Preliminary Assessment

CiviLake Recycling Facility
Lots 42, 43, 54 and 53, DP. 16062
Weir Road
Teralba

1 March 2008

Prepared by Lake Macquarie City Council

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Table of Contents

Tables

Figures

1 Introduction

This preliminary assessment has been prepared by Lake Macquarie City Council and relates to the proposed recycling facility to be located on a 7-hectare site off Race Course Rd, Teralba, including lots 42, 43, 54 and 53, DP. 16062 (Figure 3).

The proposed recycling facility will be a crushing grinding and separating operation for hard waste/ construction and demolition materials including concrete, bricks, gravel and crushed rock road base, asphalt, soils, green waste and tiles. The operation will process up to 100,000 tonnes of material per annum.

CiviLake is a business unit of Council that will own and operate the facility. CiviLake carry out road and drainage maintenance and construction, building and demolition and parks and gardens maintenance.

Primarily the facility will reprocess CiviLake generated materials to specifications required for internal and external markets. Secondary feedstock will be high value external products (eg. concrete) selected to make up any shortfall in processing capacity.

As stipulated by the Environmental Planning and Assessment Act 1979, SEPP (Major Projects) and as per advice in the Department of Planning (DoP) 23 January 2007 correspondence the proposal is a 'Major Project' requiring the Ministers approval to proceed.

Prior to the DoP issuing the Director Generals Requirements, Council will provide this Preliminary Assessment containing information as stipulated by the DoP.

1.1 Background

Site choice

CiviLake chose the Teralba site through an investigation of potential sites across the Lake Macquarie LGA. In summary, the site chosen is most suited for the development due to financial, social, and environmental considerations.

The site is situated relatively close to Council's centre of development (the Lower Hunter Region Strategy 2006 identifies the Glendale/ Cardiff area as an Emerging Major Regional Centre). This proximity to development, which will provide feedstock for processing and end markets for products, will save CiviLake significant transport costs and reduce greenhouse gas contributions from freight.

The site has low ecological value and is 500 meters from the nearest residential property. Key issues associated with the site are discussed under Part 5. *Preliminary Assessment/ Key Issues.*

1.2 Need for the project

CiviLake currently generate over 100,000 tonnes of hard material from their own operations. Less than 17% of this material is value added or on sold, while a large percentage of the material is disposed of at significant cost. The nearest recycling facilities with the capacity to store and process CiviLake generated material into new products exists outside the LGA. These factors coupled with the increases in the Section 88 Waste levy have created a sound business case for the development of a CiviLake Recycling Facility. Correspondingly, CiviLake have included the initiation of the Recycling Facility development into Council's Management Plan.

The majority of processing capacity will include materials from Table 1.

Table 1. CiviLake Generated Material Flows

Source	Volumes t/a (2005/06)	Composition	Current Destination	Current Processing
Mixed Reclaimed Asphalt Pavement (RAP)	7500	40 minus aggregate	Metromix (6500t) & Boolaroo Transfer Station (1000t)	Reuse
Road excavation	5000	Asphalt, aggregate, road base, VENM	Boral Recycling Kooragang	Reuse by Boral
Parks and gardens (green waste)	1000	Weeds, hardwood	Awaba Tip	Woodchip
Road Excavations (non-bituminous inert material)	65,000	Road base, VENM	Eraring, Vales Point (ash dam construction)	Fill
Concrete	6000	Concrete	Metromix Teralba	Road base
Roads, drainage, kerb and gutter, maintenance, cycle-ways etc.	17000	Concrete, green waste, asphalt, road base, other	Awaba Tip	Landfill
Foreshore maintenance	5788	Dredge waste sea grass	Awaba Tip	Landfill
Street sweeper	1000	Leaf litter, aggregate and litter	Awaba Tip	Landfill
Clean fill (VENM)	5000	Soil, etc	McDonalds Quarry	Reuse
Recycled sealing aggregate	500	Aggregate	Boolaroo Transfer Station	Reuse
Total	121,788			

Council and other recycling/ waste managers currently process materials listed in Table 1 to various specifications at a number of different locations. The proposed recycling facility will consolidate much of the processing to the one site, creating plant and transport efficiencies and economy of scale. These efficiencies represent triple bottom line improvements for CiviLake operations. The proposed facility will cater for up to 100,000 tonnes/ annum of building and construction materials.

2 Statutory Planning

2.1 State Planning

Pursuant to Schedule 3 of the Environmental Planning and Assessment Regulation (2000) (the "Regulation"), the proposed development is Designated Development being "*Waste management Facilities or Works"*

Section 75A of Part 3A of the Environmental Planning and Assessment Act 1979 (the "Act") defines a "*project*" as:

> *"project means development that is declared under section 75B to be a project to which this Part applies"*

Sub-section 75B(1)(a) of the Act states:

> *Projects to which Part applies*
>
> *(1) General*
> *This Part applies to the carrying out of development that is declared under this section to be a project to which this Part applies:*
>
> *(a) by a State environmental planning policy, or*

Sub-clause (6)(1) of the State Environmental Planning Policy (Major Projects) 2005 (the "SEPP") states:

> *Identification of Part 3A projects*
>
> *(1) Development that, in the opinion of the Minister, is development of a kind:*
>
> *(a) that is described in Schedule 1 or 2, or*
>
> *(b) that is described in Schedule 3 as a project to which Part 3A of the Act applies, or*
>
> *(c) to the extent that it is not otherwise described in Schedules 1–3, that is described in Schedule 5,*
>
> *is declared to be a project to which Part 3A of the Act applies.*

Schedule 1 of the "SEPP" contains the following definition:

Resource recovery or waste facilities

> *(3) Development for the purpose of resource recovery or recycling facilities that handle more than 75,000 tonnes per year of waste or have a capital investment value of more than $30 million.*

The proposed development will recycle more than 75,000 tonnes/ annum of building and construction waste and therefore is a "Part 3A Project" for the purposes of the State Environmental Planning Policy (Major Projects) 2005.

Correspondence from the Department of Planning, dated 23 January 2007 notified CiviLake of the following:

> *"The Minister has formed the opinion that the proposed recycling facility at Teralba is a 'Major Project' (as per State Environmental Planning Policy (Major Projects) 2005).*

A "Crushing, Grinding and Separating" License will be sort from the DECC for the operation of the recycling facility.

CiviLake will develop the site in accordance with the following State Environmental Planning Policies:

- State Environmental Planning Policy (Infrastructure) 2007
- State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
- State Environmental Planning Policy No. 55 – Remediation of Land
- State Environmental Planning Policy 14 – Coastal Wetlands
- State Environmental Planning Policy (Major Projects) 2005.

