

Big Swamp Land Capability Study and Justification for the Proposed LEP 2010 Environmental Clause

1 Introduction

The inclusion of an environmental clause into Greater Taree LEP 2010 will allow land identified on an LEP map to be dedicated to Council for remediation, in exchange for a prescribed increase in subdivision potential, based on the capability of the land to support such an increase. The environmental dedication map has been sourced from The Big Swamp Feasibility Study (November 2010) and refined using a land capability study to identify land capable of an increase in development intensity. It is possible for additional land outside of Big Swamp to be added to the environmental dedication map in the future when technical research and strategic studies are undertaken and adopted by Council, to support their inclusion.

2 Background

Recently, with funding from the NSW Environmental Trust, Council has been targeting problem acid sulfate soil hot spot sites and identifying strategies for rehabilitation. Working with landowners, Council has targeted the worst producing acid sites for implementing remediation programs.

The Project Team undertook discussions with the landowners, relevant State Agencies and key stakeholders and in late 2011 Council was successful in receiving a \$2 million grant from the Australian Government to undertake the Big Swamp/Cattai Wetlands project. The funding was provided over a three year period through the Australian Government's Caring for Our Country Initiative to assist Council in achieving the outcomes identified in the Big Swamp Feasibility Study, which was undertaken in 2010 in close consultation with affected landowners and the local community. The study found that the extent of the Big Swamp in terms of its area and number of landowners (over 20) requires a holistic approach, including acquisition of land.

The overall aim of the Big Swamp project is to contribute to the improvement of the water quality of the Manning River by remediating a state-recognised acid sulfate soil (ASS) 'hot spot'. Acid sulfate soil remediation will principally involve undertaking on-ground works to restore the area's natural hydrology and reinstate the original coastal wetland community. The feasibility study identified that the only realistic way of achieving this was for Council to acquire priority landholdings.

The project is of state significance because it:

- is recognised by leading experts as one of top three worst ASS hot spots in NSW;
- is one of the single greatest contributors to poor water quality in the Manning River;
- has the potential to greatly enhance regional environmental corridors linking the mountains to the sea (through habitat/riparian links from Crowdy Bay National Park to Johns River and Cooperook State Forests and Coorabakh National Park);
- acts as a flood storage for the Manning River;
- contains coastal wetlands recognised by the NSW Department of Environment Climate Change and Water for its high conservation values; and
- adjoins Crowdy Bay National Park (listed in the Directory of Important Wetlands in Australia (Environment Australia 2001).

Figure 1 shows the location of the Big Swamp.

