BIODIVERSITY DEVELOPMENT ASSESSMENT REPORT URBAN DESIGN SUPPLEMENT

HARRIS & MAY
DEVELOPMENT APPLICATION

LOT 3 & 31 DP 778111
2 INTO 251 LOT RESIDENTAL SUBDIVISION

ALLAM PROPERTY GROUP
OCTOBER 2022

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Document Control Sheet

Issue No.	Amendment	Date	Prepared By	Checked By
A	Draft Issue	23/10/2022	RK	-
B	Updated Draft	31/10/2022	RK	-

Executive Summary

We provide this report in support of the Development Application (DA) for a 251 lot subdivision of parent lots 3 and 31 in DP778111 (the site). The purpose of this report is to demonstrate how the principles of "avoid and minimise" with regard to biodiversity impact have been observed in the development of the site masterplan.

It is a requirement of Clause 6.12 of the Biodiversity Conservation Act 2016 (BC Act) to address the principles of avoid and minimise within a DA. The Statement of Environmental Effects (SoEE) for the DA includes a Biodiversity Development Assessment Report (BDAR) prepared by MJD Environmental to address Clause 6.12 of the BC Act, this report supplements the BDAR with a specific focus on urban design and engineering.

The site was rezoned as part of Stage 2 of the Thornton North Urban Release Area (TNURA) in 2011. it is noted that during the rezoning process;

- DECCW considered that the outstanding matters to be addressed at DA, post gazettal of the LEP, related specifically to "offsetting matters";
- Amendments were made to the draft rezoning plan in consultation with DECCW during the Planning Proposal process to minimise potential impacts by "retaining larger areas of the highest condition vegetation and broadening the connectivity of the environmental corridor running north-south through the site"; and
- DECCW considered that the outcomes of the planning proposal "protect areas of high ecological significance whilst ensuring that suitable biodiversity offsets will be achieved through the assessment and determination of future development applications"

We consider that the planning proposal process avoided and minimised impacts on the vegetation of highest ecological significance by creating a north-south corridor through the area zoned C3 on adjacent Lot 4 DP1145348 and that DECCW envisaged that only ecological offsetting would be addressed during the DA process (not further avoidance or minimisation) at the time of rezoning.

The site is not encumbered by any biodiversity corridor outlined within the Planning Proposal, LSPS or DCP.

There is clear and deliberately planned biodiversity connectivity at the macro-scale around the site with no connectivity through the site. On this basis there is no opportunity to provide macro-connectivity through the site and as such the focus of our design work is to create micro connections at the landscape scale.

The development approach to date in the TNURA has been to fully develop R1 zoned land (with the exception of riparian corridors) which has left limited opportunity to make biodiversity connections at the landscape scale.

We have evolved a masterplan which maximises the limited opportunity remaining to preserve meaningful ecological habitat. The masterplan includes three biodiversity connection strategies as follows;

1. Connection of the *Forest Red Gum Grassy Open Forest on Floodplains* Endangered Ecological Community (EEC) via an existing unnamed road reserve at the north of the site plus a 10m additional buffer within the site;

2. Connection of *Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland* EEC through strategic location of open space in the centre of Lot 32 DP778111 aligned to the C3 zones on adjacent lots 4 DP1145348 and 33 DP794448;

2a. Ancillary connection from item 2 along the proposed east-west distributor road to the riparian corridor on Lot 11 DP 1283071; and

3. Connection along the east-west riparian corridor via removal of the existing farm dam and reinstatement of riparian vegetation befitting the Ironbark – Spotted Gum EEC.

The evolution of the masterplan was a two-and-a-half-year process which considered over 30 options and revisions including;

- Ecological Survey and Input;
- Bushfire Input;
- Town Planning & Urban Design Input;
- Engineering Input;
- Location and Ground Truthing of Site Features with Regard to Various Layouts.

In evolving the masterplan we discounted the following redundant avoid and minimise strategies;

- Development of the full R1 zoned portion of land generating maximum yield;
- Split northern road carriageway with vegetated median which was found to contravene MCC Manual of Engineering Standards (MOES);
- Connection of the C3 zones on adjacent lots via existing mature vegetation in the north of the site, which was found to provide limited connectivity once land ownership and earthworks to fill an existing farm dam were considered;
- Connection of the C3 zones on adjacent lots via open space north of the proposed distributor road. This approach was found to be inferior to our Strategy 2 (outlined above) as it did not retain as much mature vegetation nor did it provide connectivity through mature Spotted Gum EEC.

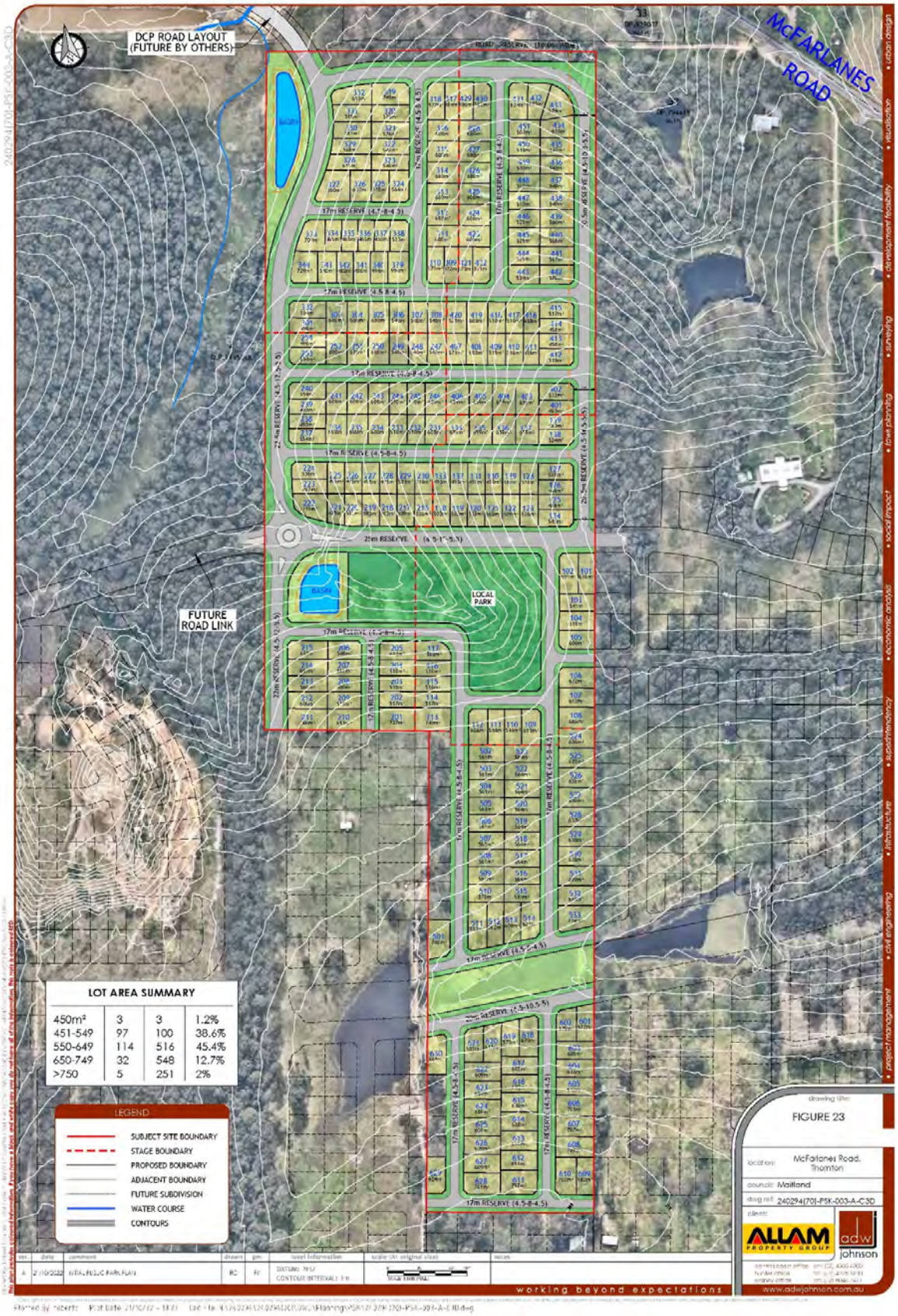
Retention of existing vegetation is a balance between ecological outcomes and achieving government dwelling supply and affordability targets. The strategies employed to avoid and minimise biodiversity impact in our masterplan come at a cost to the developer, in some cases the future home owner and impact developable land and dwelling supply as follows;

- Relinquishment of 12,136 m^2 of developable R1 zoned land;
- Resultant loss of yield and revenue in the order of -$2,580,000;
- Introduction of 1,115 m^2 of additional pavement to create a "perimeter road" around vegetated open space which will constitute a bushfire risk;
- Resultant increase in civil construction cost in the order of $800,000;
- Resultant increase in housing cost in the order of $570,00 due to 19 additional lots with a minimum BAL-29 construction rating.

We have incorporated strategies to meaningfully avoid and minimise biodiversity impact alongside best practice greenfield subdivision urban design principles within our masterplan to strike a balance between ecological outcomes and efficient development of the urban environment. The following figures show the final masterplan in the context of the TNURA and as a plan of subdivision for DA. Based on the above, we consider that the masterplan satisfies the requirements of Clause 6.12 of the Biodiversity Conservation Act.


Completed Development
1
2
3
Approved Development
Completed Development

FIGURE 22


DCP ROAD LAYOUT
(FUTURE BY OTHERS)
McFARLANES
ROAD
FUTURE
ROAD LINK
LOCAL
PARK
LOT AREA SUMMARY
450m² 3 3 1.2%
451-549 97 100 38.6%
550-649 114 516 45.4%
650-749 32 548 12.7%
>750 5 251 2%
LEGEND
SUBJECT SITE BOUNDARY
STAGE BOUNDARY
PROPOSED BOUNDARY
ADJACENT BOUNDARY
FUTURE SUBDIVISION
WATER COURSE
CONTOURS
FIGURE 23
McFarlanes Road,
Thornton
Maitland
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1.0 Introduction

We provide this report in support of the Development Application (DA) for a 251 lot subdivision of parent lots 3 and 31 in DP778111 (the site). The purpose of this report is to demonstrate how the principles of "avoid and minimise" with regard to biodiversity impact have been observed in the development of the site masterplan.

It is a requirement of the Biodiversity Conservation Act 2016 (BC Act) to address the principles of avoid and minimise, Clause 6.12 of the BC Act states that:

> *For the purposes of the biodiversity offsets scheme, a biodiversity development assessment report is a report prepared by an accredited person in relation to proposed development or activity that would be authorised by a planning approval, or proposed clearing that would be authorised by a vegetation clearing approval, that—*
>
> *(a) assesses in accordance with the biodiversity assessment method (BAM) the biodiversity values of the land subject to the proposed development, activity or clearing, and*
>
> *(b) assesses in accordance with that method the impact of proposed development, activity or clearing on the biodiversity values of that land, and*
>
> *(c) **sets out the measures that the proponent of the proposed development, activity or clearing proposes to take to avoid or minimise the impact of the proposed development, activity or clearing**, and*
>
> *(d) specifies in accordance with that method the number and class of biodiversity credits that are required to be retired to offset the residual impacts on biodiversity values of the actions to which the biodiversity offsets scheme applies.*

The Statement of Environmental Effects (SoEE) for the DA includes a Biodiversity Development Assessment Report (BDAR) prepared by MJD Environmental to address Clause 6.12 of the BC ACT. This report supplements the BDAR with a specific focus on urban design and engineering.