2.2 Regional Planning

Lower Hunter Region Strategy 2006

The Lower Hunter Region Strategy (2006) (LHRS 2006) provides a strategic planning guide for the lower Hunter from 2006 to 2031. The LHRS (2006) identifies a number of development focal points in close proximity to the recycling facility, which will subsequently require substantial resources from CiviLake and the recycling facility. The LHRS (2006) outlines the following:

- Cardiff/ Glendale identified as an "Emerging Major Regional Centre" which is expected to "grow and take on the role of major centres in the future". 4000 additional dwellings are projected for this area.
- 3200 additional dwellings are projected for the Charlestown area.
- Main Road, Edgeworth is one of five renewal corridors, which combined will accommodate 4000 new dwellings in total.
- West Wallsend and Black Hill (Newcastle LGA) to be developed for employment land to accommodate 16,500 new jobs.

(LHRS 2006)

With a proposed 36,000 new dwellings, housing projections for Lake Macquarie make up approximately one third of the total new dwellings proposed for the five Lower Hunter Councils. While a portion of the new development in the Lake Macquarie LGA is towards the southern end of the Lake, the majority will be to the north, within a 10km radius of the CiviLake recycling facility.

2.3 Local Planning

Under the Lake Macquarie Local Environment Plan 2004 (LM LEP 2004), the site is currently zoned 7(2) Conservation (Secondary) with a small portion in the southeast corner zoned 7(1) Conservation (Primary) see Figure 1. The development is currently prohibited in 7(1) and 7(2) Conservation zones.

The site is currently subject to a rezoning application by Council. Council engaged consultants CH2MHILL to conduct a Local Environment Study to determine the suitability of the site to

support a crushing, grinding and separating facility. The study also addressed land adjoining the site to assess its suitability for a sporting and recreational development.

Pursuant to section 54 of the *Environmental Planning and Assessment Act (EP&A Act) 1979* a report submitted to Council in August 2007 recommended a draft amendment to Lake Macquarie Local Environmental Plan 2004. The rezoning application recommends the site be rezoned from 7(2) Conservation (Secondary) to Natural Resources (9) or Industrial Core 4(1). Both proposed zones permit the development and operation of a crushing grinding and separating facility. Council resolved to support the recommendation. Table 2 details the timeline for the rezoning process.

Table 2. Rezoning Process Timeline

Action	**Completion Date**	**Responsibility**
Finalise LES	Late February 2008	Council
Report to Council to place on exhibition	March 2008	Council
Public Exhibition	March - April 2008	Council
Consideration of submissions	May 2008	Council
Report submissions to Council	June 2008	Council
Parliamentary Council opinion	July 2008	DoP
Finalisation of LEP	August 2008.	Council

The proposed development will be subject to the Cockle Creek Floodplain Risk Management Plan (2004).

Figure 1. Current Zoning Plan

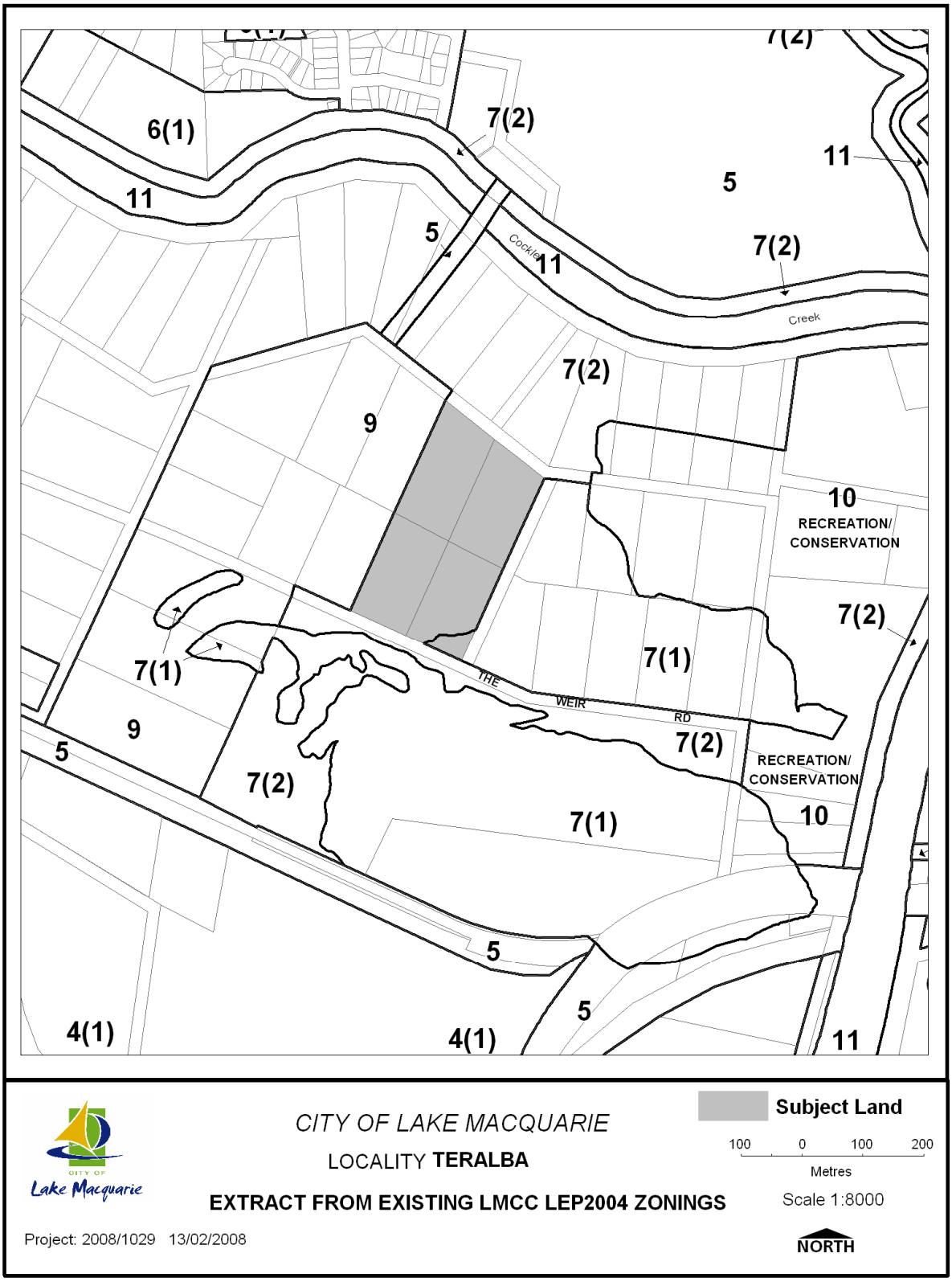
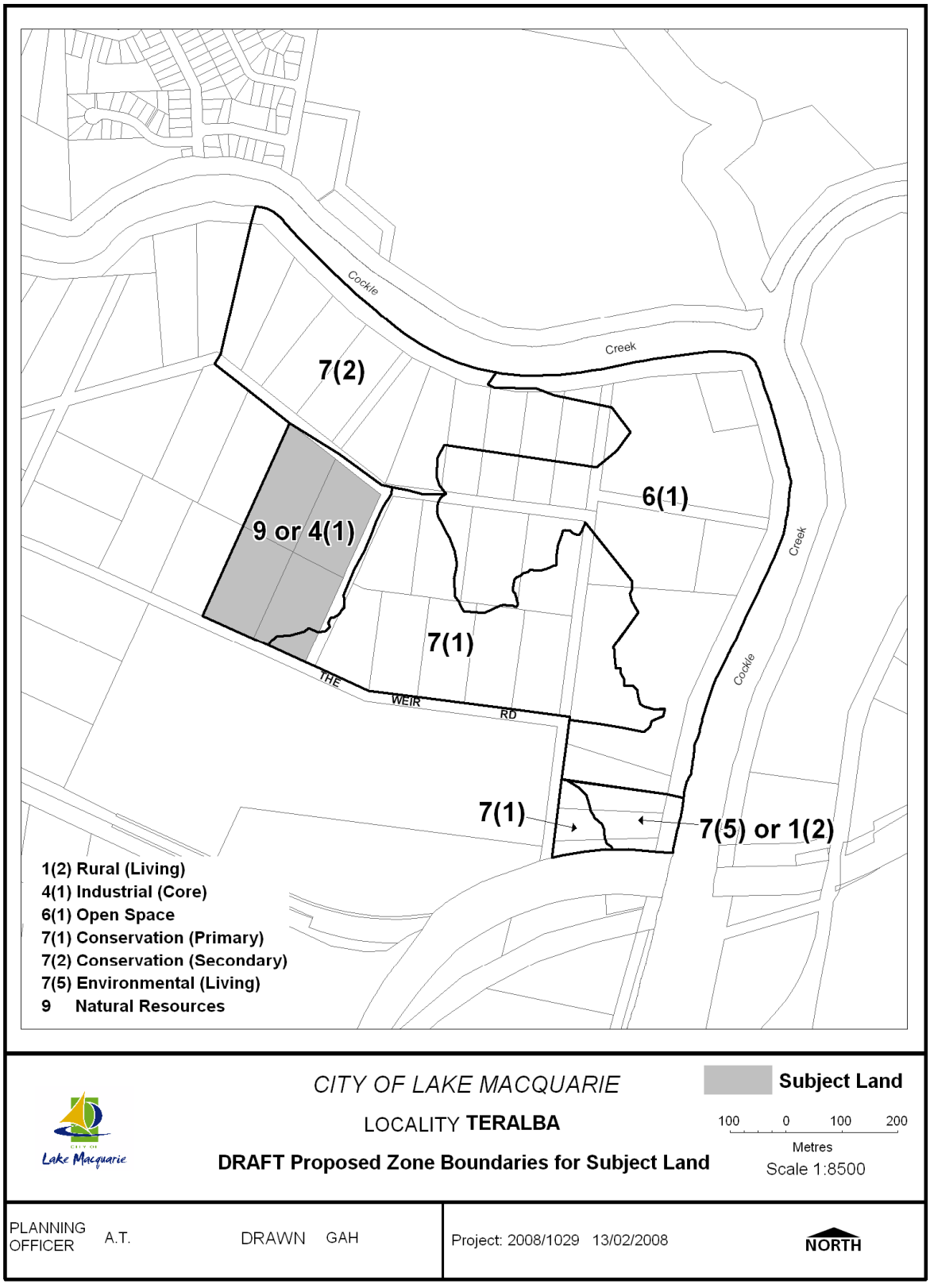


