

# Consultant Report

**Subject/File No:** DEVELOPMENT APPLICATION No: 2006/672 –  
Lismore City Council, South Lismore

**Prepared by** Planning Consultant – Kate Singleton

## Overview of Report

The proposed development involves the excavation of earth in the 'airport floodway' to improve the hydraulic performance of the floodway and extractive industry. The area of proposed extraction is approximately 58 hectares, and approximately 410,000m<sup>3</sup> of fill material is likely to be extracted over an expected life of 11 years. Extraction will occur on a 'rolling' average basis where the average annual rate of extraction over any four year period will not exceed 49,000m<sup>3</sup> insitu material.

The proposal seeks to: improve the hydraulic capacity of the floodway, thereby reducing flooding in Leycester Creek into North, South and Central Lismore in a major flood event; increase the floodway cross sectional area equivalent to those areas which abut upstream and downstream of the floodway proposed to be excavated; and provide extracted material as fill for use on the Lismore floodplain.

The development constitutes Designated Development in accordance with the provisions of the Environmental Planning and Assessment Regulation 2000 (EP & A Act Regulation), and integrated Development in accordance with the provisions of Section 91 of the Environmental Planning and Assessment Act, 1979. Approval for the proposal was sought from the Department of Primary Industries (Fisheries), the Department of Water and Energy, and the Department of Environment and Climate Change. The General Terms of Approval for the development have been issued by these State Government agencies. (Note: Comments provided by the Department of Water and Energy indicated that the proposal does not require any approval from them).

Advertising of the application was undertaken in accordance with the provisions of the EP & A Act Regulation. Key issues associated with the development, and raised in the submissions include noise, traffic, flood impact, water and groundwater impacts, dust and vegetation impacts.

As detailed in this report, the assessment of the application undertaken by Council's Development Engineer, Environmental Health Officer, Natural Resource Officer, and State government agencies, including the Department of Primary Industries (Fisheries), the Department of Water and Energy, and the Department of Environment and Climate Change, indicates that potential adverse impacts of the proposed development are able to be adequately addressed by conditions of development consent.

The proposed increase in hydraulic capacity of the 'airport floodway' and associated reduction in 1 in 100 year flood levels experienced in North, South and Central Lismore will result in significant public benefit.

## Background

Development Application No. 06/672 comprising an Environmental Impact Statement for excavation within the 'Airport' floodway to improve the hydraulic performance of the floodway and an extractive industry was lodged with Council on 13 October 2006.

## Proposal:

To undertake the excavation of earth on land in the 'airport floodway' between the recently constructed South Lismore flood levee, former municipal landfill site and South Lismore Sewage Treatment Works to:

- Improve the hydraulic capacity of the floodway thereby reducing floodwater in Leycester Creek into North, South and Central Lismore in a major flood event;
- Increase the floodway cross sectional area equivalent to those areas which abut upstream and downstream, of floodway proposed to be excavated; and
- Provide extracted material as fill for use on the Lismore floodplain.

The area of extraction is approximately 58 hectares. The quantity of fill likely to be extracted is 410,000m<sup>3</sup>. A condition is requested by the applicant to permit extraction on a 'rolling' average basis where the average annual rate of extraction over any four year period will not exceed 49,000m<sup>3</sup> insitu material.

The proposed "extractive industry" constitutes Designated Development in accordance with the provisions of the Environmental Planning and Assessment Regulation 2000.

The proposed development constitutes Integrated Development in accordance with the provisions of Section 91 of the Environmental Planning & Assessment Act 1979, on the basis that the following approvals are required for the works:

| Approval Authority   | Provision / Act  | Approval  |
|--|--|---|
| Department of Primary Industries (Fisheries)   | Section 201<br>Fisheries Management Act 1994                                 | Permit to carry out dredging or reclamation work.   |
| Department of Water & Energy<br><br>(Previously the Department of Natural Resources) | Sections 89, 90, 91<br>Water Management Act 2000                             | Water use approval, water management work approval or activity approval under Part 3 pf Chapter 3.      |
| Department of Environment and Climate Change   | Sections 43(a), 47 & 55<br>Protection of the Environment Operations Act 1997 | Environment protection licence to authorise carrying out of scheduled development work at any premises. |

## Applicant:

Lismore City Council

## Location:

The subject development application relates to the following land parcels in South Lismore:

Lot 2 DP 1035591, known as 216 Casino Street;  
 Lot 74 DP 755737, known as 135A Three Chain Road;  
 Lot 1 DP 182457, known as 135B Three Chain Road;  
 Lot 2 DP 596412, known as 97 Caniaba Street;  
 Lot 1 DP 596412, known as 197 Caniaba Street;  
 Lot 71 DP 755737, known as 171 Caniaba Street; and  
 Lot 62 DP 755737, known as 135 Three Chain Road.

## Zoning:

Part Zone No. 5 (Special Uses Zone - Sewage Treatment Works) and part Zone No. 1(r)(Riverlands Zone) in accordance with the provisions of Lismore Local Environmental Plan 2000.

## Key Issues:

- Noise;
- Traffic;
- Flooding;
- Water and Groundwater Impacts;
- Dust;
- Aboriginal Cultural Heritage;
- Vegetation; and
- Visual Impacts.

## Consultant's Recommendation

1. That Council grant consent to Development Application No. 2006/672, for excavation within the 'Airport' floodway to improve the hydraulic performance of the floodway and an extractive industry, subject to conditions as detailed in this report; and
2. That Council prepare and submit a development application, within 12 months of the date of this Consent, for the widening of the existing open drain immediately to the west of the South Lismore levee, along the South Lismore Industrial area, to 30 metres, in accordance with the hydraulic assessment prepared by Patterson Britton & Partners Pty Ltd and dated 16 March 2007.

### 1. SITE/SITE HISTORY

The subject land is located approximately 3.5 km to the southwest of the Lismore CBD. The land is located in the 'airport floodway' between the recently constructed South Lismore flood levee, former municipal landfill site and South Lismore Sewage Treatment Works. The site is bounded to the north by Three Chain Road, to the south by an existing railway corridor, to the east by Caniaba Street and to the west by an unmade Crown Road. **Attached** is a plan showing the subject land.

The landform comprises the floodplain of the Leycester Creek and Wilsons River. The subject land has a general southern aspect with an overall slope of < 2%. The land is approximately 8-10m (AHD) at the existing drain near Caniaba Street and 12m (AHD) at the adjoining railway.

The document '*Lismore Flood Plain Management Advice to Council*' prepared by NSW Public Works Department (March 1983) identified the subject lands as floodway, defined as 'the main flood paths'. Structures in these areas could suffer damage during floods from both undermining and the forces exerted by debris build up and impact. Development in these areas could obstruct the free flow of water causing an increase in flood height of diversion, which could in turn adversely affect other areas.

The lands are also identified in the "*Lismore Floodplain Management Plan*" (October 2002) as 'floodway' defined as "areas of the floodplain where a significant discharge of water occurs during floods. They are often aligned with naturally defined channels. Floodways are areas that even if partially blocked, would cause a significant redistribution of flood flow or a significant increase in flood levels".

The '*Lismore Floodplain Management Study*' (June 2001) indicates that the modelled flood behaviour for the 1 in 100 year event within the undeveloped lands, with the Lismore Levee in place, includes: a water depth of 2.0 to 4.5 metres; water velocity of 1.0 to 2.25 metres / second; water height / level 11.8 to 13.0 metres (AHD); and high to extreme flood hazard.

The following table provides a summary of the information provided in the Environmental Impact Statement (EIS) regarding the subject lands and their existing and previous use:

| Title                  | Address               | Area (ha)     | Land Use  |
|------------------------|-----------------------|---------------|---|
| Lot 2 DP 1035591       | 216 Casino Street     | 20.88         | <b>Existing/general:</b><br>Agriculture – cropping and grazing.   |
|                        |                       |               | <b>Previous:</b><br>Southwestern portion previously developed for a turf farm associated with the South Lismore Sewage Treatment Works.   |
| Lot 74 DP 755737       | 135A Three Chain Road | 17.70         | <b>Existing/general:</b><br>Agriculture – cropping and grazing. Part of the lot currently used for a treatment lagoon for the South Lismore Sewage Treatment Works.                                 |
|                        |                       |               | <b>Previous:</b><br>Most of the lot previously developed as a turf farm associated with the South Lismore Sewage Treatment Works.   |
| Lot 1 DP 182457        | 135B Three Chain Road | 4.90          | No information provided in EIS.   |
| Lot 2 DP 596412        | 97 Caniaba Street     | 35.48         | <b>Existing/general:</b><br>Agriculture – cropping and grazing.   |
|                        |                       |               | <b>Previous:</b><br>Former South Lismore flood levee and associated drain constructed near northern boundary.   |
| Lot 1 DP 596412        | 197 Caniaba Street    | 4.99          | <b>Existing/general:</b><br>Agriculture – cropping and grazing.   |
|                        |                       |               | <b>Previous:</b><br>Former South Lismore flood levee and associated drain constructed near northern boundary.   |
| Lot 71 DP 755737       | 171 Caniaba Street    | 16.18         | <b>Existing/general:</b><br>Agriculture – cropping and grazing.   |
|                        |                       |               | <b>Previous:</b><br>Former South Lismore garbage depot in the southwestern section of the lot. Land on which the former garbage depot was located is not part of the area proposed to be excavated. |
| Lot 62 DP 755737       | 135 Three Chain Road  | 20.24         | <b>Existing/general:</b><br>South Lismore Sewage Treatment Works. A small section in the northeastern corner of the lot is part of the area proposed to be excavated.                               |
|                        |                       |               | <b>Previous:</b><br>Former animal pound.  |
| <b>Total Land Area</b> |                       | <b>120.37</b> |   |

Council's mapping of potentially contaminated land identifies two of the land parcels as potentially contaminated by previous land uses. Lot 71 DP 755737 was previously used as landfill between 1950 and 1968. Lot 62 DP 755737 contains the South Lismore Sewage Treatment Works. Land contamination investigations have been carried out by Greg Alderson & Associates Pty. Ltd. and form part of the EIS.

The land generally drains to the south and southeast. There are a number of constructed drains within the lands. The largest of these was constructed at the same time as the former South Lismore flood levee in the 1970's, and runs north to south through the centre of the lands. A drain was also constructed in the northern part of the lands to take treated effluent from the South Lismore Sewage Treatment Works to Hollingsworth Creek.

The headwater of Hollingsworth Creek, a natural watercourse on lands to the north of the proposed excavation, traverse the northern part of the lands from west to east.

With the exception of scattered clumps and isolated trees in northwest portion of the land, the land has largely been cleared of native vegetation. Part of Lot 2 DP 1035991 contains isolated Swamp Oak *Casuarina glauca* which is listed under the NSW Threatened Species Conservation Act 1995 as an endangered ecological community considered to have high conservation value. The northern part of this land parcel also contains small patches of sedgeland which occur in association with the drainage system that forms part of Hollingsworth Creek. The sedgelands comprise 'Freshwater Wetland on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions' which are listed as an endangered ecological community under the NSW Threatened Species Conservation Act 1995, and considered to have high conservation value.

