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Lot 12 in DP 32026
2143-2157 Elizabeth Drive, Luddenham

Northern Gateway Precinct Plan

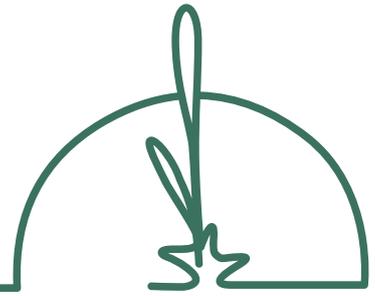
Ecological & Riparian Assessment Report

F Dominic Fanning

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March 2021

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This document and the intellectual material it contains have been prepared by the author (Mr F Dominic Fanning) for the specific purposes described herein.

It has been prepared in cognition of Division 2 Part 31 of the *Uniform Civil Procedures Rules* (UCPRs) and the *Expert Witness Code of Conduct* contained in Schedule 7 to the UCPRs – as practised *inter alia* in the NSW Land & Environment Court.

Any interpretation of this *Report* or any extraction from it are subject to the approval of the author.

**LOT 12 in DP 32026
2143-2157 ELIZABETH DRIVE, LUDDENHAM**

NORTHERN GATEWAY PRECINCT PLAN

ECOLOGICAL & RIPARIAN ASSESSMENT REPORT

March 2021

1 INTRODUCTION

1.1 Background

The NSW Department of Planning, Industry & Environment (DPIE) has released a *Draft Precinct Plan* for the Northern Gateway Precinct in western Sydney; associated with the Western Sydney Aerotropolis (see plans in Attachment A).

The *Draft Northern Gateway Precinct Plan* is contained in Part 4 of the *Northern Gateway Urban Design and Landscape Plan* prepared for the Western Sydney Planning Partnership by Hill Thalys Architecture + Urban Projects Pty Ltd (dated October 2020).

As discussed in detail below, the *Draft Northern Gateway Precinct Plan* relies in part on the *Draft Cumberland Plain Conservation Plan* which has been prepared by the NSW government – as there is no separate dedicated ecological or riparian assessment *Report*.

1.2 Purpose of This Report

The subject land for this *Ecological & Riparian Assessment Report* is Lot 12 in DP 32026 at 2143-2157 Elizabeth Drive, Luddenham (Figure 1 below; Attachment B).

The subject land is bound by Luddenham Road (along its northwestern boundary), Cosgroves Creek (along its southeastern boundary), Elizabeth Drive (to the southeast) and Lot 38 in DP 211842 (to the northeast).

The *Draft Precinct Plan* for the Northern Gateway Precinct identifies a number of purported '*Existing Constraints*' on the subject land – involving real and/or alleged "*Endangered Ecological Communities*" (EECs); an alleged '*3rd Order Stream*' and real and/or supposed '*riparian zones*'; as well as unjustified and inaccurate '*Cumberland Plain Conservation Plan Avoided Lands*'.

This *Report* has been prepared at the request of the landowner of the subject land to review the mapping of various alleged '*constraints*' on the subject land and to identify those portions of the land that contain actual development constraints (ecological and/or riparian) and those portions of the land that would be available for development purposes.



Figure 1 The subject land at 2143-2157 Elizabeth Drive, Luddenham

2 INFORMATION BASE

The undersigned conducted a walked survey of the subject land on 17 February 2021 – inspecting the vegetation present, taking photographs and observing the topography of the land (see Photographic Essay in Attachment C).

The following documents were reviewed by the undersigned.

- The *Draft Northern Gateway Precinct Plan* (Part 4 of the *Northern Gateway Urban Design and Landscape Plan* prepared for the Western Sydney Planning Partnership by Hill Thalys Architecture + Urban Projects Pty Ltd - dated October 2020).
- The *Draft Cumberland Plain Conservation Plan* (DPIE - dated August 2020).
- WSPP. November 2020. *Overview of the Northern Gateway Precinct Plan*. Western Sydney Planning Partnership.
- WSPP. November 2020. *Draft Aerotropolis Precinct Plan. Technical Support Summaries*. Western Sydney Planning Partnership.

As noted above, there is noted that there is no specific or dedicated ecological or riparian assessment *Report* for the *Northern Gateway Precinct* on the Department of Planning website. The undersigned has been advised that the *Northern Gateway Precinct Plan* relies *inter alia* on the *Draft Cumberland Plain Conservation Plan* with respect to riparian and ecological issues.

This is, as discussed below, a significant problem - compounded by the extremely poor and inaccurate mapping contained in the *Northern Gateway Precinct Plan*.

3 PRECINCT PLAN MAPPING

The *Draft Northern Gateway Precinct Plan* (as identified above) has mapped alleged or purported “*Existing Constraints*” with respect to ecological and riparian issues on the subject land (Lot 12 in DP 32026) at 2143-2157 Elizabeth Drive, Luddenham (see Figure 2 below; map in Attachment B).

The mapping provided in the *Draft Northern Gateway Precinct Plan* of purported or alleged ‘constraints’ on the subject land at Luddenham (as noted above) is **coarse, inaccurate, incorrect and inappropriate**.

In the first instance, the lines used in the mapping are up to 20 metres in width. For a significant planning document, this is simply **unacceptable**.

Second, the lines are **inaccurate** and **incorrectly** placed (in part at least). For example, the dark green lines which purportedly define ‘*Cumberland Pain Conservation Plan Avoided Lands*’ identify an area substantially greater (approximately 120m in width) along Cosgroves Creek than those depicted in the *Draft Cumberland Plain Conservation Plan* (the ‘*Plan*’) – see Chapter 4 below). The mapping in the *Draft Northern Gateway Precinct Plan* is simply **inaccurate** and **incorrect**.