Figure 2. Proposed Rezoning Plan (currently under review by Council)



3. The Site

Site details are shown in Table 3:

Table 3. Site Description

Site Characteristic	Description
Site owner	Lake Macquarie City Council
Lot	42, 43, 54 and 53 (Figure 2.)
DP	16062
Size	7 Hectares
LGA	Lake Macquarie
Zoning	7(2) Conservation (Secondary) undergoing rezoning
Address	Off Racecourse Rd Teralba

The site is approximately 2 km north of Teralba (Figure 3.) on a floodplain to the south and west of Cockle Creek. The closest point of the creek is approximately 200 meters from the facility. The site is elevated up to a metre relative to the adjoining land. This is due to the previous land use of sanitary disposal involving the deposit of biosolids and fill over the site.

A Sepp 14 Wetland exists 200 meters to the north of the site and a number of significant ecological communities adjoin the site to the north and east including Swamp Oak Bushland Forest, Riparian Melaleuca Swamp Wetland and Swamp Mahogany Paper Bark Forest (LHCCREMS 2003 Vegetation Mapping). Racecourse Road adjoins the southern edge of the site.

Lake Macquarie is geographically unique in that the City surrounds the Lake. As such, a City CBD does not exist, rather a number of commercial centres service the different areas of the City. However, development of greenfield sites and redevelopment of existing structures is largely concentrated around the northern rim of the lake as identified in the LHRS (2006). As such, Council regards the centre of CiviLake's operations as the suburb of Glendale. Glendale is approximately 8km by road to the Teralba site. Therefore, Lake Macquarie's development trends present significant transport efficiencies for feedstock to and products from the proposed recycling facility.

The city of Newcastle borders the north and eastern edge of Lake Macquarie. Newcastle's CBD is approximately 20km from the proposed recycling facility. Proposed Greenfield developments in Newcastle's western suburbs are closer to the proposed facility also offering accessible markets.

The proposed recycling facility is approximately 140km from the Sydney CDB.

Access to the site is from two directions, Barnsley to the west and Teralba to the southeast.

