

3.13.4 Recommendations

There are opportunities within Area E to include a diverse number of passive and active recreational open space areas with accessible locations and flexibility for the changing needs of the population. The proximity of the Market Parade and Glen Ayr Drive open spaces presents the opportunity to form an open space linkage.

Although the lot yield and population for Area E has not been established, open space will be provided at approximately 4ha of open space per 1,000 head of population.

3.14 Services

3.14.1 Water supply

3.14.1.1 Bulk water Supply

Tweed Shire Council has a strategy for providing bulk water supply for up to 160,000 population in the Shire, with connections currently provided to approximately 65,000 population. Council's strategy includes options for raising Clarrie Hall Dam to increase storage capacity and the construction of an additional dam at Byrill Creek where Council has already purchased approximately 80% of the land required.

With recent legislative changes and drought events in the Shire, Tweed Shire Council is re-examining options for providing bulk water supply. A critical aim of this review is to ensure that bulk water supply for future population will be sustainable. Council has currently commissioned a study to prepare and integrated water cycle plan and it is likely that as a result of this study that estimates for population able to be supplied with bulk water will be revised down. This study will examine Council's current strategy for bulk water supply and investigate the impacts of introducing new measures for water conservation and control (D Oxenham, pers. comm., 2004).

This should not effect development with a short time horizon such as Area E but may have impacts on development in the Shire with a longer time horizon.

3.14.1.2 Supply to Area E

The water supplied in the vicinity of Area E comes from Clarrie Hall Dam via the Bray Park filtration plant through to the North Tumbulgum reservoir (Martin Findlater & Associates Pty Ltd, 1995).

A water conveyancing master plan prepared by GHD in 1999 based on developments scheduled to have taken place by 2011, which are in addition to the general increase in population, included a 4,000 EP development on Area E. This study indicated a number of capital works in the water supply system required to service the 2011 population but none specifically for Area E.

GHD's conveyancing study was conducted based on a peak day demand of 850L/person/day and an average day demand of 450L/person/day (GHD 1999).

The Duroby main is a 600 mm water main that traverses the northern boundary of Area E and is supplied from the North Tumbulgum reservoir (Alex Abedrabbo, pers. comm., 2003). In addition to the Duroby main there is a second 150mm (pers comm. Alex Abedrabbo, 26th June 2003) water main that runs along the southern boundary of Area E along Terranora Road, with two reservoirs at Rayles Lane (GHD 1999). The GHD analysis was undertaken assuming that the Duroby main would supply 3,000 EP while the Terranora Road main would supply 1,000 EP (GHD 1999).

The GHD report was based on trunk mains and although it shows that there is generally sufficient pressure to supply the future water demands in the distribution system after required capital works, it did not extend to the minor reticulation system. Hence, it did not identify areas of low or high pressure within Area E. There is no requirement for a reservoir on Area E identified in the GHD report (GHD 1999), however the Draft Interim Strategic Plan - Cobaki/Bilambil Heights/Terranora (TSC, 1995) stated that a site of sufficient size for a 5ML reservoir was required on site to service the area (TSC, 1995). The requirement for a reservoir has been confirmed by Council staff however it has been advised that only a 3 ML reservoir will be required within the site (Alexandra Abedrabbo, pers comm., June 2003).

Discussions with TSC have identified that the 600 mm Duroby main is the preferred water supply for Area E and a pipeline connecting the proposed 3ML reservoir with the 600mm Duroby main will be required (Alexandra Abedrabbo pers comm. June 2003). There is sufficient capacity from the North Tumbulgum reservoir to service Area E, provided a reservoir is constructed on site (Alex Abedrabbo pers comm. June 2003).

The North Tumbulgum reservoir is at approximately 115 m AHD. The recommended elevation within Area E for a reservoir is 130 m AHD. While the majority of the site is lower than the North Tumbulgum reservoir, a booster pump from the 600mm Duroby main to the reservoir may be required. A network analysis including main and booster pump (if required) sizing will therefore be necessary.

The footprint required for a 3 ML reservoir, which is approximately 30 m in diameter involve 1000m². The land required for the 3 ML reservoir must be provided by the proponents for rezoning of the land at no cost to the community (TSC, 1995).

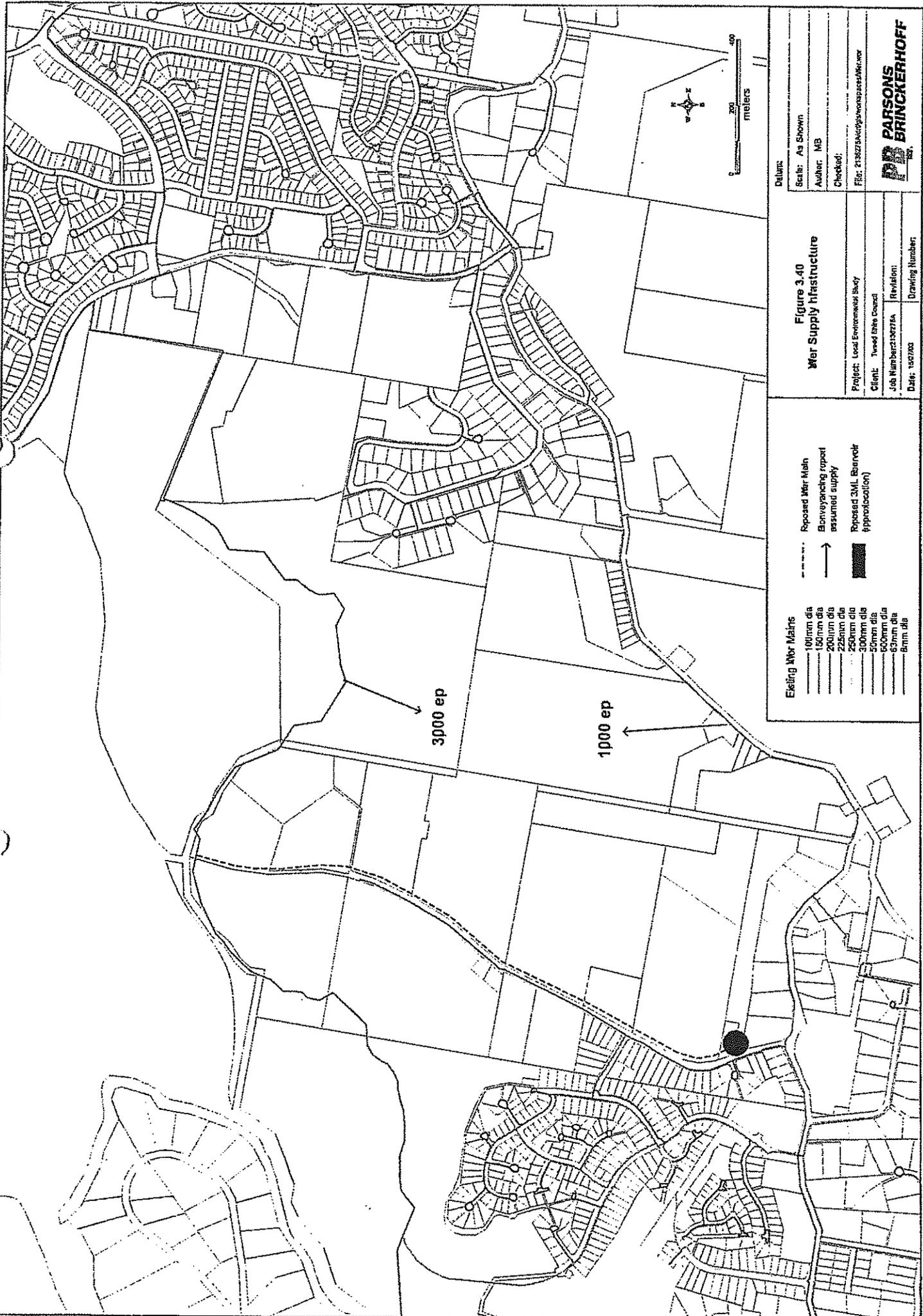
The footprint for the reservoir including some allowance for construction on slope and access requirements is 0.25 ha. The preferred location for this reservoir is in the vicinity of the intersection of Terranora Road and Mahers Lane. The approximate cost for a 3 ML reservoir is \$665,000 (Land & Water Conservation, 1999). This cost does not include land acquisition and power supply. Costs for the provision of the reservoir, pipeline and booster pumps will be required to be met by developers within Area E. Internal reticulation of water will also be required to be constructed by developers.

