The Energy from Waste (EfW) [SSD 6236] proposal by The Next Generation (NSW) Pty Ltd [TNG] has been on public exhibition.

Various submissions were received. The proponent provides a response to the following letter received as part of the public exhibition.

- Letter from Office of Environment and Heritage (DOC 15/168903 SSD 6236) (21 July 2015)

This response also references the following:

- Letter from Glennys James (Director Design and Development) (24 July 2015) Blacktown City Council
- Letter from Kristian Holz (Policy, Legislation and Innovation) NSW Department of Primary Industry Water (23 September 2015)

<u>Response to OEH</u> - Biodiversity

Exhibition comment

"OEH's previous comments raised the issue that the proposal did not adequately describe how the principles of "avoid, mitigate, offset" have been used to minimise the impacts of the proposal on biodiversity', as required by the Director General's requirements. More information has been provided in section 8.1 of the Flora and Fauna Assessment Report (FFAR) (Abel Ecology 2015), in relation to mitigate and offset impacts. However, the report states that clearing areas of biodiversity 'has not been avoided'. This is not adequate. The report should include a discussion of how the design of the proposal has considered alternatives that would have a lesser impact were not feasible.

Response to OEH

➢ Proponent's Response

The proponent identified a broad range of factors in connection with the EfW design proposal and the siting, configuration and location of the EfW.

The proponent understands that it is important to clearly articulate both the factors to which it had regard and the weight which it gave to those factors.

The proposed development, involving the construction and operation of an Energy from Waste Electricity Generation Plant, will allow for unsalvageable and uneconomic residue waste from the Genesis Material Processing Centre (MPC) and Waste Transfer Station (WTS) to be used for generation of electrical power.

The project has therefore been identified as State Significant Development (SSD) under Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011 being:

"Cl. 20 Electricity generating works and heat or co-generation:

Development for the purpose of electricity generating works or heat or their cogeneration (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:

(a) has a capital investment value of more than $30 million, or

(b) has a capital investment value of more than $10 million and is located in an environmentally sensitive area of State significance."

The proposal has a capital investment value of greater than $30 million and therefore is classified as a SSD.

As such, the following must be taken into consideration with the development:

"(1) Matters for consideration-general In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

(a) the provisions of:

(i) any environmental planning instrument, and

(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and

(iii) any development control plan, and

(iiia) any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and

(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and

(v) any coastal zone management plan (within the meaning of the Coastal Protection Act 1979), that apply to the land to which the development application relates;

(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality;

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

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

(e) the public interest."

The EfW project is a commercial venture and is intended to provide a financial return for the very significant investment which will be involved. This is a private benefit.

Considerations of the public interest must be considered as part of the assessment process for and SSD and the proponent has already identified a number of real and tangible public benefits to the project.

When preparing its application the Proponent addressed each of the factors in turn. Not all of those matters are revisited in this response.

The proponent submits that an EfW facility has not merely a marginal public interest aspect but in many ways an overwhelming one for the Australian public as a whole.

➢ Desirability of the Project. - Benefits to the Public

Elsewhere in the Environmental assessment a range of public benefits has been considered.

The TNG EfW plant complies with many of the international treaties which the Federal Government is signatory, including the Intergovernmental Panel on Climate Change (IPPC) 2007 Report "Mitigation on Climate Change" (which was awarded the Nobel Peace Prize based on this and other reports on climate change in 2007) which concluded that EfW facilities have an overall positive effect on climate protection.

The UN Framework on Climate Change states that

"The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner"(UNFCCC, Article 2)[1]

Article 3, Principle 3 - *The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects.*

Article 3, Principle 4 - *The Parties have a right to, and should, promote sustainable development. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change.*

[1] United Nations Framework Convention on Climate Change
http://www.austlii.edu.au/au/other/dfat/treaties/1994/2.html

Article 4, Commitments (c)- *Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors;*

Article 4(H)(i) - *Promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organizations have an obligation to reduce greenhouse gas emissions through promoting sustainable development of technologies in sectors including waste management.***"**

The UN has also issued an Environment Program Report called the "*UNEP Waste and Climate Change – Global trends and Strategy Framework 2010*" which applauds EfW facilities, with their contribution in the reduction in greenhouse gas emissions from traditional power sources and a positive contribution to avoiding climate change.

As such, it is clear that the TNG EfW plant will be helping the Federal Government and the Australian people to adhere to its obligations to the reduction in greenhouse gases required by the UN.

The Kyoto Protocol, of which Australia is signatory to, established legally binding emissions targets for industrialized countries, and created innovative mechanisms to assist these countries in meeting these targets. The Kyoto Protocol entered into force on 18 November 2004, after 55 Parties to the Convention had ratified it, including enough industrialized countries — who have specific targets — to encompass 55 per cent of that group's carbon dioxide emissions in 1990.[2]

[2] *Kyoto Protocol to the United Nations Framework Convention on Climate Change* (of 9 May 1992) http://www.austlii.edu.au/au/other/dfat/treaties/2008/2.html

Australia made an international commitment in December 1997 at Kyoto to limit its greenhouse gas emissions growth to 108 per cent of its 1990 baseline [3]

Article 2(1) (viii) of the Protocol calls for policy which encourages "*Limitation and/or reduction of methane emissions through recovery and use in waste management, as well as in the production, transport and distribution of energy*"[4]

In light of the above, it is clear that the TNG EfW will assist the treaty compliance in both in reducing greenhouse methane and carbon emissions, and the reduction of landfill waste.

Domestic Policy

Notwithstanding the International treaties, Australia has its own set of environmental policies domestically, of which the TNG EfW plant would be compliant with.

Origin, 2015: Around 86 percent of Australia's electricity is generated from these fuels types, with 73 percent from coal[5]

In 2012, the Protocol was amended to establish a second commitment period from 2013 to 2020. Australia submitted a second commitment period QELRO of 99.5 per cent, consistent with the Government's unconditional target to reduce emissions by five per cent below 2000 levels by 2020. In order to meet such commitments need to invest in future infrastructure that moves away from fossil fuels etc.

[3] Conference of the Parties COP3
http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Publications_Archive/archive/kyoto
[4] Ibid
[5] https://www.originenergy.com.au/blog/about-energy/energy-in-australia.html

Federal Government's General Policy

On 11 August 2015, Australia announced it would reduce greenhouse gas emissions by 26 to 28 per cent below 2005 levels by 2030, building on its 2020 target of reducing emissions by five per cent below 2000 levels[6]

Australia has submitted this target to the UNFCCC as our intended nationally determined contribution (INDC) to the proposed new agreement.

Upcoming UNFCCC Paris Conference in December 2015.

Australia is committed to taking strong and effective action against climate change. The Direct Action Plan, and its A$2.55 billion Emissions Reduction Fund, will improve practices by businesses and communities to reduce emissions and invest in new and more efficient technologies[7].

February 2014 Australian Government – Climate Change Authority: '*Australia needs policies now to drive reductions in domestic emissions, promote a steady transformation of the domestic economy, capture low-emissions growth opportunities, encourage innovation and stimulate new low-emissions investment'* (p 12) [8]

On 18 May 2015, the Federal Government and Labor opposition announced that they had reached a bipartisan deal to reduce Australia's Large-Scale Renewable Energy Target (RET) from the current target of 41,000 GWh to 33,000 GWh by 2020

[6] http://dfat.gov.au/international-relations/themes/climate-change/pages/climate-change.aspx
[7] http://dfat.gov.au/international-relations/themes/climate-change/Pages/ambition-review-under-the-kyoto-protocol-second-commitment-period-and-update-on-australia-s-greenhouse-gas-emissions-projec.aspx
[8] http://climatechangeauthority.gov.au/files/files/Target-Progress-Review/Targets%20and%20Progress%20Review%20Final%20Report.pdf

The National Energy Productivity Plan

The Renewable Energy Target allows sustainable growth in both small and large scale renewable technologies, delivering more than 23 per cent of Australia's electricity from renewable sources by 2020. Target to improve Australia's energy productivity by 40 per cent between 2015 and 2030[9]

The COAG Energy Council agrees to common objectives in improving Australia's energy productivity: to reduce costs for household and business energy users; maintain our competitiveness; grow Australia's economy; reduce carbon emissions; and improve our sustainability.

It demonstrates the Government's continued commitment to a secure, reliable, affordable and clean energy future for households and businesses in Australia and NSW.

NSW Government

In March 2014 the NSW Environment Protection Authority (EPA) published its Energy from Waste Policy Statement ("the EfW Policy Statement"). The EfW Policy Statement requires that any facility proposing to recover energy from waste will need to meet current international best practice. The policy also requires that emissions from EfW facilities must satisfy, as a minimum, current emission limits prescribed by the POEO (Clean Air) Regulations.

The proposed technology for the EfW facility is based on existing facilities in the United Kingdom and Europe and will incorporate best available technology (BAT) for flue gas treatment. The flue gas treatment is designed to meet the in-stack concentrations limits for waste incineration set by the EUIED, which are generally more stringent that the Clean Air Regulations. The flue gas treatment system includes:

a) Selective Non-Catalytic Reduction (SNCR) for reducing emissions of oxides of nitrogen.
b) Dry lime scrubbing for reducing emissions of acid gases, including HCl and SO2.
c) Activated carbon injection for reducing emissions of dioxins and Hg.
d) Fabric filters for reducing emissions of particles and metals.
e) Following flue gas treatment, emissions will be dispersed via a 100m stack.

[9] https://scer.govspace.gov.au/files/2015/07/National-Energy-Productivity-Plan-Statement-FINAL.pdf

Kyoto protocol to eliminate greenhouse gases

A review of existing EfW facilities shows that the facility meets current international best practice and can satisfy the emission limit requirements of the IED.

In September 2013, the NSW Government released the Renewable Energy Action Plan to guide NSW's renewable energy development and to support the achievement of the national target of 20% renewable energy by 2020. The Plan positions NSW to increase energy production from renewable sources at least cost to the energy customer and with maximum benefits to NSW.[10]

As such, it is clear that the EfW project is one which fulfils international and domestic policies at both state and federal levels

Moreover, a reduction in greenhouse gases is believed to be a direct benefit to biodiversity in Australia.