Figure 3. Location Map

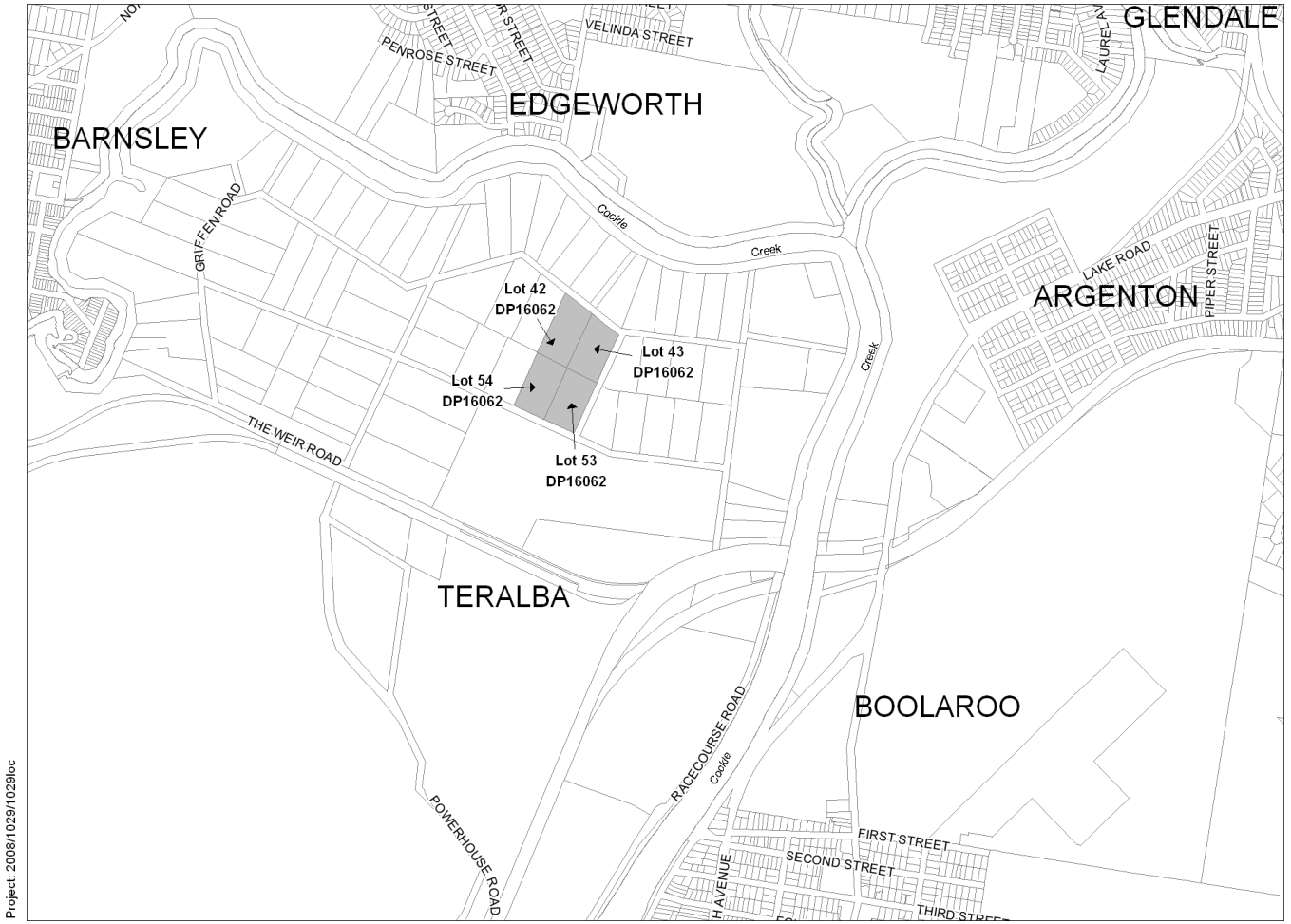


Figure 4. Aerial Photograph

SEPP 14 Wetland & 30m Buffer

LES Wetland Vegetation Community

CITY OF LAKE MACQUARIE

LOCALITY **TERALBA**

100 0 100 200

Metres

Scale 1:8500

SKM 2007 AusImage Aerial Photography

PLANNING OFFICER	A.T.	DRAWN	GAH	Project: 2008/1029 13/02/2008	NORTH

3.2 Current Land Use

The land use for the site is currently light agriculture (agistment). An electricity easement dissects the site running east west with 132kV power lines.

3.3 Previous Land Use

The previous use of the site was for biosolid disposal. Sanitary Waste Depot operators previously adjoining the site deposited biosolids in trenches covering the entire 7-hectare site.

The CiviLake development will be in accordance with "Former Sanitary Waste Depot, Racecourse Rd, Teralba NSW – Site Assessment and Remediation Full Report (2002)" (Remediation Report 2002) and with the recommendations in the Draft Local Environment Study for Land north of Teralba 2007 (Draft LES 2007).

The Remediation Report (2002) was amended in 2006 to consider the proposed future land use of an industrial commercial operation such as a crushing grinding and separating facility. The amendments concluded that pending rezoning, an industrial operation such as a crushing grinding and separating facility could be established on site without the need to remediate.

On review of the remediation report, the Draft LES (2007) concluded that further investigation is required prior to developing the crushing grinding and separating facility. Soil contamination issues are addressed further under *Preliminary Assessment Key Issues.*

3.4 Surrounding Land Uses

Bushland buffers the site for the proposed facility on all sides (Figure 4). The nearest building is the Council owned and operated Teralba Worm Farm Waste Education Centre, which is approx 300 meters from the site. The Worm Farm receives approximately 1000 tonnes/ annum of organic waste for processing and 3000-4000 people visit the facility annually. The Worm Farm is potentially a symbiotic partner to the recycling facility.

Approximately 400 meters to the north of the site the Lake Macquarie Miniature Aircraft Club currently holds a Council issued licence to operate on approximately 1 ha of cleared land at 4 Griffen Road. The licence commenced on 15 June 1999 for an initial 12 month period and is currently operating under 'hold-over' conditions.

The nearest residential property is approximately 500 meters to the north of the site (Edgeworth). Riparian vegetation covers the entire strip between the resident and the site. Zoned 7(2) Conservation (secondary) this bushland is unlikely to be cleared for development purposes.

The Edgeworth Sewage Treatment works is approx 400 meters to the NNE of the site and Council has made preliminary investigations into the provision of recycled water from the effluent storage ponds on the northern side of Cockle Creek. Consideration of recycled

water reuse will be in accordance with the NSW Guidelines for Urban and Residential Use of Reclaimed Water (1993).

The land extending to Cockle Creek to the east and north is currently subject to a Draft rezoning plan with the intention of listing part of the land for conservation and part of the land for recreation and sporting facilities. Draft LES (2007) proposes the rezoning of land adjoining the site, extending to Cockle Creek to the north and approximately 200 meters to the east.

3.5 Symbiotic Land Uses

The site presents symbiotic opportunities with existing operations and proposed developments for the area. These opportunities offer significant efficiencies for water management, resource conservation, and greenhouse gas reduction.

In summary the Edgeworth Waste Water Treatment facility located approx 400m from the site may provide recycled water for dust suppression where stormwater retained onsite is insufficient (similar sized facilities require up to 90,000 lt/ day).

