering works (including earth works, soil and water management, road works, drainage, landscaping) for each stage of the subdivision; • Subdivision Certificates for each stage of the subdivision; • Section 138 Consent for road works (Roads Act 1993); • Electricity Compliance certificate from the relevant energy authority; • Compliance Certificate from the relevant telecommunications authority; and • Water and Sewer Compliance Certificates from Coffs Harbour City Council.	Applicant	For duration of construction of subdivision.
4. Section 88B Restrictive Covenants – Bushfire Protection	An Instrument under Section 88B of Conveyancing Act 1919 will be prepared and apply to Lots 1-19, 75-82, 86-101 and 103-104, creating a restriction as to user for the purpose of creating an Asset Protection Zone as noted on Drawing 1277-DR1 dated 26.08.15 by CivilTech. Development for purposes other than a Class 10 building is prohibited within this area.	Applicant	Prior to subdivision certificates for each relevant stage.
5. Section 88B Covenants – Ecological Impact Mitigation	Covenants under Section 88B of Conveyancing Act 1919 will be prepared and apply to all residential lots requiring resident owners and occupiers of each lot to 1. Install Koala proof fencing should they keep a pet dog or cat; and 2. That all swimming pools are to have koala rescue ropes installed.	Applicant	Linen plan

Item	Commitment	Responsibility	Timing
6. Construction Certificate	The following documentation and information will be provided with an application for a Construction Certificate: • A Restoration Management Plan and Clearing Management Plan as detailed in Section 8.2 Proposed General Management Recommendations of the Ecological Assessment Lot 1 DP 1097743 Pacific Highway Moonee Beach, NSW February 2016 by PEA Consulting; • A Traffic Management Plan; • A Construction Waste Management Plan; • A Construction Erosion and Sediment Control Plan in accordance with that prepared by Civiltech Sheet Drawing 1277 DR7 2014 and *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) (Blue Book).; • An Environmental Management Plan with details of environmental management procedures, monitoring and reporting requirements during construction and operation phase; • A Stormwater Management Plan in accordance with the recommendations of Martens and Associates; • A Vegetation Management Plan for Lot 104	Applicant	Prior to issue of CC
7. Hours of construction	Construction work will be between 7.00am to 6.00pm Monday to Fridays & 7.00am to 4.00pm on Saturdays. No construction to take place on Sundays or public holidays unless approval obtained from relevant authority.	Applicant& contractors	For duration of construction
8. Moonee Creek Buffer	• A Vegetation Management Plan will be developed by an experienced ecologist for the revegetation of proposed Lot 104 and in accordance with the recommendations of PEA Consulting. • The approval of a Vegetation Management Plan to manage both the clearing of the site and the revegetation of the buffer will be in place prior to release of the first construction certificate. • The Applicant will commence revegetating the buffer upon the issue of the first construction certificate and complete the revegetation works prior to dedication of the Lot 104; • Lot 104 will be dedicated, at no cost, to Council, as public land (as per Moonee Beach DCP 2004) and will take place upon registration of the subdivision plan for first stage or entire subdivision - whichever comes first. Lot 104 will be maintained by Applicant for five [5] years after dedication after which all maintenance will become Council responsibility.	Applicant	Upon registration of the subdivision plan for first stage or entire subdivision - whichever comes first

Item	Commitment	Responsibility	Timing
3. Water Management	Applicant will line the bioremediation basin to prevent exfiltration to and infiltration from ground water	Applicant	After construction of the Basin
9. Collector Road	Applicant will assist Rothwell Boys as per their deed of agreement to construct the collector road through the site prior to release of the construction certificate for Stage 1 of the development. The Applicant will facilitate the completion of the construction of the northern collector road	Applicant	Prior to release of CC Stage 1
4. Road Design and Construction	The redesign and reconstruction of driveway crossing of Bucca Creek shall be in accordance with Section 4.2 of Policy & Guidelines for Aquatic Habitat Mgmt. & Fish Conservation	Applicant	Detailed in CC
10. Noise	A restriction shall be placed on title of affected lots via an Section 88B instrument under the Conveyancing Act 1919 requiring the design of dwellings on these lots in "yellow mitigation zone" that the following LAeq levels are not exceeded: • in any bedroom in the building—35 dB(A) at any time between 10 pm and 7 am; • anywhere else in the building (except garage, kitchen, bathroom, hallway) — 40 dB(A) at any time.	Applicant	With registration of the Lots
11. Infrastructure Provision	Subject to approval of construction certificate and construction of collector road from Lot 1 DP 725785 through site and Lots 5 DP 252223 and Lot 6 DP 1140702 (DP 252223), the following will be provided: • underground electricity reticulation to each lot as per relevant standards of electricity authority; • reticulated water supply to each residential lot in accordance with relevant Council standards; • reticulated sewer system to each residential lot in accordance with relevant Council standards; and • satisfactory arrangements will be made with the relevant telecommunications service provider for the provision of fibre optic cable to each residential lot.	Applicant	Prior to release of Subdivision Certificates for the respective stages of the subdivision.

