

4.2 Tweed Shire 2000+ Strategic Plan

The Tweed Shire 2000+ Strategic Plan (1996) provides the broad directions for future planning in the Tweed. It is the planning framework for development, environment, and infrastructure issues affecting the Tweed community (p. 1). These broad directions are identified through Desired Outcomes, Shirewide Strategic Principles and Policies & Actions.

It should be noted that Tweed Shire Council is currently in the process of preparing a new Strategic plan under the Tweed Future project. Council's embarkation on this exercise is due to the fact that issues affecting the Shire have changed significantly and as such, some of the content of the Tweed Shire 2000+ Strategic Plan is not relevant to Area E.

4.2.1 Desired Outcomes

The Desired Outcomes state specifically what the Tweed community and Council want to achieve relative to the subject areas of the Plan (p. 3). The Desired Outcomes relate to subject areas of Rural and Environmental Resources, Open Space, Community and Culture, Economic Development, Infrastructure Planning and Urban Development and Management.

It is noted from the Desired Outcomes for Rural Resources & Rural Settlement, that the quality and quantity of rural resources is maintained. While this is contrary to the use of Area E for urban development, the fact that the agricultural production values of Area E are compromised (see section 3.9), that Area E is an infill area and that development of Area E will promote a more compact urban form, thereby limits the pressure for urban expansion into other rural parts of the Shire, helping to achieve this desired outcome.

With regard to Desired Outcomes for Open Space, Area E open space will be provided at ratio's generally commensurate with the Draft Open Space Infrastructure Strategy; namely, 4 ha of open space per 1,000 population (1.7 ha structured open space, 2.3 ha casual/passive open space). This open space will be provided in suitable topographic areas that are accessible while aiming to meet the diversity of open space needs.

With regard to Infrastructure Planning Desired Outcomes, Section 94 Contributions Plans will be prepared for all necessary infrastructure unique to Area E and not otherwise covered by existing Section 94 Contributions Plans. Furthermore, major transport infrastructure will be investigated and where possible integrated with the land uses in Area to also facilitate achievement of these Desired Outcomes.

4.2.2 Shirewide Strategic Principles and Policies & Actions

The Tweed Shire 2000+ Strategic Plan also outlines the policies and actions designed to achieve outcomes that have been developed between the private sectors, community groups and the three tiers of Government. A review of the Shirewide Strategic Principles and Policies and Actions was undertaken for this LES to determine those relevant for consideration in the Area E planning, as per Table 4.1 below.

Table 4-1: Applicable Shirewide Strategic Principles and Policies and Actions

Shirewide Strategic Principles	
Background	1, 2, 3, 7, 11, 12, 14, 16, 17
Infrastructure Finance	18, 19, 22.
Policies & Actions	
The Tweed Environment	1, 3, 4, 5, 7 (in principle), 13.
Rural Settlement & Resources	17 (contrary principle), 18 (contrary principle), 20, 22.
Open Space & Recreation	29 (in part), 30
Community & Cultural Development	
Community Development Plan	50
Human Services Infrastructure	51
Infrastructure Planning & Finance	79, 80, 93, 102
Urban Development and Management	103, 104, 110 (contrary principle), 112, 116, 117, 118, 119, 122, 127, 129, 131

Justification of the applicability of each Shirewide Strategic Principle, and Policy and Action is beyond the scope of this study (particularly when the principles support the urban release, or will be otherwise considered as part of the planning process being undertaken). Notwithstanding this, a discussion of those principles contrary to that of the urban release of Area E follows.

Policy & Action 17/ 18: Rural Resources and Agriculture

These Policies generally require the protection of the ongoing viability of prime agricultural land, and their inclusion within an Environmental Protection zone. Again, issues pertaining to the agricultural value of Area E have been discussed in Section 3.9 of this report.

Policy & Action 110: Urban Release

This policy identifies areas for urban release in the short to medium term, of which Area E is not mentioned. The Policy also indicates that there will be no need for any major rezoning of new urban release areas in the Tweed in the short to medium term. While the present consideration of Area E for urban development contradicts this Policy, its recognition in the Residential Development Strategy 1991, and in Policy & Action 122 limits the significance of this policy. In addition since this policy was prepared there have been significant changes with respect to growth rates and development within the Shire.

Policy & Action 122: Terranora (Area E)

While not being a contrary Policy & Action, it is significant to note the provisions and development parameters for consideration in the Study and later stages of the planning framework for Tweed Area E, including:

- a high proportion of residential lots greater than 800m², due to existing development and scenic values (particularly where visually prominent, near ridgelines, within high visibility viewsheds, landmarks etc);

- defined areas of potential dual occupancy and medium density development (typically through assigning zone 2 (b) Medium Density Residential to lands in the Area as required);
- controls over clearing of vegetation with habitat significance (this will already be regulated by the Department of Land and Water Conservation); and
- the need for development buffer areas from environmentally significant resources and features, defined (as required) by vegetation, drainage and topography.

4.2.3 Draft Interim Strategic Plan- Cobaki/ Bilambil Heights/ Terranora 1995

The Draft Interim Strategic Plan for the Cobaki, Bilambil Heights and Terranora area contains matters for consideration in development applications, in the manner of Objectives and associated Principles by which these are to be achieved:

The Interim Plan objectives appropriate to Tweed Area E include to:

- reinforce the distinctive character of Terranora development and landforms;
- safeguard scenic value and integrity of ridgelines and views and the environmental qualities of land adjacent to... the Broadwater;
- retain integrity of remaining prime agricultural land; and
- ensure timely upgrading of Terranora Road for adequate capacity and safety.

The principles by which the above Objectives are to be achieved include:

- relatively high proportion of larger residential lots;
- 1ha minimum of lots subject to future subdivision, the exceptions being... lots cost effectively serviced by reticulated sewer;
- preserve buffer of agricultural land and larger lot residential development between Terranora and Fraser Drive;
- conceptual and integrated plan for cycleways and footpaths;
- no more development of dwellings which will be highly exposed on ridgeline/close to ridgeline on south facing slope; and
- No direct property access onto Terranora Road.

4.3 Tweed Futures – A Strategic Plan

Tweed Shire Council is currently preparing Tweed Futures - A Strategic Plan for the Tweed. Tweed Futures will:

- describe the economic, social and physical environment of the region;
- identify significant trends in the Shire - e.g. growth, employment and the people; and
- will establish actions to achieve the desired outcomes.

The Tweed Futures project will be run over two stages;

- Stage 1 will focus on nominating key issues; and
- Stage 2 will focus on developing the Draft Strategic Plan early in the term of the newly elected Council (post March 2004).

The project is expected to result in a replacement of the Tweed Shire 2000+ Strategic Plan which is now dated and requires revision based on new issues and factors such as:

- completion of the Pacific Motorway; and
- increased development activity.

The review will ensure that Council's strategic direction:

- is relevant to today's Tweed issues, particularly along the coast;
- reflects community aspirations;
- accords with Government expectations;
- attracts infrastructure resources to meet growth;
- incorporates latest data eg vegetation;
- accommodates latest demographic trends; and
- includes social and economic issues.

4.4 Tweed LEP 2000

The Tweed LEP 2000 ('LEP') contains a number of Parts with statutory provisions that will inform the planning of the proposed urban release of Tweed Area E. These Parts not only relate to Zoning Provisions (both current and intended zonings), but also Ecologically Sensitive Development Principles, General and Environmental Resource Provisions, Hazards and Buffers.

4.4.1 Zoning Provisions

Under the LEP, the land comprising Tweed Area E is zoned:

- 1(b1) Agricultural Protection (predominant zoning).
- 5(a) Special Uses (Lindisfarne Anglican Secondary School only).
- 7(a) Environmental Protection (wetlands and littoral rainforests).

Refer to Figure 4.1.

4.4.1.1 1(b1) Agricultural Protection Zone

The primary objective of the 1(b1) Agricultural Protection zone is to 'protect identified prime agricultural land from fragmentation and the economic pressure of competing land uses'. The secondary objective is to 'allow other development that is compatible with agricultural activities' (p.10).

The urban development of Tweed Area E is clearly in contradiction to the zone's primary and secondary objectives in that it would not achieve the intended protection of agricultural land. Furthermore, it is noted that dwelling house and multi-unit dwellings are only allowed to be developed on allotments of at least 10 ha (other qualifications aside). This present zoning clearly inhibits the use of Tweed Area E for urban purposes.

Previous sections of this LES discuss the issue of the long term viability of this site for agricultural uses and conclude that the lack of appropriate buffers, land capability, limitations on agricultural practices and encroachment/intrusion have severely impacted on the viability of this land as an agricultural resource.

4.4.1.2 5(a) Special Uses

The primary objective of the 5(a) Special Uses zone is to 'identify land which is developed or is proposed to be developed, generally by public bodies, for community facilities and services, roads, railways, utilities and similar things'.

The secondary objective is to 'provide flexibility in the development of the land, particularly if it is not yet or is no longer required for the relevant special use' (p.33).

Only one allotment within Tweed Area E is zoned 5(a) Special Uses being for the Lindisfarne Anglican Secondary School. The allotment is already improved with the education premises, and will hence form an important part of the social and community infrastructure for Tweed Area E.

4.4.1.3 7(a) Environmental Protection (wetlands and littoral rainforests)

The primary objectives of the 7(a) Environment Protection zone is to 'identify, protect and conserve significant wetlands and littoral rainforests' (p.37) and to 'prohibit development which could destroy or damage a wetland or littoral rainforest ecosystem.' (p. 38).

The secondary objectives are to 'protect the scenic values of wetlands and littoral rainforests' and to 'allow other development that is compatible with the primary function of the zone' (p.39).

Lot 3 on DP 622138 and Lot 1 on DP 225183 are split zoned 7(a) Environment Protection and 1(b1) Agricultural Protection zone. This 7(a) zone has been designated to protect the wetlands existent on the Terranora Broadwater foreshore. A portion of the 7(a) zone of each of the above lots is contained within Tweed Area E. In addition, the wetlands are protected under SEPP 14 - Coastal Wetlands (Wetland No. 23). These two statutory mechanisms for protection of the wetlands are representative to their importance at a local and state level.

The proposed approach to protection of the wetland, development buffering and rehabilitation, is discussed previous sections of this report.