Further, the mapping of an alleged 3rd Order ‘Stream’ through the northern central part of the subject land is based on the **flawed** and **inaccurate** ‘Hydroline’ mapping of watercourses (see Chapter 5 below). There is no watercourse of any type at this location (see Photographic Essay in Attachment C); and this alleged ‘constraint’ simply **does not exist**.

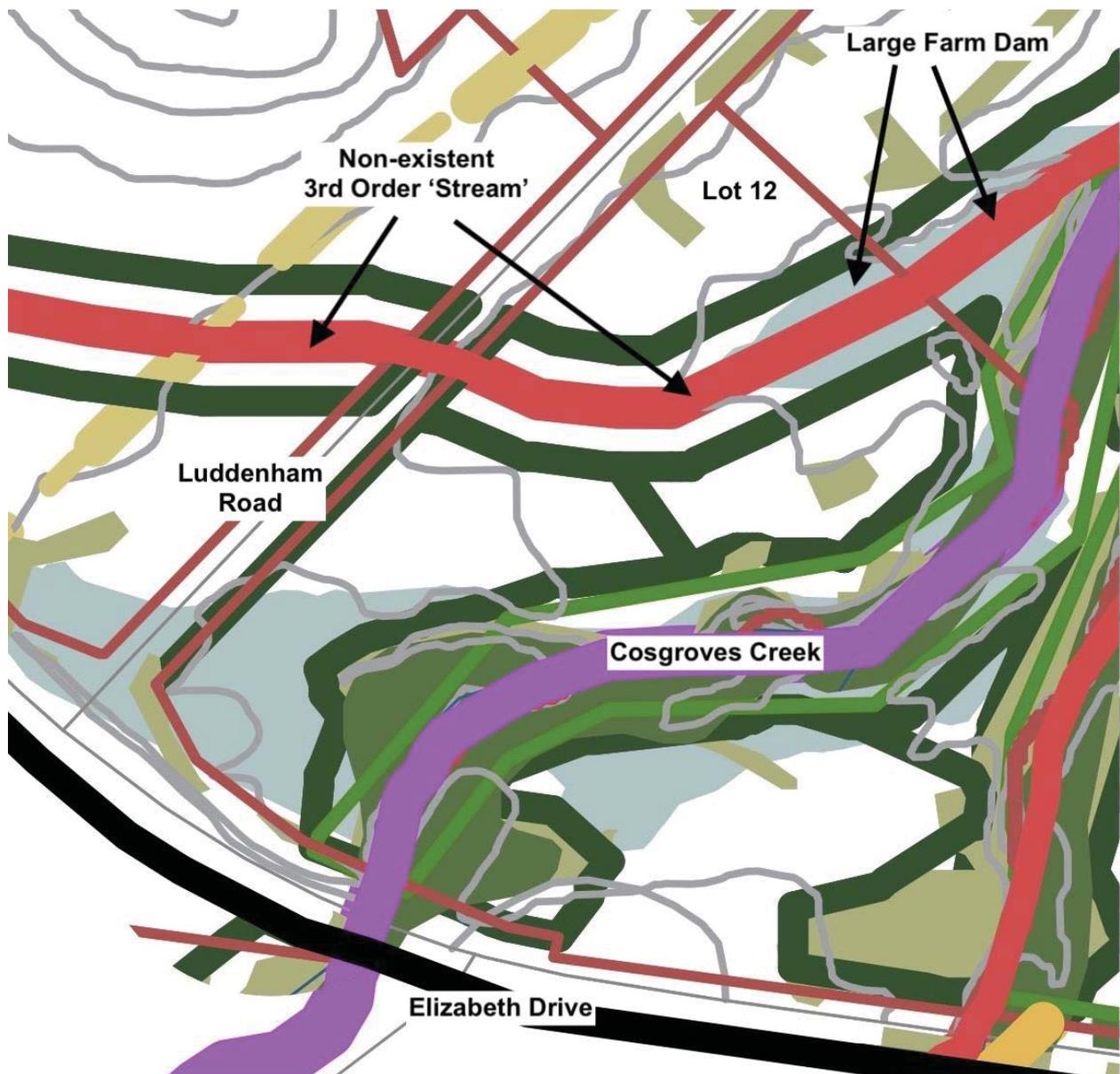


Figure 2 The mapping of purported 'Existing Constraints' on the subject land at 2143-2157 Elizabeth Drive, Luddenham – contained in the *Draft Northern Gateway Precinct Plan*

Dark Green Lines	Purported 'Cumberland Plain Conservation Plan Avoided Lands'
Red Line	Purported 3 rd Order Stream
Purple Line	4 th Order Stream (Cosgroves Creek)

As discussed above, the *Draft Northern Gateway Precinct Plan* mapping is **coarse, inaccurate, incorrect and inappropriate** – and **incorrectly** identifies the extent and/or presence of alleged 'Existing Constraints'.

The whole area occupied by the "Incorrectly mapped 3rd Order 'Stream'" in the extract from the *Draft Northern Gateway Precinct Plan* (Figure 2 above) is B – given that there is no watercourse of any type at this location (see Figure 1; Photographic Essay in Attachment C).

In addition, the mapping of the alleged 'constraint' along Cosgroves Creek is **excessive** and is **not consistent** with the *Draft Cumberland Plain Conservation Plan* (see discussion below).

4 DRAFT CUMBERLAND PLAIN CONSERVATION PLAN

4.1 Background

The *Draft Cumberland Plain Conservation Plan* (the 'Plan') has been prepared by the DPIE to provide strategic planning and biodiversity outcomes in western Sydney – specifically to support the delivery of the 'Western Parkland City' (including the Western Sydney Aerotropolis).

Relevantly, the 'Plan' states *inter alia* that it “will identify and protect **important** biodiversity in the nominated areas” (emphasis added). The 'Plan' also states that it “identifies strategically **important** biodiversity areas within the Cumberland subregion” (emphasis added).