## 2. SURROUNDING PROPERTIES & ENVIRONS

The EIS contains a table summarising the land use and zoning of lands adjoining or adjacent to the lands, including their approximate distance from the subject site, as follows:

| Direction          | Adjoining Land Use Zone (LLEP 2000) | Adjoining Land Use   | Land Use within 1km   |
|--------------------|-------------------------------------|--|---|
| North              | 5<br>1(r)<br>2(f)                   | Railway Line;<br>Dwelling house; and<br>Dwelling houses  | Agriculture – grazing and cultivation;<br>Dwelling houses (Zone 2(f)); and<br>Leycester Creek         |
| South              | 1(r)<br><br>1(a)                    | Youngberry's Retail Plant Nursery, dwelling and farm – 300m;<br>Small holding and Dwelling – 450m; and<br>Vacant small holding – 300+m; and<br>Council's Three Chain Road Quarry | Agriculture – grazing   |
| Southeast          | 5                                   | Lismore Aerodrome Runway – approx 500m<br>Terminal area – 1.9-3.0km.   | Lismore Aerodrome   |
| East               | 1(r)<br>4(a)                        | South Lismore Industrial Area – 1000m.   | South Lismore – industrial area; and<br>Dwelling houses in the 2(f) Zone (approx 550m from the site). |
| Northeast          | 1(r)<br>4(a)<br><br>2(f)            | South Lismore Industrial Area – 730-1000m.<br><br>Dwelling houses  | South Lismore – industrial area<br><br>Dwelling houses  |
| West and Southwest | 1(r) & 1(a)                         | Agriculture – grazing and cultivation  | Agriculture – grazing and cultivation   |

**Attached** to this report is an aerial photo, which illustrates the land uses surrounding the site.

### 3. PROPOSAL

The proposed development is described in the EIS and subsequent additional information submitted as follows:

To undertake the excavation of earth on land in the 'airport floodway' between the recently constructed South Lismore flood levee, former municipal landfill site and South Lismore Sewage Treatment Works to:

- Improve the hydraulic capacity of the floodway thereby reducing floodwater in Leycester Creek into North, South and Central Lismore in a major flood event;
- Increase the floodway cross sectional area equivalent to those areas which abut upstream and downstream, of floodway proposed to be excavated; and
- Provide extracted material as fill for use on the Lismore floodplain.

The proposal is for the staged extraction of earth within sequential 'work cells' that have a total area of approximately 58ha. The total quantity of fill likely to be extracted is 410 000m<sup>3</sup>.

A condition is requested by the applicant to permit extraction on a 'rolling' average basis where the average annual rate of extraction over any four year period will not exceed 49 000m<sup>3</sup> insitu material.

On the basis of a maximum average annual extraction of 49 000m<sup>3</sup> the expected life of the extraction is 11 years.

The material extracted will be used for general purpose filling on the Lismore floodplain and other locations. Approximately 300 000m<sup>3</sup> of material may be required for the filling of lands zoned or proposed to be zoned for industrial use inside the South Lismore levee. Material may also be hauled to other sites up to 10km from the subject lands.

Given the location and nature of the resource it is likely that extraction will primarily occur in the drier months between July to December. The demand for the resource is also expected to vary throughout the year.

**Attached** to this report are the Development Plans illustrating the proposed development, including: location, levels, vegetation, existing drainage and watercourses, staged extraction, sections and final landform.

#### ***Method of Extraction and Staging***

The extraction will be undertaken as a rip and load operation. An excavator or land scrapper will be used to extract the material and no blasting or on-site crushing is proposed.

Material will be directly loaded into haulage trucks for delivery to the final fill destination. The application as originally submitted also proposed a temporary stockpile area inside the Lismore levee in Caniaba Street for collection and distribution in the period between January and June when site conditions are likely to prevent vehicular access onto the lands. However, the application has been amended to delete the proposed stockpile area.

Extraction will occur sequentially from work cell to work cell. A total of nine work cells are proposed ranging in area from 4.92 hectares (Cell A) to 10.01 hectares (Cell E). The amount of solid material in each of the cells varies from 1,969m<sup>3</sup> (Cell G) to 81,907m<sup>3</sup> (Cell E).

The extraction will generally be undertaken as follows:

- Construction of vegetated filter strips and diversion drainage, if required, for the cell to be worked. Vegetation and topsoil will be stripped from the work area and stockpiled at the outer edge of the cell. The vegetation and topsoil will be used for rehabilitation of the worked area. Stripping vegetation and topsoil will be contained to a maximum area of 2 hectares. Given the relatively shallow nature of the excavation it is not proposed to bund the work area. Local diversion drainage will be provided to prevent stormwater flowing through the work area;
- Ripping the material in the work cell by either bulldozer, excavator or land scrapper;
- Loading of haulage trucks in the work area using a rubber tyred loader or excavator. It is expected that the excavation will be a dry operation only;
- Rehabilitation of the completed work cell area;
- The extraction will be staged as a sloping face type extraction, moving progressively northwards in stages as extraction in each work cell is completed. The excavation will be undertaken to provide a working face with a constant slope with a batter not greater than 1:1 or 45 degrees; and
- The restriction on the working area within each cell to a maximum of 2 hectares means that each area of extraction will be rehabilitated prior to the disturbance of the subsequent work area.

The extraction will be carried out in four stages. The first three stages will involve extraction of the material, and the fourth will comprise the completion of final works. Proposed stages 1-3 are summarised in the following table:

| Stage / Work Cell | Area of Work Cell (ha) | Average Depth of Excavation (m) | Amount of Solid Material (m <sup>3</sup> ) |
|-------------------|------------------------|---------------------------------|--|
| <b>Stage 1</b>    |                        |                                 |  |
| A                 | 4.92                   | 1.2                             | 28 800                                     |
| B                 | 5.97                   | 1.7                             | 48 610                                     |
| C                 | 5.79                   | 1.7                             | 46 476                                     |
| <b>Stage 2</b>    |                        |                                 |  |
| D                 | 5.81                   | 1.6                             | 33 656                                     |
| E                 | 10.01                  | 2.0                             | 81 907                                     |
| F                 | 8.38                   | 1.75                            | 79 185                                     |
| G                 | 5.78                   | 1.0                             | 1 969                                      |
| <b>Stage 3</b>    |                        |                                 |  |
| H                 | 4.95                   | 1.00                            | 50 083                                     |
| I                 | 6.04                   | 0.50                            | 39 903                                     |
| <b>Total</b>      | 57.65                  |                                 | 410 589                                    |

Final shaping and rehabilitation of the previous stage will be undertaken prior to the commencement of the subsequent stage.

The final stage of works will include provision of final site drainage and removal of internal access roads.

The proposed “extractive industry” constitutes Designated Development in accordance with the provisions of the Environmental Planning and Assessment Regulation 2000.

### **Operation**

Extraction of material is envisaged to occur primarily during the months of July to December, as they are the known drier months. It is estimated that extraction will approximately occur 130-160 days per year.

The general hours of operation for which approval is sought are 6.30am to 5.30pm Monday to Friday. Development consent is also sought for permission to operate between the hours of 7.30am to 4.00pm on Saturdays, and 8.30am to 4.00pm on Sundays to cater for major works if required.

The number of staff required will vary, however it is anticipated that 6 employees and sub-contractors may be used for product extraction and transport. An on-site manager will be nominated.

Council or local contract trucks will be used to haul the material to its destinations.

### ***Traffic, Vehicular Access and Parking***

The application as originally submitted proposed the primary vehicular access near the levee in Caniaba Street. The proposal was subsequently amended to relocate the entrance to the excavation lands to Three Chain Road. The amendment was made as the revised location allows trucks to exit left onto Three Chain Road without crossing on-coming traffic, and to provide an access point closer to the likely major destinations of the fill.

On site car parking for staff will be accommodated adjacent to each work cell as it is excavated.

The fill material will be transported in trucks with a payload capacity of 10 to 20m<sup>3</sup>. Excavation of 49,000m<sup>3</sup> of fill per annum, based on an average truck size of 15m<sup>2</sup>, will generate 3,267 vehicles per annum. A 200 day operating year will generate 16 loaded trucks per day leaving the land, while a 100 day operating year will generate 36 loaded trucks per day leaving the land.

### ***Soil Erosion and Stormwater Management***

A system of vegetated filter strips and grass swales adjoining the central drain are proposed to control soil sediment movement from the work cells. The filter strips will be constructed prior to excavation occurring in each work cell and will remain for the duration of work within each cell.

The floor of the work area will be shaped to direct stormwater flows to the filter strips. As each work area moves away from the filter strip progressive rehabilitation will be carried out.

### ***Rehabilitation***

A consistent slope and shape will be created for the floor of the extraction area as each work cell area is completed. Topsoil will be spread over the area which will then be planted with a variety of grasses suitable for grazing of cattle, slashing, or cut and cart production of fodder hay or mulch. The proposed rehabilitation back to grasslands aims to "...retain the improvements to the hydraulic capacity and efficiency of the flowpath achieved by the extraction".

## **4. PUBLIC NOTIFICATION**

As noted above, the proposed "extractive industry" constitutes Designated Development in accordance with the provisions of the Environmental Planning and Assessment Regulation 2000 (EP & A Regulation 2000).

The application was advertised for a period of 28 days (from 26/10/2006 to 24/11/2006) in accordance with the provisions of Division 5 of the EP & A Regulation 2000. The application was re-exhibited for a period of 30 days (from 15/3/2007 to 16/4/2007) following identification of the project as Integrated Development.

A total of 4 submissions were received (it should be noted that 3 of the submissions were from, or on the behalf of, the same property owner). **Attached** to this report is a copy of these public submissions.

The following provides a summary of the issues raised in the submissions, a response from the applicant, and an assessment of the issues. Section 6 – Referral Comments also addresses issues raised below.

**Issue 1 - Flood Impact**

*Potential flood impacts on land downstream of the subject lands as the application states that the development will result in increased flood water levels and velocities in this downstream area. No figures are provided as to how much the proposal will increase the height and velocities of flood waters on downstream properties.*

*Potential impacts on downstream properties in terms of damage to fencing and the requirement to relocate cattle in flood events.*

*Problem of flood water flows should be addressed by ceasing new buildings in industrial estate located in path of water flows. Council should also clean out and possibly deepen and widen the existing drains in front of the South Lismore Levee. These drains could also be widened and deepened. Council could also look at some excavation work on their land described as Lot 1 DP 1036569, this is where the water flows during a flood.*

*Potential flood impacts on the town side of the levee near Hollingsworth Creek.*

*Council's original EIS for Floodplain Management states no fill should be permitted within the floodplain.*

*Use of computer flood modelling and not on-site analysis.*

**Applicant's Response:**

- Impact on land downstream properties.