The Australian Government has recognised the threat to biodiversity generated by greenhouse gases as they have listed the following Key Threatening Process *Loss of terrestrial climatic habitat caused by anthropogenic emissions of greenhouse gases.*

The EfW facility will generate a reduction in greenhouse gases over those gases normally generated by landfilling and by coal burning. This will bring broad benefits to the Australian Environment

[10] http://www.resourcesandenergy.nsw.gov.au/__data/assets/pdf_file/0010/475318/Renewable-Energy-Action-Plan.pdf

➢ Objectives of Proponent's Response

In order to address the issues focussed on by OEH this response will concentrate on

"*(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality*"

In particular the proponent will attempt to articulate how, in relation to the project it will:

(a) Identify the commercial, design and construction key factors;
(b) Review key site elements and the weight to be given to each of them;
(c) Identify potential impacts of the project on the natural environment and on biodiversity as required by the Director General's requirement;
(d) Consider alternatives having regard to the principles of "avoid, mitigate"; and
(e) Where necessary, consider "offset" alternatives.

Key Site Advantages

- Commercial, locational, construction and engineering

Space/ Area

An EfW is longitudinal in design. The tipping hall must have access to a public road by which large trucks can enter and leave.

There must be adequate room for weighbridge facilities at both the entrance and egress. More than 77,000 m2 of area is required for the laydown pads.

The EfW facility – comprised of the tipping area, waste bunker, boiler house, ash handling area and flue gas treatment.

The EfW facility itself is where the feedstock (waste material) will be converted to heat energy. The tipping hall itself must be able to be configured to facilitate the mixing of residual waste delivered into it.

Adjoining components – turbine hall and air cooled condenser.

These two components are required to be adjacent and are required for operation of the EfW facility.

Linear Configuration

The EfW plant must have a linear configuration and compact design to assist maintenance and allow for:

1. safe access to and easy maintenance for all equipment;
2. a clear overview of the plant (with all lines being identical);
3. ease and safety in maintenance (less confusion);
4. identical spare parts;
5. clear emergency escape routes;
6. easy access for maintenance and in case of emergencies; and
7. to assist with efficiency, reliability and optimum performance.[11]

[11]Engineer opinion provided by Martin Brunner of Ramboll and Dr. Ute Fleck of HZI, October 2015

The benefit of the compact and linear placing of the components next to each other leads to:

(a) lower pressure loss;
(b) lower deflections of flow;
(c) improvement in efficiency; and
(d) reduction in wear and tear.[12]

The Conveyor

The conveyor links the existing Genesis Xero Waste facility (the source of feedstock) at the EfW facility. Part of the conveyor will be built below the Precinct Road.

EfW Facility Footprint

The finished facility occupies a total footprint of 11Ha. This is enormously less than conventional power stations which typically occupy much larger areas. Examples.

a) Liddell Power station (10,000Ha);
b) Loy Yang Power station (6,000Ha); and
c) Mount Piper Power Station (1,000Ha).

Construction and Assembly of EfW Facility

Where the EfW is different however is during construction. EfW's depend more upon technology and rather less upon civil infrastructure. [Which tends to be the case with traditional power stations.] EfW are typically constructed in modules which are then fitted together and placed in situ.

This means that significant areas of land are required around the main construction site during construction to receive the module parts and facilitate further construction of the modules prior to placement.

In this EfW project they have been designated as Laydown Pads.

[12] Ibid

Three lay-down pads

The three lay-down pads are required for storage of the materials used in constructing the EfW facility, eg: the building and plant equipment, space to allow pre-erection of some of the components. The lay-down pads must also have a minimum bearing capacity to allow the heavy crawler cranes to operate.

Additionally the lay-down pads must allow efficient and safe movement through providing adequate access of materials and plant equipment consistent with Workplace Health and Safety objectives. The lay-down pads will also provide areas for offices, parking, lunch rooms etc.

This site has a unique combination of the following individual factors:

- **Access/transport**

  The site is served by at least two major Sydney Motorways including the M4 and the M7. This ensures that fuel is readily transportable by road.

- **Waste fuels**

  The adjacent land has upon it the largest and most modern recycling facility and solid waste landfill in Sydney. The Genesis recycling facility currently recycles a large portion of the co-mingled waste which is fed into it.

  Residual waste from this process or waste which has been processed elsewhere is a ready source of fuel for EfW.

- **Suitable Proximity / access to NSW electricity grid.**

  In order to feed electricity back into the NSW grid proximity to a suitable facility is necessary. This site has that facility at its south western border.

- **Sub-station**

  The sub-station provides the necessary link between the energy generation components (EfW facility and turbine hall/air cooled condenser) and the transmission line located in the power easement to the west of the proposal area.

- **Proximity to gas supply**

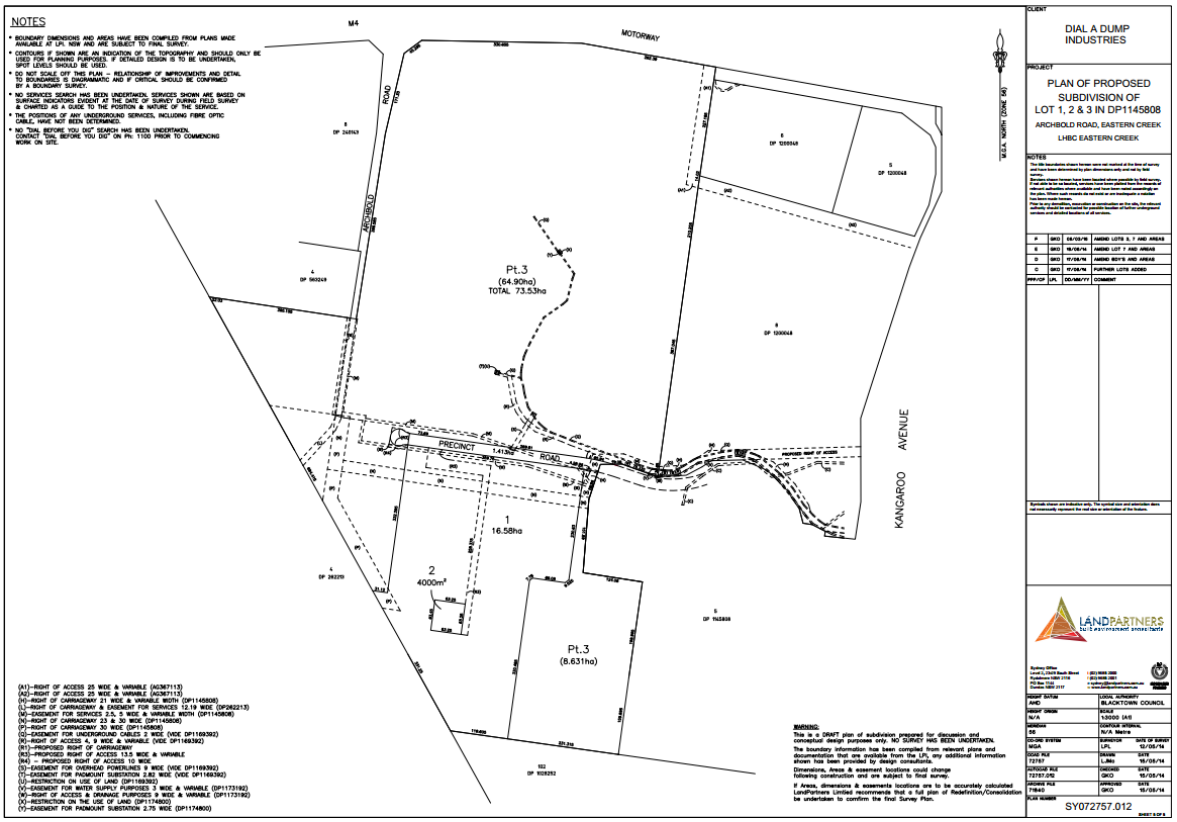
  The Boilers of the EfW require online gas supply for firing up after maintenance and cleaning. The site currently has a gas high pressure supply line running through it.

Key site Limitations

- Fixed Features. Title Boundaries/Potential Site Area

The site boundaries owned by the proponent corporate group are shown superimposed on the following plan.

The Hanson land limits the potentially developable area in the East whilst Archbold road achieves the same in the west.


NOTES
M4
MOTORWAY
ARCHBOLD ROAD
Pt.3
(64.90ha)
TOTAL 73.53ha
PRECINCT ROAD
KANGAROO AVENUE
1
16.58ha
2
4000m²
Pt.3
(8.631ha)
DIAL A DUMP INDUSTRIES
PLAN OF PROPOSED SUBDIVISION OF LOT 1, 2 & 3 IN DP1145808
ARCHBOLD ROAD, EASTERN CREEK
LHBC EASTERN CREEK
LANDPARTNERS
SY072757.012

➢ Creek/ Riparian area

The area available for development is bounded in the south by a designated creek and riparian zone in which development is prohibited. This is shown on the following figures.