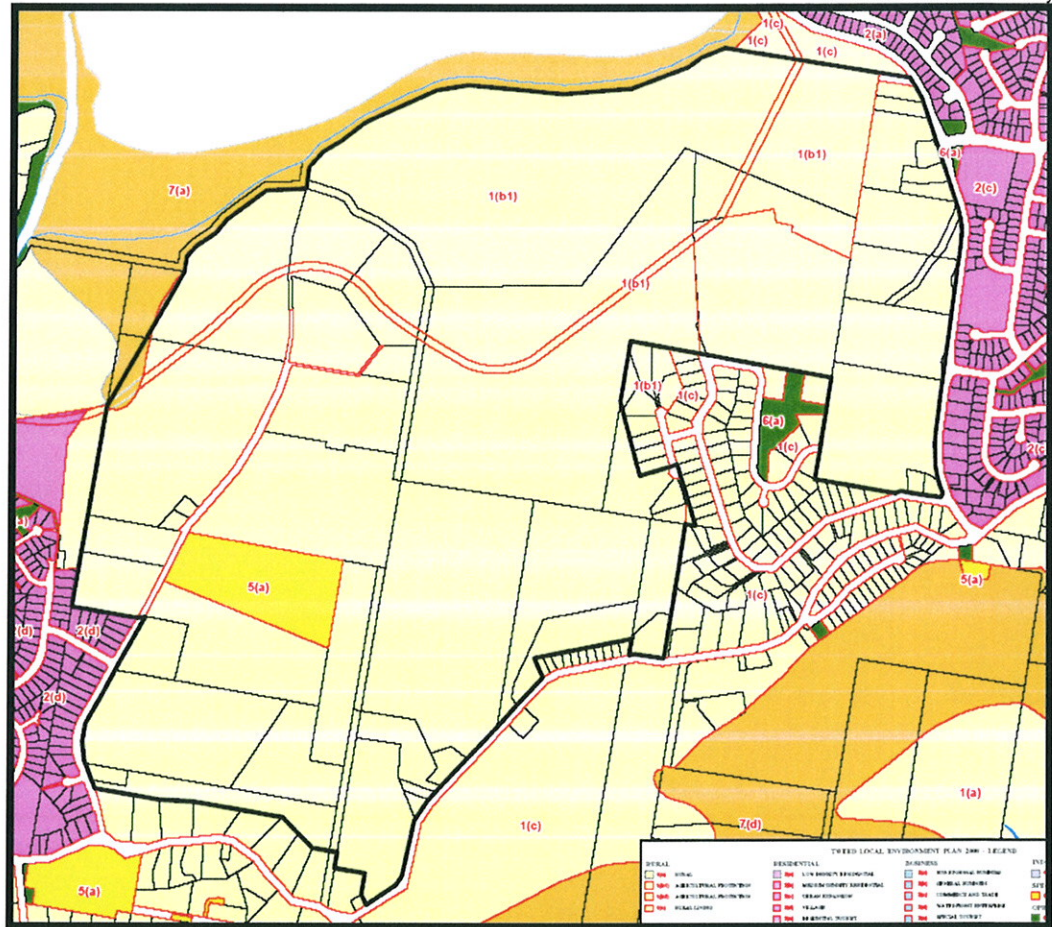


Figure 4-1: Zoning of Tweed Area E. (Source: Tweed Shire LEP 2000)

4.4.1.4 Environment and Resource Provisions

The LEP includes a number of Shirewide Environment and Resource provisions that affect development in Environment Protection zones, including for zone 7(a) Environmental Protection (Wetlands and Littoral Rainforests) in the western portion of Tweed Area E.

4.4.1.5 Clause 25 Development in Zone 7 (a) Environmental Protection... and on adjacent land

Clause 25 affects development in the 7(a) zone and on land adjoining such a zone. The objective of this Clause is 'to ensure that wetlands and littoral rainforests are preserved and protected in the environmental and economic interests of the area of Tweed' (p. 55).

The Environmental Protection Agency has indicated in their response under Section 62 of the Environmental Planning and Assessment Act 1979 that the provision of appropriately sized buffers adjacent to SEPP 14 protected wetlands, being at least 50m, is generally the only practical option for ensuring their long-term integrity. Hence, notwithstanding the release of Tweed Area E for urban development, a 50m buffer on the landward side of the wetlands will be emplaced, to assist in their protection and long-term integrity.

Further to the above, the Clause also includes a number of supporting development criteria to ensure the protection and integrity of lands zone 7(a). However, these criteria are used for development application assessment purposes only.

4.4.2 Hazards and Buffers

4.4.2.1 Clause 31 Development adjoining water bodies

Clause 31 affects development on land adjoining the mean high-water mark or otherwise the bank of 'waterbodies'. For Tweed Area E, this includes the Terranora Broadwater and watercourses within the study area.

The objectives of the Clause are to 'protect and enhance scenic quality, water quality, aquatic ecosystems, bio-diversity and wildlife habitat and corridors' and to 'provide adequate public access to waterways' (p. 59).

In this regard, the LES deals with the above considerations in the following Sections:

- flora and fauna, and ecological issues associated thereof, are discussed in Section 3.1 of the LES; and
- elements of scenic quality that require consideration in the draft LEP are outlined in Section 3.11 of the LES.

4.4.2.2 Clause 32 Aircraft noise

Clause 32 applies to land within the 20 ANEF (Australian Noise Exposure Forecast) contour or higher for the Coolangatta Airport. The objectives of the Clause are to 'prevent certain noise sensitive developments from locating in proximity to Coolangatta Airport and its flight paths' and to 'minimise the noise impact from the operation of Coolangatta Airport on development in its vicinity' (p. 60).

A review of the existing ANEF for the Coolangatta Airport determined that Tweed Area E is not subject to 20 ANEF or greater.

It is noted that a southern extension of Coolangatta's runways from 2,042 metres to 2,700 metres by Gold Coast Airport Limited is proposed, which would result in the extension and alteration of the existing ANEF contours. Accordingly, a review of the current ANEC (Australian Noise Exposure Concept) for the Coolangatta Airport for the extended runway determined that the closest approach of any ANEF contours to Tweed Area E is approximately 2.5km to the east, in the vicinity of the Terranora Road and Pacific Highway intersection.

In summary, as Tweed Area E is not encumbered from ANEF contours, there are generally no restrictions upon the residential subdivision and development of Tweed Area E. In particular the Australian Standard AS2021-1994 Aircraft Noise Intrusion – Building Siting and Construction is applicable.

4.4.2.3 Clause 34 Flooding

This Clause applies to development on flood liable land within the Shire. Figure 3.9 identifies the extent of the 1 in 100 year floods for Tweed Area E. The objectives of this Clause are to minimise 'future potential flood damage by ensuring that only appropriate compatible development occurs on flood liable land' and to minimise the adverse effect of flooding on the community' (p. 61).

Section 3.3 of the LES identifies the impacts of flooding on Tweed Area E to the effect that the 1:100 year flood level is 2.65m AHD, with the majority of affected lands being comprised low lying wetlands. It was noted that the 1 in 20 year flood level has minimal effect on Tweed Area E and is restricted to the wetland areas located on the northern boundary of the study area. Studies have also identified that the flooding impact of urbanisation of the Tweed Area E catchment will be negligible.

4.4.2.4 Clause 35 Acid sulfate soils

This Clause applies to the carrying out of works on land shown as being Class 1, 2, 3, 4 or 5 land on Council's nominated Acid Sulfate Soil Planning Maps. Acid sulfate soil has been investigated in Section 3.2 of the LES. The general conclusion is that any land below 5m AHD or otherwise identified in the Acid Sulfate Soil Planning Maps (refer to Figure 3.8), is considered to contain potential acid sulfate soils (PASS) or acid sulfate soils (ASS).

Accordingly, both PASS and ASS are noted as constraints to the development of Tweed Area E. The carrying out of development or works (e.g. excavation, filling water table lowering) is therefore to be generally avoided in both PASS and ASS areas. Given that a 50m landward buffer is required between development and the 7(a) zone/ SEPP 14 wetlands, the spatial location of this environmental constraint within Tweed Area E may be negated upon formulation of the Master Plan associated with this study.

4.4.2.5 Clause 37 Electricity transmission line corridor

This Clause applies to the development of land uses within designated electricity transmission line corridors. The current electricity transmission line alignment principally overlays both the 1(b1) zone and 5(a) zone.

It is noted that provision (2) of this Clause requires that development, 'other than exempt development and agriculture, must not be carried out on land within a transmission line corridor... except with development consent'. Country Energy was contacted to identify setback requirements for development from the corridor, with the effect that setbacks are required from the corridor perimeter. Development setbacks will be incorporated into the Master Plan, with the potential for the use of the latent corridor for open space/passive recreation purposes, being investigated.

4.4.2.6 Clause 38 Future road corridors

A designated Clause 39 future road corridor exists as an eastern extension to Naponyah Road and connecting as a southern extension to Fraser Drive, at Trutes Bay. The preferred corridor for this road has been changed in recent times based on more detailed studies and it is now proposed to use Mahers Lane as the westernmost part of the corridor.

Traffic and transport issues associated with Tweed Area E are discussed at length in Section 3.8 of the LES. This corridor will be preserved as part of the planning framework for Tweed Area E.

4.4.3 Development Control Plans

A number of Development Control Plans ('DCPs') have been prepared to provide detail on particular policies for certain types of development or parts of the Tweed Shire. These DCPs conform to the provisions of the Tweed LEP 2000, and a number of these affect development within Tweed Area E namely those following.

4.4.3.1 DCP 5 Development of Flood Liable Land

DCP 5 Development of Flood Liable Land applies to all flood liable land within Tweed Shire. The DCP sets detailed standards for land development to minimise the adverse effect of flooding on the community.

Figure 3.9 of the LES identifies the flood-affected land in Tweed Area E. Where development is proposed on such flood affected land, Council will consider the contents of DCP 5 and take into the account the provisions of the DCP in determining the development application. Thus, this DCP will apply to future development proponents in Tweed Area E, where on flood-affected land.

Furthermore and with respect to the Structure Plan, the provisions of the North Coast REP identify the considerations for dealing with flood-affected land in Tweed Area E.

4.4.3.2 DCP 16 Subdivision

DCP 16 outlines the strategic plan and policy objectives for the subdivision of land within the Shire. The release of Tweed Area E for urban development entails only the development of the underpinning statutory regimes for the Tweed LEP 2000, in this instance.

On-site development will necessitate the subdivision of the site by other development proponents, outside the scope of this Study. However, any future subdivision of Tweed Area E will need to be generally in accordance with the requirements of DCP 16.

4.4.3.3 DCP 25 Biting Midge and Mosquito Control

DCP 25 Biting Midge and Mosquito Control applies to all proposed development, including residential subdivisions, within The Tweed Council area.

A purpose of the DCP is to provide desired guidelines for proposed and existing residential and tourist developments in Tweed Council coastal areas to minimise and control the problem of biting midge and mosquitoes. It is noted from Figure 6 associated with the DCP that Saltmarsh mosquitos affect Tweed Area E at the northern extent, and in the vicinity of the SEPP 14 wetlands adjoining the Terranora Broadwater. The DCP includes Guidelines for areas of proposed development and residential subdivision for the control of biting midge and mosquitos in Tweed. Control of salt marsh mosquitos will be important if a reasonable residential amenity in the study area is to be achieved. Section 3.5 of this report discusses the issue of dealing with this area.

4.4.3.4 DCP 39 Energy Smart Homes Policy

DCP 39 Energy Smart Homes Policy generally applies to development applications for Residential subdivision, Dwelling houses, Multi dwelling housing, and Alterations and additions to dwelling houses and multi dwelling housing in all zones (with qualifications).

The DCP aims to create homes of improved energy efficiency, which use less non-renewable energy sources, in an efficient manner. Development within Tweed Area E will need to comply with the requirements of this DCP.