2.0 Background

2.1 REZONING

The site sits within Stage 2 of the Thornton North Urban Release Area (TNURA). The site was rezoned through amendment to the Maitland Local Environmental Plan (LEP) in 2011. The Maitland City Council (MCC) TNURA Stage 2 Planning Proposal supporting the rezoning included *Section C – Environmental, Social & Economic Impact* which states that;

> *DECCW supports the rezoning in principle as it is consistent with the objectives of the Lower Hunter Regional Strategy and the Thornton North Structure Plan, however considers that it is "unlikely to achieve an "improve or maintain" outcome for biodiversity values." Whilst it is preferable to deal with these matters at a rezoning stage, DECCW considers that "outstanding biodiversity offsetting matters could be dealt with post gazettal of the LEP through subsequent development applications under Part 4 of the EP&A Act." This would be through Section 798 of the EPA Act, which states that*
>
> > *(3) Development consent cannot be granted for:*
> > *(a) development on land that is, or is a part of, critical habitat, or*
> > *(b) development that is likely to significanUy affect a threatened species, population, or ecological community, or its habitat,*
> > *without the concurrence of the Director-General of the Department of Environment, Climate Change and Water or, if a Minister is the consent authority, unless the Minister has consulted with the Minister administering the Threatened Species Conservation Act 1995.*
>
> ***Amendments have been made to the draft rezoning plan in response to DECCW's suggestions for minimising potential impacts on biodiversity, including retaining larger areas of the highest condition vegetation and broadening the connectivity of the environmental corridor running north-south through the site**. This corridor will be reinforced by reference (including mapping) and provisions in the Thornton North Area Plan (DCP). A plan showing the habitat condition and the proposed environmental protection zoning is included as Appendix 8 - Conservation zoning.*
>
> *Therefore it is considered that the objectives of this planning proposal to protect areas of high ecological significance can be achieved, **whilst ensuring that suitable biodiversity offsets will be achieved through the assessment and determination of future development applications.***

It is noted that;

- DECCW considered that the outstanding matters to be addressed at DA, post gazettal of the LEP, related specifically to "offsetting matters";
- Amendments were made to the draft rezoning plan in consultation with DECCW during the Planning Proposal process to minimise potential impacts by "retaining larger areas of the highest condition vegetation and broadening the connectivity of the environmental corridor running north-south through the site"; and
- DECCW considered that the outcomes of the planning proposal "protect areas of high ecological significance whilst ensuring that suitable biodiversity offsets will be achieved through the assessment and determination of future development applications"

The land use zoning map, the subject of the above rezoning process is shown at **Figure 1**. The site is also shown in context.

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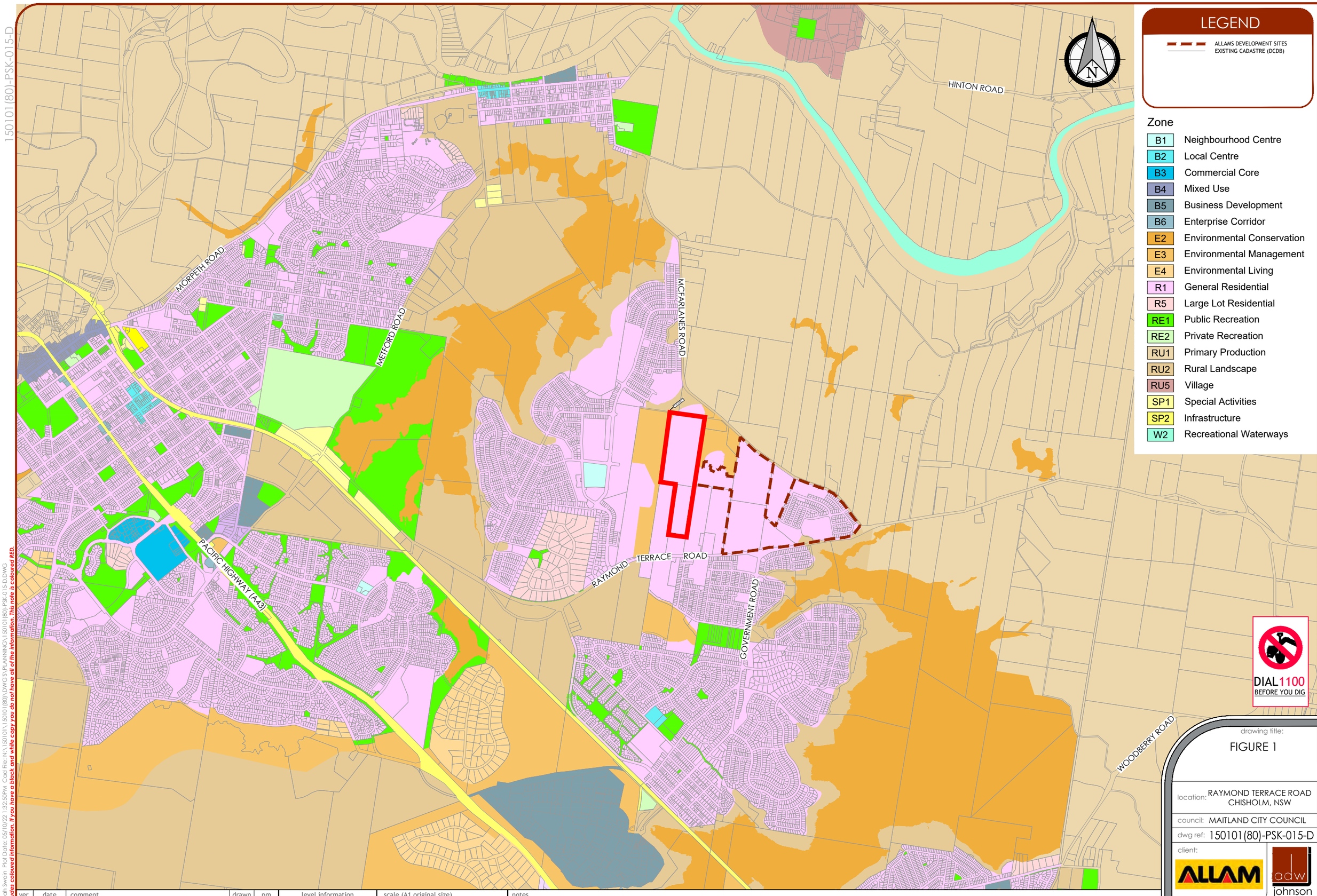

LEGEND

ALLAMS DEVELOPMENT SITES
EXISTING CADASTRE (DCDB)

Zone

B1	Neighbourhood Centre
B2	Local Centre
B3	Commercial Core
B4	Mixed Use
B5	Business Development
B6	Enterprise Corridor
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
R1	General Residential
R5	Large Lot Residential
RE1	Public Recreation
RE2	Private Recreation
RU1	Primary Production
RU2	Rural Landscape
RU5	Village
SP1	Special Activities
SP2	Infrastructure
W2	Recreational Waterways

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drawing title:
FIGURE 1

location: RAYMOND TERRACE ROAD CHISHOLM, NSW

council: MAITLAND CITY COUNCIL

dwg ref: 150101(80)-PSK-015-D

client:

ALLAM

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ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
D	5/10/2022	AMENDED ISSUE	LS	RK	DATUM: AHD CONTOUR INTERVAL: 1m	A1 1:15,000 — 0 300 600 750m — A3 1:30,000	Sheet 9 of 9 sheets

• project management • civil engineering • infrastructure • superintendency • social impact • town planning • surveying • development feasibility • visualisation • urban design

Plotted By: Leah Swain Plot Date: 05/10/22 1:32:50PM Cad File: N:\150101\150101(80)\DWG'S\PLANNING\150101(80)-PSK-015-D.DWG

This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.

2.2 PRECINCT PLAN

The site sits within precinct 7 of the TNURA. The Precinct 7 plan was adopted at Councils meeting of 22nd March 2022 and is shown at **Figure 2**. It is noted that the Planning Proposal considered the north-south biodiversity corridor would be reinforced by reference (including mapping) and provisions in the Thornton North Area Plan (DCP). The north-south biodiversity corridor is shown on the TNURA DCP Structure Plan and is reiterated in the Precinct 7 plan, both show the corridor through adjacent Lot 4 DP1145348.

It is noted that there are no environmental corridors shown through the site within the TNURA DCP Structure Plan or Precinct Plan.