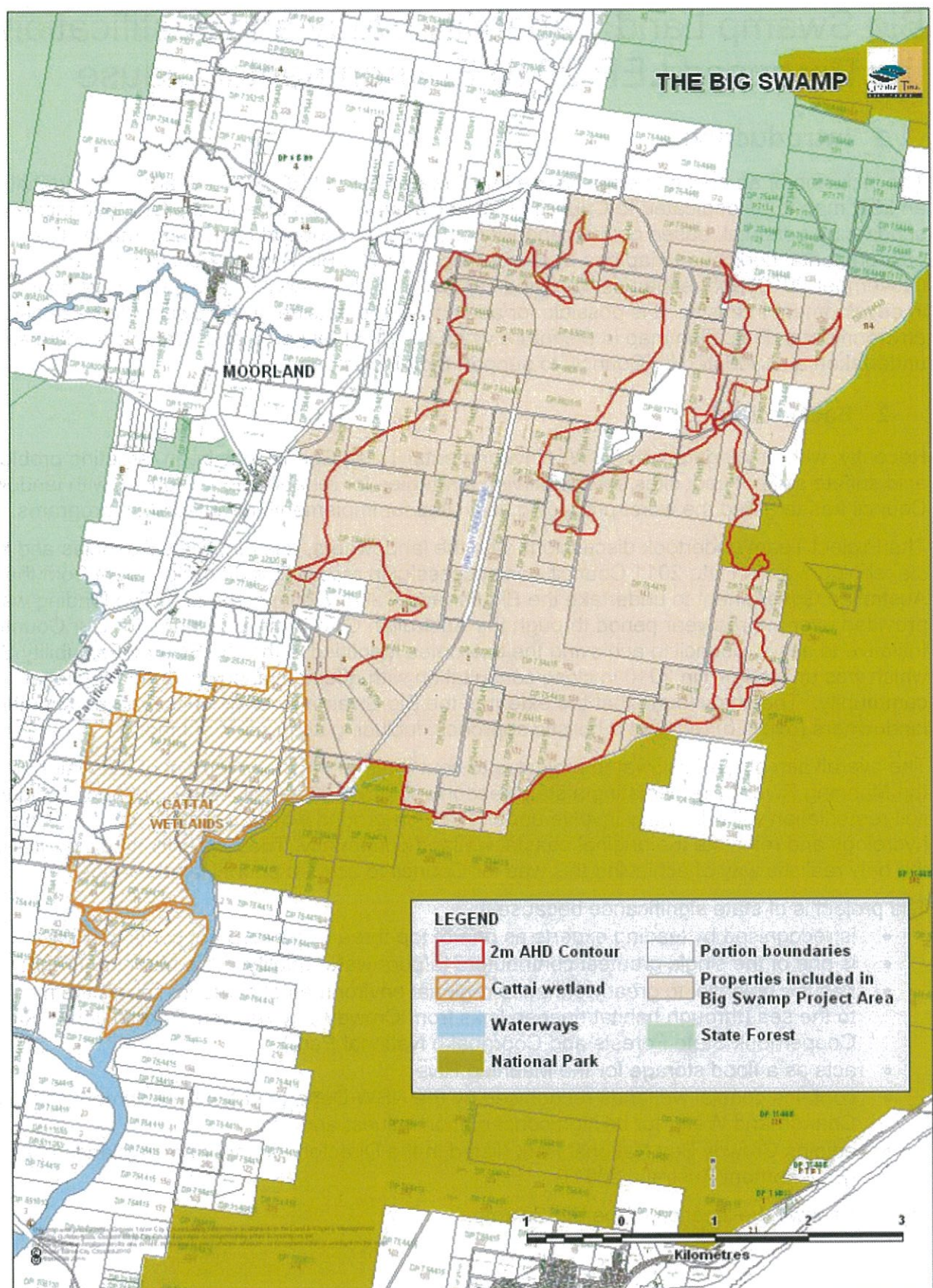


Figure 1: location of the Big Swamp

3 Land tenure

A number of approaches to tenure/land management were discussed with landowners during the preparation of the Big Swamp Feasibility Study. It was found that:

- There was no significant difference between the full cost of purchase of land below 2m AHD and the cost of providing drainage easements over land to enable the land to be inundated. This was the case as the costs associated with surveys, legal work, valuation, fencing and any other works were similar between the two approaches. Given this, the acquisition of the land was considered a more feasible approach, unless the landowner did not want to sell their land or would lose the potential to subdivide their land in the future, then easements would be considered.
- While PVPs provide a great opportunity for landowners to seek additional funding for the ongoing maintenance of the natural assets on their land, they alone would not enable the periodic inundation of the land below 2m AHD. As such, they would need to be used in conjunction with other approaches, such as acquisition, to achieve the desired outcome.
- The process used to purchase land at Cattai Wetlands (under SEPP1) is no longer available for Council to use since the gazettal of LEP 2010. To undertake a similar process under the current LEP an amendment would be required to allow the dedication of land identified on an LEP map in exchange for an increase in development potential on the remainder of the lot or a lot in the same ownership in another part of the Big Swamp study area.

Based on the above, the 2010 study recommended that the approach to tenure/land management be narrowed down specifically to the purchase of the land or the use of easements to enable inundation. This was recommended as the preferred option as no statutory conservation incentives are currently available in LEP 2010. An environmental clause allowing the dedication of land in exchange for an improved development outcome is a viable option that would be more cost-effective for Council than purchase of the land or use of easements.

4 Land capability

Prior to including land on the environmental dedication map, Council staff undertook a land capability study to ensure that potential development areas would be capable of supporting an increase in development intensity. The following aspects were considered:

- The presence of ASS
- Flood inundation
- The presence of SEPP 14 wetlands
- Bushfire risk
- Ecological constraints
- On-site sewage management
- Availability of access onto a public road.

4.1 The presence of Acid Sulfate Soils

Acid sulfate soil is the common name for soils that naturally contain metal sulfides. In an undisturbed and waterlogged state, these soils pose no or low risk. However, when disturbed or exposed to oxygen, Acid Sulfate Soils undergo a chemical reaction known as oxidation. Oxidation produces sulfuric acid which has led to these soils being called acid sulfate soils (ASS).

The Big Swamp contains extensive areas of ASS ranging from Class 2a to Class 5, with Class 2 being the worst affected soils and Class 5 being the least affected. Those areas containing Class 2a, Class 2b, Class 3 and Class 4 ASS have been excluded from potential development areas as they pose a risk to structures and a risk of pollution to the surrounding environment during disturbance from excavation. Clause 7.1 of LEP 2010 contains local provisions that require consent for the carrying out of works in ASS areas as follows:

Class of ASS	Works
1	Any works
2a	Works below the natural ground surface. Works by which the watertable is likely to be lowered.
2b	Works other than ploughing 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, 2a, 2b, 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, 2a, 2b, 3 or 4 land.

Areas containing ASS Classes 2a – 4 would be highly suitable for dedication to Council as the purpose of the project is to remediate ASS areas. The map below shows land affected by ASS within the Big Swamp site.