4.4.3.5 DCP 47 Cut and Fill on Residential Land

DCP 47 Cut and Fill on Residential Land applies to all proposed residential development within the Tweed Council area. The DCP provides detailed guidelines for the development of the applicable land, having regard to amounts of cut and fill permitted on domestic forms of construction.

Given the topographic nature of the land and based on the observation of development for similar land in the locality, cut and fill has the potential to result in significant landscape/amenity impacts. The imposition of the DCP requirements on development within Tweed Area E will therefore be important.

It is noted that cutting, filling, and excavations ('works') within Tweed Area E will not be resultant from completion of the LEP Amendments (eg. for roads etc.). Relevant approvals will be required from Tweed Shire Council to enable the undertaking of such works by development proponents. However, such applicable works will need to be undertaken generally in accordance with the provisions of this DCP.

4.5 North Coast Regional Environmental Plan 2001

The North Coast Regional Environmental Plan 1988 (North Coast REP) specifies objectives and directions regarding a range of matters to be considered and/or undertaken by Council when it prepares a LEP.

The following summary identifies the Parts and their associated Divisions within the North Coast REP applicable to the draft LEP for Tweed Area E and highlights issues relevant to the LES.

4.5.1 Part 2 Rural Development

4.5.1.1 Division 1 – Agricultural Resources

Objective (a) of this Division is to conserve the productive potential of agricultural land, with the primary tenet of plan preparation being the identification and inclusion of such land in an agricultural protection zone, and associated provisions empowering the Division objectives.

Section 3.9 of the LES discusses the issues associated with the use of agricultural resources for urban release and subsequent development.

4.5.1.2 Division 2 – Catchment Management

The objective of the REP in relation to fisheries and catchment management is to preserve and enhance fishery habitats and associated catchments, and to promote the sustainable use of natural resources.

The subsequent plan preparation provisions for this Division are related to wetland and fishery habitats, including the need to implement a buffer for adjoining land uses. SEPP 14 wetlands exist at the northern boundary of Tweed Area E.

The REP generally states that such wetlands and fishery habitats, together with their development buffer, are to be included in an environment protection zone. As per Section 3.1, 3.3 and 3.4 of the LES, the EPA's recommended 50m buffer to the wetlands, together with the wetlands themselves, will be incorporated in a consolidated manner into an applicable environmental protection zone.

Sections 3.3 and 3.4 of the LES also address the issues associated with water quality and hydrology in Tweed Area E to ensure that the objective can be achieved.

4.5.1.3 Division 3 – Geological Resources

The Objective of this Division is to prevent sterilisation of known resources by inappropriate development on or near to potential extraction sites.

Mineral Resources New South Wales (MRNSW) were contacted on 4 June 2003 for further LES input regarding any known or potential mineral or extractive resources within Tweed Area E. On 23 July 2003, MRNSW indicated in facsimile correspondence that with respect to Tweed Area E, 'the area does not include any known or potential mineral or extractive resources. No haulage routes are recognised in the vicinity of Tweed Area E'.

4.5.2 Part 3 Conservation and the Environment

The objectives of Part 3 of the REP in relation to the natural environment are as follows:

- to protect areas of natural vegetation and wildlife from destruction and to provide corridors between significant areas;
- to protect the scenic quality of the region, including natural areas, attractive rural areas and areas adjacent to water bodies, headlands, skylines and escarpments; and
- to protect water quality, particularly within water catchment areas.

Divisions of Part 3 applicable to the LES and associated LEP preparation for Tweed Area E include:

- Division 1 Natural Environment;
- Division 2 Coastal Development; and
- Division 3 Heritage.

4.5.2.1 Division 1 Natural Environment

The objectives of this Division, as they pertain to the natural environment and Tweed Area E, include the following:

- to protect natural vegetation and wildlife from destruction, and the provision of corridors between significant areas;
- to protect the scenic quality of the region; and
- to protect water quality, particularly within water catchment areas.

Supporting these Division objectives, the draft LEP for Area E is required under the following Clause 29 subsections, to:

- generally retain existing environmental protection, scenic protection or escarpment protection zonings;
- include significant areas of natural vegetation (in particular, for Tweed Area E identified rainforest, riparian vegetation, wetlands, wildlife habitat and corridors and scenic areas);
- protect water quality in water catchment and groundwater resource areas; and
- include provisions for clearing of natural vegetation in areas identified in (c).

Accordingly, the draft LEP will be required to include the significant areas of natural vegetation areas identified in Section 3.1 of the LES, in appropriate zones from the suite of Environmental Protection zones. It is noted that with respect to Clause 29(e), that the Tweed

LEP 2000 already includes provisions for vegetation clearing and these provisions are appropriate to apply to Tweed Area E.

There is a small area of land zoned as Environmental Protection 7(a) in the northwest corner of Tweed Area E; given Clause 29(b). This zoning is intended to be retained in the future.

Issues pertaining to the protection of water quality in the vicinity of Tweed Area E have been discussed previously in Sections 3.3 and 3.4 of the LES.

4.5.2.2 Division 2 Coastal Development

The objectives of this Division, as they pertain to the coastal environment, generally include:

- the enhancement of the visual quality;
- protection of water quality;
- minimisation of risks to property and people from coastal processes and changes to coastal processes; and
- retention of natural areas and regeneration of degraded natural areas.

Supporting these Division objectives, the draft LEP for Tweed Area E is required under Clauses 31 to 32A to:

- (Clause 31) identify land not currently developed that would be subject to coastal hazards; and
- (Clause 32) restrict development on land adjoining foreshore areas to minimise:
 - ▶ risk to life, property and its impact on coastal processes;
 - ▶ the visual impact of development near the shore; and
 - ▶ (Clause 32A) include provisions that give effect to, and are consistent with the NSW Coastal Policy 1997.

With regard to Clause 31 coastal hazards, tracts of Tweed Area E have been identified (see Section 3.2 of the LES) to be low-lying and thereby subject to PASS and ASS. These areas have been marked as a constraint to potential development.

Tweed Area E land in the vicinity of Trutes Bay is not subject to landslip or subsidence, as also indicated in Section 3.2. No further impediments or coastal hazards were identified in the undertaking of the LES.

The existing Environmental Protection 7(a) zone for the wetlands adjoining Trutes Bay will not be affected by the draft LEP (external to the Area). Given the provision of a landward separation buffer to these wetlands (as required by the EPA), development near the 'foreshore' areas of Trutes Bay is restricted, generally resulting in:

- visual impacts on foreshore areas being minimised; and
- minimisation of risks to impacts on coastal processes and properties.

Tweed Area E is subject to the NSW Coastal Policy 1997. The application of this policy to the draft LEP and the consistency of provisions thereof are discussed in Section 4.6 of the LES.

4.5.2.3 Division 3 Heritage

This Division contains Objectives to conserve the environmental heritage and historic regional townscapes of the North Coast Region

Section 3.7 of the LES included discussion on the environmental heritage associated with Tweed Area E, to the effect that no items of heritage significance were identified as being protected under Section 130 of the Heritage Act 1977, by the Tweed LEP 2000, or by other State Government Agencies.

Further, a visual inspection of Tweed Area E did not identify any environmental heritage items (including historic, scientific, cultural, social, archaeological, architectural and aesthetic heritage) additional to those already protected statutorily, for protection.

4.5.3 Part 4 Urban Development

The Objectives of this plan in relation to Part 4 urban development are to:

- provide for the orderly and economic release of urban land and identify growth centres; and
- promote the efficient commercial functioning of subregional and district centres.

Divisions of Part 4 applicable to the LES and associated LEP plan preparation for Tweed Area E include:

- Division 1 Strategic Planning;
- Division 2 Urban Housing; and
- Division 3 Environmental Hazards.

4.5.3.1 Division 1 Strategic Planning

Clause 38 of Division 1 discusses the need for an adopted urban land release strategy to underpin the preparation of a draft LEP, particularly where significant urban growth is proposed.

To this regard, the Tweed Residential Development Strategy 1991 identifies Tweed Area E as suitable for residential development, 'being the most logical extension of urban development within Part A of the Shire'. Hence, the urban release of Tweed Area E would be consistent with the abovementioned Clause.

Further, while the land is currently zoned 1(b1) Agricultural Protection, the agricultural capabilities of the land has been historically diminished, as demonstrated in Section 3.9 of this LES. As a result, the use of Tweed Area E for urban release would not compromise the achievement of Clause 38 (3)(b1).

Clause 40 outlines principles for consideration and adoption upon the preparation of draft LEPs, including:

- zoning should be simple and flexible;
- provisions for flexible zone boundaries may apply to any zones except environmental protection zones;
- detailed guidelines within the broad zone parameters should be identified in a development control plan; and
- the principle of minimising energy use, in particular in the design of buildings and effective transport systems.

The draft LEP for Tweed Area E will adopt the principle of zoning simplicity, so far as the final zonings for the site will achieve the desired urban development pattern. Zoning flexibility is already regulated through Clause 14 of the Tweed LEP2000 - 'Development near zone boundaries'. It is the intention of the draft LEP to continue to use these provisions, and not implement a Clause different to that existing to regulate this aspect.

4.5.3.2 Division 2 Urban Housing

Division 2 Urban Housing, states the need for the promotion of a provision of a range of adequate, affordable and suitable housing to meet the needs of the regions population. It is the intention of the draft LEP to use the current range of residential zones provided for in the TLEP 2000 (as per their primary and secondary objectives), to differentiate and provide the basis for future subdivision.

The provision of a range of adequate, affordable and suitable housing is generally market driven. Hence, the final development form of Tweed Area E's residential areas will in effect be governed by the market, in reference to their underlying zoning, at such time as Applications for Development are lodged with Council.

4.5.3.3 Division 3 Environmental Hazards

The Objective of this Division in relation to environmental hazards is to locate urban and tourism development on land that is free from a suite of environmental hazards, including (as generally relevant to Tweed Area E):

- flooding or poor drainage;
- dangers arising from potential or actual acid sulphate soils;
- dangers arising from contaminated land;
- geological or soil instability;
- bush fire;
- aircraft noise at levels of more than ANEF25 (measured according to the Australian Noise Exposure Forecast);
- air or water pollution, or airborne pollution, within 400 metres of sewage treatment works;
- disposal of septic effluent; and
- high tension electrical power lines.

With respect to the above environmental hazards, these have been investigated and mapped (where appropriate) elsewhere, in this LES. The potential constraints are also considered in Section 5 of this LES, with regard to their impact on potential land use options for Tweed Area E.

However, of particular note, is Clause 45A Plan Preparation for Flood Liable Land, which generally indicates that a draft LEP should not alter the zoning of flood liable land, if rezoned from a rural zone [i.e. 1(b1)], to a residential zone. Similarly, the Division indicates that the draft LEP should not include provisions that allow for an intensification of residential uses on flood liable land, increased need for flood mitigation measures, and certain works to occur without consent in flood ways and high hazard fringes (amongst others).

The above provisions will be taken into consideration with respect to the preparation of the draft LEP.

4.5.4 Part 5 Regional Infrastructure

4.5.4.1 Division 2 Servicing Urban Areas

Clause 58 requires the economic use of any existing services (spare capacity), and the provision of reticulated water and sewer services to Tweed Area E. Consideration in plan preparation is also to be given to effluent disposal and discharge points, and provision public transport, pedestrian and cycleways.