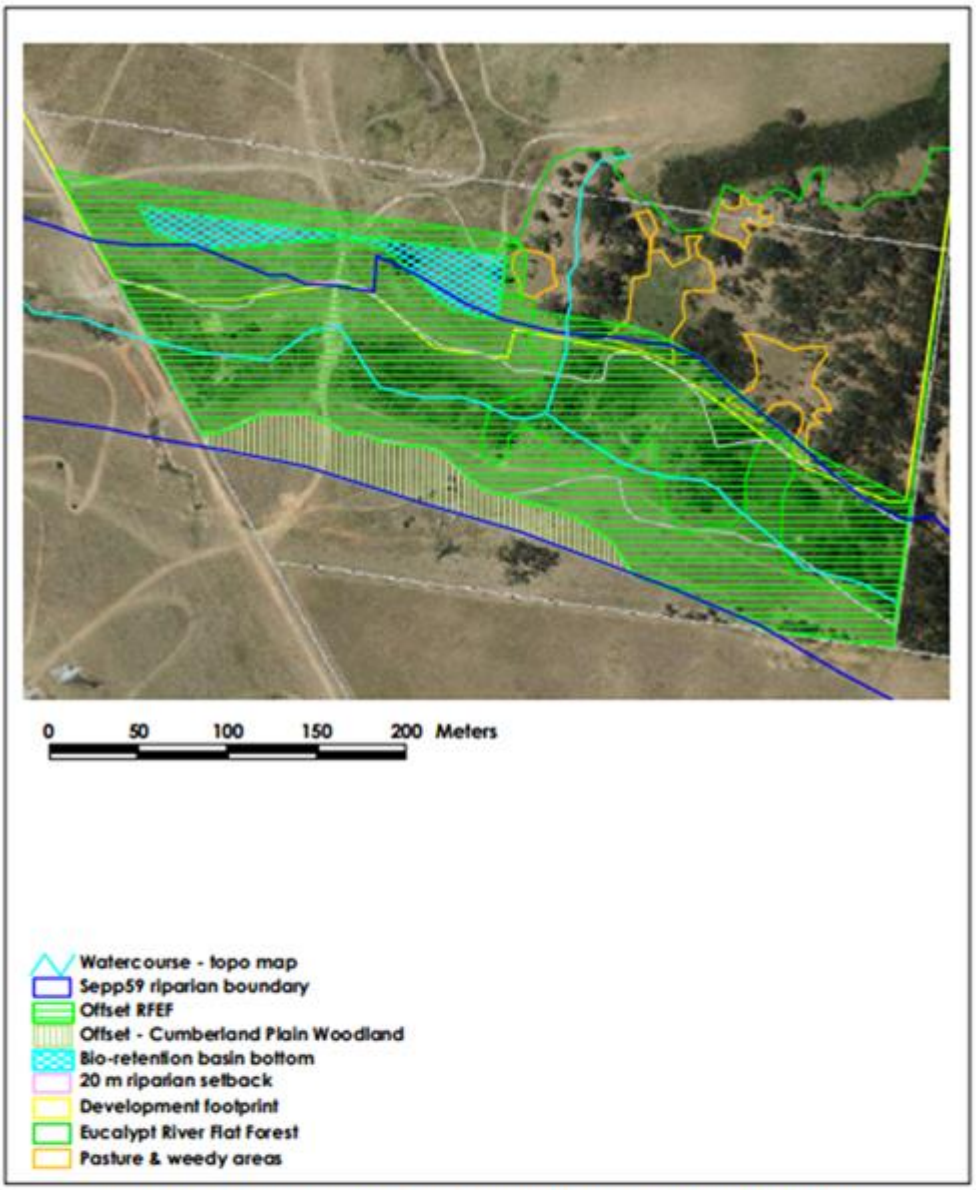
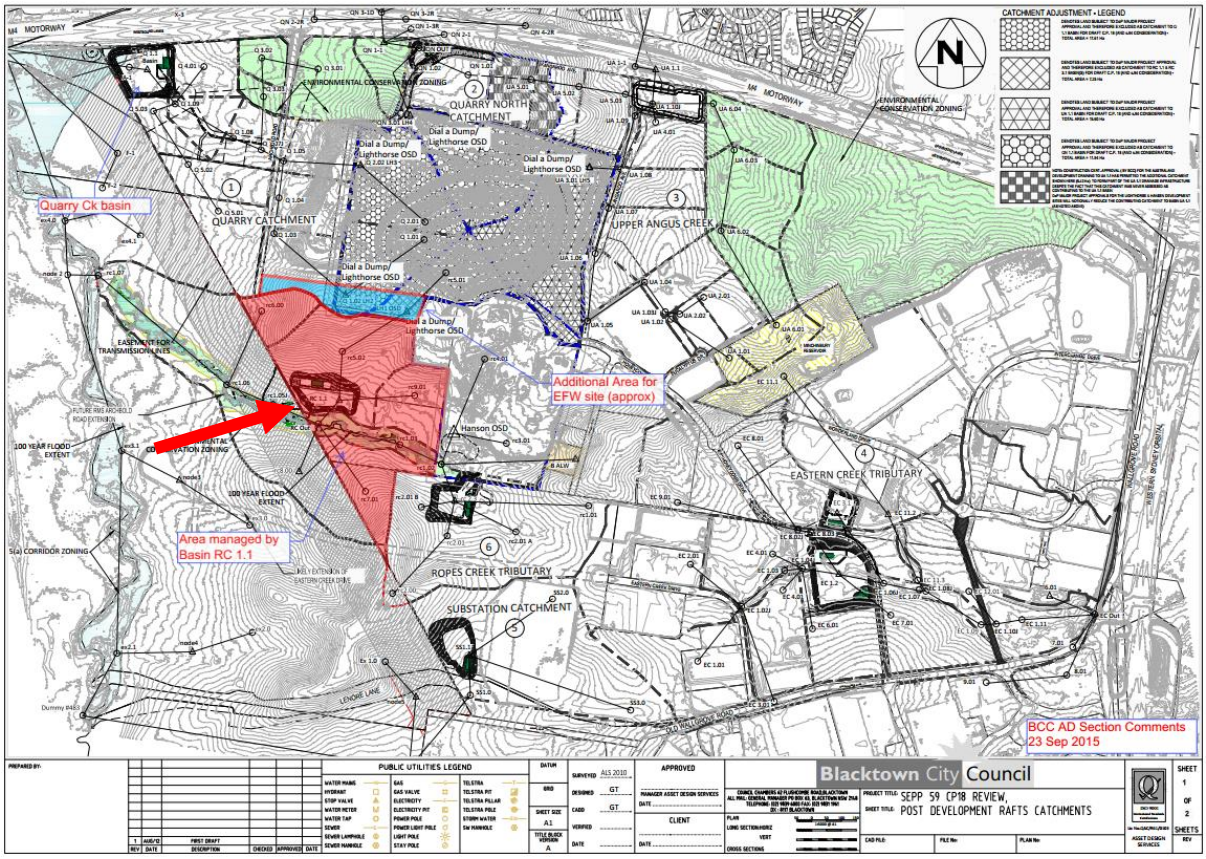


Figure 11. Aerial photo of the riparian area displaying the three revegetation/regeneration areas including the bio-retention basin bottom, River Flat Eucalypt Forest on the batters and along the Ropes Creek Tributary and the area of offset revegetation Cumberland Plain Woodland to the south-west of the tributary.

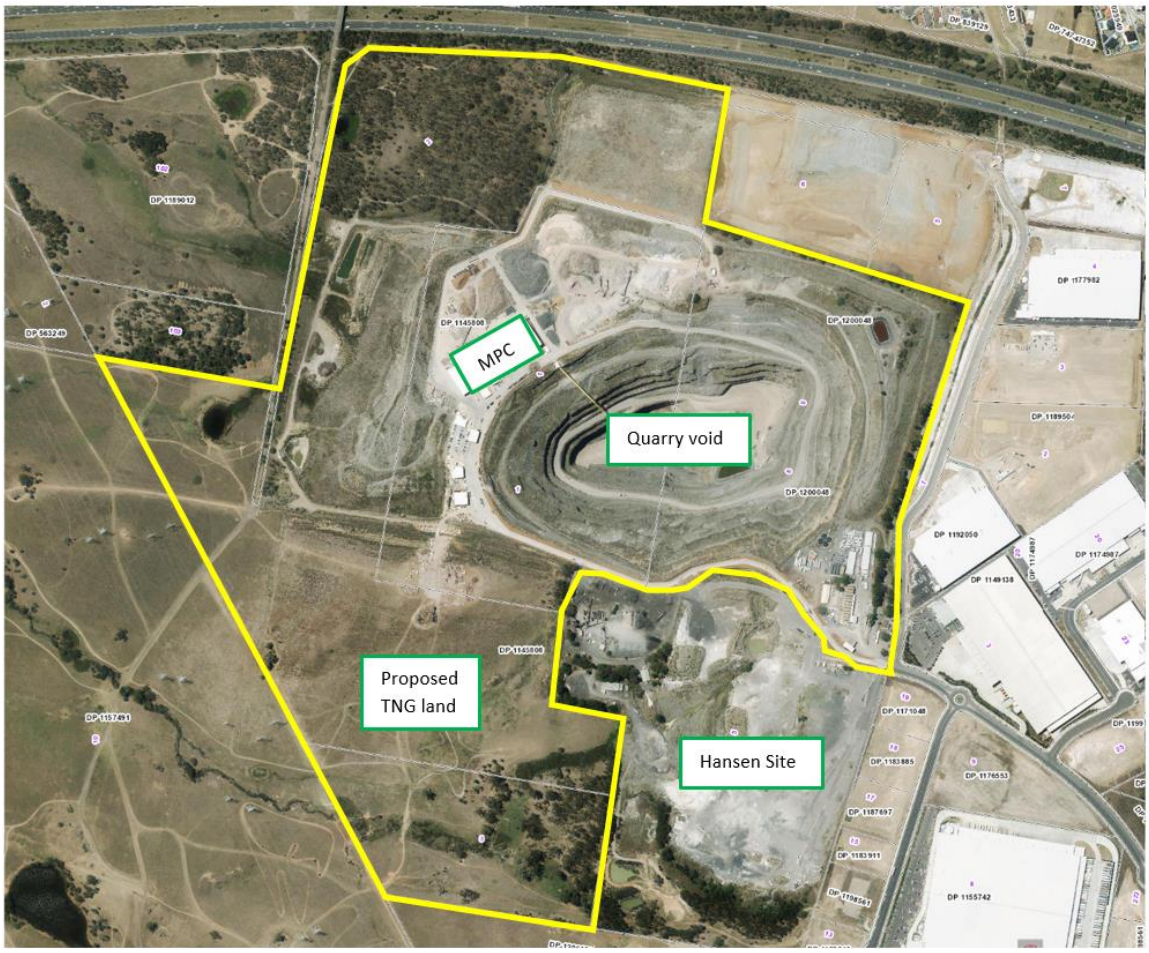
➢ Stormwater Management and Site Drainage

Blacktown Council Precinct Drainage Plan is as indicated on the following layout. That plan envisages a regional detention basin being constructed in the South East of the proponent's land.



➢ Quarry

Immediately North of the area provisionally designated for EfW development is circumscribed by the presence of the Quarry.