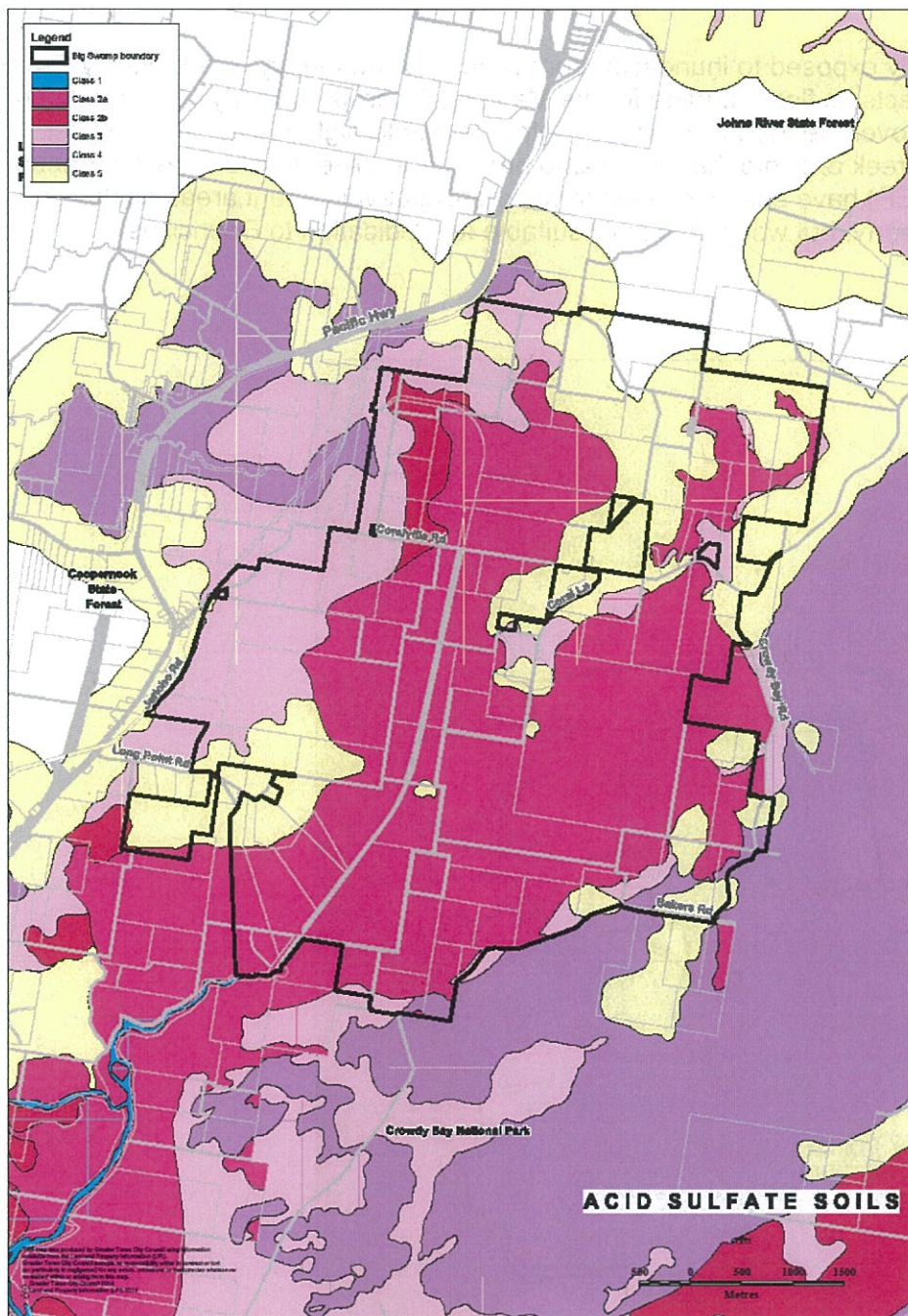


Figure 2: ASS within the Big Swamp site

4.2 Flood inundation

The Big Swamp is frequently exposed to inundation from water moving through the Pipeclay Creek catchment. This area also acts as flood storage for the Manning River, particularly when the flood waters are unable to cross over the bar at Harrington entrance due to high tides or seas. Water then backs up into Cattai Creek and into the Big Swamp project area. Areas below the 1% Annual Exceedance Probability (AEP) have been excluded from potential development areas as flooding poses a risk to life and property, but would be highly suitable for dedication to Council as remediation areas.