As outlined in Section 3 of the LES, infrastructure and services can be provided to the site, to a standard commensurate with general urban development and statutory guidelines. The servicing strategy can ensure that any spare capacity in the system can be used to initiate development within the area.

4.5.4.2 Division 3 Health and Education

Clause 61 of this Division requires that the draft LEP should not zone land for residential purposes on rural land (i.e. Agricultural Protection zone 1(b1) in this instance) unless there is adequate access available from Tweed Area E to both health and education facilities, and the proposed development can make the best use of these facilities.

The Department of Education & Training's response under Section 62 of the Environmental Planning and Assessment Act 1979 identified the need for a primary school site, to be identified within Tweed Area E. It is noted that Lindisfarne Anglican Secondary School is located at Mahers Lane, and hence, there will be adequate access available from Tweed Area E to the two education premises in question. There are also a range of private and public schools in the surrounding locality (Terranora Primary School - immediately adjacent, Centaur Primary and High School - Leisure drive, St Josephs Primary and Secondary College - Leisure Drive, Banora Point Primary School - Banora Point, Tweed River High and Primary Schools - South Tweed heads and Lindisfarne Primary - South Tweed Heads)

The area is serviced by Tweed Heads District Hospital, Tweed District Hospital (Murwillumbah) and other private hospitals in the locality. Ambulance and other health services are also available in the locality.

4.5.5 Part 6 Tourism and Recreation

Clause 78 requires that draft LEPs should include provisions that identify opportunities for a range of recreational environments in the vicinity of existing and proposed residential development.

There are a number of existing passive and active recreational opportunities in the vicinity of Tweed Area E. As part of the comprehensive planning framework developed for the site a range of passive and active recreation opportunities to cater for Tweed Area E needs will be provided for. These recreation opportunities will be provided on the basis of the Draft Open Space Infrastructure Strategy, being 4ha/1000 population (1.7ha active and 2.3ha passive open space).

4.5.6 Miscellaneous

Clause 83 outlines miscellaneous provisions for inclusion in draft LEPs. In particular the inclusion of open space, special uses or other zonings and reservations which are requested by public authorities and are relevant to those public authorities' functions.

The Environmental Protection Agency indicated in their response under Section 62 of the Environmental Planning and Assessment Act 1979 that the provision of a buffer at least 50m adjacent to SEPP 14 protected wetlands is provided as a long-term wetland protection mechanism. Capacity for this buffer will be included in the draft LEP.

Clause 83 also outlines administrative provisions to consider in the drafting of LEPs, including the adoption of Model Provisions made under Section 33 of the Environmental Planning and Assessment Act 1979, consultation arrangements, designated developments and saving provisions (amongst others). The draft LEP will adopt the administrative provisions for that are used in the existing Tweed LEP 2000; it is not intended that the draft LEP establish alternative administrative provisions.

4.6 State Environmental Planning Policies

This Section outlines the State Environmental Planning Policies (SEPPs) potentially applicable to the urban development of Tweed Area E, and the drafting of the statutory instruments for same.

4.6.1 State Environmental Planning Policy No. 1 - Development Standards

SEPP 1 provides flexibility in the application of planning controls operating by virtue of development standards. This applies in circumstances where strict compliance with those standards would, in any particular case, be unreasonable or unnecessary or tend to hinder the attainment of the objectives of the Environmental Planning and Assessment Act 1979.

This SEPP will be applicable to any subsequent development applications.

4.6.2 State Environmental Planning Policy No. 4 - Development Without Consent and Miscellaneous Complying Development

SEPP 4 is designed to permit development for a purpose that is of minor environmental significance without the necessity for development consent being obtained (typically development for certain purposes by public utility undertakings and development on certain land reserved or dedicated under the National Parks and Wildlife Act 1974).

The draft LEP will ensure that developments otherwise referred to in the SEPP are not inadvertently made assessable development under the LEP.

4.6.3 State Environmental Planning Policy No 5 - Housing for Older People or People with a Disability

SEPP 5 aims to encourage the provision of housing that will generally increase the supply and diversity of housing to meet the needs of older people or those with a disability, and make efficient use of existing infrastructure and services.

This SEPP provisions will override those of the draft LEP (with qualifications), upon the draft LEP's gazettal. The SEPP will apply to Tweed Area E land zoned primarily for urban purposes and upon which residential and community services are permitted development.

4.6.4 State Environmental Planning Policy No 14 -Coastal Wetlands

SEPP 14 aims to ensure that the coastal wetlands are preserved and protected, as an environmental and economic interest of the State. Wetlands are located north of and adjoining Tweed Area E, at the edge of the Terranora Broadwater (SEPP 14 Wetlands No 23).

Provisions will be developed for the draft LEP commensurate with those of this SEPP to ensure that adequate statutory measures are in place for the protection of the wetlands.

4.6.5 State Environmental Planning Policy No. 44 - Koala Habitat Protection

A determination on the application of SEPP44 to the majority of Tweed Area E was made by James Warren in the Preliminary Biological Assessment of Mahers Lane Lands for the Terranora Landowners Group (1995). 'The criteria contained in SEPP44 have been addressed and it has been determined that the policy does not apply to the subject site' (Warren, 1995, p. 21).

Warren identified that while koala food trees were identified within Tweed Area E and the site may contain possible koala movement corridors, the site does not provide core koala habitat. This view has subsequently been confirmed by independent studies undertaken by Parsons Brinckerhoff during the preparation of this report.

4.6.6 State Environmental Planning Policy No.55 - Remediation of Land

SEPP 55 aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. It applies to both zoning and rezoning proposals and hence is relevant to Tweed Area E and this study.

The issue of contaminated land has been addressed in Section 3.6 of this report. Contaminated land assessments carried out in mid-late 2003 identify that, while the site has been used for agricultural activities that involved the use of chemicals known to be potential contaminants, levels of contamination are such that they would not preclude the rezoning of the land to allow for residential purposes.

4.6.7 State Environmental Planning Policy No.71 - Coastal Protection

SEPP 71 aims to provide for the protection and management of sensitive and significant areas within the coastal zone. Area E falls within the coastal zone and as such the matters for consideration identified in Clause 8 of SEPP 71 must be addressed. Table 4.2 below summarises how this LES has addressed these matters.

Table 4-2: Response to SEPP 71 Matters for Consideration

Matter for consideration	Comment/ Relevant section of LES
(a) the aims of this Policy set out in clause 2;	
(b) existing public access to and along the coastal foreshore for pedestrians or persons with a disability should be retained and, where possible, public access to and along the coastal foreshore for pedestrians or persons with a disability should be improved;	No existing public access is available within the Study area.
(c) opportunities to provide new public access to and along the coastal foreshore for pedestrians or persons with a disability;	Development of the site may create opportunities for improved public access to foreshore areas through the provision of corridors and open space. Opportunities for access to the foreshore of Trutes Bay are restricted due to topography, vegetation and the need to maintain the wetland values of lands in the area.
(d) the suitability of development given its type, location and design and its relationship with the surrounding area;	The site is generally suitable for urban development being of similar characteristics to adjoining residential land. Areas unsuitable for development by virtue of topography, vegetation are taken into consideration.
(e) any detrimental impact that development may have on the amenity of the coastal foreshore, including any significant overshadowing of the coastal foreshore and any significant loss of views from a public place to the coastal foreshore;	Area E is not located on the coastal foreshore and development would not block views to the coast from public places in the locality. See section 3.11 of this report concerning landscape values;
(f) the scenic qualities of the New South Wales coast, and means to protect and improve these qualities;	See Section 3.11 of this report concerning landscape values;
(g) measures to conserve animals (within the meaning of the Threatened Species Conservation Act 1995) and plants (within the meaning of that Act), and their habitats;	See Section 3.1 of this report.
(h) measures to conserve fish (within the meaning of Part 7A of the Fisheries Management Act 1994) and marine vegetation (within the meaning of that Part), and their habitats;	See Section 3.1 of this report.
(i) existing wildlife corridors and the impact of development on these corridors;	See Section 3.1 of this report.
(j) the likely impact of coastal processes and coastal hazards on development and any likely impacts of development on coastal processes and coastal hazards;	See Section 3.3 of this Report
(k) measures to reduce the potential for conflict between land-based and water-based coastal activities;	Given the low level of access available to the Foreshore of Trutes Bay and the likelihood of demand for this, it is highly unlikely that any such conflicts will arise.
(l) measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals;	See Section 3.7 of this Report
(m) likely impacts of development on the water quality of coastal waterbodies;	See Section 3.3 and 3.4 of this Report
(n) the conservation and preservation of items of heritage, archaeological or historic significance;	See Section 3.7 of this Report
(o) only in cases in which a council prepares a draft local environmental plan that applies to land to which this Policy applies, the means to encourage compact towns and cities;	Area E is bound on two sides by existing urban development and is an infill site. The use of this site for urban development would therefore promote a more compact urban form and more efficient use of infrastructure and resources. Use of this land will also limit pressure for the further expansion of other urban areas in the Shire.
(p) only in cases in which a development application in relation to proposed development is determined:	Not applicable
(i) the cumulative impacts of the proposed development on the environment; and	
(ii) measures to ensure that water and energy usage by the proposed development is efficient.	

4.7 Section 117(2) Directions

A review of the current Section 117(2) directions under the Environmental Planning and Assessment Act 1979 (as at 24 September 2002), identified a number of directions that apply to Area E. The consistencies of the Section 117(2) directions with the provisions of the North Coast REP are noted, hence the consistencies in responses below (note directions with a 'G' prefix are 'general directions', whilst those with an 'S' prefix are 'specific directions' in which Tweed Shire Council has been nominated).

4.7.1 G7 Existing General Provisions

This Direction identifies the need for the draft LEP to maintain the provisions contained in deemed instruments for issues such as flood liable land, unstable lands or lands subject to subsidence, or agricultural land, as affecting Area E.

Accordingly, the draft LEP will embody the existing provisions in the Tweed LEP 2000 for flood liable land and propose provisions to regulate development in potential areas of unstable lands or subsidence. Matters regarding the release of rural lands for urban development are predominantly discussed in Section 3.9, and in the response to Direction G8 Rural Zones

This Direction identifies that the draft LEP shall not rezone land for an urban purpose unless such action is justified by an environmental study; the rezoning of Area E from 1(b1) Agricultural Protection for urban purposes is justified in Section 3.9 of this LES.

4.7.2 G9 Residential Zones

This Direction identifies a range of pre-conditions for residential development, including infrastructure servicing, lot size, densities and development standards.

The manner of infrastructure servicing for Area E has been detailed in Section 3.14 of the LES. It is not the intention of the draft LEP to nominate alternate criteria for the development densities, lot sizes or other development criteria to those established in the Tweed LEP 2000.

4.7.3 G12 Environmental Protection

This Direction identifies the need to retain existing zonings or identified areas of environmental, scenic or escarpment protection, or otherwise conservation areas. Such areas will be retained in the draft LEP, with environmental protection areas adjoining the Terranora Broadwater being increased in size (with buffers) to facilitate wetland conservation.