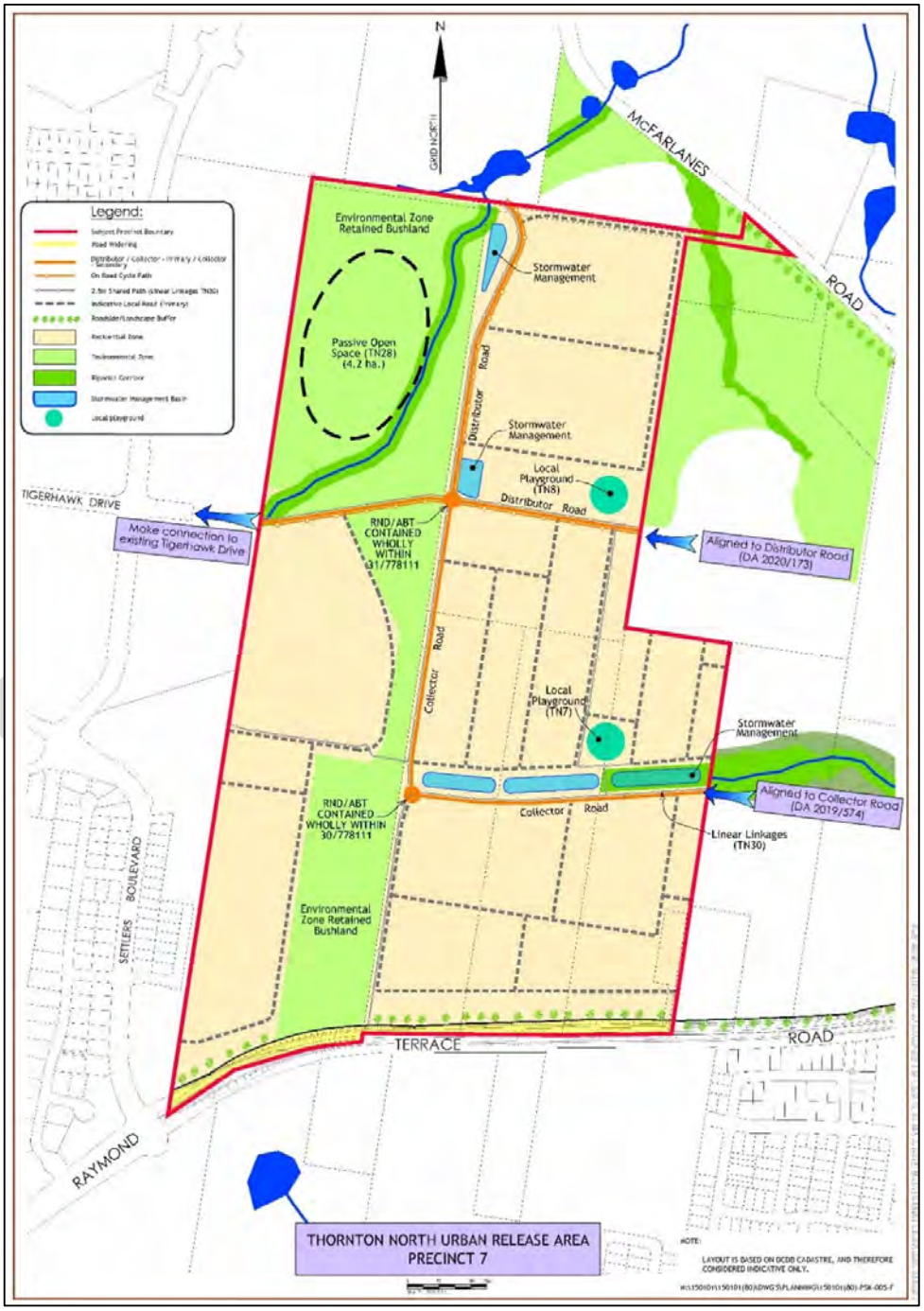

Figure 2 – TNURA Precinct 7 Plan.

2.3 LOCAL STRATEGIC PLANNING STATEMENT (LSPS)

The Maitland LSPS Figure 4.2 (Structure Plan) shows the URA with acknowledged biodiversity corridors overlain. It is noted that the north-south biodiversity corridor referenced within the Planning Proposal and TNURA DCP is shown running through adjacent Lot 4 DP1145348. No other acknowledged biodiversity corridors run through the site.

2.4 ADHERENCE TO PLANNING POLICY

We consider that the planning proposal process avoided and minimised impacts on the vegetation of highest ecological significance by creating a north-south corridor through the area zoned C3 on adjacent Lot 4 DP1145348 and that DECCW envisaged that only ecological offsetting would be addressed during the DA process (not further avoidance or minimisation) at the time of rezoning.

The site is not encumbered by any biodiversity corridor outlined within the Planning Proposal, LSPS or DCP.

3.0 Subdivision Design Development

3.1 MACRO CONNECTIVITY

Figure 3 shows the site in the context of the land use zoning map with the LSPS biodiversity corridors overlain. It can be seen that there is clear and deliberately planned biodiversity connectivity at the macro-scale around the site with no connectivity through the site. On this basis there is no opportunity to provide macro-connectivity through the site and as such the focus of our design work is to create micro connections at the landscape scale.

3.2 EXISTING SITE CONSTRAINTS

Figure 4 shows that the site is bookended by the C3 zoned, north-south corridor in the west and by existing approved development in the east. It is noted that all development to the east was approved under the previous biodiversity legislation rather than the BC Act which did not include reference to the principles of avoid and minimise. On this basis the full R1 zoned footprint (with the exception of riparian zones) has been, or is approved to be developed.

It is necessary to develop residential zoned land in the manner employed to date in the TNURA to adhere to MCC's Manual of Engineering Standards (MOES) and to carry out efficient development which assists in achieving local and state government dwelling supply and affordability targets. That is, creating an urban environment where the following design principles must be observed;

- No trees in road reserves can be retained due to regrade and service trenching.
- No trees on fence lines can be retained.
- No trees within 6m of a future building platform can be retained.
- No trees in any area of site regrade can be retained.
- Trees can be retained in undisturbed open space areas only.
- To achieve a range of diverse dwelling types with services on level pads that lead to affordable built form solutions it is necessary to perform bulk earthworks across the site.

We believe that this approach was acknowledged in the zoning of land R1(General Residential) and biodiversity corridors C3 (Environmental Management) at rezoning.

The development approach to date in the TNURA has left limited opportunity for biodiversity connection at the landscape scale. The following sections of this report outline the way in which the proposed masterplan maximises the limited opportunity remaining to preserve meaningful ecological habitat.

3.3 LANDSCAPE CONNECTION STRATEGIES

Figure 5 shows three biodiversity connection opportunities as follows;

4. Connection of the *Forest Red Gum Grassy Open Forest on Floodplains* Endangered Ecological Community (EEC) via an existing unnamed road reserve at the north of the site;
5. Connection of *Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland* EEC through strategic location of open space in the centre of Lot 32 DP778111 aligned to the C3 zones on adjacent lots 4 DP1145348 and 33 DP794448;

2a. Ancillary connection from item 2 along the proposed east-west distributor road to the riparian corridor on Lot 11 DP 1283071; and

6. Connection along the east-west riparian corridor via removal of the existing farm dam and reinstatement of riparian vegetation befitting the Ironbark – Spotted Gum EEC.

Figure 6 shows these opportunities in the context of the ecological survey mapping conducted on the site by MJD Environmental.

It is noted that these strategies influence the subject DA as well as DA/2020/173 on adjacent lot 33 DP794448 which is also owned by the proponent. As such lot 33 DP794448 is included in the strategy figures.

150101(80)-PSK-015-D

HINTON ROAD

MORPETH ROAD

METFORD ROAD

MCFARLANES ROAD

PACIFIC HIGHWAY (A43)

RAYMOND TERRACE ROAD

GOVERNMENT ROAD

WOODBERRY ROAD

LEGEND

- ALLAMS DEVELOPMENT SITES
- EXISTING CADASTRE (DCDB)
- SUBJECT SITE
- LSPS BIODIVERSITY CORRIDOR

Zone

B1	Neighbourhood Centre
B2	Local Centre
B3	Commercial Core
B4	Mixed Use
B5	Business Development
B6	Enterprise Corridor
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
R1	General Residential
R5	Large Lot Residential
RE1	Public Recreation
RE2	Private Recreation
RU1	Primary Production
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SP1	Special Activities
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ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
D	5/10/2022	AMENDED ISSUE	LS	RK	DATUM: AHD CONTOUR INTERVAL: 1m	A1 1:15,000 — 0 300 600 750m — A3 1:30,000	Sheet 9 of 9 sheets

drawing title:
FIGURE 3

location: RAYMOND TERRACE ROAD CHISHOLM, NSW

council: MAITLAND CITY COUNCIL

dwg ref: 150101(80)-PSK-015-D

client: ALLAM

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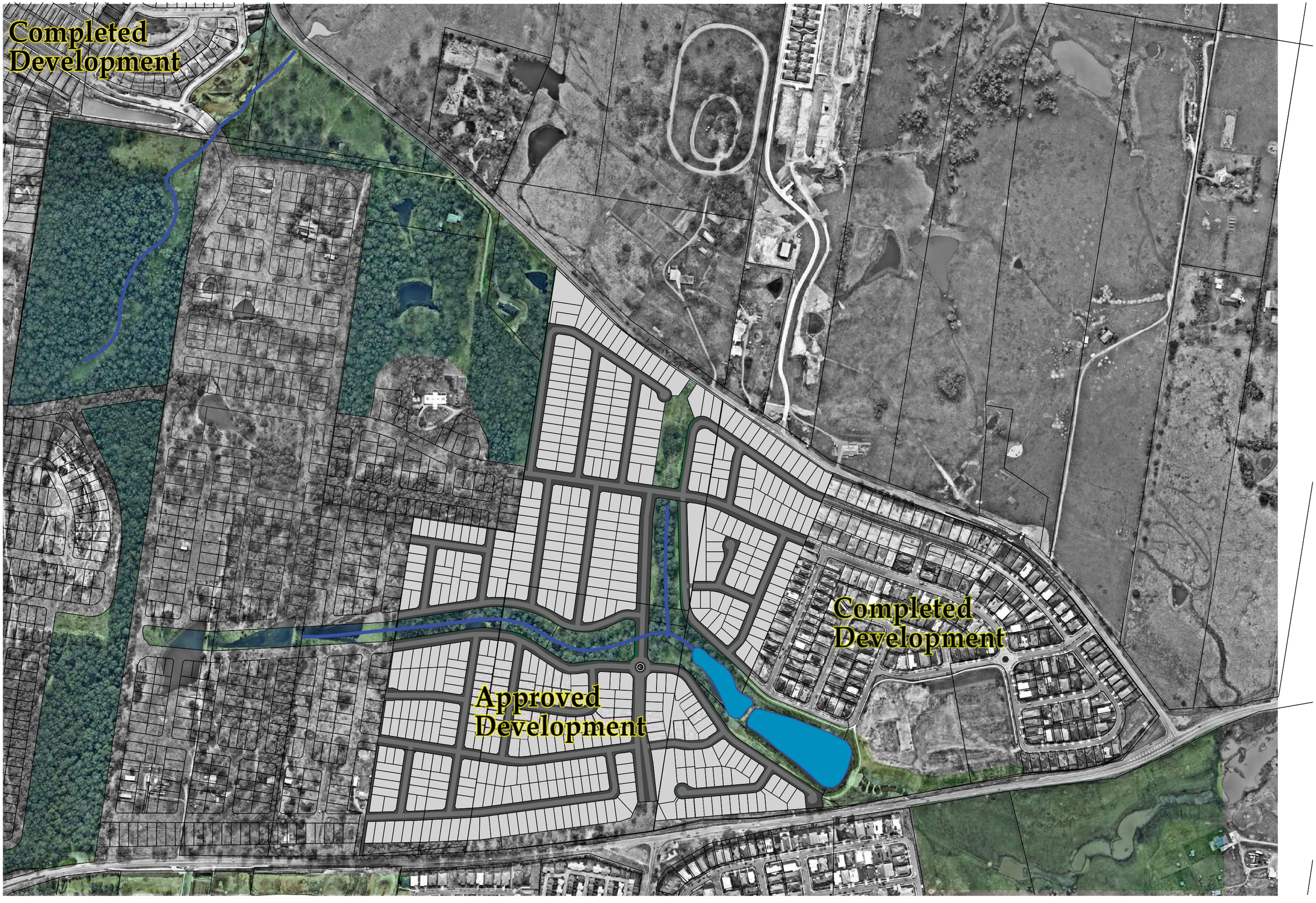
Completed
Development
Approved
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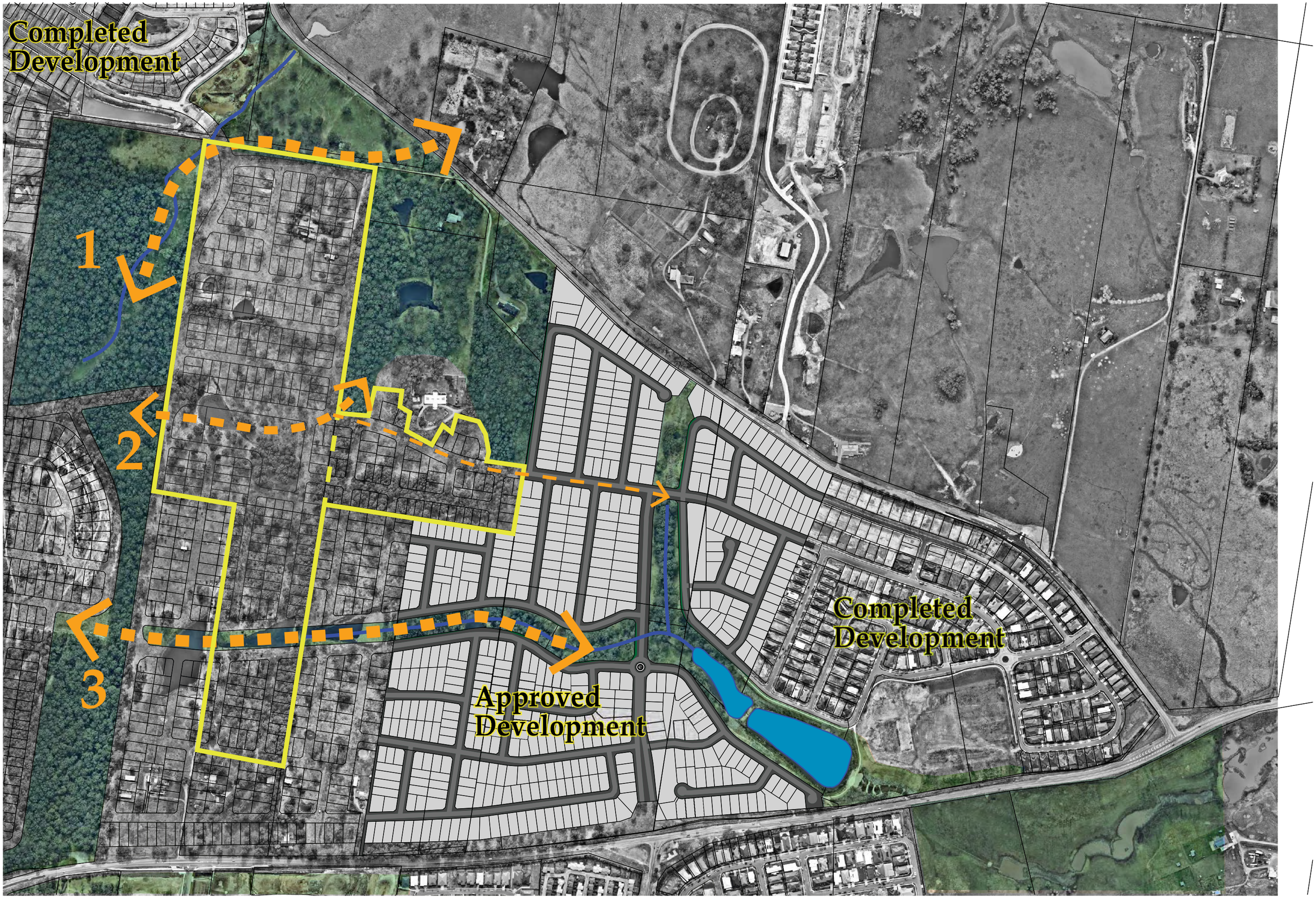
Development