On the basis of the detailed considerations documented below, the 'Plan' has clearly **failed** in both regards with respect to the subject land at Luddenham.

4.2 Vegetation Mapping Issues

The *Draft Cumberland Plain Conservation Plan Viewer* (the 'Plan Viewer') has mapped parts of the subject land at Luddenham (see Figure 3 below and in Attachment B) in the following terms.

- Patches of vegetation are mapped as a “*threatened ecological community*” (TEC) –
 - Cumberland Plain Woodland (CPW) – a small patch in the north of the subject land adjacent to the dwelling.
 - Swamp Oak Forest - along Cosgroves Creek.
 - River-flat Forest in three small patches – close to Cosgroves Creek.
- A band (approximately 40m wide) along Cosgroves Creek and in the southwest of the subject land as “*strategic conservation*”.

However.

The mapping of vegetation contained in the 'Plan' **does not** adequately or accurately reflect the existing circumstances on the subject land at Luddenham (see Figure 1 above and aerial photograph in Attachment A; Photographic Essay in Attachment C).

The vegetation along Cosgroves Creek is indeed dominated by casuarinas – and may constitute Swamp Oak Floodplain Forest (a TEC); although the *Casuarina* species has not been verified. The small patches of alleged River-flat Forest in the southeast of the subject land (near Cosgroves Creek) are actually stands of *Casuarina cunninghamiana* or *Casuarina cunninghamiana/glauca*. This is not a TEC.

The patches of alleged CPW in the north of the subject land are trees which were planted by the landowners over the last 60+ years – noting that some of the trees planted are species of the CPW community (albeit of unknown provenance and therefore not appropriately identified as a TEC).

These plantings are clearly **artificial**; and **do not** constitute the TEC. In addition, there is **virtually no** native understorey or groundcover – noting the presence of a dwelling with gardens and associated features, sheds, previously cleared lands, substantial stockpiles of equipment and materials, fences and tracks, non-native vegetation, extensive weeds and introduced plantings, and other artificial elements (see Photographic Essay in Attachment C).

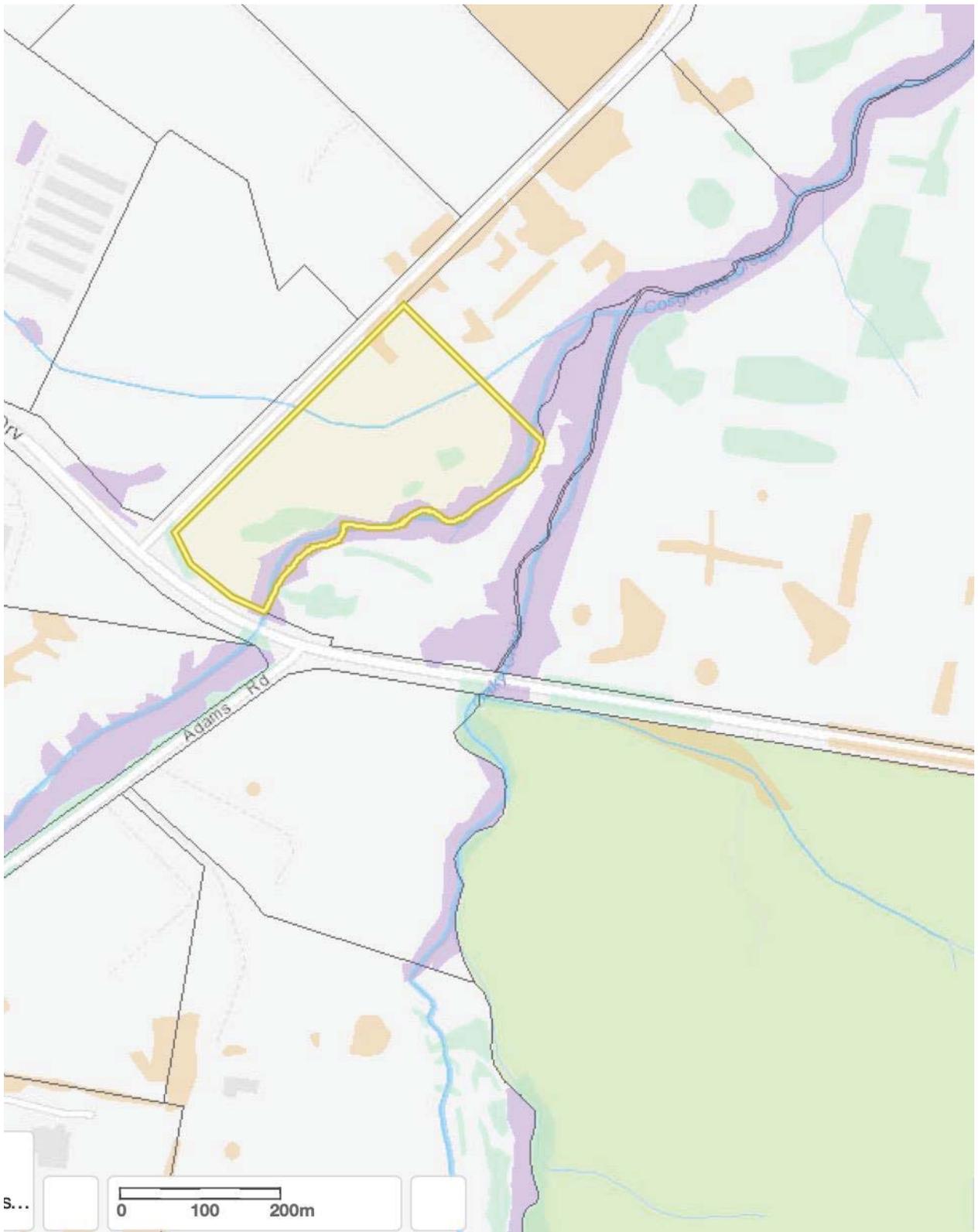


Figure 3 The mapping of purported TECs on the subject land at 2143-2157 Elizabeth Drive, Luddenham – in the *Draft Cumberland Plain Conservation Plan*

- | | |
|--------------|--------------------------|
| Light Orange | Cumberland Pain Woodland |
| Light Green | River-flat Forest |
| Light Purple | Swamp Oak Forest |

There is **no evidence** that the mapping of any of the purported TECs on the subject land has been based on any site investigations. Indeed, given the inaccuracies documented above, it is clear that no proper verification of the vegetation on the subject land has been undertaken.