Developers will also be required to pay Tweed Shire Council's 2003/2004 developer charges for water of \$4110.00 per single equivalent tenement (TSC, 2003).

Figure 3.40 identifies water supply infrastructure.

3.14.2 Sewerage

The Banora Point Sewage Treatment Plant (STP) has an existing capacity to treat 62,500 equivalent persons (EP) with a license to discharge 50,000 EP. The current load on the Banora Point STP is approximately 45,000 EP.



Details:
 Scale: As Shown
 Author: MB
 Checked:
 File: 2152273\water\water\parsons\mbk.rvt

Figure 3.40
Water Supply Infrastructure
 Project: Local Environmental Study
 Client: Tweed Shire Council
 Job Number: 2152273
 Revision:
 Date: 15/07/02 Drawing Number:



Existing Water Mains
 100mm dia
 150mm dia
 200mm dia
 225mm dia
 250mm dia
 300mm dia
 350mm dia
 500mm dia
 63mm dia

Reposed Water Main
 Branching point
 assumed supply
 Reposed 3MIL Barcrete (approximation)

APPENDIX 12

- Preliminary Estimate of Project Development Costs (excl GST)

30th November 2010

Darryl Anderson Consulting
Suite 7, 8 Corporation Circuit
TWEED HEADS SOUTH NSW 2486

Attention: Mr Darryl Anderson

Dear Sirs

Re: **'ALTITUDE 1' TERRANORA**
CAPITAL INVESTMENT VALUE FOR AREA E + CLUBHOUSE

We have reviewed the documentation and detail below the estimate of capital investment value:

1. Earthworks		\$ 5,300,000.00
2. Internal Work		\$ 13,315,000.00
2.1 Road	\$ 4,500,000	
2.2 Stormwater Drainage	\$ 3,770,000	
2.3 Sewer Drainage	\$ 1,400,000	
2.4 Water Supply	\$ 1,300,000	
2.5 Landscaping	\$ 750,000	
2.6 Additional Reticulation, Telstra & Lighting	\$ 1,595,000	
3. External Work		\$ 1,990,000.00
3.1 Intersection Works	\$ 450,000	
3.2 Pump Station & Rising Main	\$ 160,000	
3.3 Trunk water Main	\$ 330,000	
3.4 Stormwater Treatment	\$ 600,000	
3.6 Major Culverts	\$ 450,000	
4. Clubhouse		\$ 1,170,000.00
4.1 Construction	\$ 550,000	
4.2 Fitout	\$ 20,000	
4.3 Facilities & Fitout	\$ 600,000	
5. Sales Office		\$ 347,684.00
5.1 Construction	\$ 347,684	
	Subtotal	\$ 22,122,684.00
	Plus G.S.T.	\$ 2,212,268.40
	TOTAL	\$ 24,334,952.40

The above cost includes temporary works, diversions, construction costs inclusive of labour, personnel and long service levies.

If you require any further clarification, please contact the writer.

Yours faithfully
GMP MANAGEMENT

IAN W. PERT (Director)

APPENDIX 13

- Original Director General Requirements (DGR)



Planning

Contact: Tom Fitzgerald
Phone: (02) 9228 6521
Fax: (02) 9228 6540
Email: thomas.fitzgerald@planning.nsw.gov.au

Our ref: 09_0166
File ref: S09/00194

Darryl Anderson
Director
Darryl Anderson Consulting Pty Ltd
Suite 7/8 Corporation Circuit
TWEED HEADS SOUTH NSW 2486

Dear Mr Anderson

09_0166 Altitude 1 Development at Terranora: Director-General's Requirements for Environmental Assessment

The Department has received your application for a proposed subdivision of land into approximately 300-lots (MP09_0166) at the southern end of Fraser Drive, Terranora in the Tweed Local Government Area.

The Director-General's Environmental Assessment Requirements (DGRs) for the environmental assessment of the project application are attached to this correspondence at **Attachment 1**. These requirements have been prepared in consultation with the relevant government agencies including Council.

Attachment 2 lists the relevant plans and documents which will be required upon submission of your proposal. A list of some relevant technical and policy guidelines which may assist in the preparation of the Environmental Assessment (EA) are attached at **Attachment 3**.

It should be noted that the DGRs have been prepared based on the information provided to date. Under section 75F(3) of the *Environmental Planning and Assessment Act 1979* (the Act), the Director-General may alter or supplement these requirements if necessary and in light of any additional information that may be provided prior to the proponent seeking approval for the project.

If the EA is not exhibited within 2 years of the date of issue of these requirements, you should consult further with the Director-General in relation to the preparation of the EA.