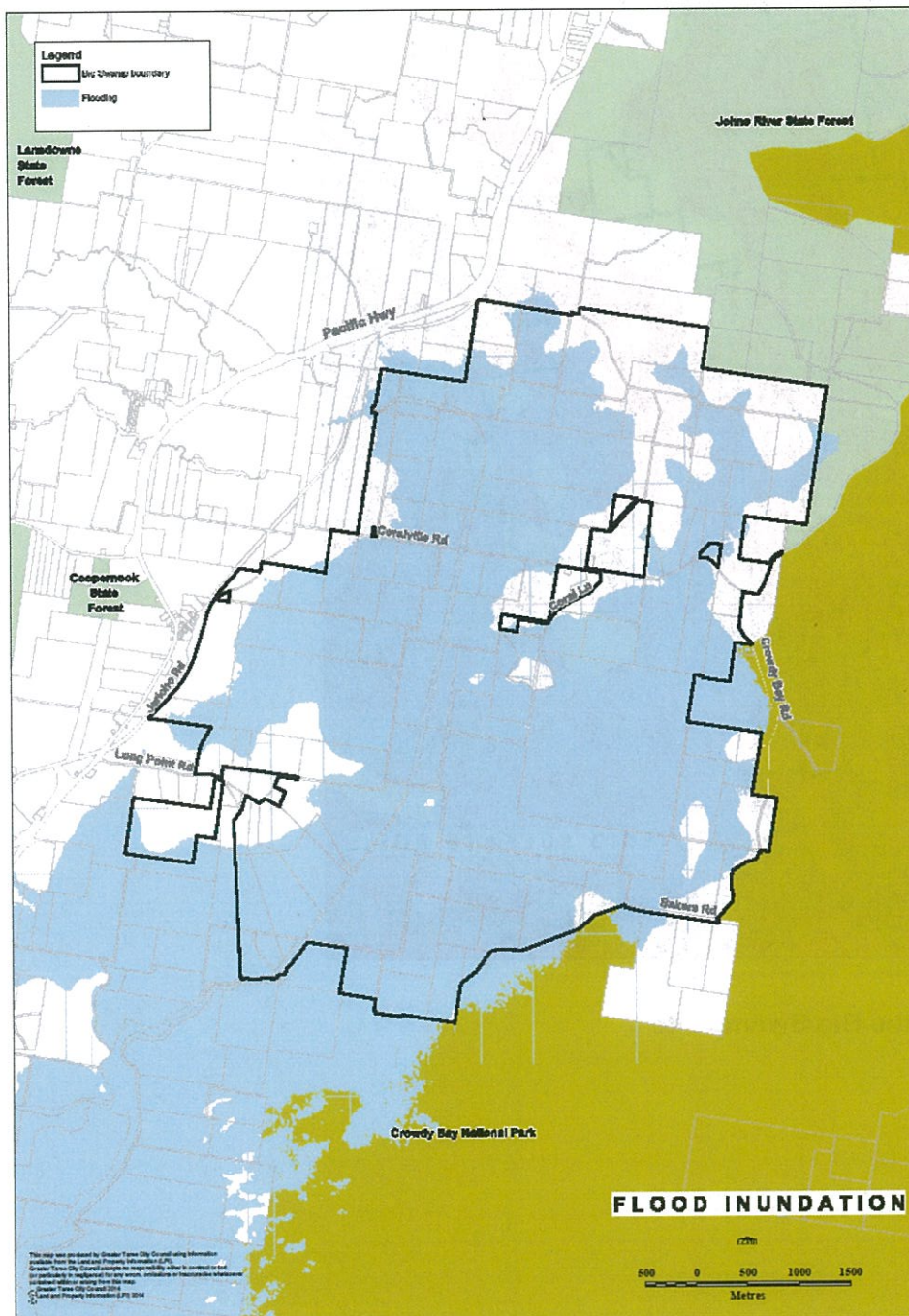


Figure 2: Areas below the 1% within the Big Swamp site

4.3 The presence of SEPP 14 wetlands

This State Environmental Planning Policy (SEPP) applies to many wetlands on the coast of NSW. The policy is aimed at protecting wetlands from filling, ad-hoc clearing, drainage, and levee construction. Where such development is proposed, preparation of an environmental impact statement (EIS) is required to be approved by the local Council (in the case of a private landholder) and the Department of Planning and Environment. The Figure below shows the extent of the SEPP 14 wetlands over the project area. Land within the SEPP 14 wetland boundary has been excluded from potential development areas as these areas are sensitive to development, but would be highly suitable for dedication to Council as remediation areas. Recently Council was granted a waiver from preparing an EIS for remediation works in the Big Swamp SEPP 14 areas as works were for the purpose of wetland restoration.