The mapping of TECs on the subject land at Luddenham is therefore **hypothetical** and **unverified**; and **cannot reasonably constitute a satisfactory basis** for precluding development on the land.

It is further noted that ‘The Plan’ **does not** provide any mechanism to review the mapping on which it relies; thus embedding **flawed** and **incorrect** mapping as the base of ‘The Plan’.

4.3 Environmental Zoning Issues

The *Proposed Environmental Zoning* of the subject land contained in the Plan Viewer’ (Figure 4 below; Attachment A) is based primarily (it would seem) on the **faulty** ‘Hydroline’ mapping of watercourses; as discussed below in Chapter 5.

The mapping of an approximately 40m wide *Proposed Environmental Zone* along Cosgroves Creek is potentially appropriate – given the riparian issues discussed in Chapter 5 below.

However.

The mapping of a purported *Proposed Environmental Zone* along the non-existent purported 3rd Order ‘watercourse’ from the northwestern boundary of the subject land at 2143-2157 Elizabeth Drive, Luddenham through the centre of the land is **entirely inappropriate**.

As discussed in detail below (Chapter 5), there is **no** such ‘watercourse’ (or ‘creek’ or ‘stream’) at this location (see Figure 1 above and in Attachment A; Photographic Essay in Attachment C). This is merely an overland flow path (with no channel or even a simple invert) and a large farm dam; surrounded by a paddock of introduced pasture grasses and weeds. There is **no native vegetation** at this location on the subject land.

There is **no conceivable justification** for this portion of the purported *Proposed Environmental Zone* on the subject land at Luddenham as mapped in the *Draft Cumberland Plain Conservation Plan* - on ecological or riparian grounds.

Similarly, the patches of ‘vegetation’ on the subject land identified as “*Non Certified - Avoided for Biodiversity*” (see Figure 4 below: Attachment A) are **completely unjustifiable** on ecological grounds.

The larger patch between Cosgroves Creek and the **non-existent** ‘watercourse’ (from the northwestern boundary of the subject land) contains virtually **no** native vegetation – being dominated by introduced pasture grasses and weeds (see Figure 1 above and in Attachment A; Photographic Essay in Attachment C). The smaller patch is partly (although not accurately) coincident with small stands of *Casuarina cunninghamiana* or *Casuarina cunninghamiana/glauca* – of very **extremely low** biodiversity conservation value or potential.