Please contact the Department at least two weeks before you propose to submit the EA for the project to determine the:

- fees applicable to the application. Note that you will need to provide a signed statement from a Quantity Surveyor to verify the capital investment value (CIV) of the project;
- consultation and public exhibition arrangements that will apply; and
- number and format (hard-copy or electronic versions) of the EA that will be required.

Prior to exhibiting the EA, the Department will review the document to determine if it adequately addresses the DGRs. The Department may consult with other relevant government agencies in making this decision. If the Director-General considers that the EA does not adequately address the DGRs, the Director-General may require you to revise the EA. Following this review period, the EA will be made publicly available for a minimum period of 30 days.

If your proposal includes any actions that could have a significant impact on matters of National Environmental Significance (NES), it will require an additional approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This approval is in addition to any approvals required under NSW legislation. It is your responsibility to contact the Commonwealth Department of the Environment, Water, Heritage and the Arts in Canberra (6274 1111 or www.environment.gov.au) to determine if the proposal is likely to have a significant impact on matters of NES and would require an approval under the EPBC Act. The Commonwealth Government has accredited the NSW environmental assessment process for assessing any impacts on matters of NES. As a result, if it is determined that an approval is required under the EPBC Act, please contact the Department immediately as supplementary DGRs will need to be issued.

Please note that under section 75U of the Act, Part 3A applications do not require certain permits/approvals required under other legislation. These matters are considered as part of the Part 3A assessment process. For example, Section 87 permits and Section 90 consents under the *National Parks and Wildlife Act 1974* are not required for Part 3A applications. Section 75U applies from the date of issue of the DGRs. Notwithstanding, the Department still requires an equivalent level of information within the EA as would ordinarily be required for the issue of any such permit/approval to enable an assessment of the relevant works. Please notify the Department should any sub-surface testing be required during the preparation of your EA.

Copies of responses from government agencies to the Department's request for key issues and assessment requirements are enclosed at **Attachment 4**. The response from the Northern Rivers Catchment Management Authority will be forwarded by Friday 27 November 2009.

If you have any queries regarding these requirements, please contact Tom FitzGerald using the contact details provided above.

Yours sincerely



Alan Bright
A/Director
Regional Projects
as delegate for the Director General

23/11/09

Attachment 1
Director-General's Environmental Assessment Requirements
 Schedule of Requirements, Definitions, Assessment Process

Application number
09_0166
Project
300-lot residential at the southern end of Fraser Drive, Terranora (known as Altitude 1), and provision of infrastructure and dedication of open space areas. Key elements of the project include: <ul style="list-style-type: none"> • opening and construction of all proposed roads; • construction of a temporary intersection to Fraser Drive; • provision of underground services (water, sewer, stormwater, power and telephone); and • bulk earthworks to establish final landforms.
Location
Lot 1 DP 304649, Lot 1 DP 175235, Lot 1 DP 781687, Lot 2 DP 778727, Lot 1 DP 781697, Lot 1 DP 169490, and Lots 40 and 43 DP 254416 at the southern end of Fraser Drive, Terranora, Tweed LGA
Proponent
Metricon Qld Pty Ltd
Date issued
General requirements
<p>The Environmental Assessment (EA) for the Project Application must include:</p> <ol style="list-style-type: none"> 1. An executive summary; 2. A detailed description of the proposal; 3. A thorough site analysis including constraints mapping and description of the existing environment; 4. Consideration of any relevant statutory and non-statutory provisions and identification of any non-compliances with such provisions, in particular relevant provisions arising from environmental planning instruments, Regional Strategies (including draft Regional Strategies) and Development Control Plans; 5. Consideration of the consistency of the project with the objects of the <i>Environmental Planning and Assessment Act 1979</i>; 6. Consideration of impacts, if any, on matters of National Environmental Significance under the <i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>; 7. An assessment of the potential impacts of the project and a draft Statement of Commitments, including a description of mitigation and management options that will be used to prevent, control, abate or mitigate identified environmental impacts associated with the project and to reduce risks to human health and prevent the degradation of the environment. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented; 8. The plans and documents outlined in Attachment 2; 9. A signed statement from the author of the Environmental Assessment certifying that the information contained in the report is neither false nor misleading; and 10. An assessment of the key issues specified below and a table outlining where in the EA these key

issues have been addressed.

Key Issues

The EA must address the following key issues:

1. Strategic Planning

- 1.1 Justify the proposal with reference to relevant local, regional and State planning strategies. In particular provide justification for any inconsistencies with these planning strategies.
- 1.2 Provide an assessment of how the proposal aligns with development of the Terranora E urban release area as a whole.

2. Subdivision Design, Layout and Desired Future Character

- 2.1 Provide an assessment of the Proposal against the provisions of the *Tweed Local Environment Plan 2000* (TLEP), in particular Clause 53D of the TLEP relating to the Terranora E urban release area.
- 2.2 Demonstrate the consistency of the proposed subdivision design and layout with the *North Coast Urban Design Guidelines*, *Coastal Design Guidelines for NSW*, *NSW Coastal Policy 1997* and *SEPP 71 – Coastal Protection*.
- 2.3 Identify the type of subdivision proposed across the site i.e. community title, Torrens, strata. A draft community management statement should be provided if any community title is proposed.
- 2.4 Demonstrate that the proposal provides for the establishment of a suitable neighbourhood character for the area. Provide details of potential building envelopes, built form, potential housing typologies, aesthetics, energy and water efficiency, public safety, any proposed design quality controls and the means for implementing them, and identify opportunities to orientate allotment configurations and shapes to maximise solar access, aspect and views.
- 2.5 Demonstrate that slope sensitive building design initiatives have been considered in the subdivision design to ensure there is a suitable access gradient and minimal cut and fill.
- 2.6 Provide details of any staging (for the subject site and the overall Terranora E area) that demonstrates the lots will be released in an orderly and coordinated manner, including the release of allotments for sale, the installation of services and infrastructure.
- 2.7 Outline the long-term management and maintenance of any areas of open space or conservation including ownership and control, management and maintenance funding, public access, revegetation and rehabilitation works and bushfire management.
- 2.8 Investigate the opportunity for passive and active recreational open spaces.
- 2.9 Assess the potential for land use conflicts between with neighbouring property and provide suitable buffers (or other mitigation measures) where appropriate to mitigate these impacts. This is particularly relevant where development is proposed to adjoin or be close to land that is used for agriculture.