Patterson Britton & Partners Pty Ltd was requested and has undertaken additional flood modelling at 2 additional reference locations within the submitters land. The modelling indicates that there will be an increase in water level and velocity (see report dated 16 March 2007).

The modelling indicates that:

- At reference location #14 water levels will increase +0.02m in the 1 in 10 year ARI, +0.04m in the 1 in 20 year ARI and +0.07m in the 1 in 100 year ARI flood events.
- At reference location #15 water levels will increase +0.01m in the 1 in 10 year ARI, +0.00m in the 1 in 20 year ARI and +0.02m in the 1 in 100 year ARI flood events.

The modelling indicates that:

- At reference location #14 water velocities will increase +0.05m/sec in the 1 in 10 year ARI, +0.06m/sec in the 1 in 20 year ARI, +0.14m/sec in the 1 in 100 year ARI flood events.
- At reference location #15 water velocities will increase +0.02m/sec in the 1 in 10 year ARI, +0.03m/sec in the 1 in 20 year ARI, +0.09m/sec in the 1 in 100 year ARI flood events.

The existing relationship to water velocity and depth means the submitters land on the floodway is in a 'high' flood hazard category.

The submitters land on the floodplain is well grassed and used for grazing of beef cattle. Fencing infrastructure on the floodplain is old and in poor condition. The submitters land contains land above the 1 in 100 year ARI and PMF events which would be utilised as a flood refuge under existing flood conditions.

Sections 5.1.5 & 5.2.3 of the EIS provides the assessment of Patterson Britton & Partners Pty Ltd of potential flood impacts and consequences of those impacts downstream of the excavation.

Patterson Britton & Partners Pty Ltd indicates that for all flood events that unobstructed grassed portions of the floodway will be able to resist velocity magnitudes and durations under proposed and existing conditions.

Patterson Britton & Partners Pty Ltd was requested and has undertaken additional 'desktop' hydraulic assessment of undertaking the proposed works and increasing the width of the major drain in the vicinity of the Lismore Airport and South Lismore Industrial Estate which connects to the existing drain in project land (see report dated 16 March 2007).

The EIS identifies a number of options to mitigate increased water velocity and depth immediately below the excavation and makes the following statement in that regard:

*"When the excavation is underway the potential impact by floodwater is reduced by undertaking the excavation in the 'dry' period June to December.*

*When the excavation is complete flood water levels will decrease for much of the North, South and Central Lismore. Flood water velocities will decrease in parts of South Lismore. Flood water levels and velocities will increase immediately downstream of the excavation.*

*On balance and having regard to the nature of the land use immediately downstream no mitigatory measures are proposed.*

*The provision of the following measures would assist if considered necessary:*

1. *Extension of the excavation of the floodway downstream of the proposed location.*
2. *The creation of drainage channels and/or increasing the capacity of any existing channels. To ensure maximum conveyance, the drainage channels would need to be connected to the downstream end of the proposed excavation area and continue to the Wilson River.*
3. *Construction of flow diversion bunds immediately upstream of the adversely impacted areas".*

As indicated by Patterson Britton & Partners Pty Ltd increasing the width of the drain is likely to reduce peak water levels.

Whether or not Council wishes to require one or a combination of the mitigatory works is a matter to be determined by Council in the course of the assessment of the proposal.

- Use of computer flood modelling.

The use of computer flood modelling is the most appropriate means of predicting flood water levels and velocities.

- Impact on land on the town side of the levee near Hollingsworth Creek.

The EIS flood impact assessment demonstrates that when the excavation is complete flood water levels will decrease for much of North, South and Central Lismore. Flood water velocities will decrease in parts of South Lismore.

No excavation works are proposed on or near Hollingsworth Creek.

Comment: Council's Development Engineer has assessed the proposed development as detailed in Section 6 – Referral Comments.

As indicated above in the applicant's response, it is acknowledged that the proposed development will result in an increase in flooding impacts on rural land immediately downstream of the proposed development. This adjoining rural land is presently identified as subject to 'high' flood hazard. The adjoining land which is used for grazing contains land above the 1 in 100 year ARI and PMF events which presently provides flood refuge.

While the proposed development will result in an increase in flooding on the downstream adjoining land, the proposed increase in hydraulic capacity of the 'airport floodway' and associated reduction in the 1 in 100 year flood levels experienced in north, south and central Lismore will result in significant public benefit. On the balance of merit, it is considered that the adverse impacts on the adjoining property in terms of flooding are acceptable in the circumstances.

In relation to the additional desktop hydraulic analysis undertaken by Patterson and Britton (dated 16 March 2007), it is noted that the mitigatory measures outlined in the report are likely to reduce the peak water levels on the adjoining land immediately downstream. While these measures will reduce the potential impacts of the proposed development on the adjoining land, it is not considered appropriate to require these works as a condition of the development consent. It is recommended that Council prepare and submit a development application for the widening of the existing drain immediately to the west of the South Lismore levee, along the South Lismore industrial area, to 30 metres, in accordance with the hydraulic assessment prepared by Patterson Britton & Partners Pty Ltd and dated 16 March 2007. This will ensure an appropriate level of environmental assessment and consultation is carried out in relation to these works.

## **Issue 2 – Traffic Assessment**

*Existing traffic conditions section identifies Three Chain Road and Caniaba Street as having an 80km/h speed limit. This is incorrect a 100km/h speed limit applies.*

*Inconsistencies in the documentation regarding proposed hours of operation. Traffic Assessment states 7.00am to 6.00pm Monday to Friday while EIS states 6.30am to 5.30pm Monday to Friday.*

*Increase in traffic using Three Chain Road and Caniaba Street since recent upgrade to bitumen. Traffic count should be conducted on these roads to determine volumes and assess impact on vehicles entering and leaving the site.*

*Potential impacts of soil deposits on roads and responsibility for addressing. Will loads be covered as required?*

**Applicant's Response:** (NOTE: A revised Traffic Impact Assessment dated 15 March 2007 was prepared by Greg Alderson & Associates Pty Ltd. The revised report was prepared in response to the amendment of the application including, the relocation of the traffic access from near the levee in Caniaba Street to Three Chain Road to allow trucks to exit left onto Three Chain Road without crossing on-coming traffic and to provide an access point closer to the likely major 'fill' destinations, and the deletion of the stockpile area).

The designated speed zone of Three Chain Road and Caniaba Street is 100km/hr, except in the urban areas where it is 50km/hr. The revised Traffic Impact Assessment reflects this.

There is sufficient area within the land for all employees to park their cars and enter and leave the land in a forward direction. The use of temporary no standing and no parking signage either side of the temporary entrance onto Three Chain Road is proposed to ensure traffic safety.

The excavation stockpile and entrance to Caniaba Street is deleted from the proposal.

The proposed hours of operation will be as stated in the EIS which is Monday to Friday 6.30am to 5.30pm. These are the times proposed in the revised Traffic Impact Assessment.

Loaded trucks exiting the land will cross a gravel road and cattle grid which will 'shake down' soil that might have lodged on truck wheels and underbodies, before the vehicles enter Three Chain Road. In the event that any soil falls on the road it has to be removed by contractors.

The traffic issues raised by the submitter are of an 'operational' nature which can be appropriately managed by conditions of consent and environmental plan of management.

Comment: Council's Development Engineer has assessed the proposed development and recommended appropriate conditions of consent in relation to traffic impacts. Council's Environmental Health Officer has recommended a condition of consent be applied specifying the approved hours of operation for the excavation works, being 7am to 6pm Monday to Friday.

### **Issue 3 – Vibration from Haulage Vehicles**

*Previous damage to existing adjoining dwelling (93 Caniaba Street) when heavy vehicles pass over the railway crossing and culvert in Caniaba Street. A further 10 -11 years of heavy vehicle movement along Caniaba Street will completely destroy this dwelling. Council has a duty of care and several choices to address impacts including fixing up and levelling the railway crossing so it can accommodate the traffic, and slow vehicles down to a crawl over the railway and culvert, or undertake works to affected dwelling, or relocate dwelling to a safer area. Primary haulage routes for the excavation will be Caniaba Street and Three Chain Road, which will impact upon the adjoining dwelling. The submission further states that the only option is relocation of the dwelling to a safer area and or buy owners out at market value. Owners not prepared to go through the stress previously experienced with the Caniaba Street upgrade.*

Applicant's Response: Caniaba Street is a signposted vehicular by-pass of South Lismore between the Bruxner Highway and Casino Street. The major 'fill' destinations are the Airport Industrial Estate and industrial land the town side of the levee both of which are close to the land and for which haulage along the local road network is minimal. Additional truck movements north of the levee along Caniaba Street as a consequence of the proposal will be minor, if any.

Comment: The proposed development is not considered likely to result in significant impacts resulting from vibrations caused by haulage vehicles. The Environmental Management Plan recommended as a condition of consent is also required to address this issue.

### **Issue 4 – Groundwater Investigation**

*The groundwater table will be intersected – In this regard, the EIS indicates that the depth of excavation will vary from 0.5 to 2.0m. Shallow groundwater in the vicinity of the site is encountered between 0.85 and 4.9m below ground level. Therefore the conclusion in the EIS that groundwater table will not be intersected is incorrect.*

*The potential groundwater flow into excavation site – The groundwater investigation suggests that groundwater flows in a northeast direction across the site. The proposed area of excavation is located down hydraulic gradient of the South Lismore Sewage Treatment Works (STW) and the former landfill. Potential groundwater contamination associated with the STW and former landfill may flow into the excavation during operation of the extractive industry.*

*Insufficient measurement of groundwater conditions – The report indicates five (5) piezometers were installed. Four (4) can be identified on the plans and are located at the boundaries of the site and therefore do not provide an accurate representation of groundwater conditions at the site. Groundwater samples were collected from only two of the piezometers. This limited number of samples insufficient to provide an indication of groundwater quality at the site.*

*Insufficient analysis of groundwater samples – the groundwater samples analysed for only a limited suite of analytes. The elevated electrical conductivity and faecal coliform results at Bore 5, suggest that shallow groundwater may be contaminated by the Sewage Treatment Works or the former landfill, however further investigation is required to characterise this. As the composition of former landfill is unknown, groundwater samples collected in the vicinity of the former landfill should have been analysed for a comprehensive suite of analytes including nutrients, polycyclic aromatic hydrocarbons (PAHs) and total petroleum hydrocarbons (TPHs).*

Applicant's Response: Please refer to the letter report on the additional groundwater investigations and assessment by Greg Alderson & associates Pty Ltd. In response to the matters raised in the submission, the report by Greg Alderson & Associates Pty Ltd:

- Provides depths to watertable from existing ground level at 6 bores (piezometer) locations;
- Indicates that the excavation will not intersect groundwater below the excavation area;
- Provides additional detail on measurement of groundwater depths before and after recent heavy rains; and
- Provides additional analysis of groundwater.