Quarry

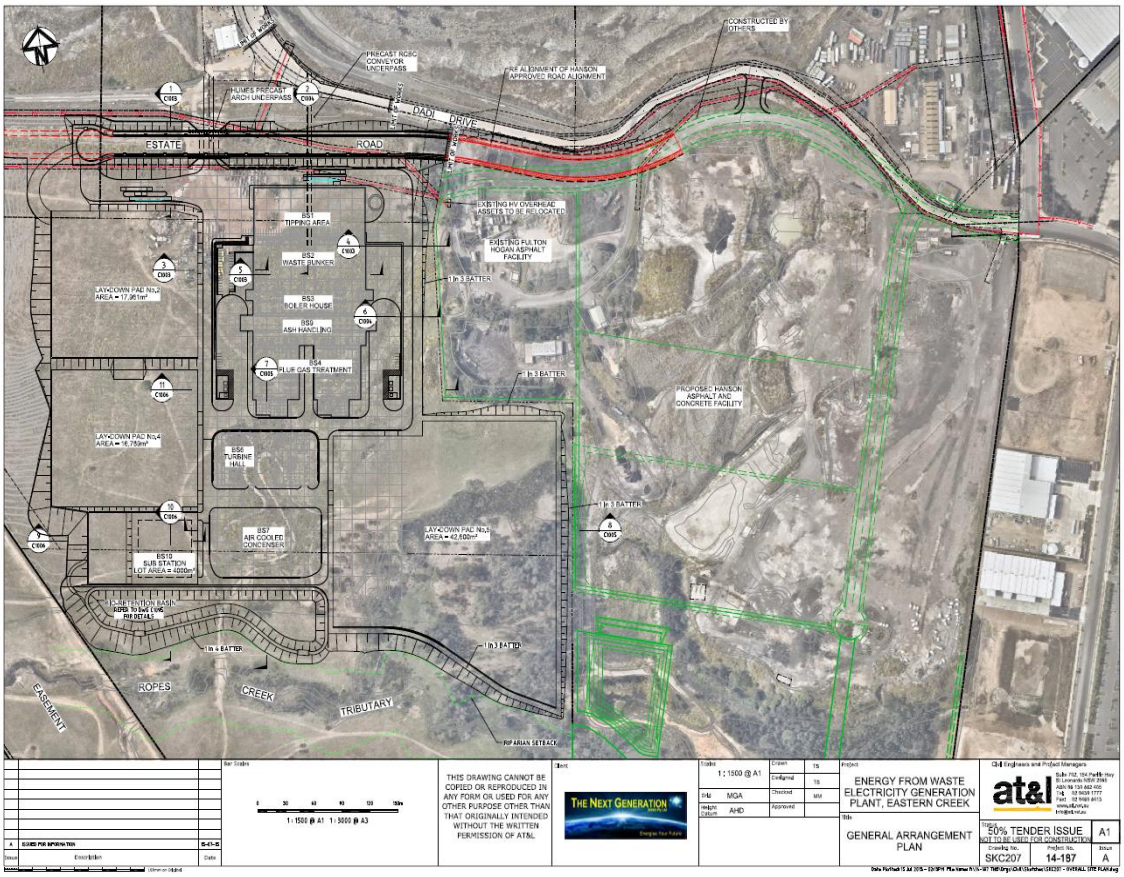
➢ Roads

Precinct Road

SEPP 59 Precinct Plan – Blacktown Council envisages a precinct road connecting Honeycomb Drive with Archbold Road.

The approximate location of the road is prescribed by SEPP 59 Eastern Creek Precinct Plan Stage 3 (Figure 30 – Local Road Pattern – page 10-13)

The proposed position of the road is shown in the plan prepared by At & L and submitted by the proponent as part of the Environmental Assessment Report.



The Precinct road was extensively considered by stakeholder Parties during the period 2007 to 2010. In particular the position of it.

The proposed road's potential proximity to the quarry edge and traffic engineering aspects were key drivers.

Blacktown Council at that time agreed with the proponent corporate group and with Hanson and the NSW Department of Planning upon the most appropriate path for the road. That agreement found expression both in the development approval granted for the Genesis development and also the Hanson land.

There is an existing approval for the Estate Road east of the site:

Modification of Minister's Approval (24 October 2013) – Schedule 1 - Project Approval 06_02225 Granted by the Minister for Planning on 3 June for the Hanson Concrete and Asphalt Facility, Eastern Creek.

Most recently, this year the NSW Department of Planning has granted an extension pursuant to s75W EPAA of the approval previously given to Hanson for the development of its land.

It is to be noted that it is a condition of that approval that Hanson construct across its land that portion of the precinct road which falls on its land from Honeycomb Drive in the east to the proposed TNG Lot in the west.

Thereafter the proponent's corporate group [TNG] would be obligated to build its section of the road connecting to the Hanson portion and in readiness for connection to Archbold Road.

➢ Ecology/ Habitat

Three areas of biodiversity, namely:

1. Cumberland Plain Woodland (CPW) in the north-east corner of the proposal area;

2. River Flat Eucalypt Forest (RFEF) in the south-east corner of the proposal area; and

3. Creek/ Tributary Riparian zone.

were identified by the Proponent as matters of critical consideration potentially to be affected by the project.

Historical information.

The site is located near the confluence of the M4 and m7 Motorways. The entire landholding of the corporate group [of which the Proponent is a wholly owned subsidiary] is bounded by the M4 Motorway in the North the Australand development in the East and the open undeveloped pasture in the west and south.

Before its present development the site was characterised by three key topographical features,

a) CPW area of approximately 9 Ha in the north western extremity of the site adjoining Archbold Road, and bounded by the M4 motorway;
b) A large worked out hard rock Quarry of approximately 11million cubic metres; and
c) An unnamed tributary at the south of the land running in an East / West direction.

Quarrying had been undertaken on the site for sixty years and large overburden mounds approximately 30 metres high to the north, west and East of the Quarry had been created.

The whole of the proponent's land south of the quarry has been used for cattle grazing for many years up to the present and between May and June 2010 was cultivated and sewn to rye for the purpose of commercial sale of baled hay.

In all other parts of the site [with the exception of the CPW area at the intersection of the M4 motorway and Archbold road] extensive traffic by heavy machinery associated with the quarrying activities meant that much of the Proponent's land had already been significantly disturbed and degraded by the time it was acquired.

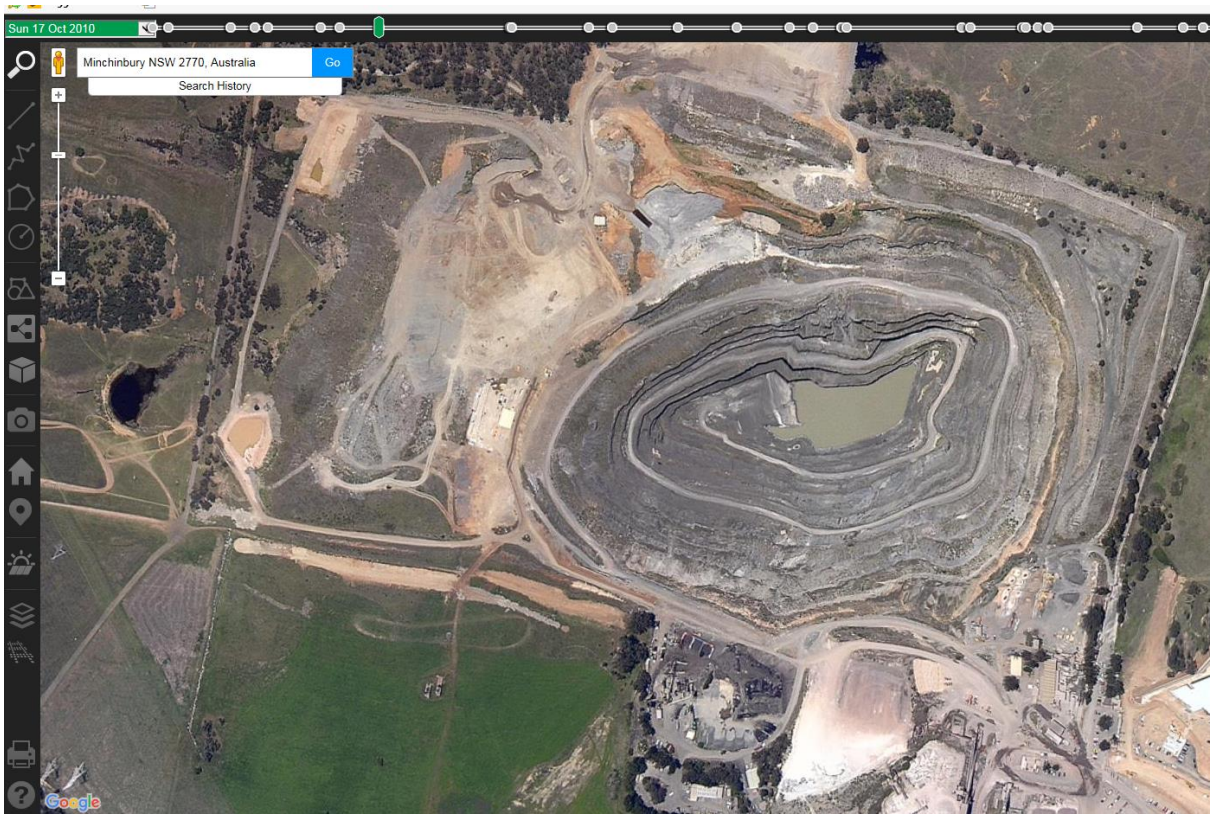
Running parallel with the southern boundary of the land is an unnamed designated creek which runs from the Hanson boundary at its eastern extremity to the western boundary of the land. It is shown as a tributary of Ropes Creek.

Prior to the proponent's group acquiring the land, Hanson's predecessor in title carried out Quarrying activities on the site. Rock excavated from the quarry was then transported onto the neighbouring site (currently owned by Hanson) where the excavated material was crushed and screened for resale and used as road-base.

The Quarry occupies approximately 25 Hectares at surface. This represented a large catchment for rainwater / stormwater.

The practice carried on by the Quarry operator was to pump the accumulated stormwater from the Quarry through a series of settlement ponds on the Hanson land and thence to a large pond near the southern extremity of the Hanson land. From there the water was allowed to overflow along the path of the unnamed creek and towards the west and Ropes Creek.

In or about 2008 Quarrying activities reached their end. For a period of time between 2008 and 2010 the occupiers of the Quarry only pumped water intermittently and instead accumulated stormwater runoff within the Quarry.



Nearmap Image 17th October 2010

Environmental Changes

By 2010 it was estimated that about 2million litres of stormwater [20,000Kl] had accumulated in the Quarry. The current owner began emptying the Quarry as a prelude to re- development of the pit as a landfill.

By December 2012 a basal leachate collection system had been installed in the quarry combined with an extraction and treatment mechanism. As waste was placed in the pit, water thereafter had to be treated as leachate and was no longer permitted to be pumped from the quarry to the Hanson land or to the tributary creek.

The tributary creek has no alternative natural source of groundwater and can best be described as "ephemeral."

It now operates as a stormwater conduit from the surrounding land. A review of the creek by IGGC Pty Ltd indicated no evidence of aquatic life[13].

At the 'head' of the tributary [that is at the south eastern boundary of the land] and where it was once supplied with water as the 'quarry pump out' point from the Hanson land is where the area of significance lies and that is the River Flat Eucalypt Forest (RFEF.)