Item	Commitment	Responsibility	Timing
12. Aboriginal Cultural Heritage	• The applicant will prepare an Aboriginal Cultural Heritage Management Plan (ACHMP). The ACHMP will detail procedures for managing Aboriginal cultural heritage values associated with the site and be implemented in consultation with registered Aboriginal parties. It will detail: ○ the involvement and responsibilities of the Aboriginal stakeholders in the implementation of all cultural heritage management actions; ○ the responsibilities of all other stakeholders; ○ mitigation and management strategies (including monitoring program, further investigations, etc.); ○ procedures for identification and management of previously unrecorded sites (including human remains); ○ an appropriate keeping place agreement with local Aboriginal community representatives for any Aboriginal objects salvaged through the development process; ○ details of an Aboriginal cultural heritage induction program for all contractors and personnel associated with construction activities; and ○ compliance procedures in the unlikely event that non-compliance with the plan is identified. • This process must be undertaken prior to commencing any ground disturbance or development works subject to the development.	Applicant and contractors	Ongoing throughout earthworks and excavation.
13. Geotechnical	If required, further detailed geotechnical investigations, including ASS assessment in accordance with the procedure established in the ASS and Groundwater Management Plan prepared by Martens & Associates (August 2013), will be carried out to confirm site stability prior to the commencement of construction of future stages of the development.	Proponent	Prior to release of Construction Certificates for each Stage

<table>
<tr><th>Item</th><th>Commitment</th><th>Responsibility</th><th>Timing</th></tr>
<tr><td>14. Section 94 Local Infrastructure Contributions</td><td>Section 94 contributions will be paid to Council, at the rate current at the time of payment, towards the provision of the following public services or facilities:
<table>
<tr><th colspan="4">Moonee Section 94 Developer Contributions Plan 2014</th></tr>
<tr><th>Service/Facility</th><th>Per lot/dwell</th><th>No. of lots</th><th>$</th></tr>
<tr><td>Moonee Precinct - transport and traffic</td><td>$6413.00</td><td>103</td><td>660,539</td></tr>
<tr><td colspan="4">All precincts</td></tr>
<tr><td>Transport and traffic</td><td>$1,818.58</td><td>103</td><td>187,313.74</td></tr>
<tr><td>Community facilities</td><td>$1,007.08</td><td>103</td><td>103,729.24</td></tr>
<tr><td>District open Open space</td><td>$2,092.07</td><td>103</td><td>215,483.21</td></tr>
<tr><td>Local open space Development Studies</td><td>$12.75</td><td>103</td><td>1,313.25</td></tr>
<tr><td>Total</td><td>$11,343.48</td><td>103</td><td>$1,168,378.44</td></tr>
</table>
Note 1 – Contributions to be paid prior to release of a Subdivision Certificate unless other arrangements acceptable to Council are made.
Note 2 – Rates will be adjusted in accordance with procedures set out in S94 Plan.
Note 3 – If development is staged, contributions to be paid on pro rata basis for each stage.</td><td>Proponent</td><td>Prior to release of Subdivision certificates for each stage</td></tr>
<tr><td>15. Earthworks</td><td>• Proposed earthworks will be carried out in accordance with the Bulk Earth Works Plan, VMP and Stormwater Management Plan;
• Prior to commencement of construction, a detailed erosion and sediment control plan (ESCP) will be prepared and all management measures in ESCP will be implemented and maintained prior to and during construction;
• Any material, other than topsoil, to be cut from the zone 2 alluvial material in lower lying parts of the site will be tested and if necessary treated, given its potential for sulphidic acidification;
• If ASS are encountered this material will be handled in accordance with the ASS management plan. ;
• Earthworks carried out under control of suitably qualified geotechnical engineer and certified to Level 1 construction monitoring and testing as per “AS 3798-1996 Guidelines for Earthworks for Commercial and Residential Developments”;
• All disturbed areas will be stabilised upon completion of earthworks.</td><td>Proponent</td><td>Prior to release of construction certificate for each stage of subdivision.</td></tr>
</table>

Item	Commitment	Responsibility	Timing
16. Biodiversity offsetting strategy	The applicant voluntarily offers, under Section 127ZO Effect of issue of bio banking statement—development requiring development consent of the Threatened Species Conservation Act and in accordance with the Biodiversity Offsetting Strategy prepared by GHD (**Attachment Q)** to secure and retire: • **291** Blackbutt - Pink Bloodwood shrubby open forest of coastal lowlands of NSW North Coast Bioregion ecosystem credits and **170** Forest Red Gum - Swamp Box of Clarence Valley lowlands of NSW North Coast Bioregion ecosystem credits; and • **170** Squirrel Glider (Petaurus norfolcensis) species credits.	Applicant and OEH	Credits secured and retired prior to release of construction certificate.

9.0 **Conclusion**

The Moonee Beach urban growth area is identified in the Department of Planning's *Mid North Coast Regional Strategy* (MNCRS) and the Coffs Harbour Our Living City Settlement Strategy 2008 to accommodate future population growth to 2031.

In accordance with the regional and local strategies, the Moonee Parklands Trust seeks the Minister's approval for a plan to subdivide the site for residential purposes. The application for approval is sought in accordance with the Environmental Assessment report.
Site specific technical studies have informed the Development plan and support the application that the site is suitable for, and capable of, residential development.

The site is adjacent to the Minister's approved concept and project plan for the Glades in between two (2) adjoining sites already declared Part 3A projects, one of which has subsequently obtained Concept Plan approval and more recently, Project Approval. Importantly, the recently approved development relies on the subject site for access. Obtaining the Minister's approval will expedite the provision of access to the approved Glades Estate and in turn, the provision of additional housing supply for the site and location and product choice and competition between both development sites.