The furthestmost lateral extent of the proposed excavation is well clear of the former landfill. The information provided by the Environmental Analysis Laboratory (21 August 1998) and included in Appendix 8 of the EIS shows that potential contaminants at the former South Lismore landfill have not migrated from the former landfill site.

Sampling for potential contaminants at depth in the excavation area adjoining the former landfill is not required due to the soil type surrounding the former landfill site and results of assessments identified above.

The potential groundwater contamination from the effluent lagoons at the South Lismore Sewerage Treatment is a matter irrelevant to the proposal as the excavation will not intersect groundwater below the excavation area. Council may wish to further investigate the matter independent of this Application to satisfy itself as to the integrity of the lagoons.

Comment: The additional groundwater investigations, undertaken by the applicant, were referred to the Department of Water and Energy (DWE) and the Department of Environment and Climate Change (DECC). Both Departments raised no objections to the proposed excavation in regard to the impact upon groundwater. The DECC included as part of their General Terms of Approval a condition requiring a groundwater management plan.

Council's Environmental Health Officer recommended consideration of the matter by the Department of Water and Energy.

#### **Issue 5 – Soil Investigation (contamination)**

*Soil Investigation not conducted at sufficient depth – A collection of soil samples from the surface using a hand auger is insufficient to characterise the quality of soil to be excavated given the proposed excavation depth of 2m. This is of particular concern given the site is located down hydraulic gradient of a Sewage Treatment Work and former landfill and the groundwater investigation indicated that there is the potential for shallow groundwater contamination. The groundwater table is present between 0.85m and 4.9m below ground level. It is noted that soil contamination down hydraulic gradient of the former landfill was assessed in 1998 and no significant contamination was detected. However, it is also noted that soil contamination was only assessed to 1m depth. Considering that shallow groundwater is present below 1m depth, potential soil contamination associated with the migration of groundwater from the former landfill has not been adequately assessed.*

*Insufficient analysis of soil contaminants – The soil samples were analysed only for a limited suite of analytes. Soils within the landfill were contaminated with nutrients, PAHs and TPHs in addition to metals and pesticides. Analysis of soils down hydraulic gradient of the site should therefore include these analytes to ensure all potential contaminants of concern are assessed.*

*The location of point and composite samples is not provided and therefore unclear whether a suitable sampling pattern was used.*

*Recommendation with respect to groundwater and soil investigations – Considering that the excavation site is located down hydraulic gradient of a STW and former landfill, in our opinion it would be prudent for Council to engage a NSW Environment Protection Authority (EPA) accredited Site Auditor to independently review the consultant's reports and ensure that the methodology and interpretation of data are consistent with current regulations and guidelines endorsed by the NSW EPA. The appointment of a Site Auditor will provide confidence to the community that the alluvial soils to be excavated and reused*

*as fill material are not contaminated. It is particularly important that such an approach is used if Council does not have specific expertise in contaminated land assessment.*

Applicant's Response: Section 2.2.3 of the EIS generally describes soils within the lands and adjoining lands. Appendix 9 of the EIS provides an assessment (30 June 2006) of the soils within the excavation area by Greg Alderson & Associates Pty Ltd.

The 30 June 2006 assessment by Greg Alderson & Associates Pty Ltd includes a description of soils to a depth of 5.5m.

The 14 September 2007 additional groundwater assessment Greg Alderson & Associates Pty Ltd includes a bore log describing soils at the additional piezometer site (Site 6) to a depth of 5.5m.

The following reports by:

1. Greg Alderson & Associates Pty Ltd comprising:
  - The 30 June soils assessment (Appendix Nine of the EIS)
  - The 30 May land contamination assessment (Appendix Eight of the EIS); and
  - The 14 September 2007 additional groundwater assessment.
2. Environmental Analysis Laboratory comprising:
  - The 21 August 1998 report on investigations of the former South Lismore landfill (Appendix Eight of the EIS).

Clearly show that the soil to be excavated is not contaminated and are satisfactory to be used as general fill for industrial lands.

Council will note the design of the proposed excavation which at the perimeter of the excavation area will commence at existing ground level and which is 'graded' towards the bed of the existing drain traversing the lands. The shape is a gentle 'v' shape and will depending on location and ground levels have a maximum depth of some 2m.

Comment: Council's Environmental Health Officer has reviewed the material submitted with the Environmental Impact Statement and concludes that the assessment of the soil environment for potential contaminants is satisfactory as a preliminary assessment.

The DECC have raised no concerns with the proposal in relation to land contamination or the suitability of the excavated material for use as future land fill.

### **Issue 6 – Former Landfill Site**

*How far away from old tip site will excavation occur? Will the excavation cause part of the contaminated landfill site to be washed away during a flood? Potential contamination impacts upon adjoining properties, including impacts on cattle. The potential impacts on health of family on downstream properties?*

*The impacts of the removal and relocation of contaminated landfill (former landfill site and South Lismore STP). Independent audit is required regarding the removal of this contaminated landfill. Dust residue will contaminate the air, the ground, and the creek.*

Applicant's Response: The furthestmost lateral extent of the proposed excavation is well clear of the former landfill. Land contamination assessment indicates that potential contaminants from the material deposited in the landfill have not moved from the former landfill site.

The issue can be 'strengthened' and managed by a condition of consent to prohibit excavation of and within an appropriate distance of the former landfill.

**Comment:** Council's Environmental Health Officer has reviewed the information accompanying the application and recommended conditions of consent including a 40 metre exclusion zone in relation to the former landfill site, and the capping of the former landfill site to limit the infiltration of waters to control the potential for migration of pollutants.

### **Issue 7 – Soil Erosion**

*The development proposal involves the excavation of a substantial amount of soil over a significant period of time. This has the potential to cause soil erosion and effect water quality, despite the flat nature of the site.*

*The EIS is unclear as to exactly what soil erosion and water quality control measures would be implemented and where. We suggest that a construction/operation management plan be prepared which outlines in detail what control measures would be implemented on site and where these measures would be located. Soil erosion and water quality control measures should be implemented in accordance with relevant guidelines, such as 'Managing Urban Stormwater – Soils and Construction', NSW Department of Housing, 1998 and 'Stormwater Pollution Prevention Code of Practice for Local Government', South Australia Environment Protection Authority, 1998.*

**Applicant's Response:** Section 3.2.11 generally describes the soil erosion and stormwater management practices to be implemented during the course of the excavation. Development Plan No. 7 of 9 shows the location of soil erosion and stormwater management filter strips.

The requirement for the preparation and approval of a detailed soil erosion and stormwater management plan prior to the commencement of works is a reasonable and an anticipated condition of development consent.

**Comment:** Council's Environmental Health Officer has recommended the submission of a detailed Soil and Water Management Plan as a condition of development consent. Such condition is considered to ensure that soil and water management issues associated with the site are satisfactorily managed.

### **Issue 8 – Flora and Fauna**

*The development proposal includes the removal of a small portion of two Endangered Ecological Communities (EEC), namely, the Swamp Oak Floodplain Forest of the NSW North Coast and the Freshwater Wetlands on Coastal Floodplains of the NSW North Coast. Council should adopt the mitigation measures recommended in the Flora Assessment and the Fauna Assessment.*

**Applicant's Response:** The excavation plan has been amended (refer to letter dated 16 March 2007) to avoid as much as possible disturbance of the Swamp Oak endangered ecological community.

The amended excavation will result in the removal of 2 Swamp Oaks.

The replanting of Swamp Oaks at the 1:10 ratio proposed by Landmark Ecological Services (Appendix Five of the EIS) to compensate the removal of 2 trees and requires that 20 trees be replanted and logically this should occur in the vicinity of the existing group of 9 Swamp Oaks.

The area surrounding the grouping of 9 trees or the 2 other trees located west between the grouping and drain from the Sewerage Treatment Works approximately 0.2.-0.3ha will be fenced to exclude grazing animals. Twenty Swamp Oaks will be planted in the area and the area will be managed to allow a natural process of regeneration. Juvenile Swamp Oaks located near the railway line and along Hollingsworth Creek suggest that the species can naturally regenerate when not disturbed.

A small pond (noted by Landmark Ecological Services as Freshwater Wetland) occurs within the excavation area south of the floodgates. The pond appears to have been constructed as a sediment pond at the time the major drain was built as a constructed flowpath drains it to the major drain.

Comment: Council's Natural Resource Officer has assessed the proposed development and raises no objection in relation to the proposed impacts upon flora and fauna, subject to appropriate conditions of consent in relation to vegetation and weed management.

The DECC advise that they agree with the recommendations of the submitted flora and fauna assessments and that if Council approves the development it should include these recommendations as conditions of consent. Despite this advice, not all the recommendations of the Flora and Fauna Assessments accompanying the application are proposed to be adopted as conditions of consent. In this regard, it is noted that the recommendations relating to: compensatory plantings, regeneration & revegetated of Swamp Oak Forest and vegetation along Hollingsworth Creek will, if adopted, compromise the hydraulic performance of the floodway, which is contrary to the primary intent of the proposal.

### **Issue 9 – Air Quality**

*The development proposal has the potential to generate dust, despite the clay nature of the soils. The EIS identifies two mitigation measures – watering exposed surfaces if required, and minimising the size of exposed areas (no greater than 2ha). A number of additional dust control measures should be implemented and included in any conditions of consent and the construction/operation management plan, including:*

1. *Establish dust deposition gauges to measure the dust deposition rate at the site. Installed in accordance with Australian/New Zealand Standard 3580 and results analysed in accordance with relevant DEC guidelines/criteria. Established prior to commencement of operations so that baseline data can be obtained. If dust deposition rates are above DEC criteria, further dust control measures should be implemented.*
2. *Minimise the time period that surfaces are exposed.*
3. *Progressively re-vegetate surfaces as soon as possible after excavation, using erosion control matting or a temporary ground crop as required.*
4. *Use wind break fences and stop work during periods of high winds as required.*
5. *Cover vehicles immediately after being loaded with soil.*
6. *Control dust levels generated from the use of access roads by sealing the road or using gravel and/or watering.*
7. *Ensure plant and equipment is regularly maintained.*

Applicant's Response: The proposed staging of the extraction process, watering of exposed surfaces and minimising the extent of the excavation stages to 2ha together with the measures suggested by the EDO are reasonable and anticipated conditions of development consent in order to minimise potential for generation of dust and air quality impacts.

Comment: Conditions of consent recommended by Council's Environmental Health Officer include a requirement for the submission of an Environmental Management Plan (EMP). The EMP is required to address air quality (including dust management) and where appropriate incorporate the above measures.