FIGURE 4


Completed
Development
1
2
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Development
Completed
Development

FIGURE 5

173 MCFARLANES, CHISHOLM

FIGURE 3: FLORA AND FAUNA RESULTS

FIGURE 6

Legend

-) Hollow Bearing Tree
- Babblers
- Little lorikeet
- (Stick nest
- Roads
- Watercourse
- Contours (2m)
- Site
- Cadastral Boundaries
- Vegetation Zones

Plant Community Type

- PCT 1598 Forest Red Gum grassy open forest on floodplains (Moderate
- PCT 1604 Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland (Moderate
- PCT 1604 Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland (Pasture - Native and Exotic)
- PCT 1604 Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland (Scattered Trees w/ Native Ground Cover)
- PCT 1604 Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland

0 30 60 120

Meters

1:2,200

µ

MJD Environmental

Aerial: Nearmap (2020) | Data: MJD Environmental, NSW Spatial Services (2020) | Datum/Projection: GDA 2020 MGA Zone 56 | Date: 7/10/2020| Version 1 | GIS\20039 - 173 Mcfarlanes Road, Chisholm | This plan should not be relied upon for critical design dimensions.

4.0 Avoid and Minimise Strategies

Detailed descriptions of the proposed avoid an minimise strategies are as follows;

4.1 STRATEGY 1 – NORTHERN FOREST RED GUM CONNECTION

Strategy 1 is shown at **Figure 7** and includes the following design principles;

- The existing 10m unnamed road reserve including existing mature canopy vegetation will be maintained;
- An additional 10m has been allowed as an extended verge to our northernmost road. The result is a 2m formal verge plus an additional 10m of maintained mature vegetation in Council ownership. Survey of the proposed trees to be maintained has been undertaken and the result is shown at **Figure 8**. It is important to note that the 2m formal verge and the additional 10m offset have been deliberately chosen to avoid deleterious impact of earthworks/roadworks on trees within their drip/root zone and to provide a total corridor width of 20m to promote fauna movement;
- An image of the vegetation to be maintained under Strategy 1 is shown at **Figure 9**; and
- While no myotis were observed on site during ecological surveys, there is potential to disturb myotis foraging habitat through removal of two existing farm dams on the site. We propose to construct a wet stormwater management basin in accordance with Maitland Manual of Engineering Standards (MOES) to replace potential myotis foraging habitat.

Figure 7 – Avoid & Minimise Strategy 1.

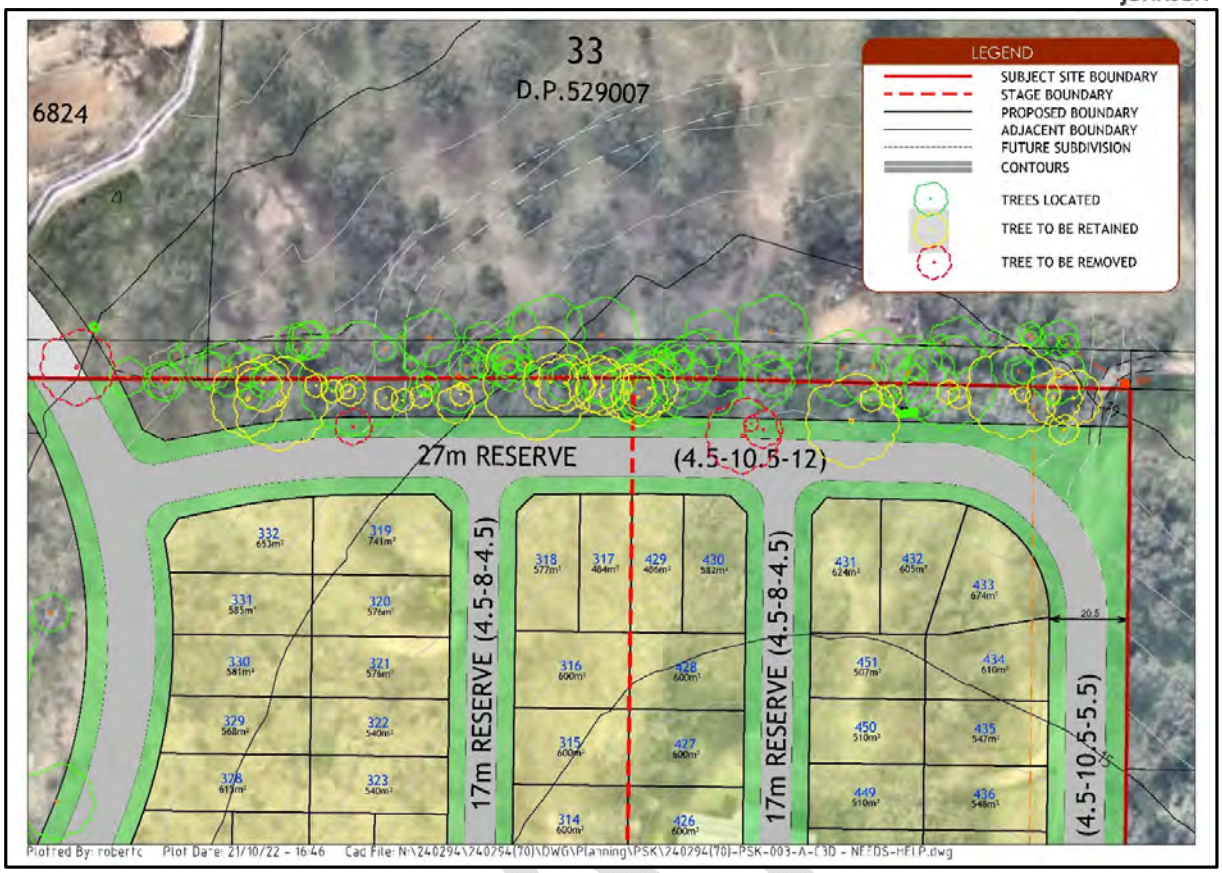

Figure 8 – Strategy 1 Tree Survey.

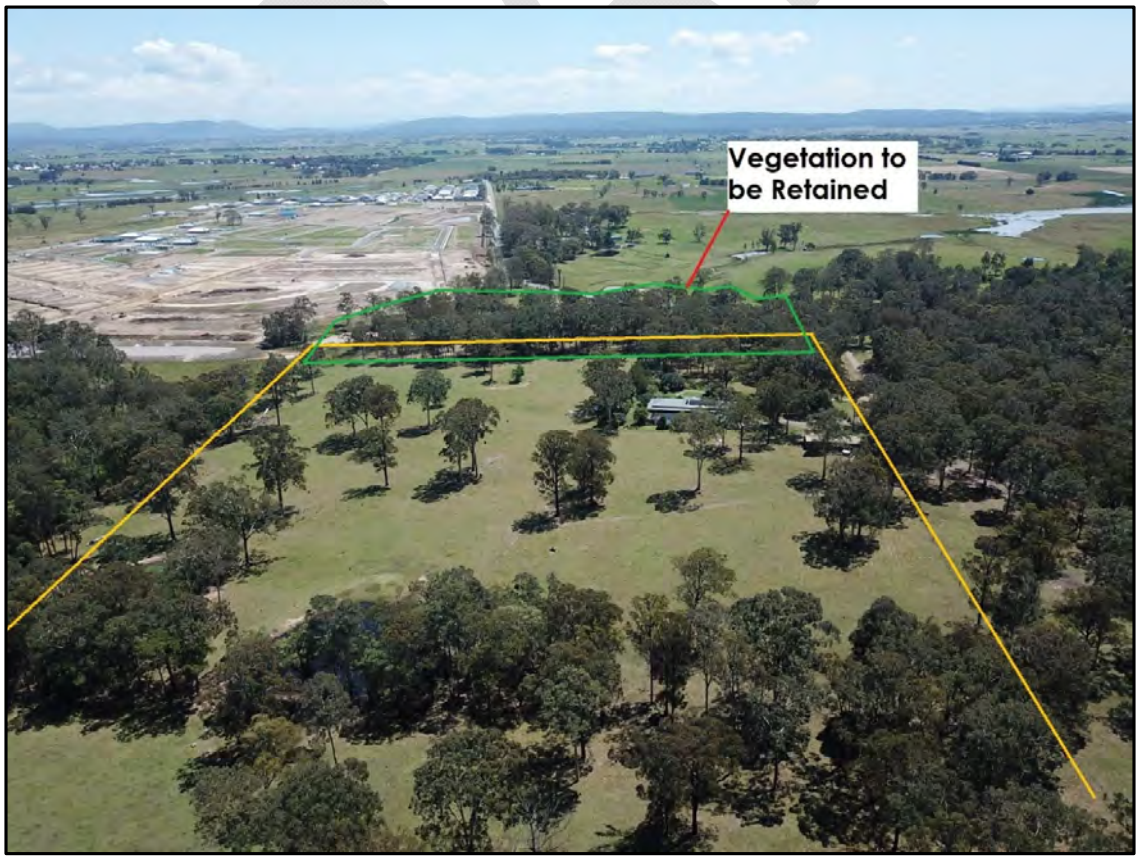

Figure 9 – Strategy 1 Vegetation to be Maintained.