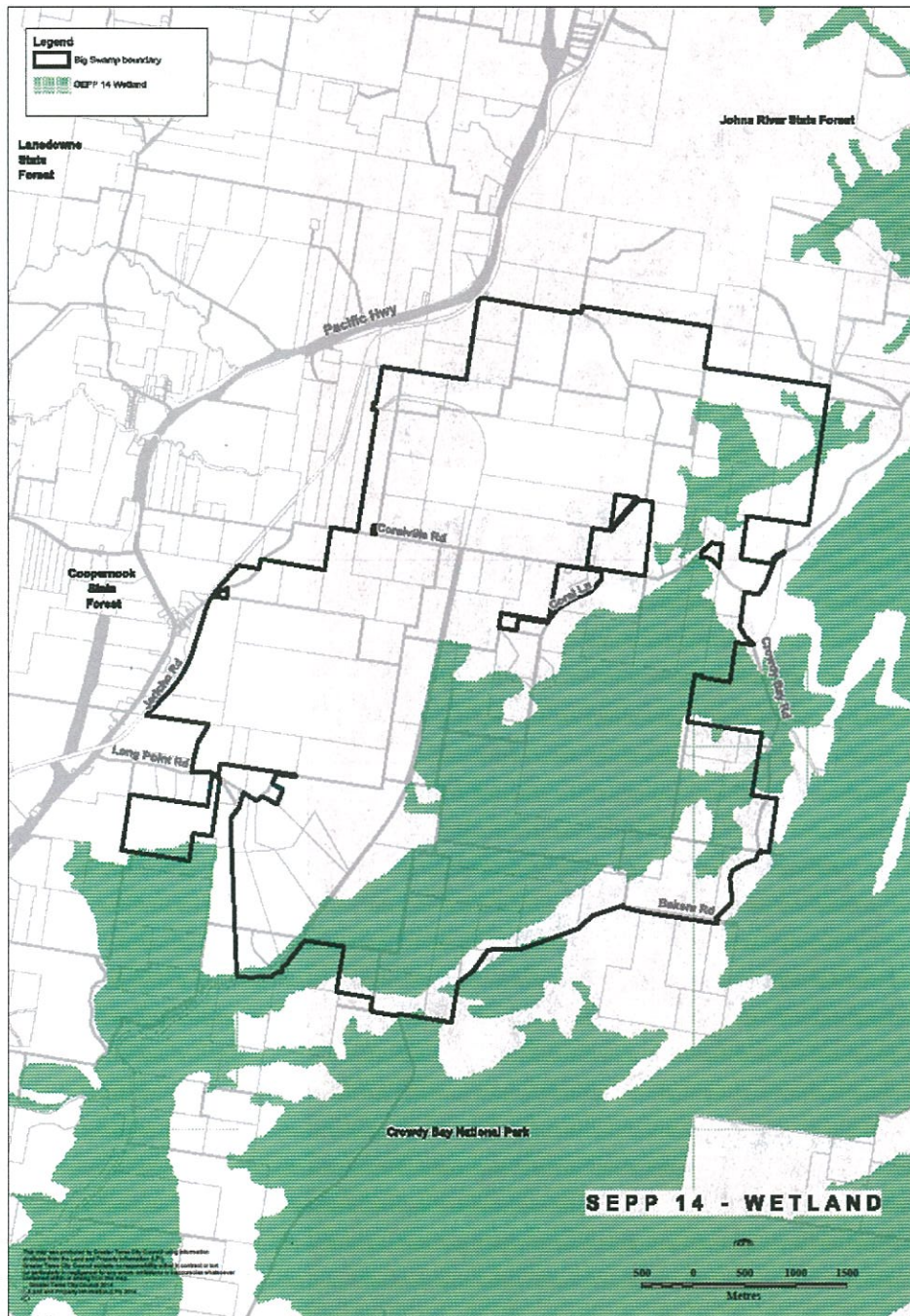


Figure 3: Location of SEPP 14 wetlands within the Big Swamp site

4.4 Bushfire risk

If bushfire prone land is being subdivided to enable a dwelling to be erected on the new lots the development is classed as “integrated development” and must be referred to the NSW Rural Fire Service for assessment. The NSW Rural Fire Service will assess the proposal against the performance criteria of *Planning for Bushfire Protection 2006* and will issue a Bushfire Safety Authority (BSA) if it advises that development may proceed. If a BSA is not issued, Council must refuse to grant consent. It is the preferred approach of Council to avoid intensifying development in bushfire prone areas, therefore land within bushfire vegetation categories 1 and 2 has been excluded from potential development areas, but would be suitable for dedication to Council as remediation areas as they contain tracts of native vegetation.

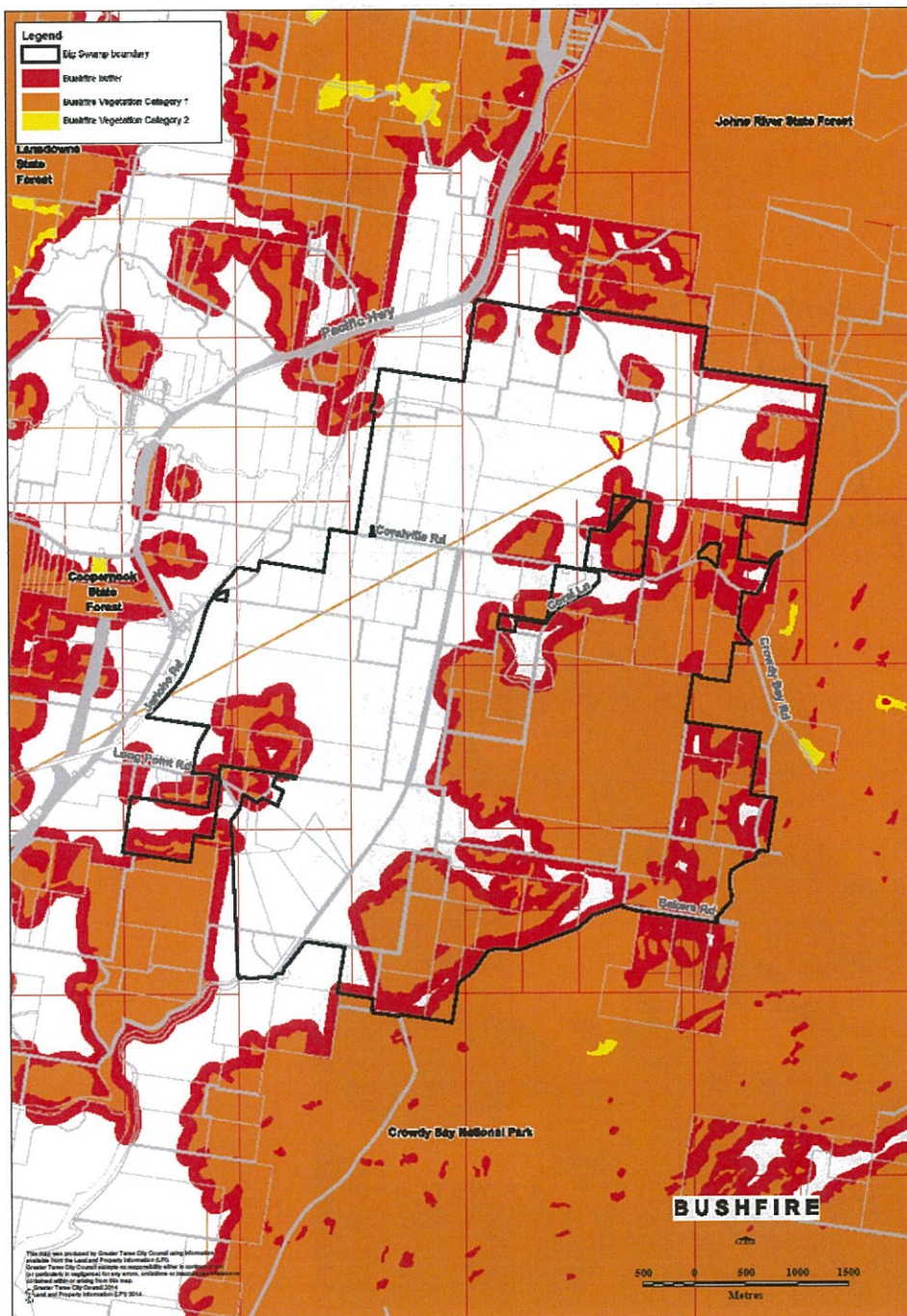


Figure 4: Bushfire risk within the Big Swamp site

4.5 Ecological constraints

The majority of the Big Swamp study area is cleared and used for cattle grazing. Tracts of vegetation are scattered over some parts of the site and the study area comprises several vegetation communities, including a number of Endangered Ecological Communities (EECs) as follows:

- The vegetation along the eastern edge of Pipeclay Canal is mangroves (river and grey). It is Saltmarsh EEC, being within Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions.
- The vegetation east of the mangroves to the levee is Swamp Oak (*Casuarina glauca*) Forest. It is an EEC, being within Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions. This area also contains some Swamp Paperbark Forest.
- The vegetation east of the swamp oaks and east of the levee is Swamp Paperbark (*Melaleuca quinquinervia*) Forest. It is an EEC, being within Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions. This zone also contains some Swamp Oak Forest.