This area was reviewed by Ashby in 2007 [Keystone Ecological] and considered *at that time* to be of "low ecological value."

Similarly, Figure 15 Existing Habitat in SEPP59 (see below) describe the Eucalypt River Flat Forest in the south-east corner of the proposal as having *Low ecological value*.

[13] *Results of Water Quality and Soil Sampling and Analysis*, Lot 2, DP262213, Old Wallgrove Road, Eastern Creek, IGGC Report dated 10 October 2007, and para 3.6, *Assessment of Soil and Water Impacts: Proposed Energy from Waste Facility*, Eastern Creek. Edison Environmental, 12 April 2015

Figure 15 - Existing Habitat

It is to be noted that both the SEPP 59 and the Keystone assessments were carried out against a background of almost 60 years of significant and sustained regular water supply pumped from the Quarry.

Nearmap Image October 2015

The next following Nearmap image from **2009** contrasts markedly with the current position.

Current 2015

The dried out remnant collection basins on the adjacent Hanson land are as they are currently as shown in the following image since pump outs have ceased.

It is to be presumed that the conditions of a constant and significant water supply which existed prior to 2012 favoured the River Flat Eucalypt Forest.

The cessation of that water supply (except in the case direct rain events) must tend to leave a question hanging over the long term viability of this ecosystem.

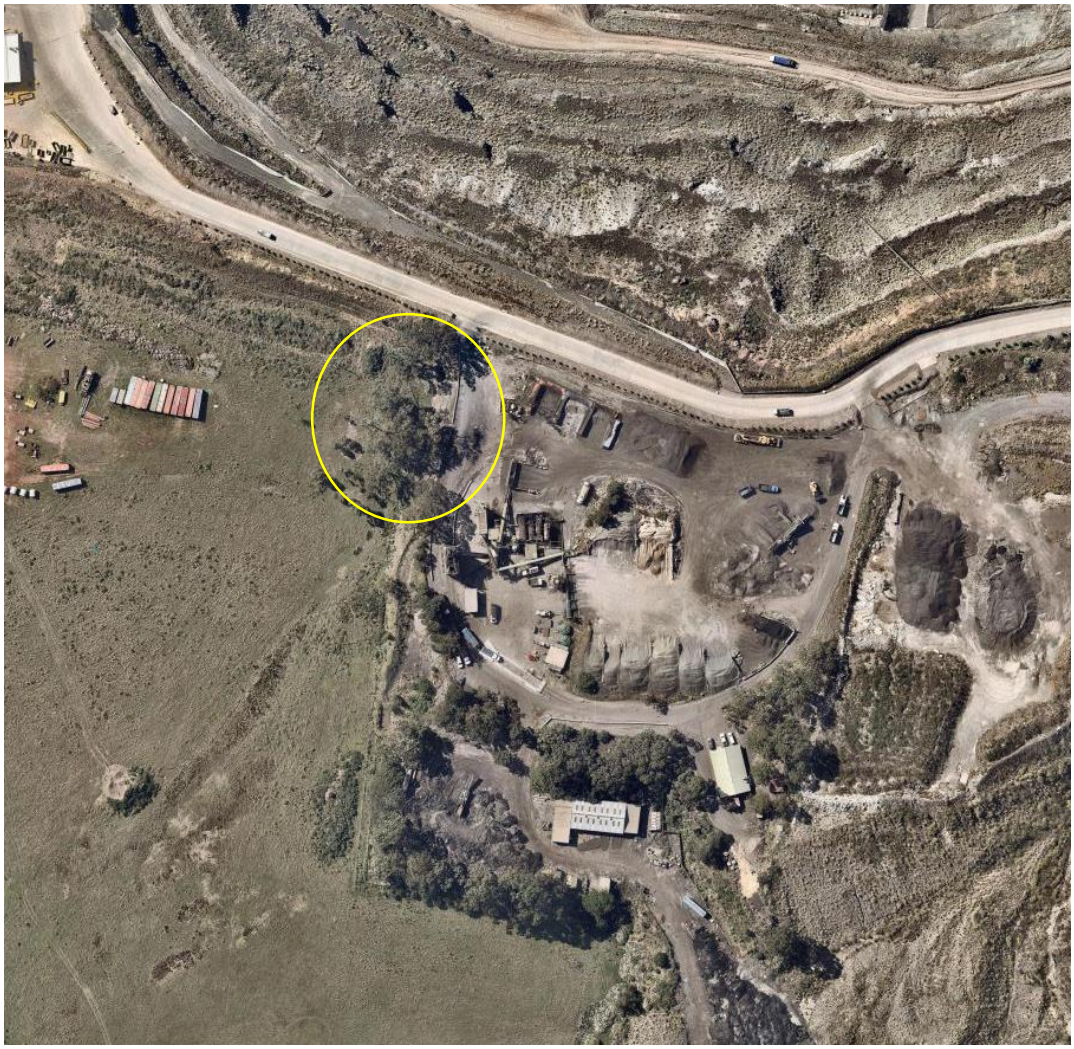
Cumberland Plain Woodland (CPW)

A small fragment of Cumberland Plain Woodland has been identified in the area shown on the following aerial photograph.

This area consists of 13 trees. [refer Abel ecology report] immediately adjacent to the existing and currently operating Asphalt batching plant located on the adjacent Hanson owned land

The Cumberland Plain Woodland in the north-east corner of the TNG site has been ignored in SEPP59. Figure 15 – Existing Habitat (page 8-4) (see below) ignores this patch of Cumberland Plain Woodland in the north-east corner of the proposal. Thus it is reasonable to assume that it is considered to have negligible regional value

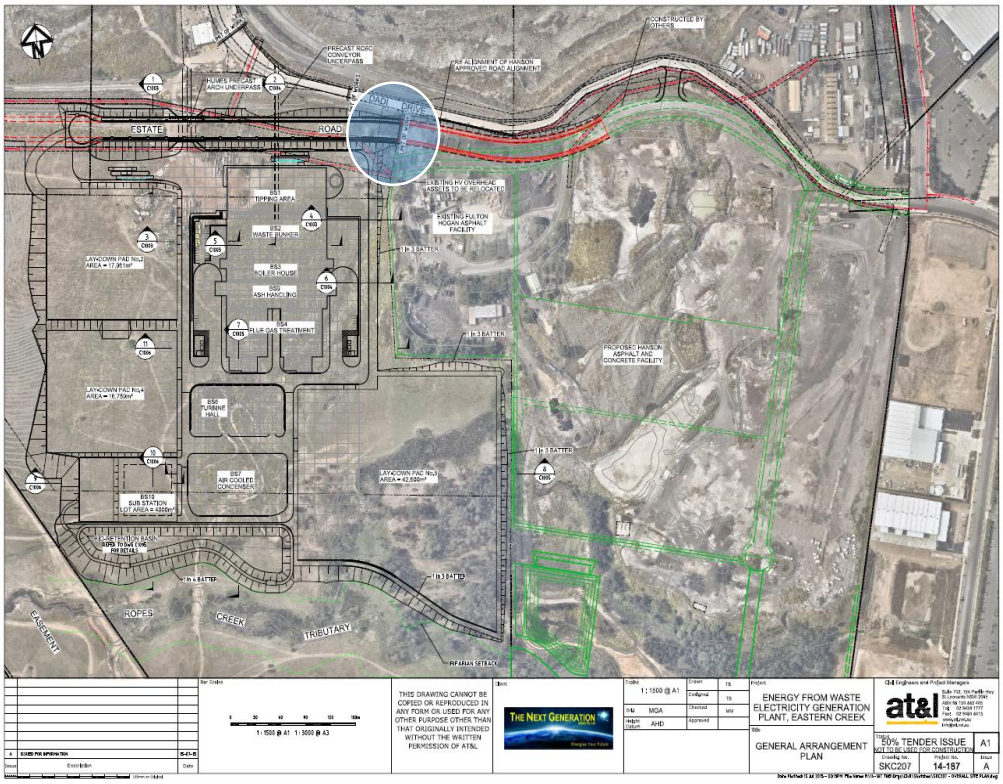
Nearmap Image October 2015



In her review of the site in 2007 Elizabeth Ashby [Keystone Ecological]

concluded that the area was of "low ecological value" and disconnected from other areas of Cumberland Plain woodland.[14]

Two different components of the TNG proposal potentially overlap this CPW fragment.



The proposed Estate Road overlaps the northern portion of the CPW, while the Energy from Waste (EfW) facility as provisionally sited overlaps the southern portion of the CPW

Discussions of avoiding the CPW by changing the proposed alignment of the Estate Road appear redundant given the existing approval, however, for completeness a comment is provided.

[14] Chapter 6, *Guiding Ecological Principles and Constraints For LHBC*, Keystone Ecological, May 2007

➢ Riparian Zone

The tributary to Ropes Creek though unnamed is nonetheless designated and therefore has an identifiable riparian area.

The Blacktown Council Precinct Plan requires that the riparian area [40 metres from top of bank on either side] not be developed.

In this case [despite having no independent 'natural' source of water] the creek is intended to form an integral part of the future stormwater drainage plans for the western end [stage 3] precinct.

It will convey stormwater from the Hanson land east of the site in a westerly direction towards Ropes creek with stormwater being intercepted at various points by both private and regional detention basins.

There is approximately 27,000–m2 area within the riparian corridor which currently has little to no trees.

The line of creek was identified by Keystone Ecological in 2007 as suffering erosion and the presence of a range of noxious weeds.[15]

Controversially the current owners of the land undertook erosion remediation works in 11-18 October 2006 and removal of noxious weeds. It risked prosecution for doing this without obtaining prior permission.

In Blacktown Council's response to the exhibition Glennys James noted as follows;

Exhibition comment Glennys James

1. "A larger area of native vegetation should be retained

a. *The offsets proposed for the endangered ecological communities (River-flat Eucalypt Forest and Cumberland Plain Woodland) are located within an area already identified as "riparian habitat" in the Precinct Plan.* ***While there is no requirement under SEPP (WSEA) 2009 to protect and rehabilitate this area, the*** *Stage 3 Eastern Creek Precinct Plan does include an objective to "preserve and improve the ecological integrity of the watercourses and riparian corridors" and this must be considered."*

[15] Ibid

The proponent's response is to observe as Ms James has noted that

"Whilst there is an objective to preserve and improve the etc. …… ***is no requirement under SEPP (WSEA) 2009 to protect and rehabilitate this area****"*

Council *could* have resumed the riparian area and *could* have undertaken management and care of it.