4.7.4 G13 Corridors

This Direction indicates the need for the retention of previously identified land for special use, open space, communications or other corridor purposes.

The Tweed LEP 2000 zoning maps currently depict a special use zone for Lindisfarne Anglican Secondary School, and corridors established under Clauses 37 and 38 for 'future roads' and 'transmission line corridors' respectively. These corridors and zone will be protected through appropriate zoning and other mapping related controls.

4.7.5 G21 Conservation of Environmental Heritage and Ecologically Significant Items and Areas

This Direction identifies the need to conserve environmental heritage and ecologically significant Items, including items of aesthetic significance for the local government area.

Area E elements of ecological significance have been identified in Section 3.1 the LES. The draft LEP prepared for the site will incorporate appropriate Environmental Protection zoning for wetlands and associated buffers and provisions for habitat protection (as previously indicated).

In this instance, items of aesthetic significance, as they apply to Area E, includes the protection of scenic views, prominent ridgelines and other elements of scenic value (identified in Section 3.11), where possible. Provisions for the protection of these values will be developed for the draft LEP.

4.7.6 G25 Flood Liable Land

This Direction requires the identification of flood liability of the land and accordingly, the Floodplain Management Manual 2001, to be considered upon the preparation of the draft LEP.

Section 3.3 of the LES contains the flood assessment for Area E, indicating that areas in the vicinity of Trutes Bay are susceptible to flooding in a 1 in 100 storm event. Future development in flood prone areas on the site will also need to be consistent with the Floodplain Management Manual 2001.

4.7.7 G27 Planning for Bus Services

This Direction requires that where the draft LEP rezones land giving rise to the need for bus services or a revision of bus services (as per Area E), that consideration be given to technical guidelines and consultation with the Department of Transport and Regional Services. The impact of releasing Area E for urban development on bus services is discussed in Section 3.8.

4.7.8 S26 Coastal Policy

This Direction requires the consideration of provisions of the NSW Coastal Policy 1997 when preparing a draft LEP. Table 1, Appendix C of the Coastal Policy contains Strategic Actions relevant to the preparation of LEPs, including for the Natural Environment, Natural Processes and Climate Change, Aesthetic Qualities and Cultural Heritage amongst others.

These Strategic Actions have been considered in the preparation of the LES and will be addressed in the draft LEP where appropriate. Table 4.3 below outlines how the issues raised in Table 1, Appendix C of the Coastal Policy, have been considered.

Table 4-3: Strategic Actions Relevant to the Preparation of LEPs

Strategic Action Number	Summary Provision	Response/ Applicability to Area E
Natural Environment		
1.1.2	Dedication of areas with land and/or marine and estuarine conservation values.	Not local government responsibilities under the <i>NSW Coastal Policy 1997</i> . Hence, not relevant to the draft LEP.
1.1.3	Dedication of Crown lands and submerged lands.	
1.1.3	Reservation of Crown foreshore land.	
1.1.5	Classification of open space and conservation value land.	Council to determine the extent of classification of open space and conservation valued lands, as community land, under the <i>Local Government Act 1993</i> .
1.1.9	Conservation zonings in LEPs.	Appropriate zonings from the Environmental Protection suite of zones, or provisions will be formulated for areas of conservation value.
1.1.10	Marine park zoning and operation plans.	Not applicable- not adjacent to a Marine Park.
1.1.11	Open space networks/corridors.	Open space networks will be based on a combination of waterway and vegetation corridors, combined with buffers and passive and active recreation areas. These will be reflected in appropriate zonings
1.3.7	Water quality and environmental flow objectives through catchment plans.	This LES has identified that water quality and flow objectives that maintain the quality of Terranora Broadwater can be achieved. The implementation of a catchment management plan to achieve these objectives is more appropriately addressed through a subsequent DCP and as requirements/ conditions of development approval.
1.3.14	State Groundwater Policy.	There are active users of groundwater in the area. Conversion of the site to residential uses is likely to limit any potential impact on groundwater as compared to the current agricultural practices. There are unlikely to be users of groundwater in the area in the future.
Natural Processes & Climate Change		
2.1.1	Incorporation to coastline, estuary and floodplain management plans into LEPs.	This LES has addressed requirements of the Terranora Broadwater Management Plan in respect of water quality. There are no specific matters from management plans that require specific attention in the LEP.
2.2.2	Sea level change.	The site rises quickly from Terranora broadwater and as such the majority is located above Council's 1 in 100 year flood level. Given the location and elevation of the site sea level change is anticipated to have little or no impact.

Strategic Action Number	Summary Provision	Response/ Applicability to Area E
Aesthetic Qualities		
3.1.2	Provisions to protect areas or items of high aesthetic value.	The Development Control Plan will include provisions for substantial protection of the LES identified natural items of high aesthetic value. Tweed Shire also has controls in place relating to cut and fill of land which will assist in controlling potentially landscape impacting works. In addition areas of significant vegetation and waterway corridors will be included in zones which will ensure their protection.
3.2.4	Design and locational principles for LEPs.	Given the topography of the site and landscape values care will be required in the location and design of housing, roads and other infrastructure. The draft LEP would be generally consistent with the requirements of Appendix C Table 3 Design and locational principles of the Coastal Policy The provisions of the Coastal Design Guidelines For NSW (2003) will be included in subsequent planning provisions where appropriate.
3.3.1	Local and regional housing strategies.	No local or regional housing strategy has been prepared for Tweed Shire.
Cultural heritage		
4.1.2	Coastal heritage resources.	No items of Indigenous or European cultural heritage have been identified on the site (See Section 3.7)
4.1.4	Views, vistas, street patterns and layout, heritage items.	Development control plans and Local design guidelines will include provisions for substantial protection of significant views and vistas within and from the greater locality.
Ecologically Sustainable Use of Resources		
5.1.2	Regional economic development strategies.	No regional economic development strategies were identified as being applicable.
5.1.3	Agricultural land.	An assessment of the agricultural potential of Area E lands is made in Section 3.9 of the LES.
5.1.7	Aquaculture.	Not local government responsibilities under the <i>NSW Coastal Policy 1997</i> . Hence, not relevant to the draft LEP.
5.1.8	Mineral exploration.	
5.2.3	Integration of management plans into LEPs.	Requirements of the Terranora Broadwater Management Plan have been taken into account.
5.2.11	Local tourism development plans.	No known Local tourism development plans applicable to Area E; preparation of same is outside of the scope of the draft LEP.

Strategic Action Number	Summary Provision	Response/ Applicability to Area E
Ecologically Sustainable Human Settlement		
6.1.1	Coastal urban planning/settlement strategies (regional).	Section 3 of the LES deals with the policies and provisions of regional urban/settlement strategies.
6.1.2	Urban land release/settlement strategies (local).	The release of Area E for urban development is commensurate with the <i>Residential Development Strategy 1991</i> .
6.1.4	Canal estate developments.	No canal estate developments are planned, and are otherwise prohibited.
6.2.1	Boundaries, amount and form of urban development.	The draft LEP and accompanying instruments will define the boundaries of urban areas and indicate the amount and form of development which is appropriate for each location. In addition the use of Area E for urban development will consolidate the urban development footprint in the area rather, as it is an infill site. This will take pressure off the expansion of the current boundaries of urban development in the area.
6.3.1	Rural residential release strategies.	The LES does not advocate rural residential development for Area E.
6.4.1	Housing choice.	Housing choice dependant on market demands; the draft LEP will not overly constrain housing choice, by way of appropriate residential zone selection.
6.4.2	Higher density residential development close to coastal town centres.	The LES advocates low-medium density development, dependant on servicing, including transportation.
Public Access and Use		
7.2.4	Surf life saving services and Section 94 plans.	Not applicable- no nexus to Area E

4.7.9 Unnumbered Direction- Coastline Management Manual

Schedule 1 of the Unnumbered Direction identifies the application of the Direction to Tweed Shire Council. However, given the inland location of Area E, and its only frontage to a dominant water body being Terranora Broadwater, the need for compliance with the provisions of Coastline Management Manual 1990 is tenuous.

Regardless, a summary review of the Coastline Management Manual 1990 identified that the proposed urban release of Area E would be consistent with, and not otherwise compromise the achievement of, the provisions of this Manual.

4.7.10 Circular 1 Acid Sulfate Soils

Area E lands identified in Section 3.2 of the LES were noted as being subject to acid sulfate soils (ASS) and potential acid sulfate soils (PASS). Hence, Circular 1 indicates the need for the draft LEP to consider the contents of the Environmental Protection Authority Acid Sulfate Planning Guidelines 1988.

The provisions of the Acid Sulfate Planning Guidelines 1988 have been considered in a preliminary as part of this LES. The constraint that ASS and PASS imposes on urban development in such areas was previously noted. It is the intention of the draft LEP to adopt the existing provisions in Section 35, Part 7 of the Tweed LEP 2000 (it is assumed that such provisions are consistent with the ASS LEP in the Acid Sulfate Planning Guidelines 1988)

Parts of the site containing acid sulfate soils (actual and potential) will be largely excluded from development due to this and other constraints.

4.8 North Coast Urban Planning Strategy 1995

The North Coast Urban Planning Strategy 1995 (NCUPS) aims to manage the expected growth of the North Coast Region, in an efficient and sustainable manner. In particular, it nominates centres best able and best located, to accommodate the major share of the region's growth (DOP, 1995, p.V).

'The Local Picture: Tweed Heads/ Murwillumbah' (Local Picture) identifies local growth opportunities to support the regional concept. The Local Picture identifies the locality of Area E generally as a mosaic of 'good agricultural land', 'floodplain', 'forest cover' and 'coastal wetlands'. No specific direction is conferred within the NCUPS as to the planning of Area E, although reference is made to Council's Integrated Local Area Plan (ILAP) program, to confer further detail on the Area.

It is noted from diagrams included in the local picture, that urban growth in South Tweed Heads is expected to occur in a north-south oriented manner. However, only Fraser Drive separates the most southern portion of the outlined South Tweed Heads urban growth corridor from Area E. If urban development occurs in-line with this expected corridor, then it can be expected that some of the urban growth will overflow into, and infill Area E residential components.

5. Guiding principles for Ecologically Sustainable Development

5.1 Overview

This section of the LES provides an overview of the principles of ecologically sustainable development (ESD) as they relate to the Area E.

Australia's National Strategy for Ecologically Sustainable Development 1992 (NSESD) defines ESD as:

'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'.

There is growing recognition that we have to look beyond economic progress to achieve sustainable societies. Sustainable Development must be ecologically sustainable. Economic and social progress depends on base ecosystem services (for example oxygen production and carbon dioxide absorption by plants) and a healthy environment. Development also implies an improvement in the quality of life through education, justice, community participation and recreation.

Three principles that are necessary to understanding sustainable development are:

- intergenerational equity;
- the precautionary approach; and
- biodiversity conservation.

Together these approaches aim to prevent and reverse adverse impacts of economic and social activities on the ecosystem, while continuing to allow the sustainable, equitable development of societies.