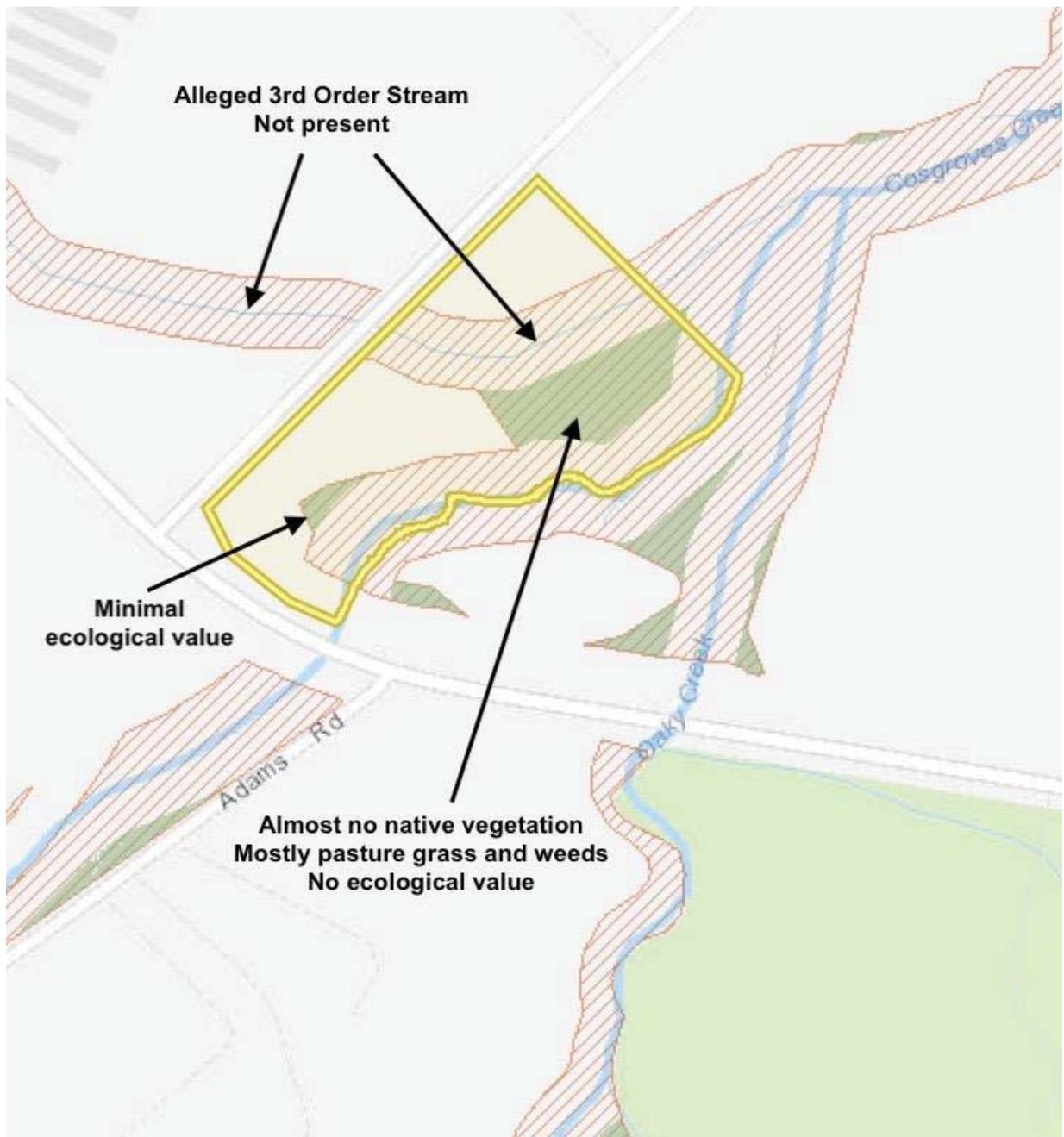


Figure 4 The mapping of ‘Proposed Environmental Conservation’ on the subject land at 2143-2157 Elizabeth Drive, Luddenham – in the *Draft Cumberland Plain Conservation Plan*

Orange Shading Proposed Environmental Conservation area – despite the criticisms documented above

Light Green Identified “*Non Certified - Avoided for Biodiversity*” – despite the lack of any biodiversity values in this area

5 RIPARIAN ASSESSMENT of the SUBJECT LAND

5.1 Cosgroves Creek

Cosgroves Creek, which forms the southeastern boundary of the subject land, is clearly a “*river*”; and has been mapped as a Strahler 4th Order Stream. The Creek has a well-defined ‘bed and banks’; and is incised 3 – 5 metres into the landscape (see Photographic Essay in Attachment C). On that basis, there would be an expectation (NB **not** a ‘requirement’) from the NRAR of a 40 metre wide ‘Vegetated Riparian Zone’ (VRZ) along Cosgroves Creek; as identified in the *Draft Cumberland Plain Conservation Plan*. It is also relevant to note, however, that a 40m wide VRZ is **not** mandated by the *Water Management Act 2000* and that incursions of up to 50% into the VRZ are possible.

Whether or not Cosgroves Creek is actually an actual 4th Order Stream is not the subject of this *Report*; but it is noted by the undersigned that the overwhelming majority of the Hydroline mapping within the Sydney metropolitan area is incorrect – because many purported ‘streams are not actually present.

The identification of a ‘Riparian Zone’ 120m wide or more along Cosgroves Creek (*ie* including at least 60 metres on the subject land) in the “*Existing [riparian] Constraints*” mapping contained in the *Draft Precinct Plan* (see Figure 2 above and map in Attachment A) is **unjustified, inappropriate and unreasonable**. That mapping is also **inconsistent** with the mapping in the *Draft Cumberland Plain Conservation Plan*.

5.2 Other Watercourse

There is no other watercourse, other than an unformed overland flow path, present on the subject land at Luddenham (see Figure 1; maps in Attachment A).

The “*Existing [riparian] Constraints*” identified on the subject land, as mapped in the *Precinct Plan*, includes a purported Strahler 3rd Order Stream flowing in a northeasterly direction from the northwestern boundary (see Figure 2; Attachment A) - according to the **faulty** and **unvalidated** Hydroline mapping provided by the NSW government.

There is **no** such ‘Stream’ or ‘Creek’ present at this location on the subject land (Figure 1; Photographic Essay in Attachment C). Rather, at its lower end there is a large artificial farm dam; upstream of which on the subject land there is no formed ‘Stream’ or ‘Creek’ or other watercourse.

The application of an approximately 100m ‘riparian zone’ along this **non-existent purported** watercourse – in accordance with the **flawed** ‘Hydroline’ mapping and the *Draft Cumberland Plain Conservation Plan* - is **unjustifiable** on ecological, riparian, statutory and logical grounds.

5.3 Conclusions

The imposition of a ‘Riparian Zone’ of up to 40m width along Cosgroves Creek along the southeastern side of the subject land at 2143-2157 Elizabeth Drive, Luddenham may possibly be appropriate.

However, there is **no** watercourse in the southwestern part of the land. There are **no** statutory or appropriate riparian constraints to any future potential development of this portion of the subject land at Luddenham.

6 ECOLOGICAL ASSESSMENT of the SUBJECT LAND

6.1 Circumstances

The subject land has been cleared of native vegetation and has been used intensively for an array of **agricultural and rural purposes** for a very long time (at least 60 years by the previous landowner's family *pers comm*) – including the for agistment and grazing of horses and cattle (see Photographic Essay in Attachment C).

The paddocks on the subject land are characterised almost entirely by introduced grasses and pasture weeds (see Photographic Essay in Attachment C). There are virtually no native groundcover plants throughout the subject land; other than occasional individual plants at scattered locations (predominantly along Cosgroves Creek).

Cosgroves Creek, as discussed above, is a moderate sized watercourse – with a riparian woodland dominated by casuarinas; but with a highly weed-infested understorey (see Photographic Essay in Attachment C of this *Report*).

6.2 Ecological Considerations

The mapping of alleged “*Existing [ecological] Constraints*” on the subject land, as contained in the *Draft Northern Gateway Precinct Plan* (see Figure 2 above and in Attachment A) is coarse, inaccurate, incorrect and predominantly **inappropriate**.

The mapping of small patches of alleged River-flat Forest on the land is **incorrect**. Whilst there are small stands of disturbed she-oak forest on the land – they are characterised by *Casuarina cunninghamiana* or *Casuarina cunninghamiana/glauca* of very extremely low biodiversity conservation value or potential.

Similarly, the small patch of alleged Cumberland Plain Woodland (CPW) on the subject land consists of canopy trees which have been planted by the landowner's over a long period. As noted above, these are of unknown provenance and cannot reasonably be considered an example of CPW.