### **Issue 10 – Noise**

*Excessive noise impacts on and around Caniaba Street from blasting, increased truck and heavy vehicle traffic and associated risks to family and day care children.*

*The revised Noise Impact Assessment does not make it clear where the residential receivers were located. If there are sensitive receivers at all three measurement locations then there is no need for the Design Criteria Section (p5). Noise levels should be calculated and assessed at all measurement locations. As it is, on p7 of the report, noise levels are calculated at two of the three measurement locations. The omitted location is closer to the site than Youngberry's and has a lower criterion, so if receivers are located near the 'Northwestern Corner' then noise levels should also have been assessed here.*

*The noise assessment has not considered the noise impacts from trucks taking soil from the storage site to other sites on the floodplain for use as fill. While the location of these other sites is not yet known, this activity is a purpose and consequence of the proposal, and needs to be considered.*

Applicant's Response: Refer to the Noise Impact Statement dated August 2007 prepared by Noise and Sound Services. The Department of Environment and Climate Change will provide advice to Council in this regard.

Comment: The General Terms of Approval issued by the Department of Environment and Climate Change indicate that the potential impacts of the proposal in relation to noise are acceptable. This issue is also addressed in Sections 5.3 and 5.5 of this report regarding the Lismore Development Control Plan (provisions regarding buffers to extractive industry) and the likely impacts of the development, and the comments provided by Council's Environmental Health Officer detailed in Section. 6.1.3.

### **Issue 11 – Blasting**

*Blasting will be undertaken as the machinery proposed will not be sufficient to move basalt and other rock materials.*

Applicant's Response: Blasting is not required to remove earth only and no blasting is proposed.

Comment: The application does not incorporate blasting of material.

### **Issue 12 – Other**

*Rural Lands Protection Board should be advised of impacts on surrounding properties resulting from the development in terms of snakes and rodents. Potential impacts in terms of snakes and rodents should the tyres at 97 Caniaba Street be moved during the course of the works.*

Applicant's Response: The submitters present no evidence to suggest how the excavation of soil from the lands as proposed, which will then be rehabilitated to enable its on-going use for either grazing or cropping, which currently occurs, will increase the number of snakes and rodents to their lands.

Comments: The proposed extractive industry is not likely to result in significant impacts in terms of snakes and rodents.

## **5. ASSESSMENT UNDER SECTION 79C OF THE E.P. & A ACT -**

### **5.1 Any Environmental Planning Instruments**

#### **5.1.1 State Environmental Planning Policies (SEPPS)**

##### **State Environmental Planning policy No. 11 – Traffic Generating Development (SEPP 11)**

The application was referred to the Roads and Traffic Authority and the Regional Development Committee in accordance with the provisions of SEPP 11. The comments provided are detailed in Section 6.2.1 of this report.

##### **State Environmental Planning Policy No. 44 – Koala Habitat Protection (SEPP 44)**

A Flora and Fauna assessment was undertaken in relation to the proposed development. The application concludes that there are no koala food trees within the lands and the provisions of SEPP 44 are therefore not applicable.

##### **State Environmental Planning Policy No. 55 – Remediation of Contaminated Lands**

A preliminary land contamination report prepared by Greg Alderson & Associated Pty Ltd accompanied the development application. This issue is addressed in the comments provided by Council's Environmental Health Officer contained in Section 6.1.3 of this report.

### 5.1.2 Regional Environmental Plan (REP)

- Clause 12 – Development control – impact of development on agricultural activities

Clause 12 of the REP states that council shall not consent to an application to carry out development on rural land unless it has first considered the likely impact of the proposed development on the use of adjoining or adjacent agricultural land and whether or not the development will cause a loss of prime crop or pasture land. The proposed development will not impact on the use of the land, or adjoining or adjacent land, for agricultural purposes in the long term.

- Clause 15 – Development control – wetlands or fishery habitats

Clause 15 of the REP states that council shall not consent to an application to carry out development for any purpose within, adjoining or upstream of a river or stream, coastal or inland wetland or fishery habitat area or within the drainage catchment of a river or stream, coastal or inland wetland or fishery habitat area unless it has considered the following matters:

- (a) *the need to maintain or improve the quality or quantity of flows of water to the wetland or habitat,*
- (b) *the need to conserve the existing amateur and commercial fisheries,*
- (c) *any loss of habitat which will or is likely to be caused by the carrying out of the development,*
- (d) *whether an adequate public foreshore reserve is available and whether there is adequate public access to that reserve,*
- (e) *whether the development would result in pollution of the wetland or estuary and any measures to eliminate pollution,*
- (f) *the proximity of aquatic reserves dedicated under the Fisheries Management Act 1994 and the effect the development will have on these reserves,*
- (g) *whether the watercourse is an area of protected land as defined in section 21AB of the Soil Conservation Act 1938 and any measures to prevent soil erosion, and*
- (h) *the need to ensure that native vegetation surrounding the wetland or fishery habitat area is conserved, and*
- (i) *the recommendations of any environmental audit or water quality study prepared by the Department of Water Resources or the Environment Protection Authority and relating to the river, stream, wetland, area or catchment.*

The proposed excavation is not considered to unreasonably impact upon the quality and quantity of flows of water from the site. In this regard, a Soil and Water Management Plan is required to be prepared for the site as a condition of consent.

Council's Natural Resource Officer has reviewed the submitted flora and fauna assessments and concludes that the impacts of the development are acceptable subject to the imposition of conditions.

The proposed development does not impact upon any public foreshore.

The Department of Primary Industries (NSW Fisheries raised no objection to the proposed development.

- Clause 18 – Development control – extractive industry

Clause 18 requires that council shall not consent to a development application for an extractive industry unless it includes any necessary conditions of consent to require implementation both during and after extractive operations of an erosion and sediment control plan and rehabilitation plan. Appropriate conditions of consent have been recommended in relation to erosion and sediment control and rehabilitation of the site.

### 5.1.3 Lismore Local Environmental Plan (LEP)

The land on which the subject development is proposed is zoned 5 (Special Uses Zone - Sewage Treatment Works) and 1(r) (Riverlands Zone) under the LEP. Extractive Industry is permissible with development consent in the applicable zones.

- Clause 2 – Aims, Objectives

The proposed development is consistent with the aims and objectives of the plan particularly in relation to minimising the potential impacts of flooding.

- Clause 8 – Zone identification

As noted above, the land on which the development is proposed is zoned 5 (Special Uses Zone - Sewage Treatment Works) and 1(r) (Riverlands Zone) under the LEP.

- Clause 35.1 – Zone No. 1(r) (Riverlands Zone)

The objectives of the 1(r) (Riverlands Zone) are:

- (a) *to encourage the use of the land for its optimum productive potential, and*
- (b) *to permit a range of activities that support the agricultural industries being conducted on the land and limit development that may, in the opinion of the Council, reduce the agricultural production potential of the land, and*
- (c) *to discourage the fragmentation of rural land, and*
- (d) *to control development that may restrict the function of, or create a traffic hazard along, classified and other formed roads, and*
- (e) *to limit the development of non-agricultural uses, except those which will not be adversely affected by flooding.*

The proposed development is considered to be consistent with the above objectives. The use of the subject lands will revert to agriculture following the proposed extractive industry and will not result in the fragmentation of rural land. The potential traffic impacts of the development are considered acceptable as detailed in this report, and the proposal will not be adversely affected by flooding.

- Clause 65.1 – Zone No. 5 (Special Uses Zone – Sewage Treatment Works)

The objectives of the zone are:

- (a) *to designate land which is now used or is intended to be used for particular public or community purposes, and*
- (b) *to ensure the land is used for a purpose appropriate to its location, community needs and economic utilisation.*

The proposed development is not inconsistent with the above objectives. The proposal is appropriate to its location, community needs and economic utilisation. In addition, the proposed excavation does not directly impact upon the existing Sewage Treatment Works development.

## 5.2 Any Draft EPI that is or has been placed on Exhibition

None applicable to the proposed development,

## 5.3 Any Development Control Plan

### **Lismore Development Control Plan (Lismore DCP)**

The following chapters and provisions of the Lismore DCP are particularly relevant to the proposed extractive industry.

#### Chapter 7 – Off Street Car Parking

The proposal is consistent with the requirements of Chapter 7 in relation to the adequate provision of access, manoeuvring areas, and on site car parking.

#### Chapter 8 – Flood Prone Lands

The proposed works aim to improve the hydraulic performance of the floodway and are consistent with the provisions of Chapter 8.

#### Chapter 11 – Buffer Areas

Chapter 11 contains provisions regarding appropriate buffers for a range of land uses, including extractive industries. The DCP identifies extractive industries as involving "...the use of an extensive range of plant and equipment which create noise and dust as material is won from the quarry face and then crushed and screened for loading and transport". Blasting is also required in some cases. The provision of a buffer between extractive industries and residential land uses is therefore desirable to minimise land use conflicts and safeguard quarry resources.

Chapter 11 states that "the extent of the buffer requirement depends on the size of the quarry, whether blasting is utilised, the nature of production methods, the extent of crushing and screening operations, topography and site conditions and the intensity of surrounding development and land uses". A 500 metre primary buffer and 800 metre secondary buffer are recommended for large quarries (>10,000m<sup>3</sup> per annum).

The Environmental Impact Statement accompanying the application notes that there are approximately 55 dwellings within 500 metres of the perimeter of the land proposed to be excavated, and 'numerous' dwellings within 800 metres.

The Environmental Impact Statement and additional information provided, particularly in relation to noise, submit that the aim, nature, and operating characteristics of the proposal warrant consideration in relation to the potential adverse impacts of the proposal on surrounding properties. These characteristics include:

- No blasting, crushing or screening is proposed.
- The excavation and completion of works will be undertaken over a relatively short period.
- The proposed lateral direction and shape of the works in relation to the majority of dwellings will reduce potential adverse impacts.

The assessment provided by the Department of Environment and Climate Change and Council's Environment Health Officer indicate that the potential adverse impacts of the proposal (noise, dust, etc...) are acceptable, subject to the recommended conditions including the implementation of mitigation measures, particularly when having regard to the overall public benefit achieved by increasing the hydraulic capacity of the "airport floodway" and subsequently reducing the flood levels experienced in north, south and central Lismore.

When having regard to the above, it is considered reasonable to permit a variation to the abovementioned numerical buffer standards for an extractive industry.

## Chapter 18 – Extractive Industries

Clause 18.1 contains the objectives of the chapter which include:

1. *Ensure that extractive industries do not adversely impact on the environment and surrounding land uses;*
3. *Identify preferred haulage routes and desired road standards;*
4. *Ensure continued efficient, appropriate and responsible operation of extractive industries of regional and local significance;*
5. *Provide for adequate “buffer area” around quarries and resources of significance;*
7. *Outline requirements and information needed for obtaining development consent to establish new quarries and extend or intensify existing quarries;*
8. *Provide guidelines for preparation and implementation of management plans for operating and rehabilitating quarries, so as to minimise adverse environmental impacts.*

The proposal is generally considered to be consistent with the above objectives in that the proposed excavations: are not considered to unreasonably impact upon the environment and surrounding land uses, utilise desired haulage routes, provide for reasonable buffer areas around the extraction area and proposes appropriate progressive and final rehabilitation of the site.