It elected not to do so.

There is presently no undertaking by Council to spend any money or do any act or thing to meet its stated objective of protecting and rehabilitating the area.

There is currently no Vegetation Management Plan [VMP] for the Riparian corridor.

Development within the riparian area is prohibited under SEPP 59. This prohibition constrains absolutely the southern boundary of any development

Avoid

- With the aim of avoiding any impact on any of the remnant CPW consideration was given of moving the proposed Estate Road

To the North

The existing access way to the Genesis site north of the line of the precinct road is a single lane each way carriageway. It is a private driveway servicing that facility and not a public road

This is regularly used by double bogey trucks semi-trailers as well as other vehicles. This existing road was not designed for the traffic requirements for the EfW facility or other adjoining businesses or workplaces. It is not able to be upgraded to public road status it is too close to the Quarry edge to qualify as a public road.

To the South

The proposed Estate Road would have to be moved approximately 90m to the South to avoid the Cumberland Woodland. This would also require presumably two approximately right-angle bends in the road and require part of the road to be built on the Hanson site, varying the existing approval. It is unlikely this would be considered a good design by either Hanson's or any government authorities.

A significant difficulty in considering avoiding the Cumberland Plain Woodland in the north-east corner of the proposal is the existing approval for the Estate Road (Modification of Minister's Approval (24 October 2013) – Schedule 1 - Project Approval 06_02225 Granted by the Minister for Planning on 3 June for the Hanson Concrete and Asphalt Facility, Eastern Creek).

This approval proposes the end of the Estate Road being adjacent to the Cumberland Plain Woodland. Avoiding the Cumberland Plain Woodland given this existing approval would require two right – hand bends in the Estate Road. This is highly unlikely to be consider a preferable outcome from a traffic engineering perspective.

It is reasonable to consider that Department of Planning have already decided that this area will be cleared to allow the Estate Road to be constructed in most logical way.

This is also consistent with the concept presented in Figure 30 Local Road Pattern (page 10-13) of SEPP59 – Eastern Creek Precinct Plan.

To the East

This project approval displays the Western end of the Estate Road finishing adjacent to the CPW. If it was determined the CPW must be avoided it would presumably require government agencies to negotiate with Hanson's to realign this section of the road.

Alternatively, an approximately right angle bend could be built at the western end of the Estate Road is proposed on the Hanson's site. This would be required for the Estate Road to avoid the CPW and a second approximately right angle turn would be required to allow the proposed road to be in an approximately East-West alignment.

However, creating two right angle bends would be inconsistent with the general concept of the road as displayed in SEPP59 as no right hand turns are displayed at this location.

Avoid

- With the aim of avoiding any impact on any of the Eucalypt River Flat Forest consideration was given of moving the EfW to an entirely different part of the site owned by the proponent corporate group.

Lay-down Pad No. 5 overlaps a portion of the Eucalypt River Flat Forest. The requirements of the three lay-down pads are discussed above.

Alternatives

Size/ Area

North of the Quarry the proponent group owns only 5 Ha of developable land bounded in the east by a transport depot development and in the west by about 9 Ha of CPW required by the Precinct Plan to be preserved.

There is insufficient land to house the plant and no land to serve as laydown pads.

Proximity to residential areas

Questions of available land area aside [only about 5 Ha] construction the EfW north of the Genesis Site and alongside the M4 Motorway was not acceptable.

The size and bulk of the construction in full view of a residential area was not consistent with the precinct Plan or acceptable to the residents.

Road Access

The 5 Ha portion north of the Quarry is currently serviced only by a two lane precinct road (not currently transferred to Council).

West of the Quarry the land is circumscribed here by the Genesis Facility in the east and Archbold Road in the West.

Archbold Road is scheduled for major upgrade as a main collector road with off ramps from the M4 Motorway.

This area was one of first considered by TNG as a site for the EfW and carried with it the benefit of optimum proximity to the Genesis processing facility.

Ultimately however, as shown on the following plan the available area is insufficient for the location of the EfW.

CPW – Avoid

It is necessary that 13 trees be removed from this area. An area of approximately 0.27 ha of Cumberland Plain Woodland

The removal of the trees could not be avoided.

Reason

The reason principally relates to,

(a) The already designated and approved route of the Precinct Road;
(b) An inability to move the road North due to the presence of the Quarry; and
(c) The unacceptable road designs which would be the result of moving the road to the South.

Considering the principle of "Offset" and despite the poor condition of trees present in the small patch of Cumberland Plain Woodland at the North East corner of the site, despite this, this area of Cumberland Plain Woodland will be offset through revegetation works using local indigenous species near Ropes Creek Tributary

Consideration of moving the proposed EfW facility to the west or south.

A consideration of relocating the EfW to the west while retaining the current proposed location of the conveyor was examined first.

Locating the EfW facility further to the west whilst retaining the current position of the conveyor is disadvantageous because:

The current design allows the feedstock (waste material) to be transferred on the conveyor to the centre of the tipping area.

Mixing of the material is required to even out the waste composition prior to entry into the combustion process. Offsetting (a non-central location) the deposit of the feedstock, tends to lead to a poorer mixed feedstock.

Well mixed feedstock achieves a constant steam production, high process efficiency and also peak emissions are avoided.

The reduction in peak emissions allows the use of Air Pollution Control (APC) reagents to be optimised and thus less APC residue has to go to secure landfill, providing a benefit through a reduced environmental impact.

The South Western boundary of the land reaches a point at which it begins to travel in a north westerly direction parallel with the electricity easement.

The effect of this is to significantly shorten the North/South depth of the land at that point rendering it impossible to house the EfW and the necessary laydown pads.

A final alternative was considered which was to move both conveyor and the EfW facility to the west by 40-50 metres. This also proved not to be feasible due to the location of the edge of the existing quarry and the Genesis Facility coinciding with the conveyor position.

Movement southwards is not possible. The fixed feature of the riparian zone (in which development is prohibited) prevents absolutely any substantial movement South.

The conclusion reached was that the EfW construction site as proposed is the only feasible position having regard to:

(a) The available space to site the Plant and construct it;
(b) The fixed site features of the cadastral boundaries, the quarry, the power easement in the riparian corridor; and
(c) The engineering and efficiency aspects including the necessity for a longitudinal design of the plant and proximity relationship and connection to the Genesis Facility.

All alternatives have been unsuccessfully explored to relocate or to reconfigure the EfW facility so to avoid impacts on the CPW and the River Flat Eucalypt in the south east corner of the site.

The riparian area remains substantially unaffected by the EfW proposal.

It is concluded then that 2.89 ha of River Flat Eucalypt Forest will be required to be cleared for the proposal. Clearing on these areas cannot be avoided. See the Flora and Fauna Report by Abel Ecology (17 April 201

➢ Proposal- Mitigation and Offsets

It is submitted by TNG that a demand for an "offset area" being some multiple of the area of land affected by development is neither:

(a) Practically feasible
nor
(b) Does it address the particular site specific issues.

Water supplied, flood prone wetland suitable for an offset RFEF in the Sydney metropolitan area cannot be easily procured.

➢ Status Summary

Affected Area

The affected River Flat Eucalypt covers an area of 2.89Ha

No existing Management Plan or any real Protection
The River Flat Eucalypt area and the Riparian corridor are currently unprotected by a Vegetation Management Plan.

Change in Environmental Conditions
There was regular and substantial water inflow from the 28 Ha quarry catchment area which sustained the River Flat eucalypts up until 2012.

This created flooded areas and a wetland habitat. It also led to substantial erosion which had not been mitigated by the previous owners of the land. The previous water flow has now ceased and the catchment for water to flow to the unnamed creek has reduced by 28 Ha.

There are already currently few if any trees along the length of the riparian corridor and it must be considered that the River Flat Eucalypt area's continued viability will be challenged by the reduction in water flow.

If a "do nothing" approach is taken the River Flat Eucalypt forest portion is likely to cease to exist.

- **Department of Planning. Determination for Adjoining Hanson Land to East of Site**

In 2013, Hanson made an application to The Department of Planning to modify their Concrete and Asphalt Facility, which adjoins the proposed TNG site to the East. This development required the removal of trees within the riparian zone, which continues West and into the South of the TNG site.

Hanson's report by Geoff Cunningham of Natural Resource Consultants concluded that the vegetation on site was *"highly degraded Swamp Oak and Red Gum community dominated by Casuarinas with a weedy understory, with low ecological value. The assessment concluded that the removal of 1.5ha of trees would have minimal impact on flora and fauna values."*[16]

In light of the above, the D.O.P. made the following decision:

"In its RTS, Hanson stated that the clearing of 1.5 ha of vegetation could not be avoided if it is to maximise development within the site. The strip of vegetation lies within the middle of the site for the proposed concrete recycling facility and retaining it would sterilise this area from development.

The department inspected the site and vegetation areas in August 2012 and considered that the assessment undertaken by Hanson was accurate, in that the vegetation is of low ecological value. This was primarily due to a lack of species diversity, large number of weeds and lack of connectivity to surrounding remnant vegetation. Further, management of vegetation in the WSEA has been handled strategically, with 268 ha of important habitat and vegetation communities zoned for 'environmental conservation'. In addition, the Hanson site is zoned 'general industrial' and has been used for industrial purposes for over 60 years. As such, the department considers that the removal of 1.5ha of degraded vegetation would have negligible ecological impacts and concludes that there are other more substantial and better quality vegetation communities that are currently protected within the WSEA.

[16] *Assessment Report - Section 75W Modification – Hanson Concrete and Asphalt Facility (06_0225 MOD 1)*, NSW Department of Planning and Infrastructure, 24 October 2013

Notwithstanding, the department advised Hanson that a better environmental outcome could be achieved for this site, through revegetation of available areas with Cumberland Plain Woodland.

In its response to submissions, Hanson proposed to:

- ***revegetate 1.85 ha of the site with Cumberland Plain Woodland (see Figure 5);***
- ***develop a management strategy for the enhancement of the riparian corridor vegetation in the south west corner. The riparian area would be fenced and segregated from the construction works and future operations, weeds removed and natural regeneration encouraged; and***
- ***maintain the riparian area in perpetuity through a public positive covenant.***

The department has included these commitments as recommended conditions in the modified Project Approval."