Some key changes to the way we think, act and make decisions will help ensure Australia's development is ecologically sustainable. In particular:

ESD requires the consideration, in an integrated way, of the wider economic, social and environmental implications of decisions and actions. This requires a long-term rather than short-term view when taking decisions and actions.

The National Strategy for Ecologically Sustainable Development (NSESD) provides broad strategic directions and framework for governments to direct policy and decision-making. The Strategy facilitates a coordinated and co-operative approach to ecologically sustainable development (ESD) and encourages long-term benefits for Australia over short-term gains.

The NSESD was adopted by all levels of Australian government in 1992.

Since 1992, the pursuit of ecologically sustainable development has been increasingly incorporated into the policies and programs of Australian governments as a significant policy objective (for example, the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC)).

5.2 Environment Protection and Biodiversity Conservation Act 1999

Under the environmental assessment provisions of the EPBC Act, actions that are likely to have a significant impact on a matter of national environmental significance are subject to a rigorous assessment and approval process. An action includes a project, development, undertaking, activity, or series of activities.

The Act identifies six matters of national environmental significance:

- World Heritage properties;
- wetlands which are listed as Ramsar wetlands of international importance;
- nationally threatened species and communities which are listed under the EPBC Act (note that these species may not be the same as those listed under state legislation);
- migratory species that are listed under the EPBC Act (these are migratory species protected under international agreements);
- Nuclear actions, including uranium mining; and
- the Commonwealth marine environment (which is generally Australian waters beyond the 3 nautical mile limit of State waters).

Under the EPBC Act a person must not take an action that has, will have or is likely to have a significant impact any of these matters of NES without approval from the Commonwealth Environment Minister. There are penalties for taking such an action without approval.

This report has included an assessment as to whether any actions which may arise as a result of this study will have or is likely to have a significant impact any of these matters of natural environmental significance. In summary:

- The study area does not contain any World Heritage properties.
- The study area does not contain any wetlands which are listed as Ramsar wetlands of international importance.
- The site contains nationally threatened plant species (see section 3.1) which are listed under the EPBC Act. However steps can be taken to ensure that these are protected including appropriate zoning and development controls.
- The adjacent Trutes Bay area is a significant habitat for wader birds which includes migratory species that are listed under the EPBC Act. Given the substantial wetlands, associated buffers and controls that are to be imposed on development likely to arise out of this study, is not likely to have a significant impact on migratory species that are listed under the EPBC Act.
- The LES and subsequent potential development will not be associated with Nuclear actions.
- With the incorporation of appropriate measures for the management of stormwater the development likely to arise out of this study is not likely to have a significant impact on the Commonwealth marine environment.

It is therefore concluded that development that is likely to result from the potential alteration of land use as a result of this study will not have a significant impact on any matters of National Environmental Significance.

5.3 Local Government Act 1993

As part of the adoption of the NSESD the NSW Local Government Act 1993 incorporated the following statement:

"principles of ecologically sustainable development" means the following statements of principle:

Ecologically sustainable development requires the effective integration of economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:

(a) the precautionary principle - namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:

(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

(ii) an assessment of the risk-weighted consequences of various options,

(b) inter-generational equity - namely, that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations,

(c) conservation of biological diversity and ecological integrity - namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,

(d) improved valuation, pricing and incentive mechanisms - namely, that environmental factors should be included in the valuation of assets and services, such as:

(i) polluter pays - that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,

(ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,

(iii) environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

5.4 Coastal Protection Act 1979 and the NSW Coastal Policy

The NSW Government has adopted the four basic principles of ESD in legislation¹ and policy related to natural resource management. Within the Coastal Zone as defined in the Coastal Protection Act (1979, as amended 1998), the application of these principles is of considerable importance given the intense pressures on the natural environment from human activity, and "that there are a large range of competing interests for its resources" (Coastal Policy 1997, p14). An approach based on ESD is seen as the best opportunity to reconcile competing interests.

The four core principles of ESD as outlined in the 1997 Coastal Policy are:

- Conservation of biological diversity and ecological integrity. This refers to the need to conserve the variety of all life forms, especially the variety of species, and to ensure that the productivity, stability and resilience of ecosystems is maintained.
- Inter-generational equity. This requires that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations. Social equity considerations, in terms of equal access opportunities to resources, are inherent in the concept of inter-generational equity.
- Improved valuation, pricing and incentive mechanisms. This requires environmental factors, such as the value of ecosystems, polluter pays principles, and incentive mechanisms are incorporated into the valuation of assets and services and considered in decision-making processes.
- The precautionary principle. Requires a risk averse approach to decision making. Where there are threats of serious or irreversible environment damage, lack of full scientific certainty is not to be used as a reason for postponing measures to prevent environmental degradation.

5.5 The Potential Development of Area E and implications for the principles of Ecologically Sustainable Development

NSW legislation and a number of government agencies have required the principles of ESD to be addressed in regard to the potential development of Area that may result from the findings of this LES. This will be addressed in terms of the four core principles set out in the NSW Coastal Policy 1997.

5.5.1 Conservation of biological diversity and ecological integrity

The biodiversity values of Area E and the surrounding area have been identified in Section 3.1 of this report. They are, in summary:

- estuarine and wader bird habitat located in the adjacent Trutes bay and wider Terranora Broadwater;
- habitat, water quality, and other wetland values of the large wetlands located on the northern boundary of the study area;
- the large lowland subtropical rainforest area adjacent to the wetlands;
- numerous native forest remnants mainly located, adjacent to the wetlands, on the steep hillsides and waterway corridors throughout the site; and
- the potential fauna corridor generally associated with the wetlands and other vegetation located on the northern boundary of the study area.

One of the factors behind the retention of areas of biodiversity significance with the study area itself, is the fact that areas occur on lands which is constrained for development by means of excessive slope, flooding, soils, drainage or other factors.

As a consequence, even with the development of land suitable for urban development within the study area, the majority of areas of ecological significance will be retained as it is unsuitable for one or more reasons.

This will also ensure that many of the other values of the site including landscape values will also be protected.

A significant impact of urban development is the impact of stormwater runoff and in this case the fragile nature of Terranora Broadwater is of concern. Failure to manage urban runoff could further impact on the poor water quality of the Broadwater and have impacts on habitat, fisheries and recreational values. The previous and current use of the study area for intensive agriculture has resulted in poorly managed stormwater runoff which has resulted in siltation and the introduction of agricultural chemicals into the Broadwater. Water quality from the potential urban development within the site is likely to result in an improvement on the current situation with respect to impacts on the Broadwater. This study has identified measures that have the potential to make significant improvements to water quality entering the Broadwater. This will also have the effect of ensuring that environmental flows into the wetlands are appropriate. Servicing of the site will also provide the opportunity to provide reticulated sewerage to existing rural residential sites in Parkes Lane. These sites are currently serviced by on-site systems which are known to deteriorate over time. This will have a resultant positive impact on runoff entering Terranora Broadwater.

Areas of remnant vegetation and waterway corridors are also able to be protected and potentially rehabilitated as part of any development of the site. This will ensure that these remnants have improved viability as in their present state the predominance of exotic species and agricultural practices on adjoining lands do not create environments which are favourable to the survival of native species. Rehabilitation also has the potential to improve habitat connectivity and corridor values.

5.5.2 Inter-generational equity

A significant issue affecting the potential development of this site is the loss of the good quality agricultural land resource represented by Area E lands. The development of Area E for urban purposes will result in the sterilisation and loss of this finite resource. Previous land use decisions made in regard to the study area and surrounding lands have severely impacted upon the agricultural viability of this land by encroachment and intrusion of incompatible land uses, eroding buffers and limiting the ability to farm the land in accordance with common practices. The limitations on farming of this land have been reflected in the general decline of the farming within the area to the present day where the majority of the area lies fallow. The lack of viability of this land has also been recognised by the NSW Agriculture who have previously advised that the site may be rezoned for residential purposes. Although the loss of this resource is regrettable, previous decisions have severely impacted on the agricultural viability of this land.

The use of Area E for residential purposes has a number of advantages in that it will promote the consolidation of the urban footprint in the area, being infill development which will have the flow on effect of relieving pressure to expand urban development in other parts of the Shire. Use of the site would also place potential residents in closer proximity to the range of services and facilities provided in Tweed Heads and Tweed Heads South. Extension of services to the site is also more efficient as most services already traverse the site and are of sufficient capacity or able to be easily upgraded.

Water quality leaving the study area can also be significantly improved over that resulting from current farming activities. This will have resultant improvements on the health of the wetlands and water quality in Terranora Broadwater. This report also proposes the uses of best practice water quality measures (water sensitive urban design) for any urban development. This will add to the protection of ecological, fisheries, wetlands and recreational values of the area.

5.5.3 Improved valuation, pricing and incentive mechanisms

The intrinsic values of habitats, water quality, landscape and other features of the site have been taken into account as part of this study. The habitat value of existing vegetation, wetlands and the adjoining Terranora Broadwater are recognised in numerous studies and accordingly will be protected.

The provision of infrastructure to the area is able to be done in a cost effective manner as most infrastructure already traverses the site and can be readily upgraded to meet potential demand. Payment and provision of infrastructure including water quality infrastructure will be required to be met by developers within the study area. This will be achieved through both existing S 94 charges and new charges raised to deal specifically with infrastructure that is specific to Area E.

5.5.4 The precautionary principle

There have been a number of studies carried on Area E and adjacent areas to document the values of the site and the potential impacts that will arise if development of the land for urban purposes occurs. This study has identified that with appropriate development controls, land use allocations and potential improvement projects development of the site can be undertaken without significant impacts on the environment.

In addition, urban development will provide the opportunity to curb impacts from current farming activities on the surrounding area and to implement strategies that will result in potential improvements, including water quality and quantity management, contaminated land rehabilitation, rehabilitation of degraded land and vegetation, improvement of transport links and limitation of land use conflicts.

The loss of agriculturally productive land will be hastened by a decision to allow urban development within Area E, however the continuation of this use is highly unlikely given the limitations placed on agriculture in the area and the erosion of any market advantage that this site once held.

6. Area E Land Use Analysis

This Section provides a summary of the land use opportunities and constraints affecting Area E, together with recommendations for the future land use of Area E which take into account these opportunities and constraints. Supporting the recommendations for the land use are associated recommendations for the formulation of the draft LEP zones and associated provisions for Area E.

6.1 Land use opportunities

There are a number of land use opportunities that can be capitalised upon in the release for urban development of Area E. Section 3 should be referred to for detail regarding the individual land use opportunities of Area E; it is not the intent of this Section to undertake an appraisal or otherwise duplicate the contents of Section 3.