The purported “*Existing [ecological] Constraints*” on the subject land as mapped in the *Precinct Plan* (see map in Attachment A) are predominantly, if not entirely, **inappropriate, unreasonable and unjustified**.

6 CONCLUSIONS

The *Draft Northern Gateway Precinct Plan* (Part 4 of the *Northern Gateway Urban Design and Landscape Plan* prepared for the Western Sydney Planning Partnership by Hill Thalys Architecture + Urban Projects Pty Ltd - dated October 2020) has mapped alleged or purported “*Existing Constraints*” with respect to ecological and riparian issues on the subject land (Lot 12 in DP 23026) at 2143-2157 Elizabeth Drive, Luddenham.

The mapping provided in the *Draft Northern Gateway Precinct Plan* of purported or alleged ‘constraints’ on the subject land at 2143-2157 Elizabeth Drive, Luddenham in the *Draft Northern Gateway Precinct Plan* is **coarse, inaccurate, incorrect and inappropriate**.

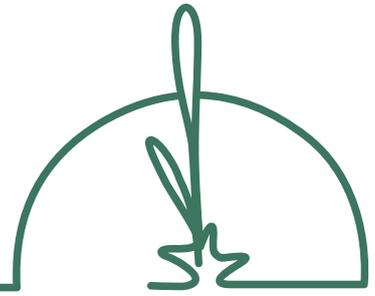
Similarly, the mapping of an alleged 3rd Order stream on the subject land in the *Draft Cumberland Plain Conservation Plan* is **incorrect**. There is part of a large farm dam at this location; and there is no watercourse upstream of the farm dam to the west.

The information and mapping provided in the *Draft Northern Gateway Precinct Plan* and in the *Draft Cumberland Plain Conservation Plan* is **entirely and utterly insufficient** to constrain the potential development of the subject land. The alleged “*Existing Constraints*” (other than the band of vegetation along Cosgroves Creek) **cannot be justified** on the basis of any **objective or scientific** analysis, relevant statute or any *Planning Policy*.

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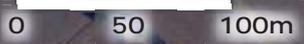
Attachment A
Relevant Maps and Plans