3. Visual Impact

- 3.1 Demonstrate that the subdivision design and layout of the dwellings is able to preserve the scenic values of the area, in particular the integrity of the ridgelines, and the views and environmental qualities of Terranora Broadwater and the adjacent SEPP 14 Wetland.

4. Infrastructure Provision

- 4.1 Identify existing capacity of, and requirements for the provision of all appropriate services and infrastructure, including: sewerage, water, stormwater, electricity, waste disposal, telecommunications, gas, open space, roads and transport, pedestrian and cycle-friendly infrastructure, community facilities and social infrastructure, and State Infrastructure. Undertake consultation with relevant agencies and provide evidence of this consultation. Identify and describe staging, if any, of proposed infrastructure works.
- 4.2 Provide an assessment of how the provision for services and infrastructure required at both a State and local level will be managed (refer to submissions from agencies at **Attachment 4**). Consult with relevant agencies and include an outline of the program of works for such services and infrastructure, and provide estimates of cost, timing of works, and sources of funding.

5. Transport and Accessibility

- 5.1 Prepare a transport and accessibility impact study in accordance with Table 2.1 of the RTA's *Guide to Traffic Generating Developments*.

Alternative Modes of Transport

- 5.2 Address how the Proposal is consistent with the objectives and principles of the NSW Government's *Integrating Land Use and Transport Policy* package and the *NSW Planning Guidelines for Walking and Cycling*.
- 5.3 Identify measures to manage travel demand and increase the use of public and non-car transport modes.
- 5.4 Outline any proposed cycleways and ensure connectivity with existing cycleways in the area, especially Fraser Drive.
- 5.5 Identify the likely transport infrastructure and recurrent servicing costs for Government in proceeding with the development.
- 5.6 It is noted the subject site is located outside the Tweed Heads bus contract region and is not serviced by public transport. Residential developments outside of the bus contract regions are generally only provided with local school bus services. Boundaries of bus contract regions are subject to review every five years following the census. Please contact Mr. Phil Sullivan, Manager – Northern Region on (02) 4928 8701 or email phil.sullivan@transport.nsw.gov.au regarding the process for potential allocation of bus services to the proposal.

Traffic and Roads

- 5.7 Demonstrate that the proposed road layout can achieve a high degree of pedestrian and cycle access, and can support future bus access in accordance with the NSWTI bus planning guidelines for regional areas. Also identify and address how staging of the development will impact on accessibility across different transport modes.
- 5.8 Demonstrate that the proposed internal road layout maximises connectivity within the development, to the broader Terranora Area E urban release area, and to the surrounding environment.
- 5.9 Analyse the impacts of an expected increase in traffic on the existing road network surrounding the site, and provide measures to ensure that traffic impacts on the existing and future local road network are minimised. Address how the proposed temporary access to Fraser Drive will affect the amenity of local roads
- 5.10 Provide an assessment of the feasibility and environmental impacts of the proposed temporary access to Fraser Drive. Including:
- Provide justification for the proposed location and design of the temporary access and its suitability;
 - identify the expected life of the temporary access and any staging of works and/or construction of the permanent road alignment;
 - identify how the temporary intersection is proposed to be controlled;
 - provide an assessment of the safety and capability of the proposed temporary intersection; and
 - address any potential adverse environmental effects (including noise, amenity etc...) for adjacent landowners.
- 5.11 Provide an assessment of how the future permanent alignment of Broadwater Parkway and Fraser Drive is anticipated to work in terms of timing, payment and constraints (refer to Tweed Shire Council's comments on Infrastructure, Roads and Access in **Attachment 4**).
- 5.12 Ensure environmental objectives are not significantly compromised by the design and layout of the proposed road network, including the proposed Broadwater Parkway's interaction with the SEPP 14 wetland.
- 5.13 Investigate the opportunity for road alignments to follow existing land contours. The objective is to minimise cut and fill, preserve the integrity of the existing topography, and take advantage of existing overland drainage opportunities.

Public Access

- 5.14 Ensure public access to and along the adjacent SEPP 14 wetland and Terranora Broadwater is not compromised, and provide new opportunities for controlled public access and disabled access where appropriate.

6. Hazard Management and Mitigation

Contamination

6.1	Identify any deep soil, surface water and groundwater contamination on site and assess appropriate mitigation measures and monitoring program necessary in accordance with the provisions of <i>SEPP 55 – Remediation of Land</i> .
<i>Acid Sulfate Soils</i>	
6.2	Identify the presence and extent of acid sulfate soils (ASS) and potential acid sulphate soils (PASS) on the site and, where relevant, provide appropriate mitigation measures for the development's construction and operational stages. Identify the need for an Acid Sulfate Management Plan and prepare if necessary (prepared in accordance with ASSMAC Guidelines).
<i>Bushfire</i>	
6.3	Address the requirements of <i>Planning for Bush Fire Protection 2006</i> (RFS) and ensure that any proposed Asset Protection Zones do not adversely effect environmental objectives (e.g. buffers) and provision is made for their appropriate management into the future.
<i>Geotechnical</i>	
6.4	Provide an updated assessment of any geotechnical limitations that may occur on the site and if necessary, appropriate design considerations that address these limitations.
<i>Flooding</i>	
6.5	Provide an updated assessment of any flood risk on site (for the full range of floods including events greater than the design flood, up to probable maximum flood; and from coastal inundation, catchment based flooding or a combination of the two) and having consideration of any relevant provisions of the <i>NSW Floodplain Development Manual 2005</i> , the <i>NSW Sea Level Rise Policy Statement</i> (DECCW, 2009), the <i>Draft Flood Risk Management Guide: Incorporating Sea Level Rise Benchmarks in Flood Risk Assessments</i> (DECCW, 2009), and the <i>Draft NSW Coastal Planning Guideline: Adapting to Sea Level Rise</i> (DoP, 2009). The assessment should determine: the flood hazard in the area; address the impact of flooding on the proposed development, address the impact of the development (including filling) on flood behaviour of the site and adjacent lands; and address adequate egress and safety in a flood event.
6.6	Assess the potential impacts of sea level rise and increases in rainfall intensity on the flood regime of the site and adjacent lands.
7. Earthworks	
7.1	Provide a detailed site survey showing existing and proposed contours, levels and quantities of cut and fill earthworks, and provide details of the source of fill including types of material and soils.
7.2	Outline all erosion and sediment control measures proposed during works, and provide for the appropriate management and discharge of stormwater onsite. Ensure riparian areas, waterways, and the SEPP 14 wetland adjacent to the site are not adversely affected by the proposed development.
8. Stormwater	
8.1	Address stormwater quality and quantity, including lawful points of discharge. A comprehensive stormwater management plan should be provided for the whole site, in conjunction with the wider Area E and contributing external catchments. This plan must provide for the appropriate management of stormwater and ensure there are no adverse environmental impacts as a result of the proposal. The plan must also include a conceptual design layout for the preferred stormwater treatment train showing location, size and key functional elements of each part of the system and identify the anticipated effect of each element.
8.2	Address and outline measures for Integrated Water Cycle Management based on Water Sensitive Urban Design principles which addresses impacts on the surrounding environment, drainage and water quality and quantity controls for the catchment, so that there is no water pollution resulting from the development.
8.3	Provide an assessment of the proposal against the provisions of the following: <ul style="list-style-type: none"> • the <i>Tweed Urban Stormwater Quality Management Plan 2000</i>; • Tweed Shire Council's <i>Terranora Broadwater Management Plan 2004</i>; and • The Draft Cobaki and Terranora Broadwater Catchment Management Plan (currently

on exhibition).