A general summary of land use opportunities identified from Section 3 of the LES include:

- Area E is a logical westward extension of Banora Point residential development (at the interface of Fraser Drive), and represents logical infill development between Terranora village (the area covered by Terranora Village DCP) and Banora Point.
- The agricultural viability of Area E has historically been significantly diminished to an extent that precludes future agricultural pursuits (which would otherwise require intensive agricultural and unsustainable farming practices to achieve a measure of viability).
- Removal of agricultural uses and the introduction of water sensitive urban design principles for subsequent development will significantly reduce water quality impacts on Terranora Broadwater. In addition the cessation of agricultural uses will eliminate current conflicts between agricultural and urban uses.
- Most significant vegetation and waterway corridors occur in locations that are precluded from development and as such they can be readily protected.
- The ability to provide integrated land use concepts based on the treatment of Area E as a single cadastral parcel devoid of tenure or ownership issues.
- The ability to interconnect Area E into the greater context, particularly the Terranora DCP area immediately west of and adjacent to Area E.
- The extent of physical land mass enables adequate buffers to protect wetland areas, protection of existing ecological and water way corridors, and areas of significant vegetation as otherwise identified.
- The extension of Mahers Lane and its interconnection into Fraser Drive and the greater transportation network.
- The opportunity to rehabilitate disturbed wetlands, manage overland stormwater flow and manage biting midge and mosquito problems, through the development of artificial wetlands that build upon the existing system of ecological corridors, dams and wetlands on and adjoining Area E.
- Provision of recreation and social facilities to a standard that allows for adequate baseline community service provision to Area E.
- Potential to provide foreshore access in riparian areas, where they would compromise the ecological values of such areas.

- Services already traverse the area or can be readily extended to efficiently service the area. In addition servicing of the area will also provide the opportunity to sewer rural residential lots in Parkes Lane.

6.2 Land use constraints

Figure 6.1 depicts the physical land use constraints affecting or otherwise impacting on potential land uses within Area E. Again, it is not the intention of this Section to undertake an appraisal or otherwise duplicate the contents of Section 3, which should otherwise be referred to for detail regarding individual land use constraints.

A general summary of land use constraints identified and planning implications from Section 3 of the LES include:

- Location of wetlands – the SEPP 14 wetlands located on the site must be protected by appropriate zoning and buffers and require rehabilitation to restore freshwater habitat.
- Waterway corridors – there are a number of waterway corridors across the site which must be protected. These areas also generally coincide with much of the remnant vegetation on the site.
- Location of remnant vegetation – these areas are generally constrained due to a range of physical factors and as such can generally be retained as part of the development of the site.
- The area contains good quality agricultural land which is an important resource.
- Dam locations – there are a number of farm dams located throughout the site. These are generally associated with waterway corridors and as such can be incorporated into the stormwater management system.
- Areas of restrictive geological stability/Slopes greater than 27% – these areas generally coincide with vegetation remnants and as such will be largely excluded from development.
- Designated/ recommended road and electricity transmission corridors - these areas must be set aside including appropriate buffers. The Mahers Lane - Fraser Drive road corridor will be used as the northern boundary for residential development. The electricity transmission line corridor largely coincides with a waterway corridor/remnant vegetation.
- Corridors for existing infrastructure and requirements for new corridors and infrastructure sites – an existing sewer pipeline traverses the site and must be protected. New pipelines for water and sewer, a water reservoir site and a sewer pump station site will be required.
- Major land uses already developed in Area E – Lindisfarne School occupies part of the site and future planning must accommodate the long term future and expansion of this use.
- Requirements for new community infrastructure – NSW Department of Education have identified that they will require a primary school site. Open space and community facilities must also be provided to serve the needs of the population.
- Areas of potential and actual acid sulfate soils – these areas have poor load bearing capacities and if disturbed can result in a range of impacts on the environment and assets. These areas will be largely excluded from development. Some infrastructure

(roads and pipelines may be required in these areas which will require specific consideration at development stage.

- Land subject to flooding (Q100) – these areas will be excluded from development.
- Salt marsh mosquito habitat – salt marsh mosquitos have the potential to impact upon the amenity of the area if developed for urban purposes. Rehabilitation of the wetland to restore a freshwater hydrological regime will be required to limit salt marsh mosquito breeding habitat.
- Protection of scenic amenity – Area E has scenic qualities by virtue of open/rural character and remnant vegetation. While much of the remnant vegetation can be retained the open/rural character will be more difficult to protect with a change in land use.

The presence of an identified constraint in Figure 6.1, that may affect a land parcel in Area E, does not preclude it from immediate development or urban land release. Identified constraints indicate the need for further ameliorative measures, considerations and/or environmental factors to be undertaken in order to ensure that development does not impact upon (eg ecological corridors), or is otherwise impacted upon by the constraint (e.g. electricity transmission lines).

6.3 Land Use Options

This section considers possible scenarios for the future land use of Area E. While Area E has been identified for a considerable period of time as a logical area for urban infill the site still has significant values in terms of its value as an agricultural resource, scenic amenity and other important values.

This section assesses options for retention of Area E in largely its current state (Option 1) and for the urban development of the area (Option 2). These options are outlined and assessed below.

A third option of limited development within Area E has been dismissed as it would be unlikely to allow productive agricultural use of the land and would result in the inefficient use of land. Previous advice from NSW Agriculture has been that (10 February 1995) that it will not oppose the rezoning of lands adjoining Mahers Lane providing that it goes to a residential zoning. This higher zoning is considered appropriate as other forms of development such as rural residential development are widely regarded as an efficient use of residential capacity land.

6.3.1 Option 1 – maintain current land use

This option consists of the retention of Area E largely in it's undeveloped state allowing for the ongoing broad hectare use of the land.

The continued use of the site for agricultural practices would not be guaranteed by the retention of the land in it's current 1(b) Agricultural protection zone as most of the landholders have currently ceased active farming of the land due to economic viability and encroachment by urban development. Urban encroachment, including the intrusion of Lindisfarne Anglican College into Area E, has been a source of ongoing conflict.

The assessment of agricultural viability contained in this LES indicates that buffers of approximately 150 metres would be required to buffer agricultural and urban uses in order to limit ongoing conflicts. Given that the buffer cannot be imposed over urban development the

only alternative would be to impose this buffer over lands within Area E. The result of this would be the exclusion of the majority of land that is currently being productively farmed.

would mean that intensive agricultural practices would need to retreat to the centre of the site whereas at the current time the most successful (and majority of) operations are located on the periphery.

NSW Agriculture has previously identified in correspondence (10 February 1995) to previous consultants dealing with the site, that it will not oppose the rezoning of lands adjoining Mahers Lane providing that it goes to a residential zoning. This correspondence indicates that the provision of Lindisfarne School within the centre of the agricultural land has created a significant point of conflict between uses.

Similarly, previous studies (Wilkie Fleming and Associates, 1994) indicate that the intrusion and encroachment by urban development, the need to employ a high level of technology to maintain productivity, the limitations placed on farming practices (by both surrounding uses and the physical constraints of the land for agricultural production) and the loss of market advantages through improved transport for other areas, has undermined the long-term viability of these lands for agricultural production.

In reality it is likely that this option would result in the ongoing use of Area E for agricultural production and that over time the three major operations still on site would cease. This would result in a situation of areas lying fallow and ongoing pressure being placed on Tweed Shire Council to allow rezoning of the land for higher order uses.

Within this 150 metre buffer productive and economic use of the land would be difficult. This

Over the short term agricultural activities would continue to impact on the wetlands complex and adjacent Terranora Broadwater. These impacts would diminish as more intensive uses within the area ceased. The potential to provide funding for the rehabilitation of the adjacent wetland area through a developer contributions plan would also be limited.

The rural/open character values of Area E would be maintained by this option however it is likely that the quality of land management would decrease over time due to the lack of economic drivers.

A further potential drawback of this option would be the possibility that the proposed Mahers Lane/Fraser Drive road extension would not be constructed. This road has benefits not only to Area E, but also to residents/traffic generated by development further to the west. While this project could be pursued, funding of the project would be harder to procure.

6.3.2 Option 2 – urban development

Option 2 proposes for the urban development of much of Area E. Based on constraints analysis approximately 205ha of land would be available for urban development, and 91.4ha of land would be set aside for environmental protection purposes.

This option would allow the development of Area E which has been identified for a considerable period of time as a logical infill site, being located between two existing urbanised areas.

The main impacts of this option would be the loss of important agricultural land and impacts on landscape values. In the first instance the future of this resource has been in question for some time and use of the resource has been limited over time by ongoing urban

encroachment. It is unlikely that this area would continue to be farmed much into the future regardless of whether the area is allowed to develop.

The impacts of urban encroachment have been ongoing and decisions over time such as approval of Lindisfarne School and failing to impose buffers on surrounding development have severely limited the future agricultural potential of this site.

Cessation of agricultural activities on the site would have immediate beneficial impacts in terms of limiting ongoing rural/urban land use conflicts and limiting ongoing impacts on the wetlands area and the Terranora Broadwater from farming activities.

In regard to impacts on landscape values particular care will be required to ensure that important vegetation is maintained, cut and fill is minimised and that development forms suit the topography and landscape characteristics of the area. The development will result in the loss of rural/open character values which can only be ameliorated to a certain extent. Development of Area E will impact on views from external to the site.

While cessation of farming activities will result in an improvement in water quality, the subsequent urban development has the potential to degrade water quality is not appropriately managed. Urbanisation typically increases run off volumes as well as pollutant loads and the sensitive nature of the wetlands and the adjacent broadwater are key concerns. Studies carried out for this LES indicate that a holistic approach to catchment management including water sensitive urban design, artificial wetlands will be required.

This LES has also identified that on site wetlands provide breeding habitat for salt marsh mosquitoes which unless managed will impact upon the desirability of residential development in the area. It is proposed that the wetland, which has been previously modified, will need to be rehabilitated to restore a freshwater regime and subsequently limit salt marsh mosquito breeding habitat. Given the benefit to the whole of the area this should be addressed and funded by all developers within the area.

Option 2 provides the opportunity for consolidating urban growth in Tweed Shire. At the present time there is significant demand for urban land in the shire and this site represents an opportunity to consolidate on growth rather than to allow uncoordinated development in other parts of the shire. In the absence of the release of Area E pressure would be placed on Tweed shire Council to allow development in other parts of the shire.

In this case the loss of the agricultural land resource needs to be balanced with the opportunity of providing for land use which extracts the best and highest value of the land. Use of the land for low key rural activities would not be economically viable but would preserve most landscape qualities. Development for rural residential development would also tend to preserve some landscape qualities but is considered by most to be a wasteful use of land resources, being costly to service and of low population yield for land close to major amenities and services. As a consequence higher density urban development is considered appropriate in the form of detached houses and multi-dwelling housing in strategic locations.

The site is able to be readily serviced with all major utilities and has been included in ongoing planning for urban growth since the early 1990s. In terms of amenity due to the topography of the site, views and other features development would generally be expected to be provided with a very high level of amenity.

The overall size and shape of the site lends itself to the establishment of a well developed movement network, a high quality of urban design and opportunities for a range of land uses that would contribute to the well being of future residents.