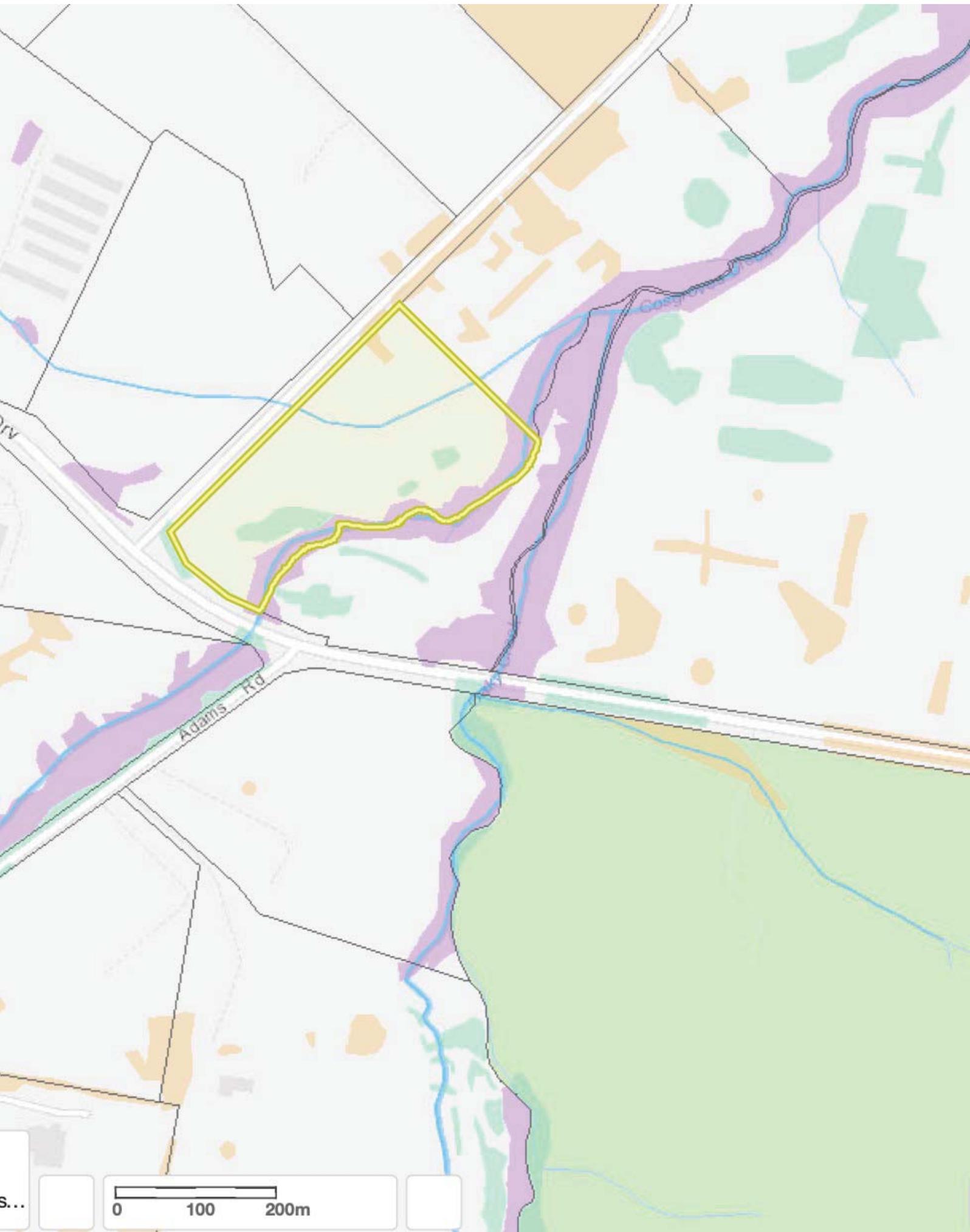


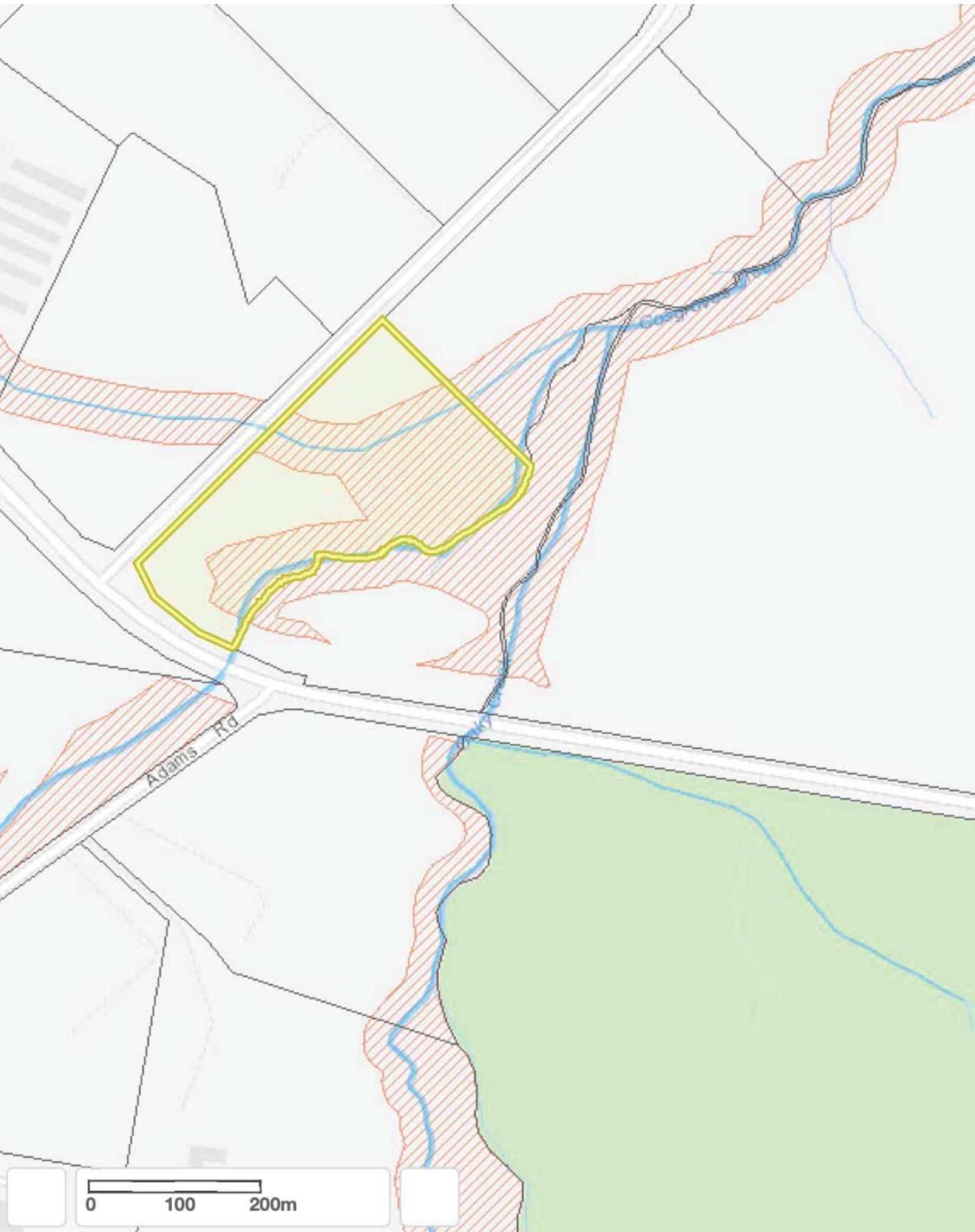
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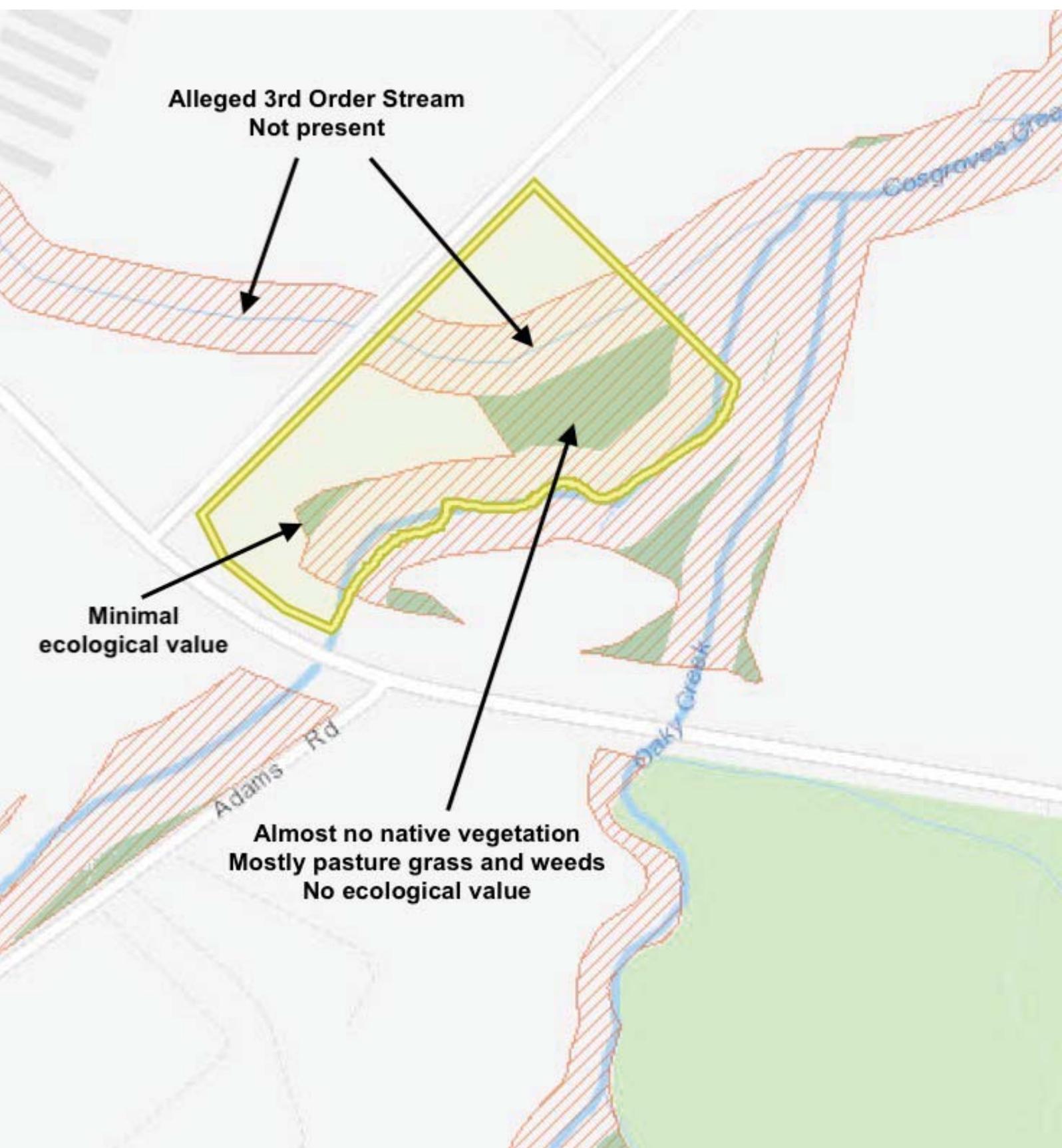