The only threatened species to have been recorded on site is the Glossy Black Cockatoo. This species is likely to forage in the EECs on the eastern half of the Big Swamp. There is no primary Koala habitat known to occur on site and no records of Koalas within the site.

Land containing EECs has been excluded from potential development areas, but would be highly suitable for dedication to Council as remediation areas as remediation is likely to improve the condition and habitat value of the EEC.

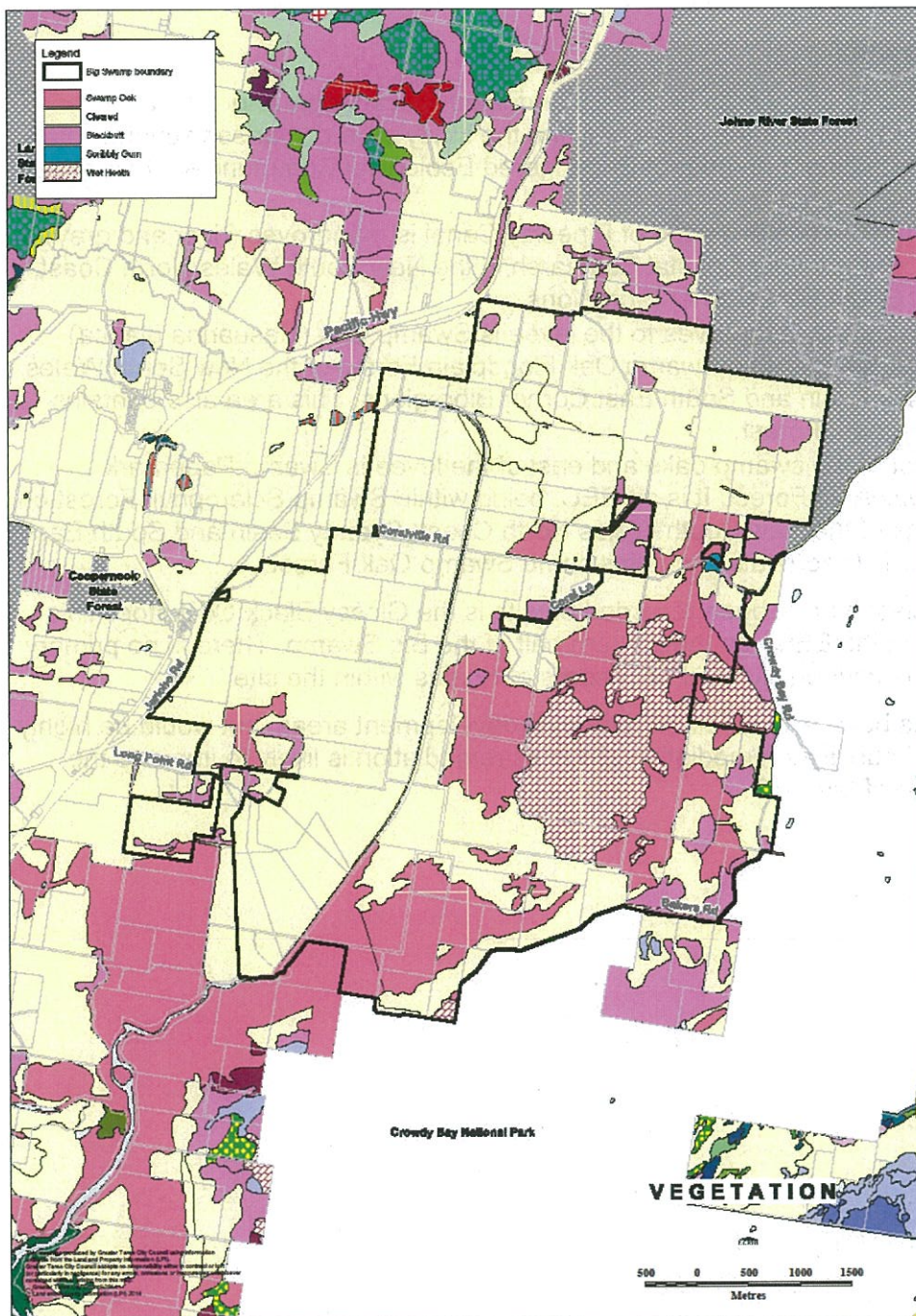


Figure 5: Vegetated areas within the Big Swamp site

4.6 On-site sewage management

This aspect was considered in relation to the intensity of development that could be achieved for each of the potential development areas. Sewage management risk mapping has been completed for Greater Taree as part of a technical study titled *Sustainable On-site Sewage Management in Greater Taree*. All unsewered allotments in Greater Taree have been assigned an onsite sewage management hazard class that takes into account site slope and aspect, soil type, flooding, proximity to a permanent or ephemeral water body, climate variables and depth of groundwater.

LEP 2010 provides that the minimum allotment size for land use zones where unsewered development is permissible is 15,000 m² (1.5 hectares). This ensures that in most cases, sustainable on-site sewage management (OSSM) will be achievable. This minimum allotment size was found to be capable of preventing cumulative off-site impacts in the majority of circumstances and receiving environments. A 1.5 ha minimum allotment size was also found to be consistently adequate to enable a sustainable on-site sewage management service to be established on Low and Medium Hazard allotments.

Whilst in most cases, a 1.5ha minimum Lot size would be adequate for on-site effluent disposal; other factors have been considered when setting the minimum Lot size that can be achieved through the environmental clause. This is discussed further in Section 5 of this study.

Giving consideration to Council's Development Assessment Framework, land containing high or very high hazard OSSM risk has been excluded from the potential development area.