The area of land to which the Hanson modification approval applies is immediately adjacent to and connected with the vegetation on the Proponents land.
Fig 4

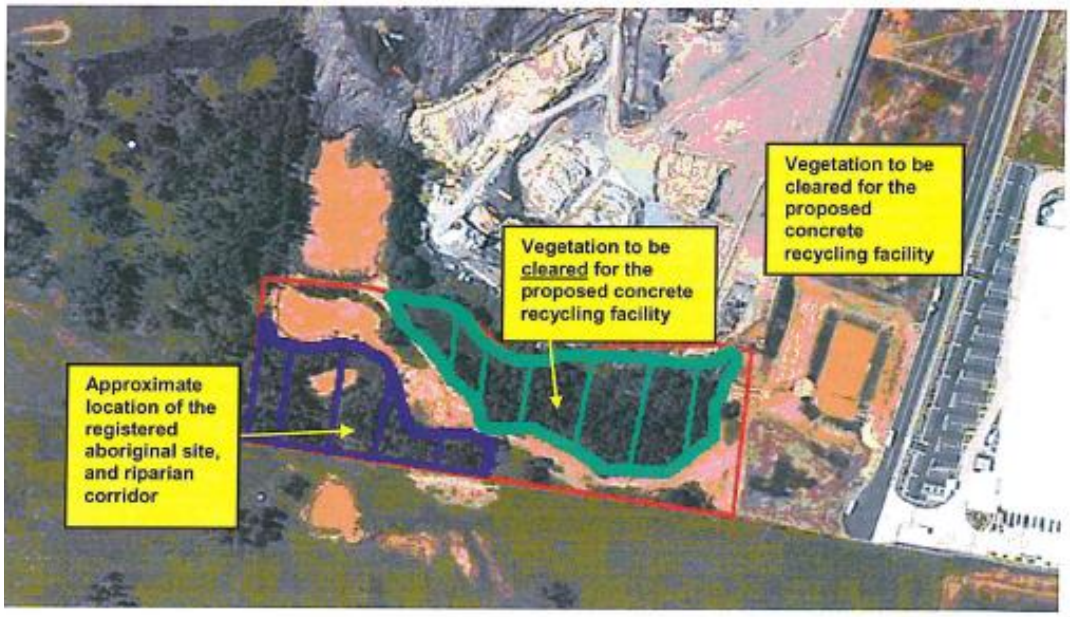


***Figure 4**: Existing vegetation and identified aboriginal site.*

In its response to the Department in support of the modification Hanson proposed to Remove 1.5 Ha of trees and then

- Revegetate 1.85Ha of its site with Cumberland Plain Woodland (next figure)
- Develop a management strategy for the enhancement of riparian corridor vegetation in the south west corner.
- The riparian area to be fenced and segregated from the construction works, weeds removed and natural vegetation regenerated and maintained and
- To maintain the riparian area in perpetuity through a public positive covenant,

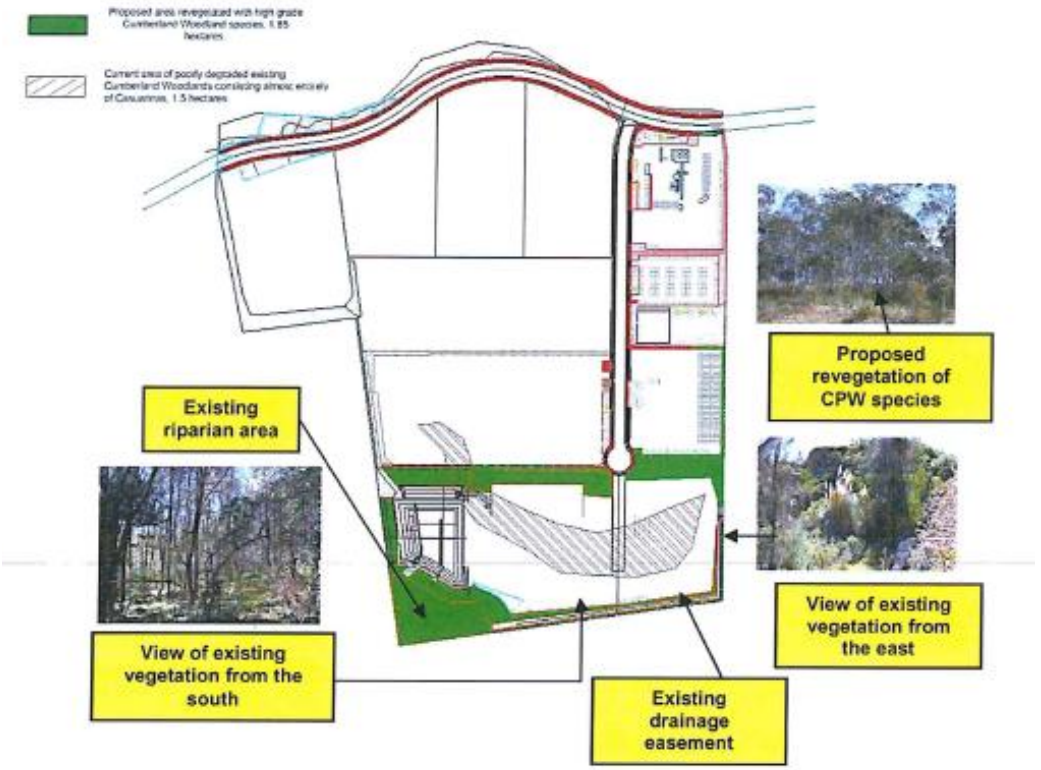


Figure 5: *Existing vegetation and proposed revegetation are (in green).*

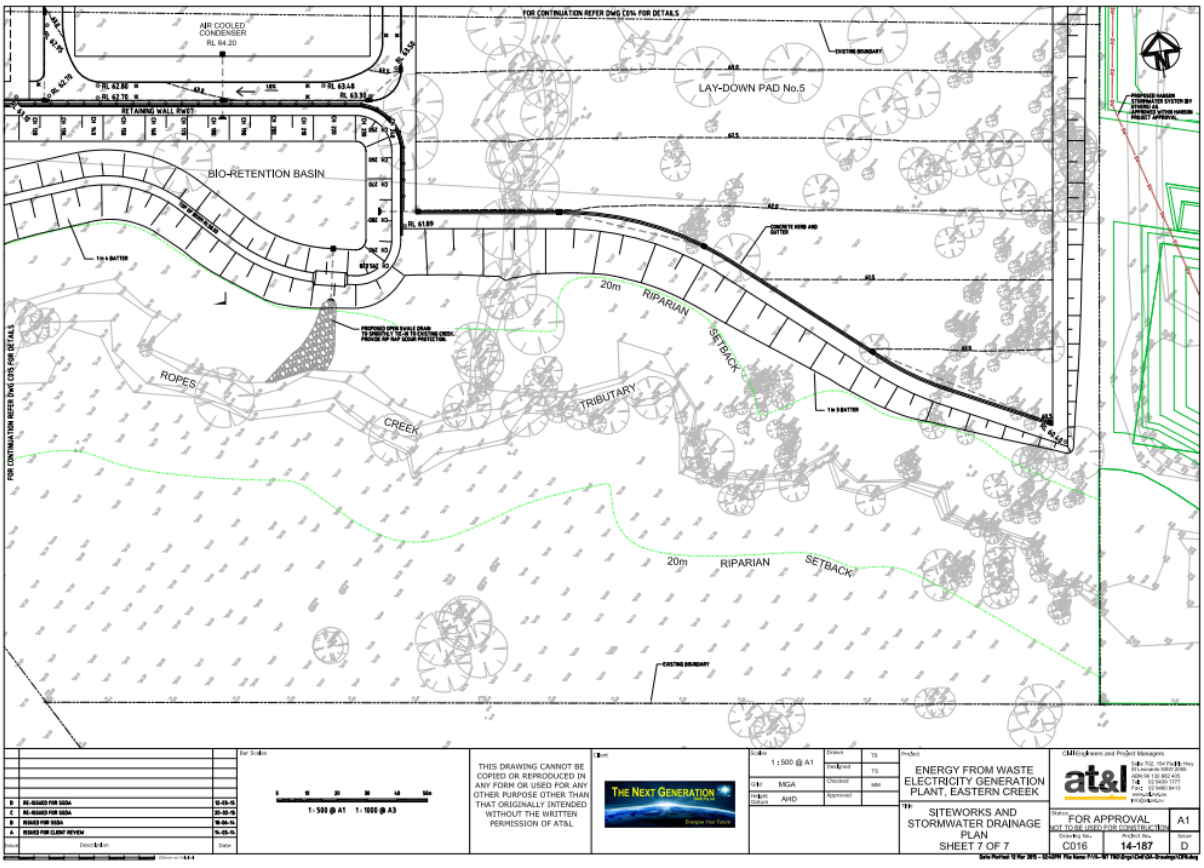
The Assessment Report concluded :…….the department has included these commitments as recommended conditions in the modified Project approval and considered that Hanson's proposed vegetation management strategies were appropriate for the vegetation to be retained on the site"[17]

[17] Ibid

➢ TNG Offsets on a Site rehabilitation approach.

There is approximately 27,000 m2 area within the riparian zone corridor which currently has few if any trees.

There is also an area south of the riparian corridor as shown on the following image.



Together the Riparian Zone and the southern portion total approximately 5.22Ha

Water Flow

There is no prospect of resuming water flow from Quarry pump outs however, with the imminent development of the Hanson site and the TNG site significant roofed and hardstand areas will be created.

The managed run off from these [with quality control] is likely to go some way to restoring a suitable environment for the rehabilitation and expansion of the River Flat Eucalypt Forest (RFEF) along the length of the Riparian Corridor.

If the whole of the area is then replanted as offsets for the removal of an area of River Flat Eucalypt Forest the vast majority of the revegetation/regeneration works will take place in a location ideally suited to this ecological community,

Detention basins

Instead of the regional detention basin proposed by Blacktown Council as shown in figure 15 on page 16 the proponent has proposed to construct a detention basin in the configuration generally as shown and dedicate it to Council as public infrastructure.

Council and the Proponent have also agreed in principle that a supplementary smaller detention basin will be constructed in the area south of the riparian corridor in order to manage run off from the Jacfin land.

Whilst there will be a slight reduction in size of the riparian corridor along the northern edge in the eastern side of the riparian corridor the reduction in the size of the riparian corridor is only small (approximately 3.3%).

Taken together the area south of the riparian corridor the corridor itself and the batters and in the bio-retention basins is approximately 6 ha (60,000 m2). [This more than twice the area of the threatened RFEF which is proposed to be removed.]