4.2 STRATEGY 2 – CENTRAL NARROW-LEAVED IRONBARK – GREY BOX - SPOTTED GUM CONNECTION

Strategy 2 is shown at **Figure 10** and includes the following design principles;

- Locate the proposed active open space for the site over a stand of existing mature Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland EEC;
- The open space would run the width of the site and be in the order of 16,000m^2 excluding the proposed stormwater basin. The open space would be located directly between the C3 zones on adjacent lots 4 DP1145348 and 33 DP794448;
- An image of the vegetation to be retained under Strategy 2 is shown at **Figure 11**;
- It is proposed to consolidate two neighbourhood parks (TN7 and TN8) shown within the Thornton North Contributions Plan 2008. The walking catchments related the contributions plan layout are shown at **Figure 12** and the walking catchments related to our proposal are shown at **Figure 13.** It can be seen that no residents are disadvantaged by the proposed approach and Council's maintenance liability is limited to a single location. It is apparent that some open space was envisaged by Council to be provided by passive recreation in the riparian areas (item TN29 in the contributions plan).
- The proposed open space arrangement is a premium urban design outcome on the following basis:
  - Maintains an area of existing mature veg aimed at nature-play alongside a formal active open space;
  - The open space is located near the hilltop;
  - The open space area is 1.67ha befitting a regional park;
  - The open space is located on the development distributor road with multiple opportunities for parking away from the distributor;
  - The topography is such that keeping the vegetation necessitates a natural drainage swale within the open space and intertwining of the blue and green grid; and
  - The length and shape of the park creates opportunity for maximum park-front lots.
- The proposed open space arrangement introduces a bushfire risk to the heart of the development. To avoid the bushfire risk, we would be required to leave a 100m buffer between the retained vegetation and C3 zones, counteracting the ecological connection we seek to create. In the absence of a 100m buffer, the options to address the bushfire risk are:
  - Ensure the open space is managed as an Asset Protection Zone (APZ) by Council in perpetuity under a Plan of Management; or
  - Introduce "perimeter roads" around the park in accordance with Planning for Bushfire Protection 2019 and constructing the adjacent dwellings to the appropriate Bushfire Attack Level (BAL), nominally BAL 29.
- An ancillary benefit of Strategy 2 is the opportunity to extend the biodiversity corridor to the north-south riparian corridor on Lot 11 DP 1283071 via select street tree planting to encourage fauna movements. Ecological advice at this stage is to utilise a winter flowering native such as Spotted Gum (*Corymbia maculate)*

Figure 10 – Avoid & Minimise Strategy 2.

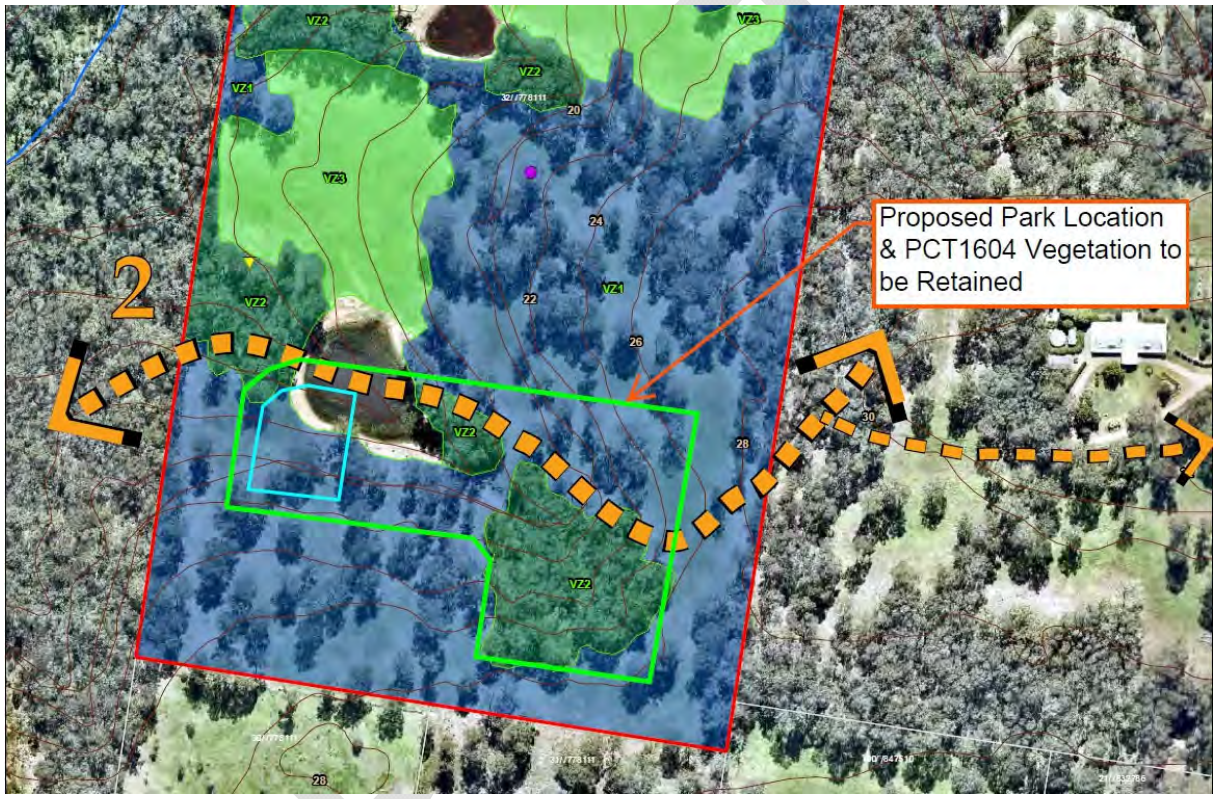

Figure 11 – Strategy 2 Vegetation to be Retained.

150101(80)-PSK-018-A

DA-18-1146

DA-18-626

LIMIT OF ROADWORKS (BY OTHERS)

McFARLANES

ROAD

RAYMOND TERRACE

Lot 32 DP778111

TN8 LOCAL PARK

Lot 33 DP79448

DA 2020-173

Lot 1 DP198776

DA 2019-653

Lot 4 DP1145348

TN7 LOCAL PARK

TN29 PASSIVE OPEN SPACE

Lot 18 DP999725

DA 2016-2377:1

Sophia Waters 1A-3A Development

DA 2016-432.3

Lot 30 DP778111

Lot 31 DP778111

Lot 100 DP847510

Lot 21 DP832786

DA 2019-574

Lot 1 DP1032753

DA 2019-652

TN16 NEIGHBOURHOOD PARK & PLAYGROUND

Sophia Waters 3B Development

DA 2016-2890

Lot 20 DP832786

DA 2019-573

N

Zone

B1	Neighbourhood Centre
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
R1	General Residential
R2	Low Density Residential
R3	Medium Density Residential
RE1	Public Recreation
RU2	Rural Landscape

LEGEND

- ALLAMS DEVELOPMENT SITES
- SUBJECT SITE BOUNDARY
- UNDEVELOPED PARCELS
- EXISTING LOTS
- PROPOSED FUTURE LOTS
- MAJOR CONTOURS
- MINOR CONTOURS
- WATERCOURSE
- PARK OFFSET 400m (FROM EDGE)
- PASSIVE OPEN SPACE OFFSET 400m (FROM EDGE)
- PASSIVE OPEN SPACE

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working beyond expectations

drawing title:
THORNTON NORTH URA

FIGURE 12

location: RAYMOND TERRACE ROAD CHISHOLM, NSW

council: MAITLAND CITY COUNCIL

dwg ref: 150101(80)-PSK-018-A

client: ALLAM

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ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
A	28/10/2022	INITIAL ISSUE	RC	RK	DATUM: AHD CONTOUR INTERVAL: 1m	A1 1:3000 — 0 60 120 150m — A3 1:6000	Sheet 1 of 4 sheets

• project management • civil engineering • infrastructure • superintendency • social impact • town planning • surveying • development feasibility • visualisation • urban design

150101(80)-PSK-018-A

DA-18-1146

DA-18-626

LIMIT OF ROADWORKS (BY OTHERS)

McFARLANES ROAD

Lot 32 DP778111

TN7/8 LOCAL PARK

Lot 33 DP79448

DA 2020-173

Lot 1 DP198776

DA 2019-653

Lot 4 DP1145348

Lot 30 DP778111

Lot 31 DP778111

Lot 100 DP847510

Lot 21 DP832786

DA 2019-574

Lot 1 DP1032753

DA 2019-632

Lot 20 DP832786

DA 2019-573

TN29 PASSIVE OPEN SPACE

Lot 18 DP999725

DA 2016-2377:1

Sophia Waters 1A-3A Development

DA 2016-432:3

TN16 NEIGHBOURHOOD PARK & PLAYGROUND

Sophia Waters 3B Development

DA 2016-2890

RAYMOND TERRACE ROAD

N

Zone

B1	Neighbourhood Centre
E2	Environmental Conservation
E3	Environmental Management
E4	Environmental Living
R1	General Residential
R2	Low Density Residential
R3	Medium Density Residential
RE1	Public Recreation
RU2	Rural Landscape

LEGEND

- ALLAMS DEVELOPMENT SITES
- SUBJECT SITE BOUNDARY
- UNDEVELOPED PARCELS
- EXISTING LOTS
- PROPOSED FUTURE LOTS
- MAJOR CONTOURS
- MINOR CONTOURS
- WATERCOURSE
- PARK OFFSET 400m (FROM EDGE)
- PASSIVE OPEN SPACE OFFSET 400m (FROM EDGE)
- PASSIVE OPEN SPACE

DIAL 1100 BEFORE YOU DIG

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drawing title:
THORNTON NORTH URA

FIGURE 13

location: RAYMOND TERRACE ROAD CHISHOLM, NSW

council: MAITLAND CITY COUNCIL

dwg ref: 150101(80)-PSK-018-A

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A	28/10/2022	INITIAL ISSUE	RC	RK	DATUM: AHD CONTOUR INTERVAL: 1m	A1 1:3000 — 0 60 120 150m — A3 1:6000	Sheet N of 4 sheets

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4.3 STRATEGY 3 – RIPARIAN REVEGETATION

Strategy 3 is shown at **Figure 14** and includes the following design principles;

- It is proposed to carry out stormwater management in a downstream basin on lot 12 DP1283071 (also owned by the proponent) as outlined in the Stormwater Management Plan accompanying the DA;
- The above stormwater management approach avoids the need to construct engineered basins in the existing gully, limiting the number of basins in the URA and Council's maintenance liability;
- Engineered basins require defined batters within which, canopy vegetation cannot be planted due to the risk of tree roots destabilising the basin. Avoiding an engineered basin within the existing gully generates possibility to revegetate the gully under a Vegetation Management Plan (VMP) and create a connective corridor within the east-west riparian zone; and
- An image showing the opportunity for riparian revegetation under Strategy 3 is shown at **Figure 15.** It is noted that the remainder of this parcel is vegetated, however this portion of the site has been avoided and is not included in the DA**.** It is also noted that this parcel is a disconnected island of vegetation with cleared pastureland to the east and west as well as completed development to the north. Conversely, the riparian corridor offers opportunity to create a connected ecological corridor of much greater biodiversity value.