9. Water Supply

- 9.1 Address the issue of provision of a sustainable water supply for the development site. Ensure there is adequate water supply for the development. If an alternative other than town water supply is proposed then provide an assessment of the water requirements. The assessment should include Water Management Plans detailing how a sustainable and efficient water supply can be sourced and implemented with minimal reliance on accessing valuable surface and groundwater resources.

10. Surface water

- 10.1 In accordance with the correspondence from the NSW Office of Water and DECCW (refer to Attachment 4), provide an assessment of any impacts on surface water as a result of the development, including any impacts on quantity, quality and the hydrological regime.
- 10.2 Provide an assessment of measures to ensure the following water quality objectives for the proposal are met:
- There is no pollution of waters during the construction and operational phases;
 - There is no inconsistency with any Statement of Joint Intent established by the Healthy Rivers Commission; and
 - Ensure the proposal is not inconsistent with the relevant River Flow Objectives and Water Quality Objectives for the area.
- 10.3 Provide an assessment of the proposal against the provisions of the draft *Tweed River Area Unregulated and Alluvial Water Sources Water Sharing Plan*, if relevant.

Water Management Structures/ Dams

- 10.4 Identify any water management structures on site (dams, sediment basins etc) and provide an assessment of their management as part of the proposal (refer to the letter from NSW Office of Water in Attachment 4 for further details).

Riparian Areas

- 10.5 Identify all riparian areas on site including any creeks, wetlands, drainage lines etc.. and outline the intended management, protection and restoration of these areas, including monitoring and mitigation measures. The protection and restoration of riparian zones will maintain and improve the ecological functions of watercourses and forms a key part of ensuring appropriate water quality is achieved. If any works are proposed within the riparian areas (such as bridges, culverts, stormwater outlets, walking tracks etc...) then this should be identified.

In addition to sections 10.1 and 10.3 above, provide the following:

- Identify the sources of surface water.
- Details of stream order (using the Strahler System).
- Details of any proposed surface water extraction, including purpose, location of existing pumps, dams, diversions, cuttings and levees.
- Detailed description of any proposed development or diversion works including all construction, clearing, draining, excavation and filling.
- An evaluation of the proposed methods of excavation, construction and material placement.
- A detailed description of all potential environmental impacts of any proposed development in terms of vegetation, sediment movement, water quality and hydraulic regime.
- A description of the design features and measures to be incorporated into any proposed development to guard against long term actual and potential environmental disturbances, particularly in respect of maintaining the natural hydrological regime and sediment movement patterns and the identification of riparian buffers. (See note below)
- Details of the impact on water quality and remedial measures proposed to address any possible adverse effects.

Note: Recommended Core Riparian Zones:

- Minimum of 10m for any intermittently flowing 1st order watercourse
- 20m for any permanently flowing 1st order or any 2nd order watercourse

- 20m-40m (merit based assessment) for any 3rd order or greater watercourse.

11. Groundwater

- 11.1 In accordance with the correspondence from the NSW Office of Water (refer to Attachment 4), provide an assessment of groundwater issues associated with the development, the location of the water table, the nature and profile of the groundwater regime, if any works will intercept the water table, any potential contamination issues, any proposed use of groundwater resources, any associated impacts on registered bores, any works that may result in increased groundwater discharge, impact on the stability of potential acid sulfate soils in the vicinity, or affect groundwater dependent native vegetation, and any impacts on the quantity and quality of groundwater.

12. Heritage and Archaeology

- 12.1 Identify whether the site has significance to Aboriginal cultural heritage and identify appropriate measures to preserve any significance. The assessment must address the information and consultation requirements of the draft *Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation* (DEC 2005) and the *Part 3A EP & A Act Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation* (Department of Planning and DEC, 2007).
- 12.2 Carry out a detailed heritage assessment by a suitably qualified consultant that includes consultation undertaken with the relevant Local Aboriginal Land Council/s and Aboriginal community groups. The assessment should include:
- Up to date surveys by suitably qualified archaeological consultants and include evidence of consultation with traditional Aboriginal custodians;
 - Identification of the nature and extent of impacts on Aboriginal Cultural Heritage values across the project area. If impacts are proposed as part of the final development, clear justification for such impacts should be provided;
 - A description of the actions that will be taken to avoid or mitigate impacts of the project on Aboriginal Cultural Heritage values. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented;
 - An assessment of the archaeological and Aboriginal significance of the site's Aboriginal Cultural Heritage values. If impacts on Aboriginal cultural values are proposed as part of the final development, an assessment of the regional significance of the values to be impacted, the extent to which these values are protected elsewhere in the landscape and consideration of the proposed impacts in the context of 'intergeneration equity' should be undertaken; and
 - Evidence that effective community consultation with Aboriginal communities has been undertaken in assessing impacts, developing options and making final recommendations. DECCW supports broad-based Aboriginal community consultation and as a guide the 'Interim Community Consultation Requirements for Applicants' provides a useful model to follow.
- 12.3 Identify any items of non-indigenous heritage significance and, where relevant, provide measures for the conservation of such items.

13. Flora and Fauna

- 13.1 Provide a up-to-date assessment of any potential direct and indirect impacts of the development on flora and fauna, taking into consideration impacts on any threatened species, populations, ecological communities and/or critical habitat and any relevant recovery plan in accordance with the draft *Guideline for Threatened Species Assessment (Part 3A)* and *Threatened Species Assessment Guideline: The Assessment of Significance*. Describe the actions that will be taken to avoid or mitigate impacts or compensate unavoidable impacts, where relevant.
- 13.2 A field survey of the site should be conducted as part of this assessment in accordance with DECCW's *Threatened Biodiversity Survey and Assessment Guidelines*.
- 13.3 Likely impacts on threatened species and their habitat need to be assessed, evaluated and reported on. The assessment should specifically report on the the guiding principles for threatened species assessment at section 1.2 of the draft *Guideline for Threatened Species Assessment (Part 3A)*. Identify measures to protect remaining native fauna and flora on the site where appropriate.