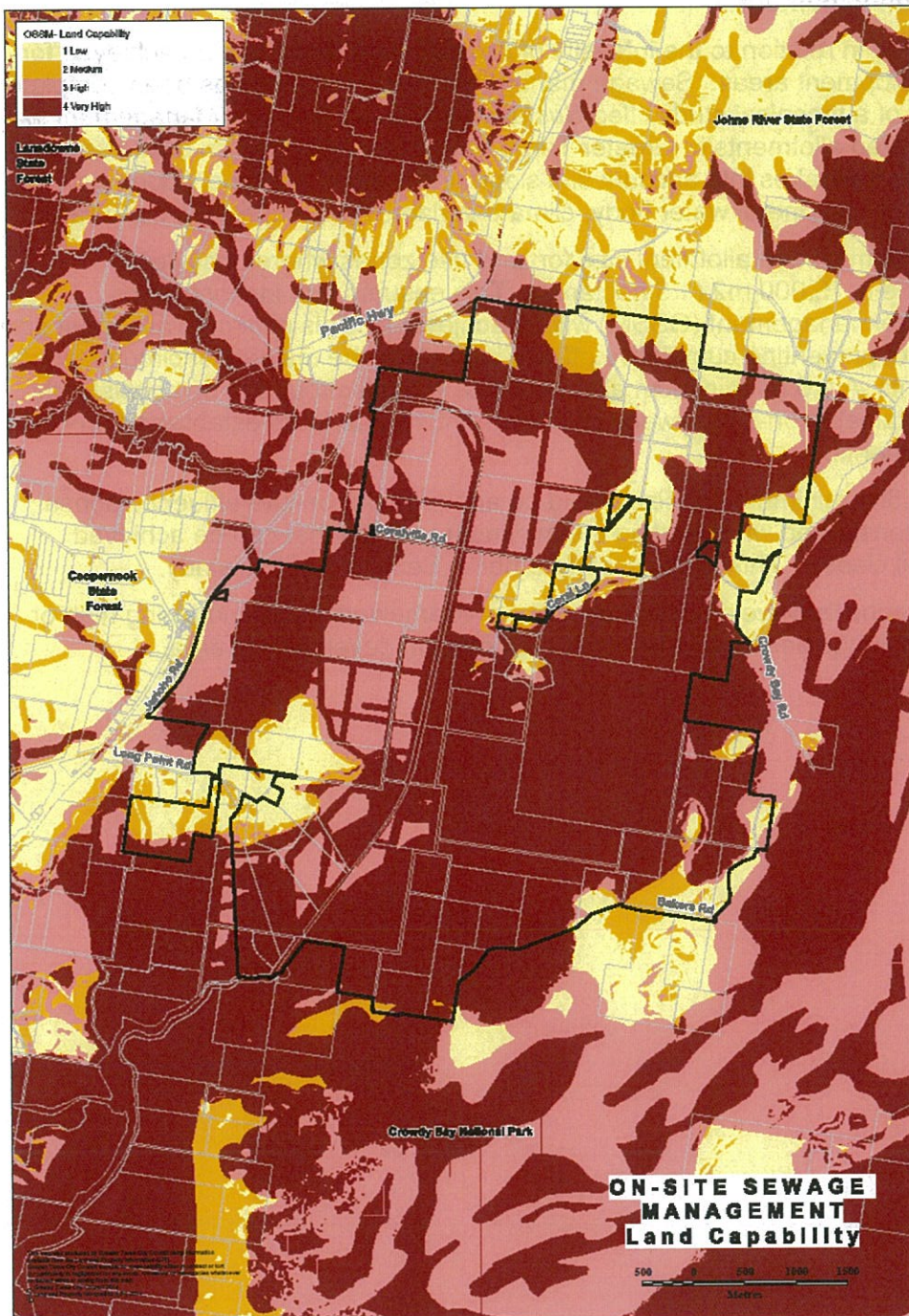


Figure 6: OSSM capability of land within the Big Swamp site

4.7 Availability of access on to a public road

In considering the capability of land to support increased development intensity, adequate vehicular access from the gazetted public road system must be available to all potential new lots. Whilst not all lots are able to directly access a public road, they are located in close proximity to a public road or are easily accessed via land in the same ownership. Each of the areas of land identified as having development potential have potentially adequate vehicular access from the gazetted public road system.