Clause 18.4 identifies primary and secondary haulage routes. Three Chain Road is nominated as a primary haulage route.

Clause 18.5 contains buffer provisions. These provisions are consistent with those contained in Chapter 11 and addressed above.

Clause 18.6 requires Council to impose conditions of consent regarding rehabilitation at the end of life of the excavation. The Environmental Impact Statement accompanying the development application provides information regarding the proposed rehabilitation of the lands, including the following:

*As the extraction of each ‘work cell’ area is completed the floor of the extraction area will be worked to create a consistent slope and shape. The area will be spread with topsoil. The area will then be planted with a variety of grasses suitable for grazing of cattle or slashing or cut and cart production of fodder hay or mulch.*

*The extracted ‘working cell’ areas will be rehabilitated back to grasslands in order to retain the improvements to the hydraulic capacity and efficiency of the flowpath achieved by the extraction.*

Clause 18.8 requires the submission of an Extractive Industry Management Plan for the operation and rehabilitation of quarries. As previously noted, an Environmental Management Plan is required to be submitted as a condition of consent.

### **5.4 Any Matters Prescribed By The Regulations**

None applicable to the proposed development.

### **5.5 The Likely Impacts of that Development, including Environmental Impacts on both the Natural and Built Environments, and Social and Economic Impacts in the Locality**

The Environmental Impact Statement accompanying the development application, and additional information submitted by the applicant provide an assessment of the potential impacts of the development on the natural and built environment, and social and economic impacts in the locality. The key issues are summarised below, and also addressed in Section 4 – Public Notification and Section 6 – Referral Comments.

### Noise

The potential impacts of the development in relation to noise are addressed in detail in Section 6 of this report containing referral comments. As stated in the comments provided by Council's Environmental Health Officer, the noise emissions from the excavation works will slightly exceed the project specific noise criteria (intrusive criteria) under normal weather conditions at several sites and exceed the target performance level at a number of sites by more than 2 dB(A) during adverse weather conditions.

The applicant submits that the nature and operating characteristics of the proposal warrant consideration in relation to the potential adverse impacts of the proposal on surrounding properties. In this regard, no blasting, crushing or screening is proposed as part of the application. The excavation and completion of works will be undertaken over a relatively short period, and the proposed lateral direction and shape of the works in relation to the majority of dwellings will reduce potential adverse impacts.

Despite the modelled noise levels for the project exceeding specific noise criteria, the noise generated by the proposal is considered to be acceptable given:

- the aforementioned nature and operating characteristics of the proposal; and
- the public benefit achieved by increasing the hydraulic capacity of the "airport floodway" in reducing the 1 in 100 year flood levels experienced in north, south and central Lismore.

The Department of Environment and Climate Change (DECC) assessed the noise impacts generated by the proposal and determined to issue their General Terms of Approval (GTA). These GTA conditions include a requirement for the submission of a Noise Management Plan. Such plan will aim to mitigate the noise impacts upon the surrounding locality.

### Traffic

The proposed development is estimated to generate the equivalent of 14 loaded vehicle trips per day. As detailed in this report, the application was amended to relocate the entrance to the land from near the levee in Caniaba Street to Three Chain Road. The comments provided by the Roads and Traffic Authority and Council's Development Engineer indicate that the potential impacts of the development in relation to traffic are acceptable, subject to the imposition of appropriate conditions of consent.

### Flooding

Potential impacts of the development in relation to flooding are addressed in Section 4 – Public Notification, and Section 6 – Referral Comments.

While the proposed development will result in an increase in flooding (level and velocity) on the adjoining downstream land, the proposed increase in hydraulic capacity of the 'airport floodway' and associated reduction in the 1 in 100 year flood levels experienced in north, south and central Lismore will result in significant public benefit. On the balance of merit, it is considered that the adverse impacts on the adjoining downstream property in terms of flooding are acceptable in the circumstances.

Despite the above, to reduce the proposed flooding impact upon the adjoining downstream property, it is recommended that Council prepare and submit a development application for the widening of the existing drain immediately to the west of the South Lismore levee, along the South Lismore industrial area, to 30 metres, in accordance with the hydraulic assessment prepared by Patterson Britton & Partners Pty Ltd and dated 16 March 2007.

### Water and Groundwater Impacts

The Department of Environment and Climate Change (DECC) and the Department of Water and Energy (DWE) raise no objection to the proposal in relation to groundwater impact. The DECC require, as part of their General Terms of Approval, a Groundwater Management Plan to be submitted prior to excavation works.

## Dust

The comments provided by Council's Environmental Health Officer indicate that significant adverse impacts are not likely to result from the proposed development in this regard. Conditions of development consent will adequately address this issue.

## Aboriginal Cultural Heritage

An Archaeological Assessment was prepared by Adrian Piper Heritage Surveys as part of the Environmental Impact Statement. The report indicates that no Aboriginal sites or relics were found on the subject land. Consultation with the Ngulingah Local Aboriginal Land Council was undertaken. No objection was raised to the proposed development.

## Flora and Fauna

Flora and Fauna Impact Assessments were undertaken by Landmark Ecological Services Pty Ltd and Sandpiper Ecological Services respectively, and form part of the Environmental Impact Statement documentation. The application as originally submitted was amended (16 March 2007) so as to reduce the required tree removal associated with the proposed development. The excavation will now only result in the removal of 2 Swamp Oaks. As addressed in Section 4 – Public Notification, and Section 6 – Referral Comments, no significant impacts on the existing natural environment are considered likely to result from the proposal, subject to appropriate conditions of consent.

Council's Natural Resource Officer raises no objection to the proposal's impact upon flora and fauna, subject to conditions of consent relating to vegetation and weed management.

The Department of Environment and Climate Change advise that they agree with the recommendations in the submitted Flora and Fauna Assessments and suggest that these recommendations be incorporated as conditions of consent. Despite this advice, not all the recommendations of the Flora and Fauna Assessments accompanying the application are proposed to be adopted as a condition of consent. In this regard, some of the recommendations will, if adopted, compromise the hydraulic performance of the floodway and others are assessed as being unreasonable in the circumstances.

## Visual Impacts

On the basis of the topography of the lands and the nature of the proposed works, the development is not likely to result in significant impacts on the existing visual amenity of the locality.

## Social and Economic Impacts

As detailed in this report, the proposed development will result in some adverse impacts on existing surrounding development, particularly in relation to noise and flooding impacts on land immediately downstream. The potential adverse impacts are considered acceptable given the nature of the proposal, its operating characteristics, and the wider public benefit resulting from the development.

The proposed increase in hydraulic capacity of the 'airport floodway' and associated reduction in the 1 in 100 year flood levels experienced in north, south and central Lismore will result in significant public benefit. The provision of fill material for industrial lands will also result in positive economic impacts on the locality.

It is concluded that the development will result in positive social and economic impacts on the locality.

## **5.6 The Suitability of the Site for the Development**

The proposed development seeks to improve the hydraulic performance of the Lismore floodplain and reduce the level of floodwaters in North, South and Central Lismore. The proposed

development is considered to adequately respond to the site constraints and it is concluded that the site is suitable for the proposed development, subject to reasonable and relevant conditions of consent.

## **5.7 Any Submissions made in Accordance with this Act or the Regulations**

Submissions received in relation to the proposed development are addressed in Section 4 – Public Notification, and Section 6 – Referral Comments.

## **5.8 The Public Interest**

The proposed development is considered to be consistent with the public interest.

## **6. REFERRAL COMMENTS**

### **6.1 Internal**

#### **6.1.1 Natural Resource Officer**

The proposed development was referred to Council's Natural Resource Officer for comment. Following review of the application, particularly the submitted flora and fauna reports, the Natural Resource Officer advised that no objection was raised to the proposal subject to the conditions of consent relating to "vegetation" and "weed" management plans be submitted prior to the commencement of works.

#### **6.1.2 Development Engineer**

The proposed development was referred to Council's Development Engineer for comment and the following response provided:

##### Traffic & Access

The development area is bounded by Caniaba Street and Three Chain Roads. Both Caniaba Street and Three Chain Road are collector roads within Council's road hierarchy. Likely haulage routes from local roads to the state road system would be Three Chain Road to the Bruxner Highway and Caniaba Street to Kyogle Road. Given the above, the location of the development from a transport perspective is considered suitable in terms of surrounding transport infrastructure and minimising haulage distances upon local roads.

Access to the site is proposed to be from Three Chain Road and has been conditioned to meet the relevant Roads and Traffic Authorities Standard.

##### Flooding

With regard to flooding impact, modelling of the proposal has been undertaken for the project by Patterson Britton & Partners Pty Ltd. The modelling indicates that the proposal will result in reduced flood levels in some areas while increasing flood levels in others.

The flood modelling indicates that the proposal will result in the following reductions in flood levels for the 1 in 100 year event at the following locations; 0.46 metre immediately upstream of the works, 0.09m in South Lismore, 0.06m in North Lismore and 0.06m in the CBD.

The flood modelling indicates that the proposal will result in the following increases in flood levels for the 1 in 100 year event at the following locations; 0.1 metre immediately downstream of the works, 0.07m north of the airport runway, 0.06m at the airport hangers, 0.02m 1/3 of the way along the airport runway and 0.0m at the new airport terminal.

In response to the above outcomes additional hydraulic assessment was undertaken by Patterson Britton & Partners Pty Ltd. This assessment examined possible measures for reducing the downstream flood level increases. The findings showed that by widening the existing drain, through the airport site, from Three Chain Road to the river the likely change in peak water levels would be a reduction in the peak water level of 0.06m. The original modelling indicated an increase in water levels of 0.07m to 0.0 in this location. A decrease of 0.06m, as would be achieved by the widening of the drain, would therefore reduce the anticipated downstream effects of the development to between 0 and 0.01m.

Therefore it is recommended that an assessment of the expected benefit/detriment of the proposed changes in flooding be undertaken as part of the planning review. Should the above impacts be assessed as unsuitable then the widening of the existing drain to 30m, in order to reduce the increase of flood levels immediately downstream of the proposal, could be implemented.

Conditions of consent recommended by Council's Development Engineer have been incorporated.

### 6.1.3 Environmental Health Officer

The application and additional information submitted were referred to Council's Environmental Health Officer who provided comments in relation to the proposed development on three occasions. The final comments forwarded on 11 September 2007 are provided as follows:

#### Noise Assessment

The revised noise assessment prepared by Noise & Sound Services generally supports the works undertaken by Greg Alderson and Associates but is considered to be more robust in assessment. The outcomes however recognise that the noise emissions from the excavation works will slightly exceed the project specific noise criteria (intrusive criteria) under normal weather conditions at sites (Casino Street 0-6dB, Ruane Road 1 dB, 122 Three Chain Road 2 dB & Youngberry's Nursery 5 dB). It is generally considered that a measured sound pressure level is acceptable if it is up to 2 dB(A) higher than the target level in accordance with the Industrial Noise Policy. Utilising this standard it could be argued that impacts are generally minimal recognising the non-stationary nature of the works and periodic duration. However this can be contrasted to the modelling undertaken for adverse weather conditions where a number of sites are exceeding the target performance level by more than 2 dB(A).