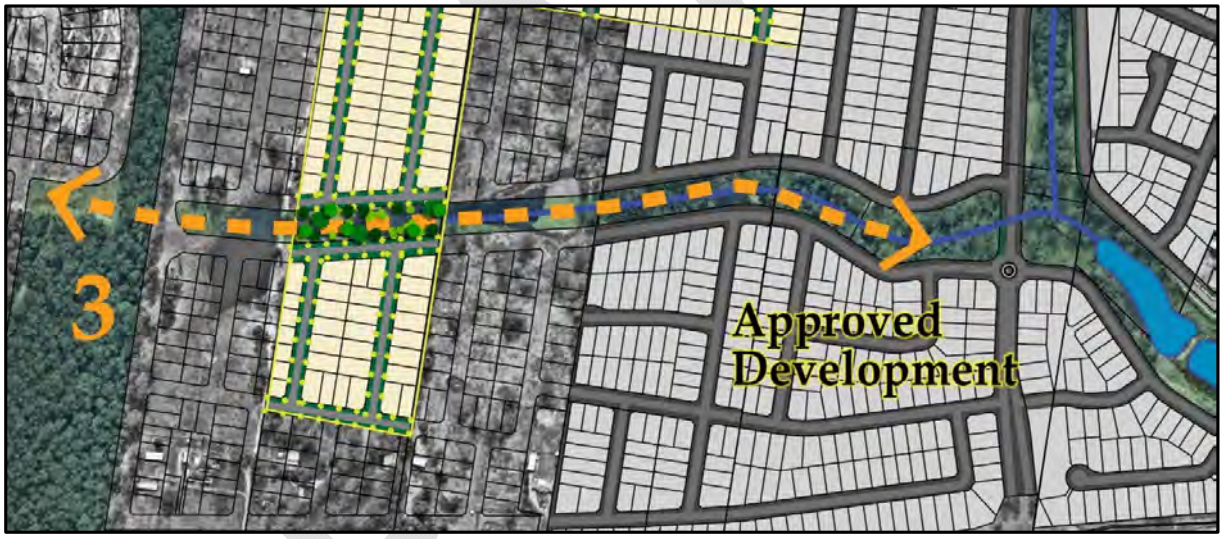

Figure 14 – Avoid and Minimise Strategy 3.

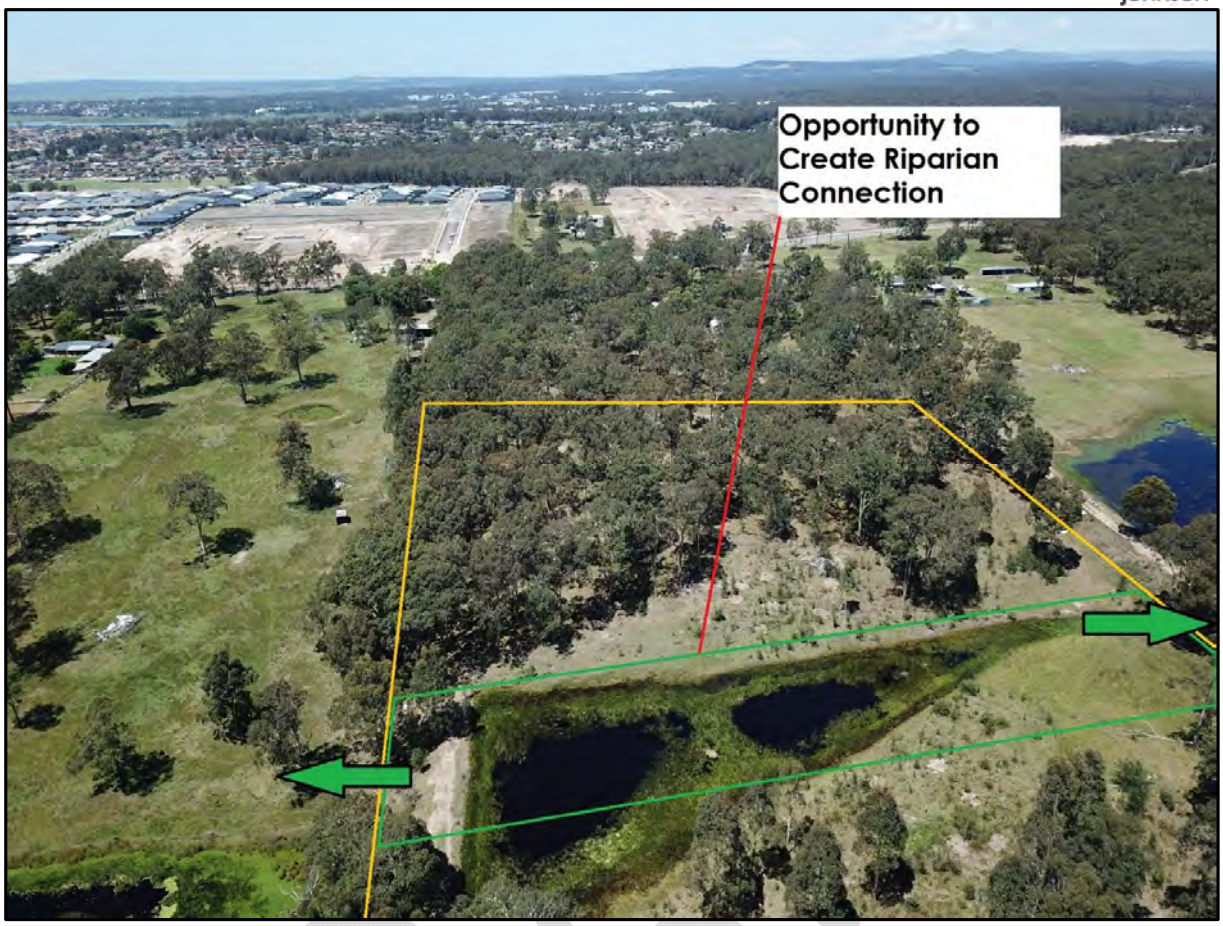

Figure 15 – Strategy 3 Opportunity for Riparian Revegetation.

5.0 Redundant strategies

In the development of the masterplan, we considered a number of strategies that were found to be suboptimal for various reasons. We provide an overview of these redundant avoid and minimise strategies with justification for their abandonment to assist in demonstrating the evolution of the masterplan.

The masterplanning process commenced in May 2020 and has been a two-and-a-half-year process including a rigorous options analysis of over 30 options and revisions. While many of the options related to lot yield, lot mix and road alignment, we focus on four core layout fundamentals within this section.

5.1 MAXIMUM YIELD

The site was acquired based on a May 2020 layout which was seen to be the most efficient development of the site and achieved maximum yield. The layout is shown at **Figure 16**. This layout is aligned to the intent of the rezoning process and satisfies the LSPS and DCP as well as being in accordance with the approach applied to all previous DA approvals in the LGA. However, it is the proponent's intention to provide some ecological connectivity through the site and as such the maximum yield layout was discounted.

Figure 16 – Maximum Yield Layout.

5.2 SPLIT NORTHERN CARRIAGEWAY

To maintain the existing mature vegetation in the unnamed road reserve at the north of the site we considered a split carriageway with a wide centre median as shown at **Figure 17**.

Survey of the trees in the area was undertaken to assist in the assessment of road alignment and vegetation that could be retained. The surveyed trees are shown in **Figure 17**.

This approach would not satisfy MOES in terms of road cross section and was found to hinder the developability of the R1 zoned portion of Lot 33 DP 529007 to the north. After considering the layout and walking the site, this strategy was discounted.

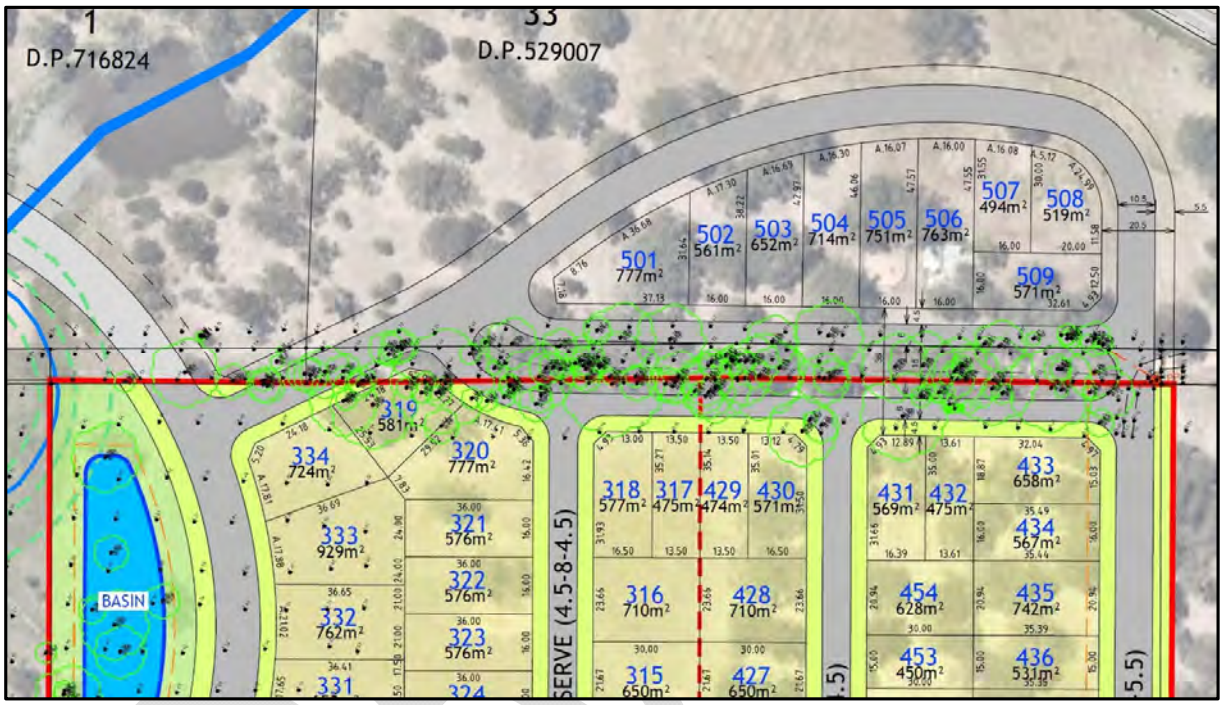

Figure 17 – Split Northern Carriageway.