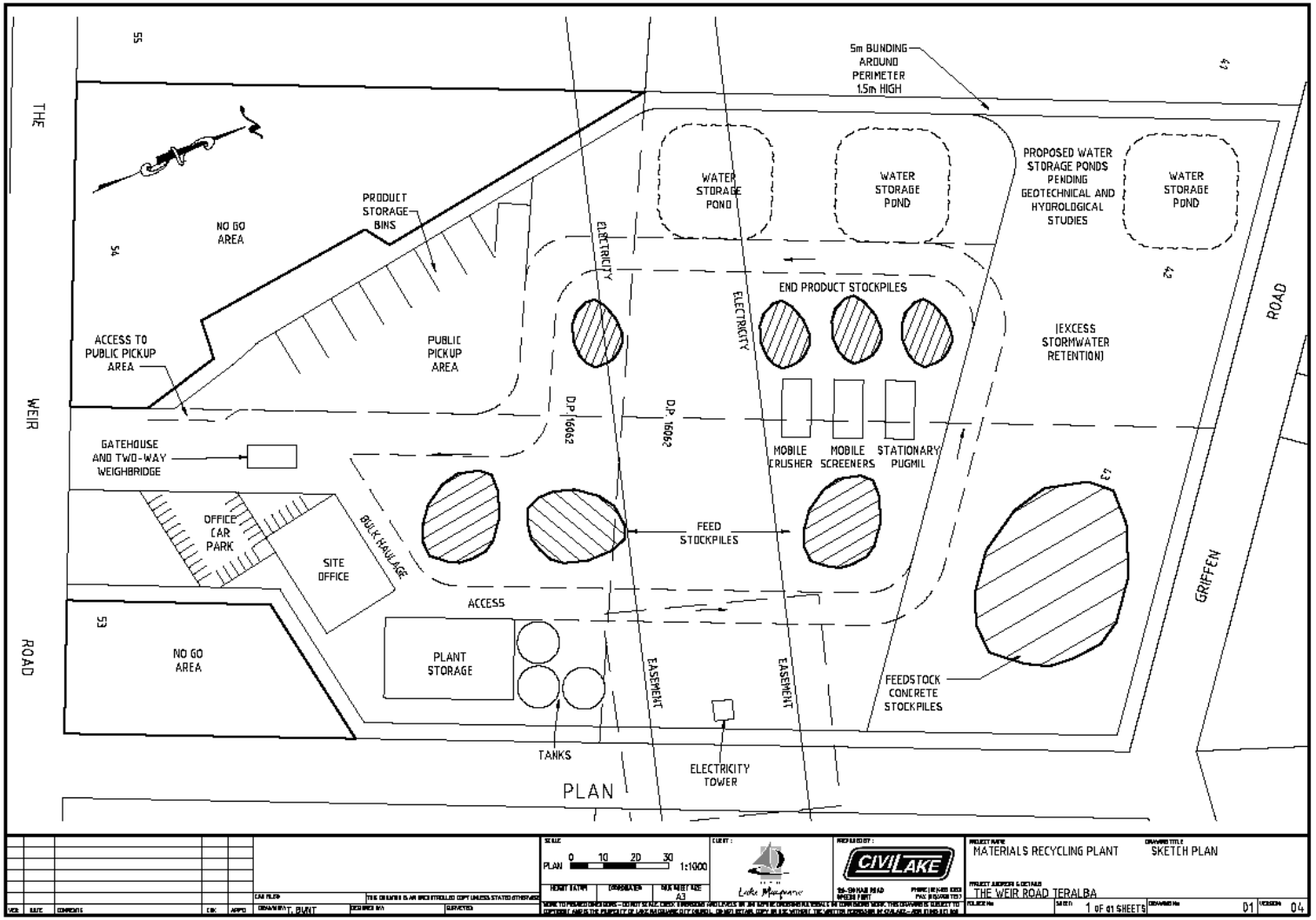
As per Council's current rezoning application for the site, land adjoining the proposed recycling facility is earmarked for conservation (riparian habitat) and sporting field developments. These proposals will benefit from the establishment of the recycling facility. The recycling facility will supply fill, soil, construction and mulch products, while Council will utilise plant from the recycling facility for the spreading and levelling of materials for the sporting field developments.

The Teralba Worm Farm Waste Education Centre also operates on land 300 meters to the east of the site. The Waste Education Centre will promote the recycling operations and potentially operate as a shop front for public access to recycled products generated at the facility. The Teralba Worm Farm is currently an outlet for small quantities (<1000t/a) of compost, vermicast, mulch and other soil and waste minimisation products.

The site is approximately 500 metres from the nearest residential property to the northwest, and buffered by 400 meters of dense bushland. Prevailing winds are predominantly northeast in summer and westerly in winter.

Operational times of the recycling facility (Mon-Fri 7.00am-3.30pm) are outside of peak use times for the sporting complex (weekends and weekday afternoon/ evenings). Therefore, traffic conflict and potential noise and dust impacts from the recycling facility are avoided.

Figure 5. Proposed Site Layout



4. Crushing Grinding and Separating Operation

The site will reprocess up to 100,000 tonnes/ annum of hard waste material for resale. Materials including, but not limited to, concrete, asphalt, recycled asphalt pavement (RAP), road base, green waste, bricks, tiles and soil (from internal sources only) will be received over a weigh bridge and charged as per a differential pricing schedule. Differential pricing will encourage source separation.

Once on site materials will be deposited into respective stockpiles to await reprocessing.

Processing will vary for different feedstock, outputs and market availability. Table 3 shows the potential processing pathways.

Table 4. Processing Pathways

Feedstock	Processing	Product
Concrete, bricks and tiles	Crushing/ screening	Various aggregates
		Crusher dust
	Blending	D.G.B. 20 & D.G.S. 20
Asphalt/ road base	Crushing/ screening	Recycled road base
		Gravel products
	Asphalt recycler	Asphalt
Green Waste	Shredding, mulching	Woodchip
	Composting	Compost
	Blending	Soil blends
Soil	Screening/ Blending	Soil blends

External (non-CiviLake) product sales will be pick up or delivery. Internal product sales will largely be hauled via truck and dog combination.

Residual waste generated at the site will go to the Awaba Waste Management Facility. Products generated from the facility will be sold internally for Council operations and externally to suitable markets in the building and civil engineering industries in the Lower Hunter.

Figure 5 shows the proposed site layout. Design features of the site include:

- The 5 m wide 1.5 m high bund wall surrounding the site covered with dense native vegetation (grass in power easement). The bund wall will prevent water flows from entering or leaving the site, and the vegetation will assist in minimising airborne dust leaving the site,

- Stormwater retention ponds to store all rainwater that falls on the site for the operational use of dust suppression,
- 1 m depression covering approx 1.5 hectares at the northern end of the site is for storage of concrete feedstock and stormwater following major rain events. No surface water will leave the site ensuring maximum retention of water for dust suppression and eliminating surface water runoff risks,
- Double story gatehouse to allow for visual screening of incoming loads,
- Incoming and outgoing weighbridge located approx 70 meters from the road verge to allow for truck queuing.
- Site offices and plant storage facilities with rain water tanks plumbed into toilets, showers, and truck wash bay,
- Two entry lanes off Racecourse Road, one for bulk haulage (over weigh bridge) and one for public access to "Public Pickup Area', and
- Product storage bays (pickup area for small loads) away from processing areas to avoid operational risks.