The report concludes:

*'It can be seen from the assessment results that the NSW Government intrusive noise criteria will, on at least some occasions, be exceeded from the on-site plant noise during the proposed excavations. All reasonably practicable mitigation measures are recommended for the day time use of the excavators, scrapers and on-site trucks. These include the use of low noise plant and the construction of straw bale barriers, or similar to provide temporary acoustic barriers by increasing the height of the levee banks at relevant times.*

*Although the noise goals are likely to be exceeded the impact will be less than the impact for a continuous and permanent noise source. There are also considerable community benefits of the proposed floodway excavation'.*

The report is not prescriptive on the 'all reasonably practical mitigation measures' which should be developed up to support the site superintendent for the construction activity. The Alderson report was comprehensive in practical measures.

The report should be forwarded to DECC as the regulatory authority for issue of their General Terms of Approval.

Existing Landfill

It was previously recommended within the draft conditions that soil excavation works not be undertaken within a 40m exclusion zone of the former South Lismore Landfill site. It was further discussed that the exclusion zone be discussed with DECC. The EIS recognises that a report was undertaken by EAL (Southern Cross University) as part of a proposal to remediate the site. This report has been appendage to Appendix 8 – Preliminary Contamination Assessment. The report identifies that although there is a high level of contamination within the former landfill envelope transect soil sampling downstream of the landfill indicates that there has been little lateral migration of contaminants from the landfill proper. The report was presented to DECC who have considered the results and provided advices as to management options (DECC correspondence attached) being excavation and disposal to controlled site or capping of existing site. No works have been undertaken on-site since reporting to DECC in 1998.

If the site had been 'closed' in accordance with best practice then the 40m exclusion zone would be appropriate as that is the distance recommended by DECC for separation distances of landfills from waterways. If the site has not been closed then it is recommended that the site be closed in accordance with the 40m exclusion zone as stage one of this proposed floodplain excavation proposal as recommended by DECC.

Council's Waste Service Manager advised that he has no knowledge of a formal closure plan for the site and DECC are not currently involved in any closure direction.

Soil Investigation (Contamination)

The assessment of the soil environment for potential contaminants is considered satisfactory as a preliminary assessment. The conclusion reached that a further detailed assessment is not required, is supported in recognition of the location and depth of supporting soil samples. The soils of the development site is a heavy clay soil demonstrating very low permeability as recognised by its water holding capacity (perched water table). The migration of contaminants is considered very restrictive through such a soil environment and therefore the judgemental sampling program is considered reasonable. It should be recognised that the development consent for the principal fill location requires the submission of an EMP. This document should address the matter of fill validation. Comments from DNR should address associated groundwater matters.

It is considered reasonable to formally determine a buffer distance between proposed excavation areas and the former landfill site. Communications will be undertaken with DECC to determine an appropriate arbitrary buffer distance.

Erosion, Sediment and Dust Control

Sediment, erosion & dust control will be formalised through conditions and the required EMP (nominated condition).

Conditions of consent recommended by Council's Environmental Health Officer have been incorporated.

**6.2 External****6.2.1 Roads and Traffic Authority (RTA)**

The proposal was referred to the RTA on two occasions, initially following receipt of the development application and again following the amendment of the application and the receipt of additional information.

The initial comments provided by the RTA dated 18 December 2006 advised that the matter was considered that the Regional Development Committee meeting of 16 November 2006, and that the

committee recommended the consideration of the matter be deferred until all the impacts on the road network, infrastructure and users have been adequately addressed. The comments provided included the following in relation to the impact on road safety and traffic management:

- *The access to the site should be located where there are adequate safe intersection site distances along Caniaba Street. It should also be offset from any other junction/access to avoid conflicts with turning traffic.*
- *The access driveway should be constructed and sealed in accordance with the RTA's or AUSTRROADS rural access standards in order to cater for heavy vehicle turning paths.*
- *An appropriate facility should be provided to prevent the tracking of loose material onto the road network.*
- *There are a number of other local roads that can be utilised. The development should be conditioned to prevent their usage.*
- *The geometry of the intersection of Caniaba Street and Three Chain Road should be checked for heavy vehicle turning paths.*
- *Standard Truck Entering warning signs are to be displayed on Caniaba Street during hours of operation.*
- *A contribution based on haulage rates should be made to the maintenance of the road network.*

The comments received from the RTA dated 28 May 2007, regarding the revised scheme and additional information submitted included the following:

- *Any access to Three Chain Road should be located at least 90m from the Caniaba Road junction.*
- *The access to Three Chain Road should be constructed in accordance with either the RTA's or AUSTRROADS Rural Access Standards and sealed for at least 30m back from the road in order to manage heavy vehicle turning paths.*
- *A contribution should be made to the maintenance of the road network based on haulage rates.*
- *Hinged truck entering warning signs should be erected on Three Chain Road and displayed during hours of operation.*

Conditions of consent are considered adequate to address the above matters raised by the RTA.

### **6.2.2 Department of Natural Resources (Department of Water and Energy)**

As stated earlier in this report, the proposed development requires approval under the provisions of the Water Management Act 2000 / Rivers and Foreshores Improvement Act 1948 and therefore constitutes Integrated Development in accordance with Section 91 of the Environmental Planning & Assessment Act, 1979.

Accordingly, the application was referred to the Department of Natural Resources (now the Department of Water and Energy) in relation to the provisions of the Rivers and Foreshore Improvement Act, 1948. The comments provided by the Department of Natural Resources dated 27 November 2006 in relation to the provisions of the Rivers & Foreshore Improvement Act, 1948 include the following:

*In regards to the subject development application, it is understood that within the lands proposed to be excavated there are no natural watercourses and Hollingsworth Creek is located to the north of the proposed excavation. There are a number of constructed drains within the lands proposed to be excavated (Section 2.2.4 of the EIS – Drainage and watercourses).*

*Artificial drains do not constitute "protected waters" under the provisions of the RFI Act. Also Clause 22H(1)(b) of the Act exempts local authorities (councils) from requiring a Part 3A Permit for the above activities. Notwithstanding the RFI Act exemptions, the proposed extraction should employ*

*best management practice for sediment and erosion control to minimise onsite and downstream effects.*

In addition to the above, the Department of Natural Resources advised that the application be referred to the Department of Water and Energy (DWE) in Grafton to consider the impacts of the proposal upon the groundwater. In accordance with this advice, Council referred the application to the DWE for comment. The DWE reviewed the application and made the following recommendations:

1. *Further work should be undertaken into the potential of the intersection of groundwater from the proposed works. Water table information should be provided with respect to the proposed deeper cut areas and lower RL areas, ie drains.*

*Should the water table be intersected as part of the works, an assessment should be undertaken to determine the impacts of the operation on groundwater and groundwater dependant ecosystems such as the swamp oak EEC and freshwater wetland EEC, as well as considering the mobilisation of any contaminants that may be present at the site through an increased groundwater gradient.*

2. *Any further assessment of groundwater should include contouring of water level results from all bores.*

The applicant reviewed the above recommendations and in response installed an additional piezometer (monitoring well) at the site and undertook additional groundwater levels and water quality analysis. Following this additional field work, the applicant prepared an additional report on the groundwater impact, which Council referred to the DWE for comment.

The DWE reviewed the additional information and made the following comments:

*In response to the material submitted following the Department's letter dated July 18, 2007, regarding the above, the Department does not consider the works require licensing under the Rivers and Foreshores Improvement Act 1948 for excavations in or near a "river" nor the Water Act 1912 as it appears that works will not intercept groundwater.*

*As discussed, the Department does have concerns regarding groundwater quality, however it is considered this issue is more applicable to the existing ponds and landfill sites. It is understood that this is being followed up by the Department of Environment and Climate Change and the Department considers it inappropriate that these issues be addressed by Council and DECC.*

*If, during construction, the works for some reason do not intercept groundwater, the Department is to be notified immediately to address licensing and water monitoring matters.*

### **6.2.3 Department of Environment and Climate Change (DECC)**

As previously noted, the proposed development requires an environment protection licence to authorise carrying out of scheduled development work in accordance with the provisions of Sections 43(a), 47 & 55 of the Protection of the Environment Operations Act 1997. The development therefore constitutes Integrated Development under the provisions of Section 91 of the Environmental Planning and Assessment Act, 1979.

The application was referred to DECC for assessment, and comments were also provided in relation to biodiversity and cultural heritage.

Three letters and one email were received from DECC in response to the referral of the proposed development.

The first letter dated 4 December 2006 requested additional information in relation to the Noise Impact Assessment accompanying the development application. This request for additional information was forwarded to the applicant for attention.

An email dated 12 February 2007 provided the following comments in relation to biodiversity and cultural heritage:

*In relation to matters of Biodiversity and Cultural Heritage it is recommended that prior to determining the application Council consider the following:*

- *The proposal is not likely to cause impacts on areas of native vegetation, with special reference to threatened or regionally significant flora and fauna species, populations or ecological communities.*
- *The proposed development is consistent with the threatened species provisions of the Environmental Planning and Assessment Act, 1979, State Environmental Planning Policy (SEPP) 44 – Koala Habitat Protection, SEPP 71 – Coastal Protection and the Native Vegetation Act, 2003.*
- *An appropriate level of Aboriginal cultural heritage assessment has been undertaken, and that the proposal is not likely to impact on areas of cultural significance to the Aboriginal community. Also, it is important that the views of Aboriginal community groups be sought in regard to the proposed development.*

*Your attention is also drawn to the Commonwealth legislation, the Environment Protection and Biodiversity Conservation Act, 1999. If the proposal affects any species requiring consideration under this legislation then approval may be required from the Department of Environment and Heritage.*

Following the receipt of a Revised Noise Impact Assessment, the additional information was forwarded to DECC for review and comment. In correspondence dated 19 April 2007, DECC raised a number of concerns regarding the assessment of the potential impacts of the proposed development in relation to noise, and advised that the General Terms of Approval were unable to be issued. The concerns of DECC were referred to the applicant for further attention. A further Noise Impact Statement was prepared by Noise and Sound Services (dated August 2007) and forwarded to DECC for review.