13.4	Provide an assessment of the proposal that ensures (if possible) adverse impacts on identified areas of ecological significance are avoided or mitigated (including the adjacent SEPP14 wetland, Endangered Ecological Communities, threatened species habitat etc...)
13.5	Outline measures for the conservation of existing wildlife corridor values and/or connective importance of any vegetation on the subject land. Address measures to protect and manage the riparian corridor and adjacent aquatic habitats.
13.6	Provide appropriate buffers and habitat protection measures for known significant ecological habitats as identified in the constraints map contained in Figure 3.4 of the <i>Tweed Area E Local Environment Study</i> (Parsons Brinckerhoff, 2004).
13.7	Assess the need for artificial wetlands to assist in the rehabilitation of the adjacent SEPP 14 Wetland and managing the overall water quality of the development.
13.8	Provide a detailed Vegetation Management Plan (VMP) for that area of the site zoned 7(a) Environmental Protection (Wetlands and Littoral Rainforests) and for future dedication to the Tweed Shire Council. As a minimum the VMP should incorporate scoped and appropriate performance requirements for any habitat/wetland rehabilitation works (e.g. in relation to the diversity and density of plantings, seedling survival and growth rates, cumulative crown coverage, and the abundance and diversity of weed species) referenced to appropriate benchmarks (such as comparable, undisturbed vegetation communities).
14. Biting Insects	
14.1	Address the potential for an increase in the impact of biting insects on the amenity of the area, in particular salt marsh mosquitoes. The assessment should address impacts on future residents, and potential increases in mosquito borne disease. Undertake consultation with Council and the NSW Area Health Authority and provide for measures to control and ameliorate their effects, including measures to minimise their breeding habitat. Prepare a biting insect management plan if the problems are considered severe.
14.2	Provide evidence of consultation with Tweed Shire Council regarding a recently submitted project entitled 'Fish Move In, Mosquitoes Move Out', and discuss the implications of this project for the development within the assessment.
15. Noise	
15.1	Assess any potential noise impacts resulting from, and impacting on, the development. In particular the potential impacts from road traffic noise for future residents. Outline appropriate mitigation measures to mitigate noise impacts.
16. Socio-economic Impacts	
16.1	Provide a social impact assessment for the development. Address the social and economic context of the development in terms of infrastructure requirements, public transport, community services and facilities (including schools and medical services). Identify the need for any additional and/or augmentation of social and community infrastructure and resources. In particular explore the potential and methods for a new educational facility to be provided for.
16.2	Identify opportunities to incorporate affordable housing into the proposal.
16.3	Provide an assessment of the future potential cumulative impacts of the development on the LPMA's Tweed Coast Regional Crown Reserve No. 1012191 that encompasses Terranora Broadwater to the north-west and the Tweed River to the south. In particular address the effects the future residential population may have on the Reserve through the likelihood of increased visitation and recreational use (refer to the LPMA letter in Attachment 4)
17. Planning Agreements and/or Developer Contributions	
17.1	Address and provide details on the likely scope of any planning agreement and/or developer contributions with Council and/or any Government agencies.
17.2	Provide an assessment of any land proposed to be dedicated to public authorities and outline how this will be managed and funded into the future.
Consultation	
You should undertake an appropriate and justified level of consultation with the following agencies during the preparation of the environmental assessment:	
(a) <i>Agencies or other authorities:</i>	
<ul style="list-style-type: none"> • Tweed Shire Council; 	

- Department of Environment, Climate Change and Water;
- NSW Office of Water;
- Department of Housing;
- Northern Rivers Catchment Management Authority;
- NSW Rural Fire Service;
- Land and Property Management Authority – especially in relation to Crown roads and owners consent issues;
- Department of Transport and Infrastructure;
- Roads and Traffic Authority;
- Department of Health;
- Department of Education and Training.

(b) *Public:*

Document all community consultation undertaken to date or discuss the proposed strategy for undertaking community consultation. This should include any contingencies for addressing any issues arising from the community consultation and an effective communications strategy.

The consultation process and the issues raised should be described in the Environmental Assessment.

Deemed Refusal Period

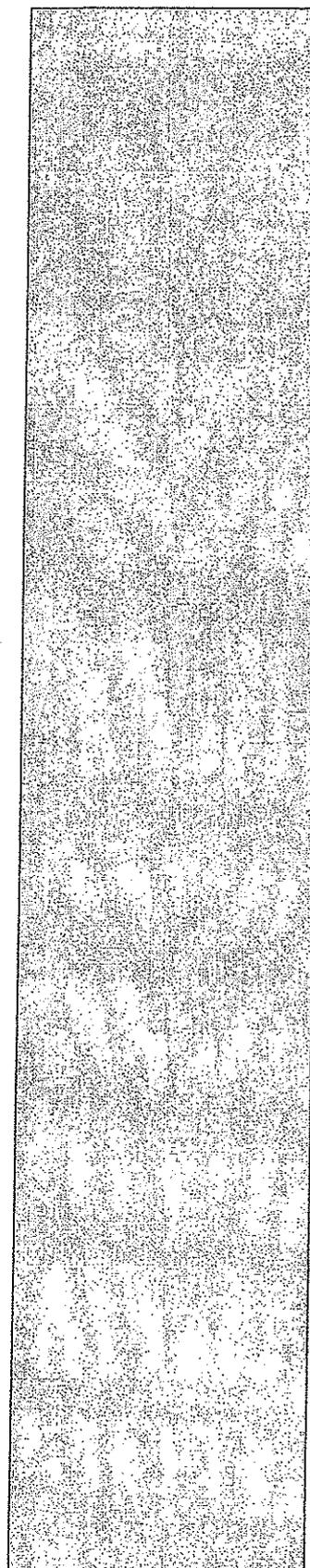
60 days

Attachment 2 Plans and Documents to accompany the Application

Plans and Documents of the development

The following plans, architectural drawings and diagrams of your proposal as well as the relevant documents will be required to be submitted for your application:

1. The **existing site survey plan** is to be drawn to 1:500 scale (or other appropriate scale) and show:
 - the location of the land, the measurements of the boundaries of the land, the size of the land and north point;
 - the existing levels of the land in relation to buildings and roads;
 - location and height of existing structures on the site; and
 - location and height of adjacent buildings and private open space.
2. An **aerial photograph** of the subject site with the site boundary superimposed.
3. A **Site Analysis Plan** must be provided which identifies existing natural elements of the site (including all hazards and constraints), existing vegetation, property dimensions, footpath crossing levels and alignments, existing pedestrian and vehicular access points and other facilities, slope and topography, natural features such as watercourses, rock outcrops, utility services, boundaries, orientation, view corridors and all structures on neighbouring properties where relevant to the application (including windows, driveways etc.).
4. A **locality/context plan** drawn to 1:500 scale (or other appropriate scale) should be submitted indicating:
 - significant local features such as parks, community facilities and open space, water courses and heritage items;
 - the location and uses of existing buildings, shopping and employment areas;
 - traffic and road patterns, pedestrian routes and public transport nodes; and
 - The existing site plan and locality plan should be supported by a written explanation of the local and site constraints and opportunities revealed through the above documentation.
5. A **zoning plan** must be provided which shows the existing zoning overlaid with the proposed development layout. An extract of the land use table or relevant clauses from the subject LEP is required.
6. **Subdivision plans** are to show the following:-
 - The location, boundary dimensions, site area and north point of the land, and names of roads fronting the land;
 - Title showing the description of the land with lot and DP numbers etc;
 - Existing and proposed subdivision pattern including all measurements and sites areas of existing and proposed allotments;
 - Location and details of all proposed roads and footpaths;
 - Location of all structures proposed and retained on site;
 - Location and details of access points to the subdivision;
 - Existing vegetation on the land and vegetation to be retained;
 - Location of services and infrastructure, and proposed methods of draining the land;

	<ul style="list-style-type: none"> • Any easements, covenants or other restrictions either existing or proposed on the site; • Type of subdivision proposed (Torrens, strata and/or community title). • Cross sections of roads, including gradients, widths, road names, footpaths etc. • Existing and proposed finished levels in relation to roads, footpaths and structures; • Riparian zones, including any creeks, wetlands, drainage lines etc. • Landforming plan showing all areas of cut and fill, including pre and post development levels and associated drainage and retaining structures. <p>7. Stormwater Management Plan - illustrating the concept for stormwater management from the site and must include details of any major overland flow paths through the site and any discharge points. Where an on-site detention system is required, the type and location must be shown and must be integrated with the proposed landscape design. Site discharge calculations should be provided;</p> <p>8. Landscape Concept Plan – showing planting design and plant/tree species to be used, listing botanical and common names, mature height and spread, number of plants to be utilised in relation to the treatment of communal/public open space areas, footpaths, driveways and the public domain including details of street trees, furniture, signage, lighting and surface treatments (i.e. pavers).</p> <p>9. Site Management Plan – to avoid, remedy or mitigate adverse effects on the surrounding environment during the undertaking of earthworks. Include:</p> <ul style="list-style-type: none"> • a list of buildings, structures and roads to be demolished and removed; • details of bulk earthworks proposed (including volumes, locations, stockpiles, and any other relevant matter) • proposed measures to avoid adverse impacts on Aboriginal heritage; • traffic management measures; • acoustic and vibration management measures; • stormwater management measures; • description and plan of erosion and sediment controls measures to be utilised; • methods for dust management; • material recycling measures; • hazardous substances (e.g. asbestos, lead based paint) report and works plan; • redundant services to be removed; • vegetation to be cleared; • site fencing and security; • waste management and disposal measures; • a delegated liaison officer for consultation with adjacent property owners; • emergency and complaint contacts; • proposed sequencing of activities on site; and • any other measures required to avoid, remedy, or mitigate any adverse impacts of the activity.;
	<p>Specialist advice</p>

	<p>consultants in relation to issues including, but not limited to, the following:</p> <ul style="list-style-type: none"> • Planning; • Flora and Fauna; • Bushfire; • Transport; • Landscaping; • Geotechnical and/or hydrogeological (groundwater); • Stormwater/drainage; • Water quality; • Flooding; • Urban Design/Architectural; • Contamination in accordance with the requirements of SEPP 55; and • Acid Sulfate Soils.
<p>Documents to be submitted</p>	<ul style="list-style-type: none"> • Both hard copy and electronic versions of the Environmental Assessment will be required to be submitted. Please contact the Department prior to submitting your Environmental Assessment to determine how many copies will be required. • If the Environmental Assessment is bulky, you will be required to package up each Environmental Assessment ready for distribution by the Department to key agencies.
<p>Electronic Documents</p>	<p>Electronic documents presented to the NSW Department of Planning for publication via the Internet must satisfy the following criteria:</p> <ul style="list-style-type: none"> • Adobe Acrobat PDF files and Microsoft Word documents must be no bigger than 1.5 Mb. Large files of more than 1.5 Mb will need to be broken down and supplied as different files; • File names will need to be logical so that the Department can publish them in the correct order. Avoid sending documents that are broken down in more than 10 files; • Image files should not be bigger than 2Mb. The file names will need to be clear and logical so the Department can publish them in the correct order; • Graphic images will need to be provided as [.gif] files; • Photographic images should be provided as [.jpg] files; • Large maps will need to be presented as individual files and will need to be calibrated to be no more than 2Mb each; and • Images inserted into the document will need to be calibrated to produce files smaller than 1.5Mb. Large images will need to be presented as individual files and will need to be calibrated to be no more than 2Mb each. The file names will need to be clear and logical so the Department can publish them in the correct order. <p>Alternatively, these electronic documents may be placed on your own web site with a link to the Department of Planning's website.</p>

Attachment 3 State Government technical and policy guidelines

The following list provides relevant technical and Policy Guidelines which may assist in the preparation of the Environmental Assessment. It should be noted, however, that this list is not exhaustive as other documents and policies may need to be reviewed. It is also important to note that not of all of these guidelines may be relevant to your proposal.

The majority of these documents can be found on the relevant Departmental Websites, on the NSW Government's on-line bookshop at <http://www.bookshop.nsw.gov.au> or on the Commonwealth Government's publications website at <http://www.publications.gov.au>.