5.3 INTERMEDIATE TREE CONNECTIVITY

There is a line of existing vegetation following a fence line which currently links the C3 zoned land on the adjacent lots. A layout to maintain this vegetation was considered which, after some deliberation, sought to place the vegetation in the front setback of residential lots. It was posited that the trees could be protected in perpetuity under a "Restriction as to Use" on the property title that would prevent their removal. The layout maintaining this existing vegetation is shown at **Figure 18**.

Survey of the trees in the area and pegging of the proposed lot boundaries was undertaken to assist in assessment of;

- Vegetation that could be retained
- Topography and its potential to affect road grading
- The ability to thread driveways for each lot through the retained vegetation.

The trees and lot boundaries as surveyed are shown at **Figure 19**.

After the lots were pegged, we walked the site with the proposed layout and found that;

- There were few trees that were healthy and of a size that warranted retention; and
- Significant regrading adjacent a portion of the vegetation would be required to fill the existing farm dam. This fill operation would require clearing of the trees or harm to the

trees via earthworks within their drip zone.

Based on the above it was considered that very little vegetation could be retained and that connectivity between the C3 zones would not be maintained under this strategy. The strategy was discounted on this basis.

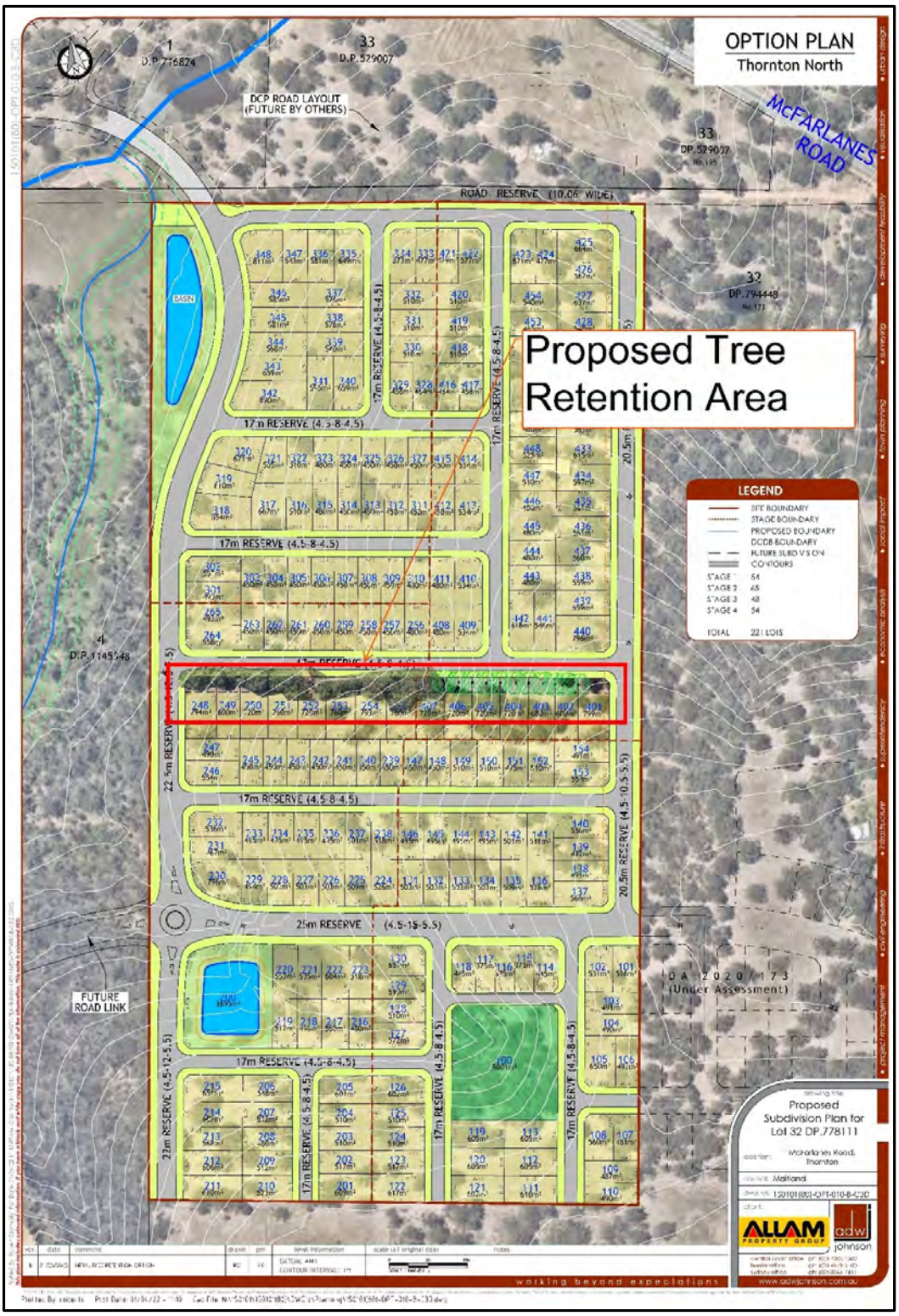

Figure 18 – Intermediate Tree Connectivity.

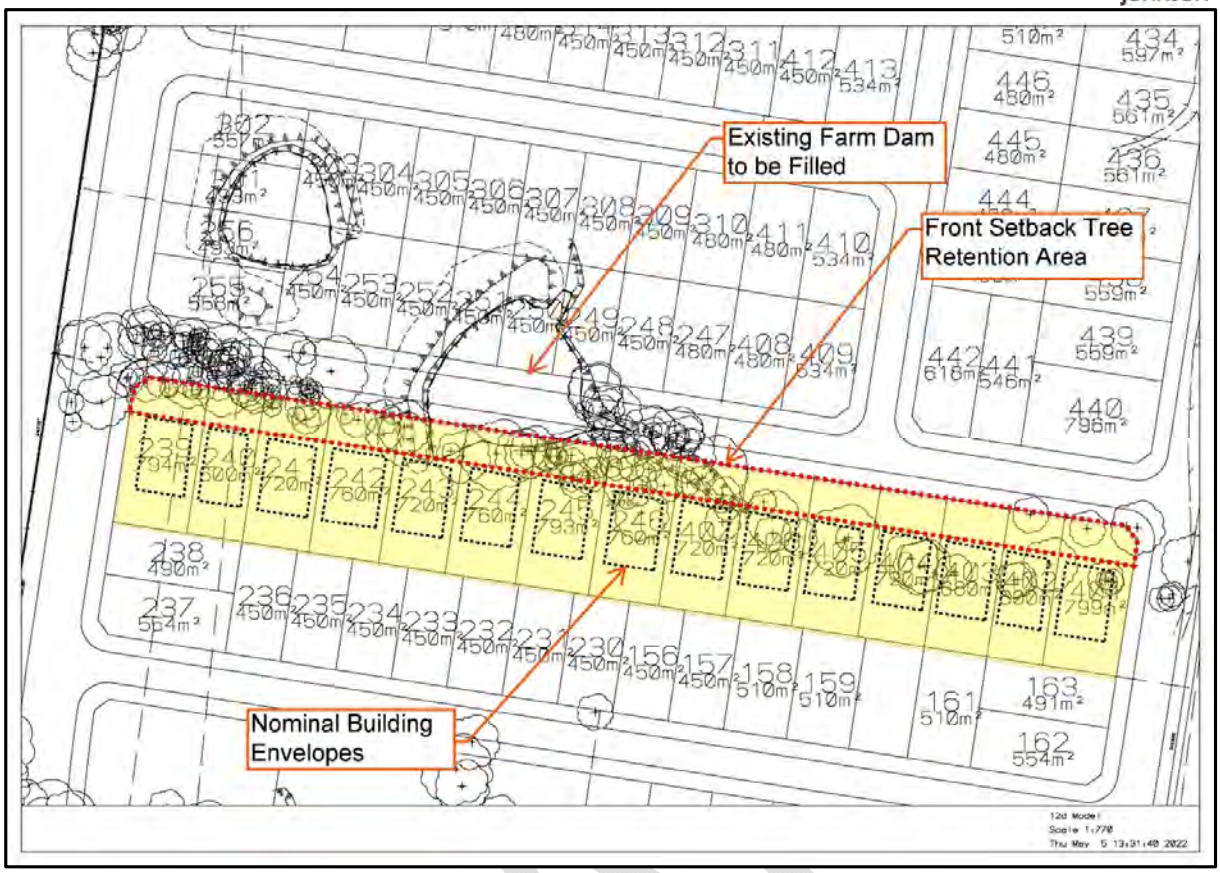

Figure 19 – Intermediate Tree Connectivity Survey.