A stormwater management plan for the site will detail topography to ensure surface water from the entire site flows into on-site retention areas. CiviLake will conduct geotechnical and hydrological surveys of the site prior to determining a final layout. CiviLake will develop a remediation action plan (RAP) as per the recommendation of the Draft LES (2007) and the Remediation Report (2002).

CiviLake have investigated a number of similar recycling facilities, such as the Hassall St Recycling Centre at Fairfield, in determining the plant and resource requirements for the proposed recycling facility. Estimated resources include

- 2 Screening plants (processing capacity up to 300 tonne/ hour),
- 3 large loaders (no larger than Kawasaki 90 – 300, moving up to 400 tonne / hour depending on length of travel).
- Water cart (standard 12 tonne bogie truck with a maximum 50,000lt capacity)
- 300,000 litres of water storage,
- 60 tonne weigh bridge, and
- Pug mill (ARAN Modumix 11, with a full capacity of 400 tonne/ hour, but expected to achieve up to half this capacity).

A Plan of Management will guide the establishment and operation of the facility. Operation of the facility will be restricted to normal business hours and will be as per licensing conditions stipulated by the DECC.

4.1 Products and Markets

Council purchases VENM and reprocessed materials from external organisations for a number of operational purposes, namely; road base, landfill cover, clean fill, backfill, rehabilitation etc. Specific examples of Council purchases include:

- 70,000 t/a gravel overburden for road base,
- 2000 t/a of mulch for parks and gardens,
- 1700 t/a packing sand and crusher dust,
- 1200 t/a topsoil,
- 1400 t/a of backfill/ drainage aggregate, and
- 50,000 t/a cover material for landfill

Internal markets for products from the recycling plant will develop further through trialling products and Policy instruments that encourage the use of recycled products within Council.

Crushed brick and crushed terracotta are examples of mulch and pavement products suitable as alternatives to new products currently purchased by Council.

While Council hope to occupy the total end market for products derived from reprocessed CiviLake waste materials, there are established external markets that will bolster the recycling plant and ensure the demand for quality products is continuous. As such, CiviLake will have the option to limit the supply of external feedstock ensuring the appropriate scale of the operation and quality of the products.

CiviLake will conduct a detailed market analysis prior to establishing the recycling facility.

4.2 Timing

As per advice from the DoP, the Environmental Assessment required for the proposal is not submissible to the DoP until the DoP gazettes the rezoning application currently in progress for the site. As per Table 2, the rezoning application is expected to be completed in August 2008.

CiviLake anticipate submitting a Development Application (Major Project Application and Environmental Study) for the proposal by February 2009.

CiviLake anticipate that construction of the recycling facility will commence by June 2009 and the facility will be operational by August 2009.

5. Preliminary Assessment/ Key Issues

Key issues relating to the site and identified by the Draft LES (2007), investigation into similar operations and review of planning and assessment documents are:

- acid sulphate soils
- surface and ground water contamination,

- flooding,
- flora and fauna,
- noise generation,
- dust generation,
- traffic impact,
- greenhouse gas emissions,
- contaminated land, and
- power easement.

5.1 Acid Sulphate Soils

Draft LES (2007) identifies that acid sulphate soils may be present up to one meter below the ground surface. Where the site plan identifies the need for excavation of the site, CiviLake will conduct intrusive investigations prior to the development to identify the presence and level of ASS. If ASS is located, Council will develop an Acid Sulphate Soil Management Plan to manage the issue.

5.2 Surface and Ground Water Contamination

The site is situated on a floodplain approx 200 meters from a SEPP 14 wetland and at it's closest point, approx 200 meters south of Cockle Creek which runs parallel with the north and east boundaries of the site.

CiviLake will conduct geotechnical and hydrological surveys of the site for the 'Environmental Assessment' required as per the Major Projects Application, to determine and control all risk associated surface and ground water management. CiviLake will develop a stormwater management plan based on the results of these surveys and in accordance with the Cockle Creek Floodplain Risk Management Plan (2004).

The nature of the operation does not pose a significant threat of ground or surface water contamination. 95% of material processed at the site will be inert with the 5% that is not inert, consisting of green waste. Green waste processed at the site poses little risk from leaching or surface water contamination when considering the volume of organic material, other local operations, previous land use and background levels. As a sanitary depot, untreated biosolids were buried in trenches over the entire site up until November 1999. Council currently conducts ongoing monitoring of groundwater quality at the site via 10 groundwater bores. Groundwater monitoring will continue during and after the development of the proposed recycling facility.

As dust suppression requires significant amount of water storage on the site, surface water will be directed into stormwater retention areas located on the site for reuse. Stormwater retention areas include the proposed 1.5 hectare by 1 meter depression at the northern end

of the site, specifically for major rain events. The stormwater management plan for the site will ensure no discharge of surface water from the site into the SEPP 14 wetland or Cockle Creek.

5.3 Flood Risk

The Cockle Creek Floodplain Risk Management Plan identifies the site as being low flood hazard risk in the 100-year flood recurrence event. The proposal will eliminate flood risk by raising the site by an additional 1m above the current ground level and maintaining a 1.5m high bund around the perimeter of the site. All changes to ground surface level will be as per the Remediation Report (2002) and the stormwater management plan.

5.4 Flora and Fauna

The site is largely devoid of native vegetation due to the previous operation on the site of biosolid disposal. The majority of the site is covered in exotic grass species such as kikuyu and couch.

Approximately 200 meters to the east of the site is a SEPP 14 Wetland. As CiviLake will retain all stormwater on the site and considering background pollution and the level nature of the site, there is unlikely to be any impact on the wetland ecology.

To the north, east and west of the site are a number of floodplain ecological communities. Under the NSW Threatened Species Conservation Act (2005) (TSC Act 2005), most of these are listed as Endangered Ecological Communities. The proposed recycling facility will have no negative impacts on these surrounding communities.