Area of Responsibility	Policy/Methodology
	Draft Guidelines for Threatened Species Assessment (Part 3A) (DEC & DPI, 2005)
	Threatened Species Assessment Guideline: The Assessment of Significance (DECC, 2007)
	Threatened Biodiversity Survey and Assessment Guidelines (DECCW, 2009)
	Guidelines for Development Adjoining DECC Land (DECC, 2008)
	Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries, 2003)
	Policy and Guidelines: Aquatic Habitat Management and Fish Conservation (NSW Fisheries, 1999)
	Threatened Species Management Manual (NPWS, 1998)
Coastal Planning	
	NSW Coastal Policy 1997 - A sustainable Future for the New South Wales Coast, NSW Government, 1997
	Coastal Design Guidelines for NSW, PlanningNSW, February 2003
	NSW Wetlands Management Policy (DLWC, March 1996)
	Coastline Management Manual (NSW Government 1990)
	Northern Rivers Farmland Protection Project (DIPNR & DPI, 2005)
Community Consultation	
	Guidelines For Major Project Community Consultation, (NSW Department of Planning, 2007)
Bushfire	
	Planning for Bushfire Protection 2006 (NSW Rural Fire Service)
Contamination and Soils	
	Managing Land Contamination: Planning Guidelines SEPP 55 – Remediation of Land (DUAP & EPA, 1998)
	Best Practice in Contaminated Sites (Commonwealth DEH, 1999, ISBN 0 642 546460)
	Contaminated Sites: Sampling Design Guidelines (EPA, 1999)
	NSW Acid Sulfate Soil Management Advisory Committee - Acid Sulfate Soil Manual (ASSMAC, 1998).
	National Environment Protection (Assessment of Site Contamination) Measure (NEPC 1999)

Aspect	Policy /Methodology
	Contaminated Sites – Guidelines for Consultants Reporting on Contaminated Sites (EPA, 1997)
	Contaminated Sites – Guidelines on Significant Risk of Harm and Duty to Report (EPA, 1999)
Environmental Management Systems	
	NSW Government Interim Water Quality and River Flow Environmental Objectives (DEC)
	Guidelines for the preparation of Environmental Management Plans (DIPNR, 2004)
Heritage	
Aboriginal	Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC, 2005)
	Interim Community Consultation Requirements for Applicants (DEC, 2004)
	Part 3A EP&A Act Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation (Department of Planning & DEC, 2007)
Non-Indigenous	Assessing Heritage Significance Update for Heritage Manual, NSW Heritage Office, 2000
	Statements of Heritage Impact, NSW Heritage Office 2002
	NSW Heritage Manual, NSW Heritage Office 1996
Noise	
	Environmental Criteria for Road Traffic Noise (EPA, 1999)
	NSW Industrial Noise Policy (EPA, 1999)
	Chapter 171 Noise Control Guideline, <i>Construction Site Noise, Environmental Noise Control Manual, 1994</i>
	Acoustics - Road traffic noise intrusion - Building siting and construction (Standards Australia, 1989, AS 3671-1989)
	Interim Construction Noise Guideline (DECC, 2009)
Safety and Hazards	
	Electrical Safety Guidelines (Integral Energy)
	Crime prevention and assessment of development applications 2001
Traffic & Transport	
	Guide to Traffic Engineering and Guide to Geometric Design of Rural Roads (Austroads, 2003, AP-G1/03)
	Guide to Traffic Generating Developments (RTA, 2002)
Urban Design: Cycleway/Pathway Design	
	Guidelines for the Design and Construction of Paths and Cycleways along Watercourses and Riparian Areas (Version 2) (DIPNR/DNR)
Vibration	
	Assessing Vibration: A Technical Guideline (DEC, 2006)
Water	
Water Quantity	NSW Farm Dams Policy (DNR, 1999)
Water Quality	Water quality guidelines for the protection of aquatic ecosystems for upland rivers. (ANZECC, 2000)
	Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000)
	NWQMS Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC, 2000)

Aspect	Policy /Methodology
	Healthy Rivers Commission Report into Coastal Lakes and Statement of Joint Intent
	State Water Management Outcomes Plan
Effluent Reuse	Environmental Guidelines for the Utilisation of Treated Effluent by Irrigation (NSW DEC 2004)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Effluent Management (ARMCANZ/ANZECC 1997)
	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Use of Reclaimed Water (ARMCANZ/ANZECC 2000)
	Environmental and Health Protection Guidelines: 'Onsite Sewage Management for Single Households', February 1998 (Silver Book)
Floodplain	NSW Government Floodplain Development Manual - the Management of Flood Liable Land (DIPNR, 2005)
	Practical Consideration of Climate Change – Floodplain Risk Management Guideline (DECC, October 2007)
Groundwater	NSW State Groundwater Quality Protection Policy (DLWC, 1998, 0 7313 0379 2)
	NSW State Groundwater Quality Protection Policy (DLWC 1998)
	NSW Groundwater Policy Framework Document – General (DWE)
	NSW Groundwater Quantity Management Policy (DWE)
	NSW Groundwater Quality Management Policy (DWE)
	NSW State Groundwater Dependent Ecosystem Policy (DWE)
	NSW State Rivers and Estuaries Policy (DWE)
	NSW Wetlands Management Policy (DWE)
	NSW Farm Dams Policy (DWE)
	NSW Salinity Strategy (DWE)
	NSW Water Conservation Strategy(DWE)
Stormwater	Managing Urban Stormwater: Soils & Construction – Volume 1 (NSW Landcom, March 2004) - "The Blue Book"
	Managing Urban Stormwater: Soils & Construction – Volume 2 (DECC, January 2008)
	Managing Urban Stormwater: Harvesting and Reuse (DEC, May 2006)
	Constructed Wetlands Manual (NSW DLWC 1998)
Waterways	Waterways Crossing Design & Construction (Version 4 – DIPNR/DNR Draft Guidelines)
	Guidelines for Controlled Activities - Riparian Corridors, Watercourse crossings, laying pipes and cables in watercourses, outlet structures, and in-stream works (DWE, 2008)
	Independent Public Inquiry into Coastal Lakes: Final Report (Healthy Rivers Commission, 2002)
Wetlands	NSW Wetlands Management Policy (DLWC 2000)
	NSW State of the Rivers and Estuaries Policy (DWE 1993)
Planning	
	Tweed Area E Local Environmental Study (Parsons Brinckerhoff 2004)
	State Environmental Planning Policy (Affordable Rental Housing) 2009 - Director-General's Site Compatibility Certificate: Guidelines For Applications (DoP, 2009)
	State Environmental Planning Policy (Affordable Rental Housing) 2009 -

Aspect	Policy /Methodology
	Notes for Industry (DoP, 2009)
	State Environmental Planning Policy (Affordable Rental Housing) 2009 - Community Guide (DoP, 2009)
<p style="text-align: center;">Attachment 2 Agency Responses to Requests for Key Issues</p>	