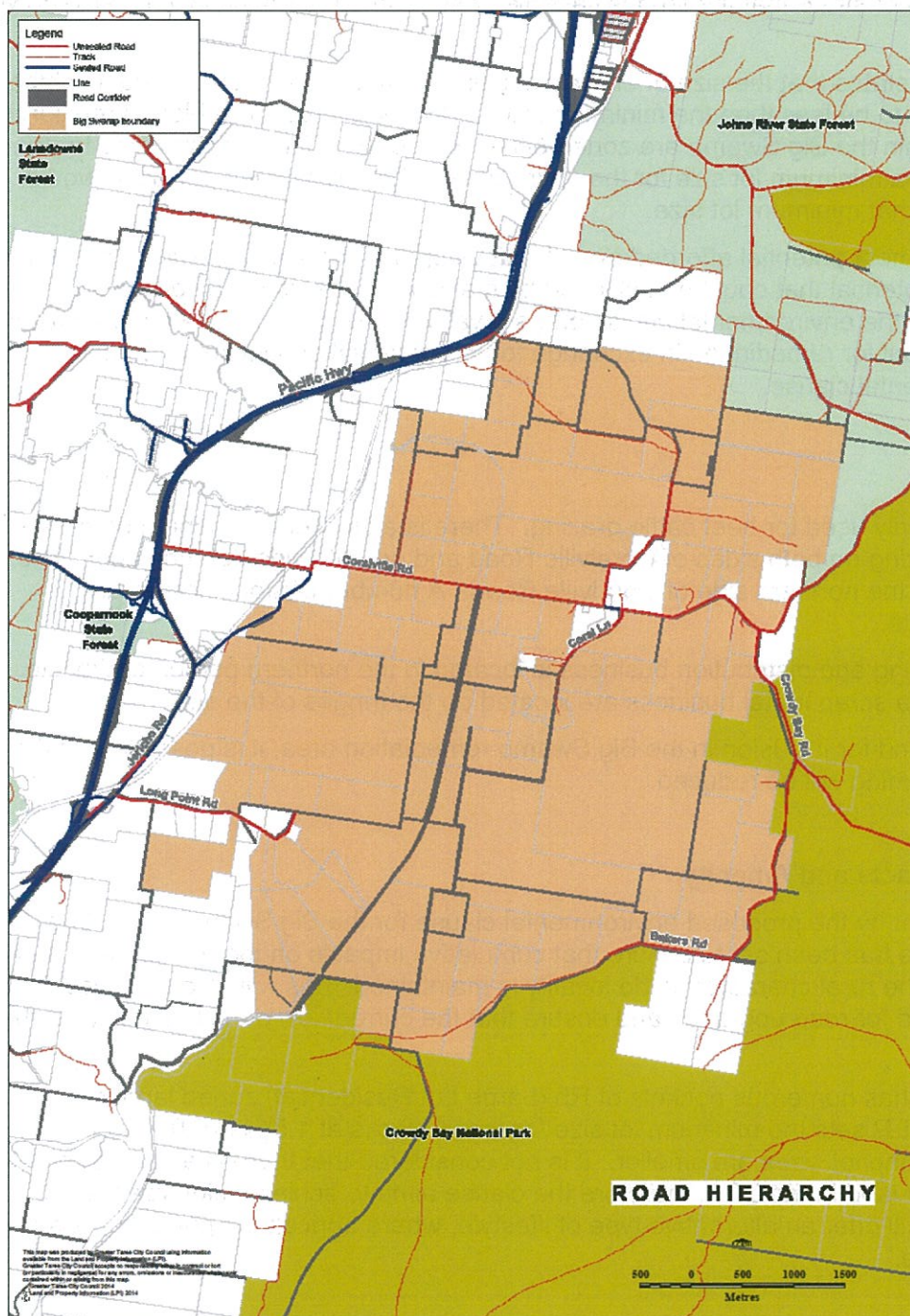


Figure 7: Gazetted road corridors within the Big Swamp site

5 Land Use Planning

5.1 Lot size and dwelling entitlements

The proposed inclusion of the environmental clause will reduce Lot sizes to a minimum of 5ha (50,000m²), depending upon the capability of the land to support such an increase in development density. Only those lots identified on the environmental dedication map will be subject to the reduction, and only in exchange for dedication of land to Council for remediation. The clause will require applicants to demonstrate that the land is capable of supporting a reduction in lot size down to a minimum of 5ha.

Clause 4.1 of LEP 2010 states that the size of any lot resulting from a subdivision of land to which this clause applies is not to be less than the minimum size shown on the Lot Size Map in relation to that land. Properties within the Big Swamp are zoned either RU1 or E2. The Lot Size Map for the Big Swamp shows a 40ha minimum lot size for the entire area. The environmental clause would provide an exception to that minimum lot size.

The increase in development potential afforded over the development bonus sites will be greater than the development potential that could be achieved by maximising the use of dwelling entitlements. Therefore, the environmental clause offers a valid economic incentive for landowners to dedicate land to Council for remediation in exchange for the potential development outcome offered by the environmental clause.

5.2 Land use

The Big Swamp is primarily used for beef cattle grazing. There is a smaller component of the site used for dairy cattle grazing on both sides of Coralville Road and on both sides of the canal. The dairy infrastructure is on the northern side of Coralville Road. A number of stock horses are grazed throughout the site.

A stock feed manufacturing and distribution business is located in the northern portion of the site and a plant nursery and a scrap metal business are located on the fringes of the site.

With the acquisition of land for inclusion in the Big Swamp remediation area, it is possible that the viability of the site for farming will be reduced.

5.3 Cumulative Impacts and Amenity

The minimum Lot size set by the proposed environmental clause for the Big Swamp site is 5ha (50,000m²). This lot size has been set to ensure that cumulative impacts on the remediation area are minimised and that the rural character of the locality is maintained. This will also minimise the amount of works required for road upgrades and ensure that the current low density amenity of the area is maintained.

The Greater Taree LGA has numerous pockets of R5 (Large Lot Residential) zoned land in unsewered areas. The LEP sets the minimum lot size for these blocks at 1.5ha (15,000m²), however in many areas, the lot sizes are smaller. It is not considered that there is a need to create more large lot residential land in the LGA, therefore the clause aims to achieve a lot size that is significantly larger and will offer an alternative type of lifestyle, where agricultural pursuits are still possible on a small scale.

5.4 Development potential.

The following map shows those areas that are largely unconstrained and suitable for a reduction in lot size. The unconstrained areas have been identified from the analysis undertaken in Section 4 of this report. At the subdivision stage, it will need to be demonstrated by the applicant that lots are capable of being reduced in size. No final lot shall be less than 5ha in size.

Development areas have been designated in such a way that they allow for a clustered style of subdivision layout. This will prevent encroachment into sensitive areas and maximize the use of assets such as internal roads, utilities and the drainage network. Clustered development will also allow the landholder to maximize the amount of land available for each “bonus development” block.