The Draft LES (2007) also identifies a number of threatened flora and fauna species on the rim of the proposed development area. Regarding the proposed CiviLake site the Draft LES (2007) states:

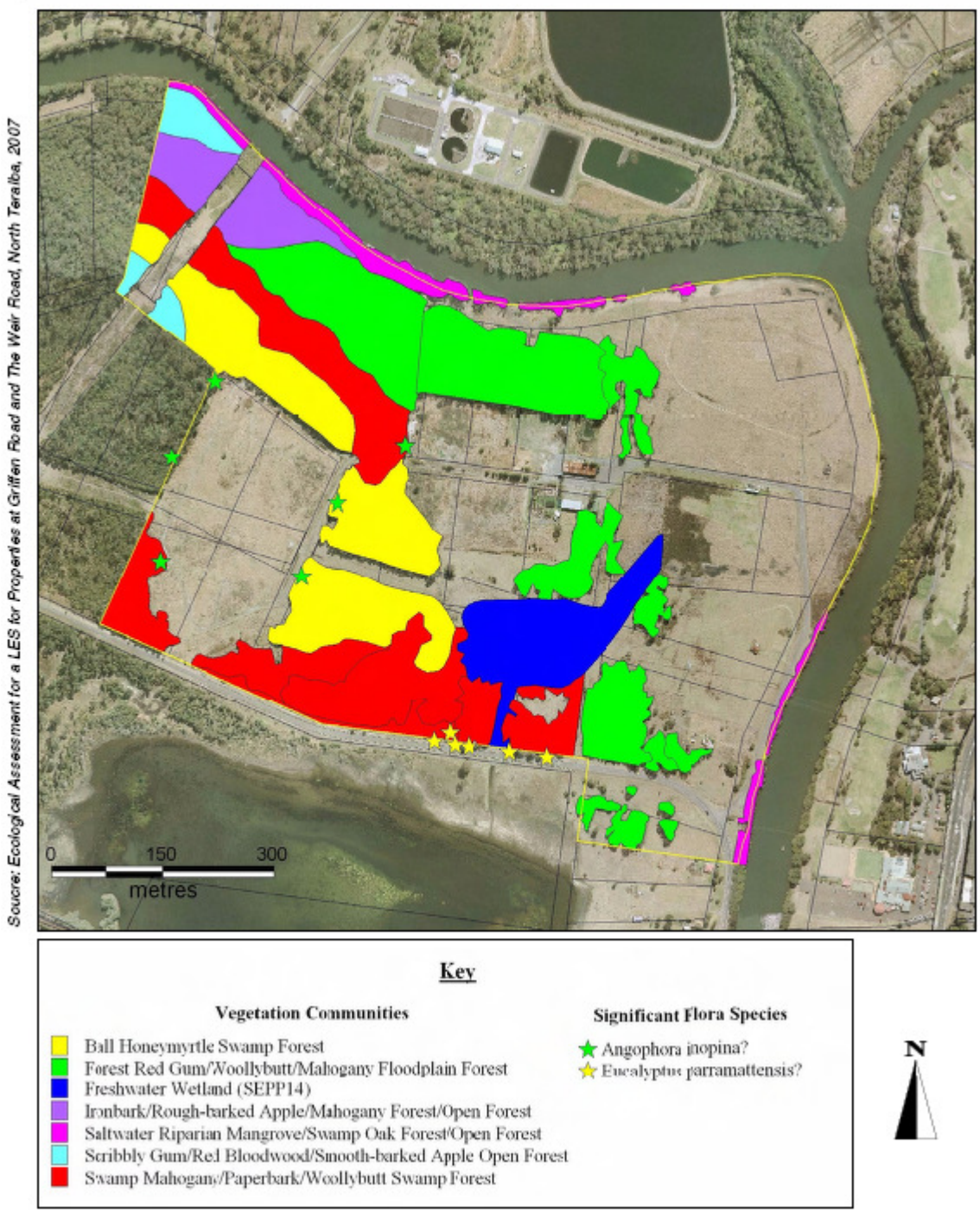
> *The immediate surrounding areas to the north, east and west… contain medium and high conservation vegetation communities and have been classified under this LES as low development potential areas. A number of threatened flora and fauna species exist in these areas. It is recommended that a minimum 20m buffer be retained around these ecologically sensitive communities.*
>
> *Should these requirements be implemented and managed accordingly, the development of a crushing and recycling plant in Area F (proposed site) should not have any negative impacts on these medium and high conservation value communities. In fact, the vegetation should act as a natural buffer and help to mitigate impacts such as loss of amenity, dust and noise on surrounding residential areas and users of the sporting and recreational facilities. (Draft LES 2007)*

Vegetation communities adjoining the site include 'Ball Honeymyrtle Swamp Forest' to the north and east and 'Swamp Mahogany/ Paperbark/ Woollybutt Swamp Forest to the south, southeast and northeast. Draft LES (2007) identifies both communities as Endangered

Ecological Communities (EEC's) listed under the TSC Act (2005). The Swamp Mahogany/ Paperbark Community encroaches onto the southwest and southeast corners of lots 54 and 53 respectively. Figure 5 shows these corners of the lot 54 and 53 as protected due to their conservation value. The bund wall, fencing, and a 20m buffer will ensure no encroachment of the development onto these areas. The ecological communities surrounding the site are described in Figure 6.

Mulch and soil products and the potential utilisation of the Teralba Worm Farm as a plant storage and propagation facility will provide resources to enhance the ecological integrity of the areas around the facility.

Figure 6. Ecological Assessment (taken from the Draft LES 2007)



5.5 Noise

The operation of crushing, grinding and separating machinery and truck movements will generate noise on and around the site. Plant will only operate during normal business hours and as per conditions stipulated through the development consent and licensing process.

Noise has limited potential to affect residents living NNW of the facility in Edgeworth. To minimise this effect plant will be operated on the site only during normal business hours. Prevailing winds in the area are NE in summer and W during winter ensuring the effects of prevailing winds will in no way amplify the projection of noise.

The Environmental Study will incorporate an acoustic study to determine the extent of noise pollution from the operation and adequate control measures where required.

5.6 Dust

Dust impact from the site operation will be minimal due to:

- vegetation buffer surrounding the site,
- nearest resident approx 500m to the NNW, and
- prevailing winds NE and W.

CiviLake will control dust generation at the site using water truck, sprinklers and stormwater retention.

5.7 Traffic Movements

Preliminary investigations into the traffic movements resulting from the recycling facility operation will be approximately 265/ week with the majority of these being heavy vehicle (truck and dog combination) movements. Access for these traffic movements is via two roads; Weir Rd running east/ west towards Barnsley and Racecourse Rd north/ south towards Teralba. CiviLake anticipate the Racecourse Rd approach will receive two thirds of the total traffic movements to and from the facility.