NSW DPI have commented the SEPP 59 Eastern Creek Precinct Plan (Stage 3) states:

"5.6.1(E) Development adjoining riparian corridors and trunk drainage channels (Including detention basins and wetlands) must include a 10m buffer zone consisting of

A landscaped open space area that can tolerate occasional flooding"

SEPP 59 paragraph 8.3.3, states:

"Riparian habitats should be retained and enhanced along the tributaries of Ropes Creek, Reedy Creek, Eskdale Creek (tributary of Eastern Creek), and Upper Angus Creek. Development must undertake the following measures to ensure that the riparian vegetation is suitable as habitat and as a movement corridor for native species:

(a) the native tree canopy must be retained and, where necessary, enhanced with the aim of developing a continuous canopy linking the corridors lands to the western of the Precinct with the Western Sydney Regional Parklands to the east;

(b) a continuous understorey link must be maintained and enhanced;

(c) weed control measures must be implemented to remove noxious and environmental weeds from the creek corridor and only native species shall be used in any landscaping; and

(d) Landscaping of passive recreation areas must complement the native landscapes."[18]

Currently the Riparian habitat is threatened by lack of water, there is no aquatic life, no continuous tree canopy the length of the creek and there is no native vegetation to create a wildlife corridor to Ropes creek.

This is not a situation therefore where a strong and vibrant eco system is threatened by development.

This is situation in which a threatened and potential unviable community has an opportunity to be revitalised.

[18] Paragraph 8.3.3, State Environment Planning Policy "SEPP 59" *Central Western Sydney Economic and Employment Area -Eastern Creek Precinct Plan*, Blacktown City Council, 14 December 2005

Rehabilitation – Offset Proposal

Given the varied assessments of the ecological value of the vegetation, the connectivity with the Hanson site, the lack of water supply and the decision taken in respect of the Hanson site the proponent proposes that it be permitted to remove the requisite trees to allow the project to proceed and proposes that, the area of Eucalypt River Flat Forest proposed to be removed will be offset through revegetation works using local indigenous species along Ropes Creek Tributary.

The Proponent is prepared to give the following undertakings as part of a VMP to be incorporated as part of the approval conditions.

- Habitat

The proponent has identified 7 habitat trees in both the CPW and RFEF areas.

Under the guidance of appropriate experts the Proponent will,

(a) Create an artificial landscaped habitat along the margins of the entire length of the Riparian corridor. Using hollow logs and fallen trees and rocks sourced on site;
(b) Provide at least 20 hollows and roosting/nesting boxes for native fauna; and
(c) Undertake further surveys of the Cumberland Land Snail and any other native fauna, prior to vegetation clearing and will relocate any snails and fauna found to other appropriate areas on site the retained vegetation along the Ropes Creek Tributary.

- Water flow and Standing water

Rather than have detention basin overflows which may lead to scouring and erosion proponent will:

a) Sculpt a series of terraces each side of the creek. These terraces will consist of grassed shallow swales into which the water may sequentially flow before it reached the core of the creek to begin the westward flow.

In this way the regularly wetted area with standing water suitable for RFEF tree growing will be maximised.

- Tree Numbers

The proponent proposes a 2 for 1 replacement with appropriate species tubestock for every tree removed.

The replantings to be with the requisite species and within the riparian corridor and adjacent designated areas along the Ropes Creek Tributary, and along the batters of the bio retention basin to the South of the TNG building.

Works shall be undertaken under supervision by an independent ecologist.

Review and ongoing management shall be in accordance with a VMP with tube stocks which fail within the first two years being replaced.

- Fencing

Will be installed prior to earthworks to protect the retained vegetation along Ropes Creek Tributary.[19]

- Erosion

Will be mitigated through the use of sediment fencing adjacent to the downslope edge of the development footprint.

- Stormwater quality

Water discharged from the site will meet or exceed the requirements of SEPP59 and thus this will mitigate against potential impact of poor water quality.

The bio-retention basin be planted with local indigenous wetland species to create wetland habitat.

[19] *Flora and Fauna Assessment report*, Able Ecology, 17 April 2015

- Weeds

Removal of weeds throughout the development footprint will mitigate against further weed spread in the Riparian corridor.

- Groundwater

No long term extraction and discharge of groundwater will occur after the construction phase. If saline conditions are discovered during excavation de watering [construction phase] this will be held in a detention basin for evaporation rather than discharge.

- Stormwater and salinity

Provision of a formal stormwater drainage system for the site from roads and sealed hardstand areas will result in a reduction in rainfall recharge and salinity along the Rope's Creek Tributary may actually decrease over the long term by implementation of the proposal.

- Measures to prevent contamination of stormwater include:

All EfW processes are to be undertaken within roofed buildings, limiting the potential for leaching of contaminants from incoming waste to process residue;

Design floors, internal drainage systems grated drains wash-down areas, tipping hall design floor and related infrastructure is designed to be contained within a closed system to allow collection and disposal.

Proposed development includes excavations of up to 15 meters below ground surface. CEMP Water Quality Management Sub-plan includes information regarding the proposed abstraction of groundwater for construction purposes.

- Plantings outside of the created wetland terraces

Will be Cumberland Plain Woodland (CPW) species on a ratio of 5 to 1 for every CPW tree removed.

Specific Issue responses.

Exhibition comment

"OEH's previous comments also raised the issue that the report should include data from the quadrats. It is noted that the quadrat data has now been provided and figures in the FFAR display the location of the quadrats, however the quadrats should be numbered in these figures so that the data can be related back to its location."

Response

The figures displaying the locations of the quadrats have been amended and are attached to this document as an amendment (Attachment A).

Exhibition comment

"OEH's previous comments noted there was no proposal to provide offsets. It is noted the amended report now proposes offsets, which include the regeneration or replanting of areas of Cumberland Plain Woodland and River Flat Eucalypt Forest. However, OEH considers the proposed offsets are inadequate, for the following reasons:

- Most of the areas to be replanted/regenerated are within the State Environmental Planning Policy 59 riparian boundary, which was already required to be protected. Therefore it is considered that the proposal is likely to result in a net loss of biodiversity over the site.

- A large proportion of the River Flat Eucalypt Forest offset area will be on batters around the building platform and bio-retention basin. The likelihood of recreating River Flat Eucalypt Forest on well drained batters, and maintaining them in the long term is very low, given this community naturally occurs on flat, damp or waterlogged floodplains.

- The offsets proposed in the FFAR calculate out as ratios of 1.7:1 for the River Flat Eucalypt Forest and 2:1 for Cumberland Plain Woodland. Adequate offsetting ratios for replanting should be much greater, in the order of 10:1 – 20:1, given the time required to recreate ecosystems and the risk of failure.

The areas proposed for regeneration and revegetation have no long term protection, such as appropriate zoning or covenants."

Response

The current proposal including offsets is being re-submitted.

Exhibition comment

"The FFAR recommends the preparation of a Vegetation Management Plan (VMP).

However, there is no commitment in the EIS to prepare such a document. Any conditions of consent should require the preparation of a VMP and implementation in perpetuity."

Response

"OEH supports the recommendations listed in section 11 of the FFAR, including the recommendation to undertake further surveys for the Cumberland Land Snail prior to vegetation clearing."

A further survey for the Cumberland Land Snail undertaken prior to the vegetation clearing can be included as a condition of consent.

Exhibition comment

"Section 11 of the FFAR includes species recommended to be used in revegetation. OEH also recommends that any plants used in replanting should be of local provenance."

Proponent response

A condition of consent can be included which states: "*Any revegetation works must use planting material of local provenance.*"

Exhibition comment

a. "The biodiversity offsets should be in addition to the existing protection and management requirements. The total area used within the offset calculations therefore does not satisfy this basic principle. This is highlighted by the fact that some of the proposed offset area (Figure 11) is within an area of waterfront land, includes vegetation previously mapped as River-flat Eucalypt Forest and includes the proposed bio-retention basin and batters located in the riparian habitat. It is therefore recommended that additional existing endangered ecological communities be retained within the development footprint and/or additional offsets be provided."

Response

There is no existing protection and management requirement either for the riparian corridor or the River Flat eucalypts beyond the stated objective in the Precinct Plan – refer response to Glennys James at page 29.

The changed environmental conditions since the cessation of quarrying and the pumping out of stormwater in 2012 has substantially altered the likelihood of viability of the River Flat Eucalypts in the south eastern Corner of the site. The general absence of trees from the area immediately adjacent to the Hanson boundary to the western boundary is testament to the current marginality of the riparian corridor.

Exhibition comment

c. "It is recommended that your Department confirm with NSW Office of Water that they agreed to the removal of the small section of the first order stream located to the east of the bio-retention basin (i.e. that runs in a north-south direction)."

Response

Abel Ecology has previously discussed the proposal with Gina Potter of the NSW Office of Water during the preparation of the most recent FFAR. In particular the removal of the northern drainage line was discussed and approved in email discussions on the 4 March 2015 (Attachment B).

Exhibition comment

d. *"A vegetation management plan for the riparian habitat corridor is to be Included as a condition of any consent granted."*

Response

NSW DPI have recommended a Vegetation Management Plan be prepared as part of their conditions of approval.

Exhibition comment

a. "The north-south main collector road should be designed to eliminate any potential impact on the riparian habitat corridor."

Response

The north-south main collector road is Archbold Road, it is beyond the boundaries the site. Archbold Road is the responsibility of the NSW Roads and Maritime Services.

Exhibition comment

"Clarification is required on the riparian corridor width required to be established along either side of the Ropes Creek Tributary at the site and whether the riparian corridor is meant to be consistent with SEPP59 – Eastern Creek Precinct Plan (Stage 3). The project as presented in the EIS is not consistent with the riparian corridor width outlined in the precinct plan. The project layout may need to be amended depending on the minimum width that is required to be established along the creek."

Response

The proposal is consistent with the SEPP 59.

On the eastern side some of the proposed works overlap the edge of the riparian corridor, the adjacent 10 m buffer and 40 m from the top of bank of Ropes Creek Tributary.

The size of the riparian corridor (excluding the basin) as defined by the riparian corridor polygon in Figure 12 (SEPP59) is approximately 48,000 m2. The batter overlaps approximately1600 m2 (approx. 3.3%) of the riparian corridor. Part of the works are proposed on the eastern side over the 10 m buffer and also occur within 40 m of the top of bank of the Ropes Creek Tributary.

The overlap is justified by the provision of a substantial bioremediation stormwater detention basin as shown on page 15 in lieu of the regional detention basin as had been proposed by Council ref fig 15 page 16