5.4 C3 CONNECTION VIA OPEN SPACE

Multiple options were explored to connect the two C3 zones on adjacent lots 4 DP1145348 and 33 DP794448, two such options are shown at **Figure 20 and Figure 21**. These options appeared beneficial at first as they kept the open space on the ridgeline but were discounted as they provided very limited biodiversity value on the following basis;

- They maintained very little existing vegetation and required planting of new vegetation which would require many years to mature;
- They did not utilise the existing mature Narrow-leaved Ironbark - Grey Box - Spotted Gum shrub - grass woodland EEC south of the distributor road and as such the mature vegetation is lost and no connectivity is created. In this way our proposed Strategy 2 outlined at **Section 4.2** is superior and was the preferred option

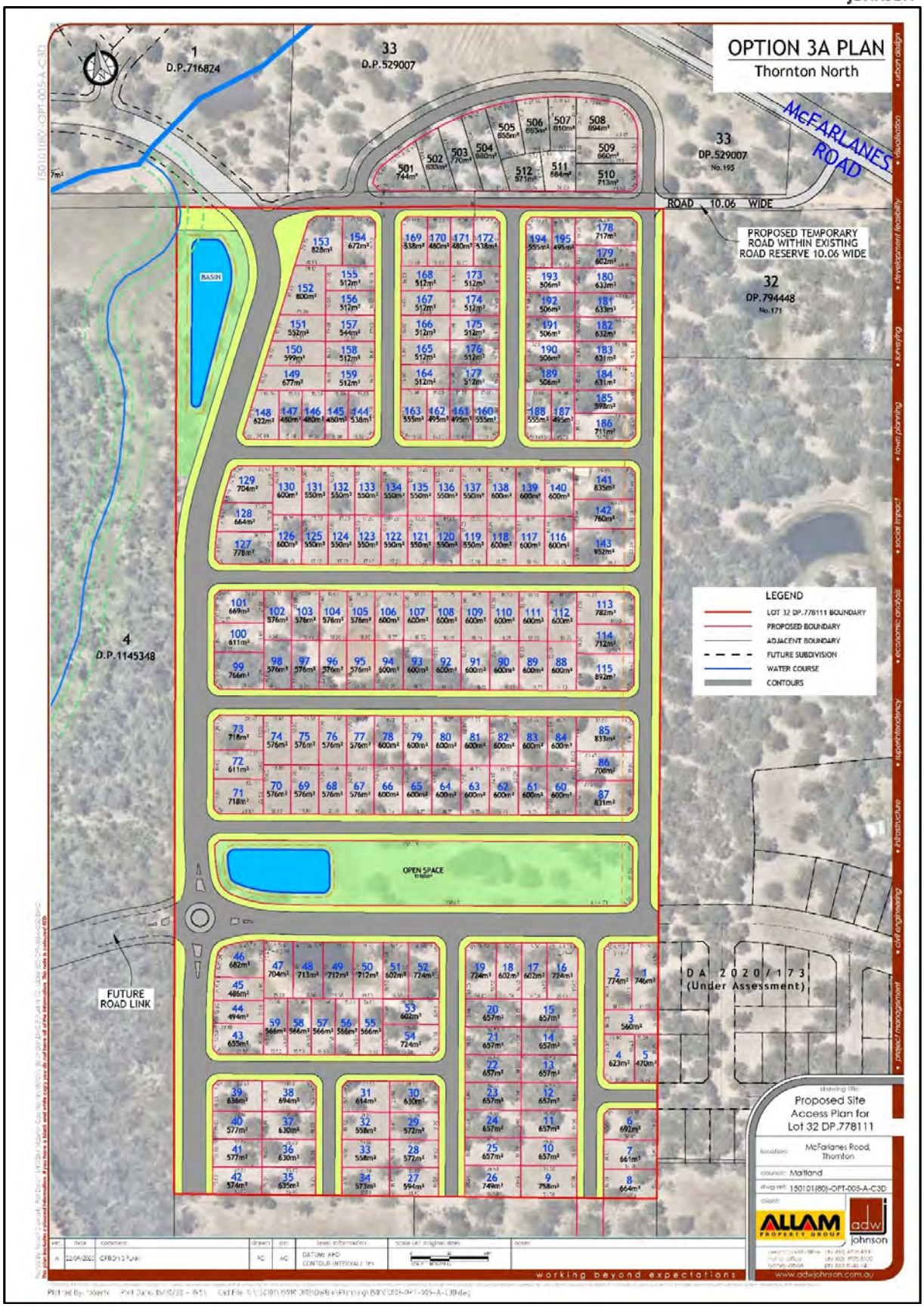

Figure 20 – Redundant Park Connection Strategy 1.

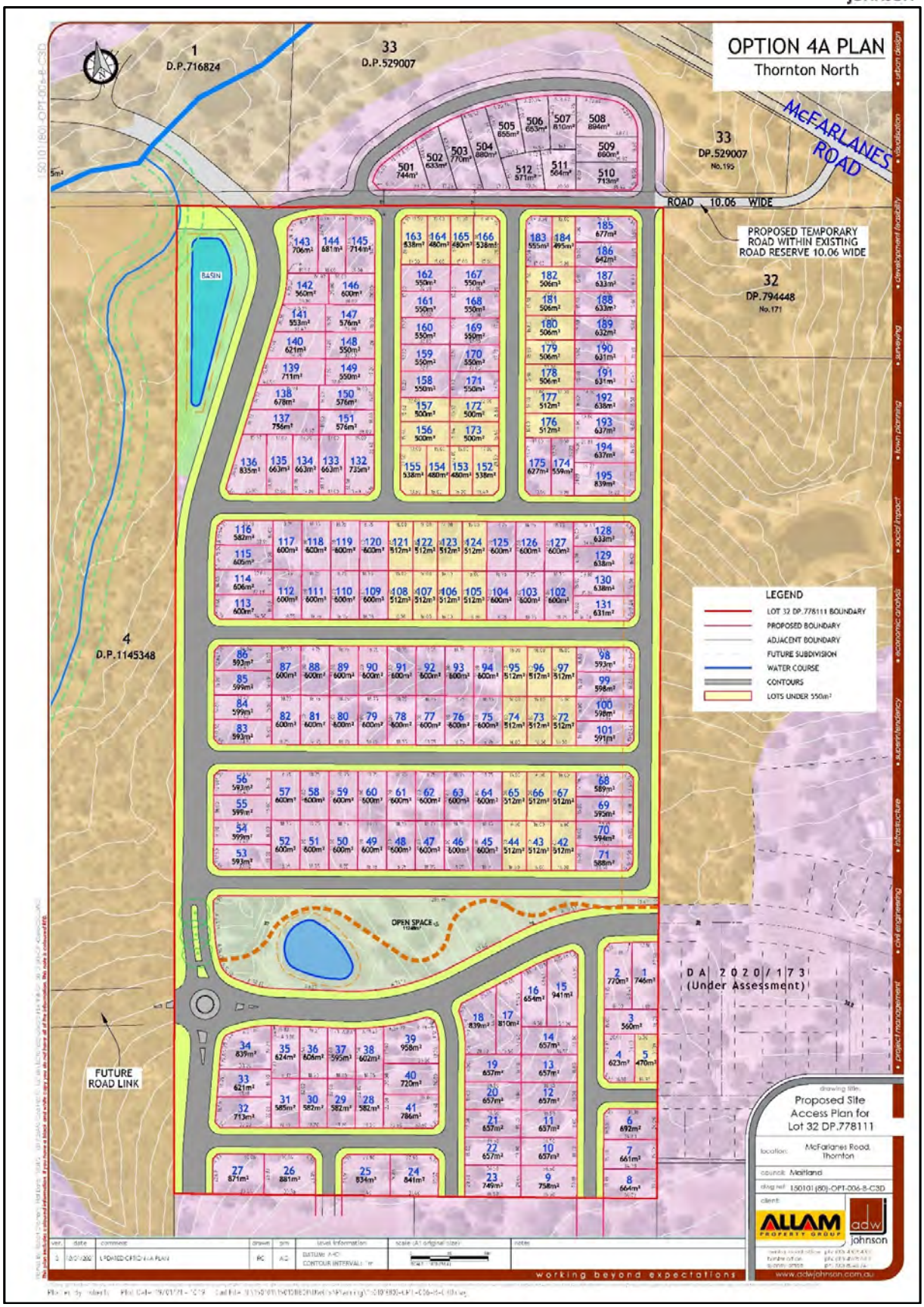

Figure 21 – Redundant Park Connection Strategy 2.

6.0 Opportunity Cost

Employing the avoid and minimise strategies outlined in **Section 4** has the following effects on yield and housing affordability;

- Relinquishment of developable R1 zoned land:
  - Northern Corridor = 5,408 0m^2;
  - Additional Open Space Area = 6,728m^2; and
  - **Total R1 zoned land relinquished = 12,136 m^2.**
- Loss of Yield
  - Lot 3 DP778111 = Loss of 10 lots
  - Lot 31 DP778111 = Increase of 4 lots
  - **Total Loss of Revenue = -$2,580,000**
- Introduction of additional pavement to create a "perimeter road" around the open space = 1,115 m^2;
  - **Total Increase in Construction Cost = $800,000** (accounts for reduction in S7.11 due to loss of yield)
- Additional lots with a BAL-29 construction rating = 19.
  - Nominal cost to upgrade construction to BAL-29 is $30,000 per lot).
  - **Total Cost to Future Home Builders = $570,000**

The above effects on the developability of the site are not incidental. At the time of purchase, it was a reasonable expectation that the maximum yield layout outlined at **Section 5.1** could be achieved as full development of the R1 zoned land (with the exception of riparian corridors) had been achieved on all sites within the TNURA to date.

The need to address the principles of avoid and minimise have arisen unexpectedly, this report demonstrates that we have made a considered and genuine attempt to incorporate them into our development layout over a two-and-a-half-year process which included;

- Ecological Survey and Input;
- Bushfire Input;
- Town Planning & Urban Design Input;
- Engineering Input;
- Location and Ground Truthing of Site Features with Regard to Various Layouts.

It must be stated that the proposed ecological outcomes come at a cost to the developer, in some cases the future home owner and they reduce the capacity to deliver housing supply on residential zoned land in the Maitland LGA to address the needs of population growth and housing affordability.

7.0 Proposed Masterplan

The three avoid and minimise strategies outlined in Section 4.0 have been incorporated into the masterplan alongside our normal greenfield subdivision urban design principles to arrive at the layout shown at Figure 20. This layout forms the basis of the Development Application, the DA subdivision drawing is included at Figure 21 and we consider that it satisfies the requirements of Clause 6.12 of the Biodiversity Conservation Act.


Completed
Development
1
2
3
Approved
Development
Completed
Development

FIGURE 22

240294(70)-PSK-003-A-C3D

DCP ROAD LAYOUT (FUTURE BY OTHERS)

ROAD RESERVE (10.06 WIDE)

McFARLANES ROAD

33 DP.529007 No.195

32 DP.794448 No.171

4 D.P.1145748

BASIN

17m RESERVE (4.5-8-4.5)

22.5m RESERVE (4.5-12.5-5.5)

20.5m RESERVE (4.5-10.5-5.5)

25m RESERVE (4.5-15-5.5)

LOCAL PARK

FUTURE ROAD LINK

LOT AREA SUMMARY

450m²	3	3	1.2%
451-549	97	100	38.6%
550-649	114	516	45.4%
650-749	32	548	12.7%
>750	5	251	2%

LEGEND

- SUBJECT SITE BOUNDARY
- STAGE BOUNDARY
- PROPOSED BOUNDARY
- ADJACENT BOUNDARY
- FUTURE SUBDIVISION
- WATER COURSE
- CONTOURS

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
A	21/10/2022	INITIAL PUBLIC PARK PLAN	RC	RK	DATUM: AHD CONTOUR INTERVAL: 1m	0 30 60 75m SCALE: 1:1500 (FULL)	

working beyond expectations

drawing title:

FIGURE 23

location: McFarlanes Road, Thornton

council: Maitland

dwg ref: 240294(70)-PSK-003-A-C3D

client: ALLAM PROPERTY GROUP

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• urban design • visualisation • development feasibility • surveying • town planning • social impact • economic analysis • civil engineering • infrastructure • superintendency • project management

Plotted By: Robert Cromarty Plot Date: 21/10/22 1:27:24PM Cad File: N:\240294\240294(70)\DWG\PLANNING\PSK\240294(70)-PSK-003-A-C3D.DWG

This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.

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