The LES (2007) detailed a qualitative assessment of the impacts resulting from increased traffic movements to the recycling facility in the context of

- existing flows,
- anticipated flows in 2020,
- current and proposed road networks,
- sporting field development,
- “various references and databases including traffic volume data for Hunter and Northern Regions 2004 (RTA, 2005)” (Draft LES 2007)

As per the recommendation of the Draft LES (2007), the Environmental Assessment (Major Projects Application) will include a comprehensive quantitative traffic assessment,

undertaken by a qualified traffic engineer. This traffic assessment will be prepared in accordance with the following documents:

- State Plan (NSW Government, 2006);
- Premier's Urban Transport Statement (NSW Government, 2006);
- Section 117 Direction #17 – Integrating Land Use and Transport (Department of Planning, 2005);
- Draft State Environment Planning Policy (SEPP) No. 66 – Integration of Land Use and Transport;
- Planning Guidelines for Walking and Cycling (NSW Government, 2004);
- Service Planning Guidelines (Ministry of Transport, 2005);
- Best Practice Guidelines for NSW Public Transport Signage and Information Displays (Transport NSW, 2002); and
- Disability Standards for Accessible Public Transport (Commonwealth Legislation, 2002).

The qualitative assessment conducted by CH2MHILL for the Draft LES (2007) and Council's own qualitative investigations have identified potential traffic issues and potential controls. Table 5 lists these.

Table 5: Traffic Issues and Controls

Traffic Issues	Controls
Cumulative traffic affects between the crushing and recycling plant and the sporting and recreational development.	Dedicated access points for the sporting and recreational facilities and the crushing and recycling plant.
	The crushing and recycling plant will operate at different times to peak use of the sporting and recreational facilities i.e. weekends and in the evenings during the weekdays.
Vehicle load on existing road infrastructure	The design of the external and internal road network will consider vehicle load from a maintenance and upgrade perspective and as per recommendations from the quantitative traffic assessment.
Existing local traffic movements	A quantitative traffic assessment will assess the potential impacts relative to background levels. CiviLake will develop a traffic management plan accordingly.

Draft LES (2007) states the following with regard to preferred access location and intersection design:

> *AustRoads have established guidelines for designing roads in Australia. These guidelines outline considerations for construction of new roads and upgrading of existing roads. Any future road development works within or in the vicinity of the study*

area should be completed in accordance with the relevant guidelines as described by AustRoads. (Draft LES 2007)

Further, due to traffic resulting from the recycling facility, section 2.6.2 of Lake Macquarie DCP 1, Part 2, 2.6, the proposed development is likely to be a *"traffic generating development"* and as such must comply with RTA (2002) Guidelines for Traffic Generating Developments.

5.8 Greenhouse Gas Emissions

As a member of the Cities for Climate Protection Program, Council is committed to greenhouse gas (GHG) reduction. Through reduced virgin material extraction and increased recycling the facility will contribute significant reductions in GHG emissions.

Further, the site is relatively close to a high concentration of works proposed for the north of the city (LHRS 2006). The proposed development of sporting fields adjacent to the Recycling Facility is likely to require a large amount of resources such as products and plant that can be provided directly by the recycling facility. These efficiencies represent significant reduction in GHG emissions and savings for Council.

Consolidating CiviLake recycling into the one site at Teralba creates the opportunity for significant transport efficiencies. Effective works programming will allow for back haulage of loads. This will result in fuel savings and reduced GHG emissions.

5.9 Contaminated Land

As discussed under *Previous Site Use* the site has been used for the disposal of biosolids (night soil). The Remediation Report (2002) indicates there are no reported concentrations above the National Environmental Protection Measures (NEMP) for Health Based Investigation Levels commercial and industrial guidelines. However, Draft LES (2007) undertook a desk top assessment of land records, aerial photographs, state and local planning and licensing records and reports and investigations relating to the site. Subsequently, Draft LES (2007) considers there to be insufficient information to manage the risk posed by contamination on the site. The report recommends:

The lateral and vertical extent of potential soil and groundwater impacts has not been determined during any previous investigations. The following is recommended in order to delineate potential contamination:

- *Further detailed (intrusive) site investigations in order to delineate potential contamination. The objectives of this investigation would be to facilitate the identification of any further potential 'hot spots'.*
- *Install replacement wells onsite to assess the current state of groundwater conditions.*
- *Undertake a water gauging event to confirm previously documented groundwater flow direction at the site.*

- *Undertake a groundwater quality monitoring event to assess the current concentrations of the contaminants of concern at the site and compare this data to the previous investigation.*
- *Once further investigations have identified the extent soil contamination and current groundwater status, Council should consider options for remediation and/or management of any identified impacts. Preparation of a remedial action plan (RAP) and/or a Site Management Plan (SMP) are recommended for such measures.*

This additional investigation should be undertaken in accordance with appropriate NSW EPA guidelines. Council may wish to provide further information on the study area to the NSW DECC in this regard, depending on the outcome of further investigations (Draft LES 2007)

5.10 Power Easement

A power easement for 132kV power lines transects the site from east to west. Energy Australia met with Council onsite to discuss the limitations this imposes on the development and operation of the facility. The Draft Site Plan is in accordance with Energy Australia's recommendations.

Council will maintain ongoing consultation with Energy Australia throughout the development approval, construction, and operational phases of the facility. Energy Australia provided Council with verbal and written advice regarding the limitations imposed by the power easement.

Factors including the area of the land, the relatively small portion of land covered by the power easement and the broad nature of activities and resources associated with the recycling facility ensure that the development and operation can proceed without conflict with the power easement.

The Energy Australia publication "What all residents should know about living with Electricity Easements", summarises the limitations placed on activities and development within a 45 metre easement under the power lines. These guidelines indicate that key aspects of the recycling facility can occur within the easement, including; transport, mobile plant operation, small stockpiles, and water storage.

Energy Australia will review the proposal in the context of surveys of the power easement and towers and the current guidelines for development and operations within a power easement prior to Council submitting the Environmental Assessment.

Council will consult with Energy Australia in developing risk assessments for the construction and operational phases of the facility.

6. Conclusion

The Preliminary Assessement outlines the proposed Civilake Recycling Facility and identifies the environmental receivers likely to be effected by the development. The document outlines a series of actions for Civilake to review the potential environmental impacts resulting from the development and operation of the facility and to impliment controls accordingly.

As a recycling facility of hard waste materials located in close proximity to a high concentration of development the facility offers net environmental gains in terms of resource conservation and greenhouse gas reduction. However, potential local impacts resulting from the operation require thourough investigation prior to development approval. As per the recommendations herein, Civilake will conduct the following further investigations to identify potential environmental impact by the development:

- Geotechnical Study,
- Hydrological Survey,
- Acid Sulphate Soil Investigation,
- Accoustic Study,
- Further Intrusive Contaminated Soil Investigation, and
- Quantitative Traffic Surveys

CiviLake will use results from these further investigations to develop controls and ensure minimal environmental impact from the development. The Environmental Assessment developed as per the SEPP (Major Project) Application will include the the further analysis and controls.

From the Preliminary Assessment, Civilake conclude that the recycling facility will provide a net environmental, social and economic benefit, notwithstanding the outcomes of the above listed further investigations.