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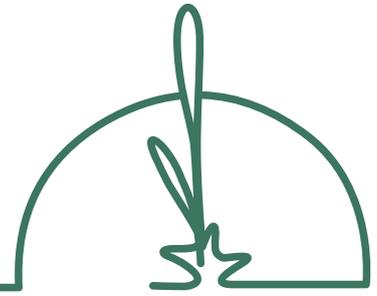


**Alleged 3rd Order Stream
Not present**

**Minimal
ecological value**

**Almost no native vegetation
Mostly pasture grass and weeds
No ecological value**

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Attachment B
Statutory Maps and Plans

Existing Constraints



- | | |
|--|-------------------------------|
| — Cadastre | — 3km wildlife buffer zone |
| ■ 1% AEF | — 8km wildlife buffer zone |
| ■ Existing Endangered Ecological Communities (EEC) | — Strahler Fourth Order Creek |
| □ Cumberland Plain Conservation Plan Avoided Lands | — Strahler Third Order Creek |
| ■ Other Vegetation | — Strahler Second Order Creek |
| ≡ 2m contours | — Strahler First Order Creek |
| — ANEC 35 Contour | — OLS Chart Line |
| — ANEC 30 Contour | — Proposed Metro alignment |
| — ANEC 25 Contour | □ OSO/Freight rail corridor |
| — ANEC 20 Contour | ■ M12 corridor |

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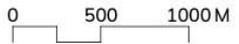


The Precinct Plan

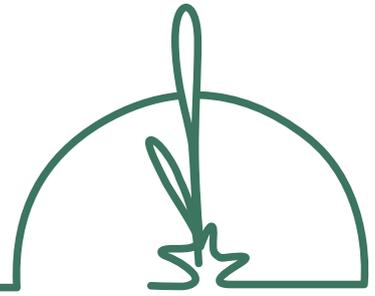


- Sydney Science Park Boundary
- Cadastre
- Precinct Boundary
- Proposed Riparian Park
- Proposed Ridgetop/Hill Top Park with district park facilities
- Proposed Urban/local Park
- Proposed Nature Park
- Endangered Ecological Communities(EEC)-Nature parks where substantial EEC exist
- Unprotected existing vegetation-Nature parks where substantial remnant vegetation exists
- Proposed Streetscape Open Space

- WSUD and detention basin investigation areas (indicative only)
- 1% AEF
- 2m contours



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Attachment C
Photographic Essay



Photo 1 The central part of the subject land looking southeast across the paddock of introduced pasture and weeds towards the Swamp Oak Forest vegetation along Cosgroves Creek



Photo 2 The southern part of the subject land looking south across Elizabeth Drive with introduced pasture and weeds; and a narrow band of she-oaks this side of Cosgroves Creek



Photo 3 Narrow band of She-oaks (*Casuarina cunninghamiana* or *Casuarina cunninghamiana/glauca*) in the southeastern part of the subject land. No watercourse is present



Photo 4 The northeastern part of the subject land looking northeast – with the casuarina forest along Cosgroves Creek (in background) and extensive introduced pasture and weeds. The alleged **non-existent** 3rd Order Stream is located through the centre of the photograph. There is no such stream nor any native vegetation of any sort present



Photo 5 The central part of the subject land looking north towards Luddenham Road - with introduced pasture and weeds across the alleged **non-existent** 3rd Order Stream is located through the centre of the land. There is no such stream nor any native vegetation of any sort present



Photo 6 Pasture grassland and pasture weeds characteristic of the majority of the subject land – including the alleged **non-existent** 3rd Order Stream



Photo 7 Cosgroves Creek on the subject land – incised into the landscape



Photo 8 Swamp Oak Forest along Cosgroves Creek on the subject land – with high levels of weed infestation in the groundcover layer