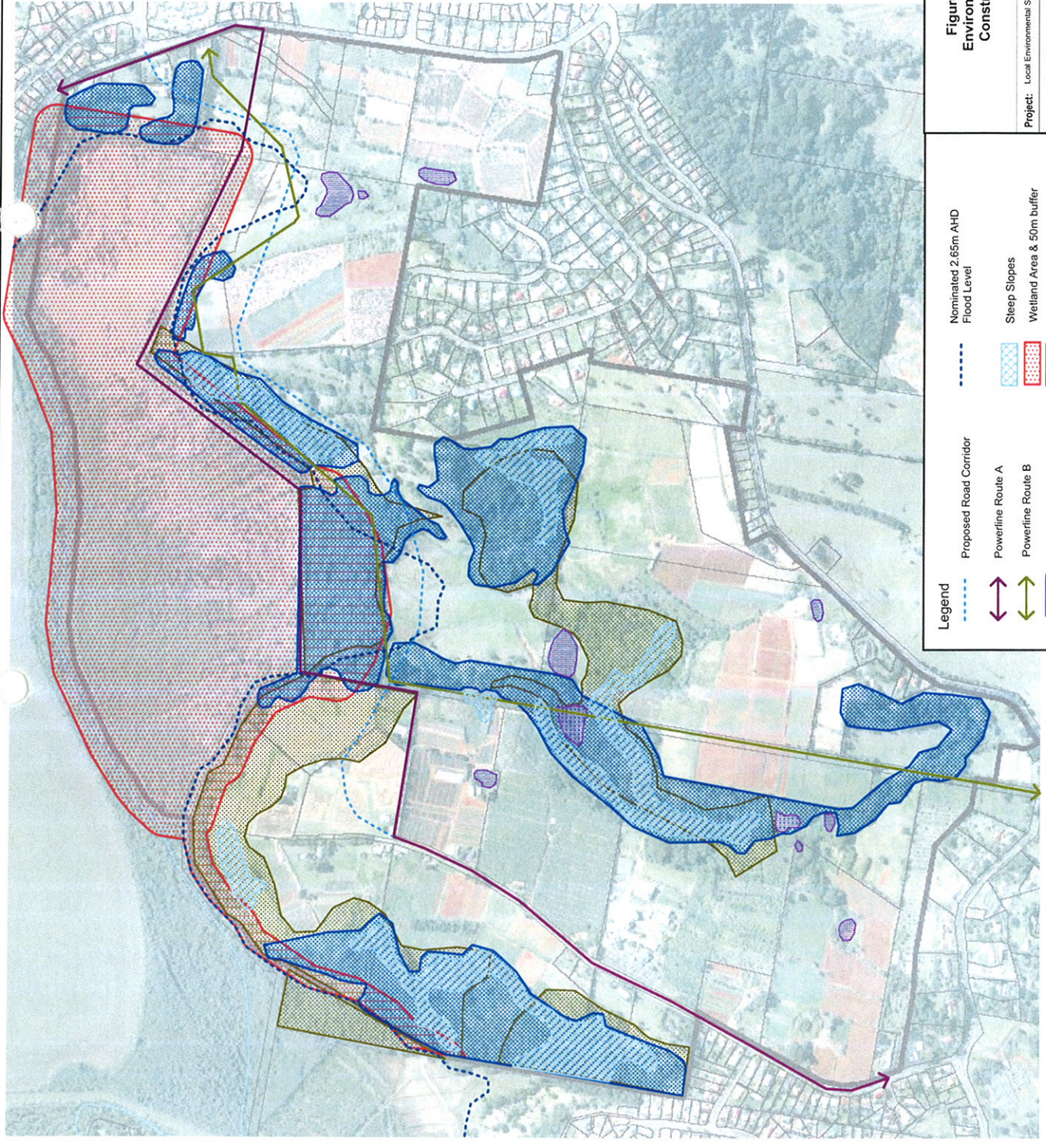


Figure 6.1 Environmental Constraints	
Datum:	As Shown
Scale:	MB
Author:	MB
Checked:	
Project:	Local Environmental Study
Client:	Tweed Shire Council
Job Number:	2136275A
Date:	15/07/03
Revision:	
Drawing Number:	

Proposed Road Corridor	Nominated 2.65m AHD Flood Level
Powerline Route A	Steep Slopes
Powerline Route B	Wetland Area & 50m buffer
Dams	Restrictive/Unstable Slopes
Riparian & Landscape Amenity Areas	



Impacts on surrounding land uses will occur as a result of the development of Area E. One of the most significant will be traffic impacts on areas to the east which lie between area E and likely destinations. This can be controlled in part by additional roadworks, many of which are planned or underway. Tweed Shire Council is currently examining arrange of other options which if implemented will further reduce these impacts.

Current rural living zoned land surrounding Parkes Lane is likely to be sewerred as a result of development of Area E. This will have a positive effect on water quality in the area but may create pressure for resubdivision of these lots. This is likely to create some community angst as there will be land holders in this area wishing to retain the large lot amenity of the area and other wishing to pursue subdivision of heir lots. Subsequent pressure may be placed on Council to allow this to occur. Residents in this area are unlikely to be subject to more traffic as a result of the development as Area E will actually provide an alternative access to existing residents and the new route created through area E will generally be more convenient and direct for new residents of area E.

Current landholdings fronting Terranora Road and on the southern side of Terranora Road will be subject to loss of landscape values. Much of the land on the western side of Terranora road is already developed for rural residential subdivision and its current subdivision pattern is likely to remain.

Overall impacts on land located to the west are likely to be minor apart from loss of landscape values viewed when travelling past the site. Areas to the west will also benefit from the Mahers Lane extension which will provide an alternate access route to Terranora Road.

6.4 Recommendations

The following land use recommendations are based on an appraisal of both the physical and statutory land use opportunities and constraints identified in this LES and discussed above in the context of various land use options for the land.

6.4.1 Environment and Open Space

Area E contains a number of environmental assets that require conservation and protection within any land-use mosaic chosen for Area E. These environmental assets include not only the wetland areas adjoining Trutes Bay and SEPP14 areas, but also buffers, subtropical rainforest remnants and those areas identified as waterway corridors (creek systems with associated vegetation stands). The SEPP 14 Wetlands and associated buffers as well as the lowland rainforest will be protected through appropriate environmental protection Zones. One area of waterway corridor occurs on steeper land and also contains plant species of national significance. Due to the characteristics of this corridor it should be retained in an appropriate environmental protection zone.

In constraints mapping, other areas of vegetation identified as adjoining a waterway have been identified as waterway corridors. Such areas are valued for the buffers they provide from urban development to the invert of the associated waterway. The retention of such waterways is important in the overall development of an integrated network of natural on-site stormwater mitigation measures. These areas are largely undevelopable. These areas can be protected through appropriate controls identified at Development Control Plan Stage and as such it is not necessary to include them in an environmental protection zone. Inclusion of these areas in Zone 2(c) Urban Expansion is considered appropriate.

The Tweed Shire Council Open Space Infrastructure Policy indicates that 4 ha of open space are required per population of 1,000 persons. Based on an expected population of 4,324 persons, approximately 17.3ha of open space will be required for Area E. This will be apportioned generally as 7.35ha of structured (active) open space areas (such as playing fields) and 9.94 ha of casual (passive) open space areas (such as local parklands and linear parks). These areas have not been specifically identified at this stage but will be identified during the preparation of a Development Control Plan. Zone 2(c) Urban Expansion allows for such uses to be identified in such a manner.

6.4.2 Infrastructure

The Lindisfarne Anglican Secondary School site, Lot 2 on DP1018747, is approximately 16.1ha including the existing school improvements, together with residual land for expansion. This site will be protected in the draft LEP through retention of its partial present Special Use Zone 5(a), as increased to include the entire cadastral lot.

The need for suitable land area to be set aside for the development of a primary school is recognised. However, a specific site will not be identified at present, with partial reliance on the flexibility of the Residential Zone 2(c) Urban Expansion, to enable this form of development once suitable population thresholds have been reached.

With regard to trunk (or major/primary) infrastructure required to service both Area E and external areas, land area provision will be made for the following infrastructure (including associated buffer areas):

- Mahers Lane - Terranora Road extension, which will be a minimum of 50 m from the extent of any wetland area (to facilitate wetland conservation);
- both electricity transmission corridors (subject to Clause 37 of the LEP) identified in constraints mapping, including a buffer (in plan) of at least 20 m (total width) to facilitate operational and occupational health and safety (the linear buffer would be able to be utilised for passive recreation and would provide connection to local and district level parks);
- a 3 ML water reservoir of 30m diameter that requires approximately 0.3ha of site areas; and
- protection of existing sewer mains traversing the site and new corridors for such infrastructure.

6.4.3 Residential

Area E is approximately 297 ha in area, with constraints affecting the development of Area E totalling approximately 91.4 ha. This results in a residual land area balance of approximately 205.6 ha.

Further, from this land area balance a nominal 25% was allocated for infrastructure such as roads, transmission line corridors and water reticulation infrastructure (such as the 3ML water reservoir). The following approximate land use apportionment is envisaged:

- 130.45 ha being utilised for residential development at varying lot densities;
- 16 ha being utilised for open space (as identified previously);
- 15.15 ha being utilised for educational purposes;
- 1,000 m² being utilised for a local commercial centre; and
- 1,000 m² being utilised for local community purposes infrastructure.

Based on an appraisal of current market demand and 'Policy & Action 122' of the Tweed Shire 2000+ Strategic Plan, the lot size for detached dwellings proposed for Area E is an average of 800m², with a minimum of 600 m² and a maximum 1,000m². It is envisaged that lot sizes of 600m² will be used for medium density development, with individual tenancies or dwelling units in multi-unit development being of 300m².

In this case, and based on the average lot size of 800m², the residential lot yield from the available 130.45ha will be approximately 1,632 lots. Of these lots it is envisaged that:

- 95% (1,550 lots) will be utilised for detached dwellings (at 2.5 persons occupancy, this equates to 3,875 persons residential population); and
- 5% (81 lots x 3 tenements per lot = 243) will be utilised for medium density dwellings (at 1.85 persons occupancy, this equates to 449 persons residential population)

Given the above, an approximate residential population for Area E, after all stages have been developed, would be 4,324 persons.

The full summary of calculations for developable area is contained within Appendix H.

6.4.4 Commercial

A local commercial centre, of 1,000 m², has been allocated for Area E.

This is based on a calculation of 0.2m² per person (residential population) for an approximate population of 4,324 persons. Whilst this equates to approximately 864m², an allowance of 135m² has been allocated as a contingency to allow for future retail growth and any changes in future retail trends.

6.4.5 Staging of Development

Due to the need to supply additional infrastructure to Area E staging of development must be considered.

Generally further development of the land will be limited until major infrastructure is provided in the form of water supply, sewerage and roads.

There is some minor capacity left in existing networks which are located in the vicinity of Fraser Drive and as such it is logical to allow some limited development which absorbs this capacity on land directly adjacent to Fraser Drive.

As sewer from the site will be piped to Banora Point STP and major traffic movements will be in the direction of west tweed heads and the Pacific highway it follows that development should extend from east to west across the site until such time as the Mahers Lane Road extension is completed. Once this road has been constructed staging of development over the site would not be restricted by infrastructure.

The provision of a reservoir to service the site is likely to occur in the south-western corner of the site as this is close to the highest point. This may create some issues with respect to the logical extension of services.

Full details of staging can be addressed in the preparation of the DCP for the area.

6.4.6 Overall Land Budget

On the basis of this analysis the following overall land budget has been developed and included in Appendix H.