Further correspondence from DECC dated 12 October 2007 incorporating the General Terms of Approval includes the following comments in relation to the proposed development:

*The DECC has reviewed the information provided and has determined that it is able to issue a licence for the proposal, subject to a number of conditions. The applicant will need to make a separate application to the DECC to obtain this licence.*

*The general terms of approval for this proposal are provided at attachment A. If Lismore City Council (Council) grants development consent for this proposal these conditions should be incorporated into the consent.*

*These general terms relate to the development as proposed in the documents and information currently provided to the DECC. In the event that the development is modified either by the applicant prior to the granting of consent or as a result of the conditions proposed to be attached to the consent, it will be necessary to consult with the DECC about the changes before the consent is issued. This will enable the DECC to determine whether its general terms need to be modified in light of the changes.*

*In particular, we draw your attention to the following conditions in the General Terms of Approval which must be addressed prior to the commencement of works at the site:*

- *Prepare a Noise Management Plan – key elements of this plan may be reflected in conditions of an Environment Protection Licence*
- *Design and implement a Community Engagement Plan– key elements of this plan may be reflected in conditions of an Environment Protection Licence*
- *Develop a Traffic Noise Management Plan– key elements of this plan may be reflected in conditions of an Environment Protection Licence*
- *Develop a Groundwater Management Plan– key elements of this plan may be reflected in conditions of an Environment Protection Licence*
- *Develop a Soil and Water Management Plan for the site. We note that the current proposal is to utilise vegetated filter strips to remove sediment from work cells. This approach is more commonly utilized as part of water sensitive urban design to remove sediment from stormwater rather than managing runoff from an excavation site.*

*We have briefly reviewed the flora and fauna assessments and agree with the recommendations in the Flora Assessment prepared by Landmark Ecological Service Pty Ltd and the Fauna Assessment by Sandpiper Ecological Surveys. If Council approves this development it should include these recommendations as conditions of consent.*

*With regard to impacts on Aboriginal heritage, a brief review of the information provided suggests that the interests of the DECC are unlikely to be affected by the proposed development. Prior to determining the application, it is recommended that Council be satisfied that an appropriate level of Aboriginal heritage assessment has been undertaken and that the proposal is not likely to impact on areas of cultural significance to the Aboriginal community.*

*Your attention is also drawn to the Commonwealth legislation, the Environment Protection and Biodiversity Conservation Act 1999. If the proposal affects any species requiring consideration under this legislation then approval may be required from the Department of Environment and Water Resources.*

#### **6.2.4 Department of Primary Industries (Fisheries)**

The development constituted Integrated Development under the provisions of Section 91 of the Environmental Planning and Assessment Act, 1979, particularly s201 of the Fisheries Management Act 1994.

The application was referred to the Department of Primary Industries (DPI) for assessment. The following comments were provided:

*“NSW DPI has both statutory and advisory responsibilities in relation to development and land use planning matters. The Department is an advocate of sustainable development and profitable and sustainable primary industries through appropriate access to and wise management of natural resources. NSW DPI through Forests NSW also has a commercial and operational interest in land use planning matters.*

*DPI’s responsibility also covers managing fish (including aquatic invertebrates), and fish habitat throughout NSW. In addition, the department works to provide quality commercial and recreational fishing, and aquaculture opportunities.*

*The Aquatic Habitat Protection Unit within DPI has reviewed the development application and accompanying information in light of provisions in the Fisheries Management Act 1994 and the policies that underpin them.*

*It is noted in the EIS report that: with the exception of Hollingsworth Creek, “there are no other natural watercourses with the lands and there are no natural watercourses occurring within the lands proposed to be excavated”.*

*Considering this there are no fisheries issues or direct impacts on fish habitats. Therefore while the proposal is technically triggered by 2198-202 of the Fisheries Management Act 1994 a permit will not be required contingent that the work is carried out or authorised by a relevant public authority (other than a local government authority) consistent with s201(2)(b) of the Act.*

*Contingent upon adherence to the following conditions DPI has no objection to the proposed works based on potential impacts on fish and key fish habitats:*

*General Terms of Approval*

- *The works be carried out, and or authorised by a relevant public authority (other than a local government authority) consistent with s 201(2)(b) of the Fisheries Management Act 1994”.*

### **6.2.5 Country Energy**

Country Energy advised that it has 11,000 volt power line assets that traverse across the southern section and the eastern edge of the designated land, and that these are critical electricity assets close to the South Lismore Zone substation supply point.

## **7. CONCLUSIONS**

The proposed excavation of earth in the ‘airport floodway’ to improve the hydraulic performance of the floodway and extractive industry, will result in significant public benefit, resulting from the associated reduction in the 1 in 100 year flood levels experienced in north, south and central Lismore. Potential adverse impacts resulting from the development include noise, traffic, flooding, and groundwater impacts. A detailed assessment of the proposed development indicates that while some adverse impacts on existing surrounding development are likely to result from the proposal, the potential impacts are acceptable in the circumstances having regard for the scale and nature of the impacts, and the broader positive outcomes of the proposed development.



|                             |   |
|-----------------------------|---|
| <b>POLICY NO:</b>           | <b>SOCIAL IMPACT ASSESSMENT POLICY and GUIDELINES</b>               |
| <b>FUNCTION:</b>            |   |
| <b>ACTIVITY:</b>            |   |
| <b>OBJECTIVE:</b>           | To ensure minimal negative social impact resulting from development |
| <b>SECTION RESPONSIBLE:</b> | Community Services  |
| <b>AUTHORISED:</b>          | 4/7/95  |
| <b>REVIEWED:</b>            | October 2007  |

### **Introduction**

Social Impact Assessment (SIA) can be defined as the process of assessing and analysing, in advance, the social consequences that are likely to follow from specific policy actions or developments. It aims to find out how to maximise desired outcomes and to minimise costs or losses to communities. The fundamental objective is to improve people's quality of life and social well being.

The objective of the Social Impact Assessment Guidelines is to ensure that social considerations are an integral part of the development process. These guidelines will assist applicants, the community and Council to identify and address potential social impacts of any proposed development.

In order to realise this objective the Guidelines seek to:

- Indicate which proposals should include comment regarding social impacts or a detailed social impact statement;
- Provide clear guidelines as to when and how social impact assessments should be conducted;
- Enhance consistency and transparency in social impact assessment; and
- Assist applicants and Council staff to improve their understanding and assessment of social issues relating to development.

### **Legislative requirement**

Section 79C(1)(b) of the NSW Environmental Planning & Assessment Act 1979 specifies the matters that Council should take into consideration when assessing development applications. One of the main considerations is to assess "*The likely*

*impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality.”*

This Policy relates to ‘local development’, ‘integrated development’ and ‘designated development’ as defined in the Environmental Planning and Assessment Act 1979 together with applications to rezone land.

### **Relationship to other Council Plans and Policies**

The proponent of the proposal and council staff member responsible for the project must address relevant Council policies and plans, including (but not necessarily limited to):

- Lismore City Council Local Environmental Plan
- Lismore City Council Development Control Plan
- Lismore City Council Strategic Plan, 2004-2012
- Lismore City Council Management Plan, 2006/7 - 2009
- Lismore City Council Social and Community Plan, 2005 – 2009
- Lismore City Council Community Profile, 2004
- Lismore City Council Rezoning Guidelines, 2006
- Lismore City Council Crime Prevention Plan 2005 – 2009
- Lismore Rural Housing Strategy, 2002
- Lismore Urban Strategy, 2003 (amended 2005)
- Lismore Village Development Strategy, 1997, Re-edited 2002
- Lismore Contributions Plan, 2004
- North Coast Regional and Environmental Plan
- Far North Coast Regional Strategy 2006 – 2031
- Age-friendly built environments (ALGA)

## **Social Impact Assessment Trigger Criteria**

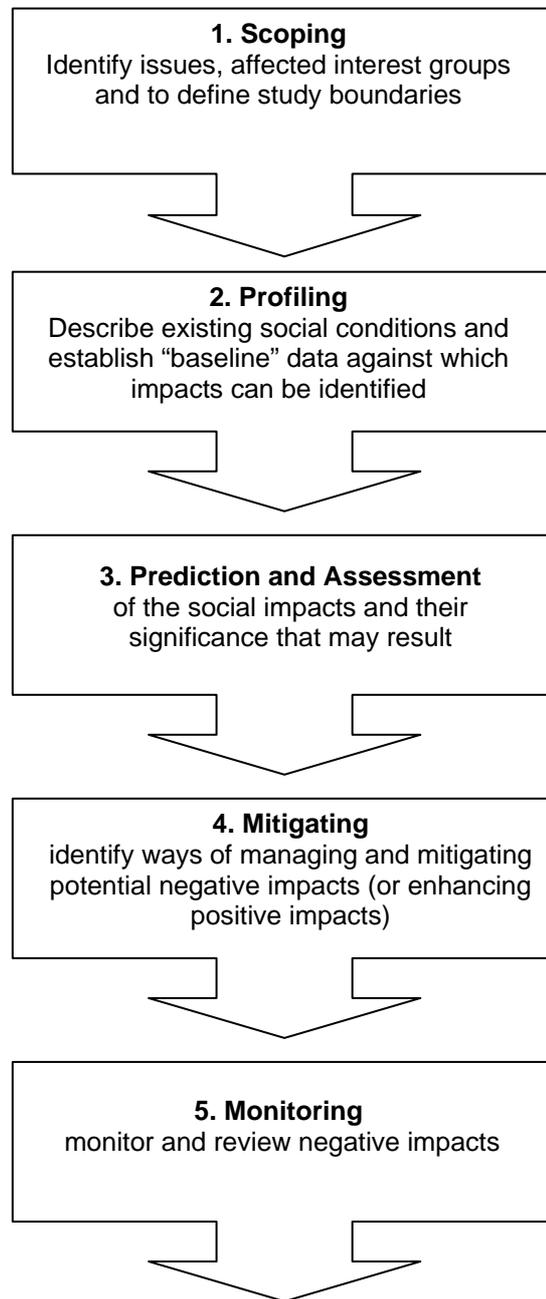
Where a Social Impact Assessment is required, this Policy should be read in conjunction with the Lismore City Council's Social Impact Assessment Guidelines.

Council requires a Social Impact Assessment be carried out where any one of the following circumstances apply:

1. Rezoning resulting in significant change in land use eg more than 20 dwellings
2. DA for residential development for 20 dwellings or more in an urban area
3. An 'Affordable housing' project
4. Removal of facilities that are significant to target groups identified in the LCC Social and Community Plan
5. Manufactured home estates or caravan park
6. Commercial and retail development with a gross floor area of more than 5,000 sqm
7. Industrial development with a gross floor area of more than 5,000 sqm
8. Boarding houses, hostels, group homes, drug and alcohol rehabilitation centres
9. Tourist facilities providing overnight accommodation for 20 or more persons
10. Major new sports facilities
11. Major transport infrastructure and interchanges
12. Restricted premises and brothels
13. Designated Development pursuant to the EPA Act as directed by the NSW Department of Planning
14. Any other proposal deemed by Council to have likely significant social impacts and advised by Council staff at prelodgement meetings

## SIA Process

Once an applicant or Council has established that a social impact assessment is required for a particular proposal there are five key steps involved in carrying out that assessment. These are outlined below:



A SIA report is required to be submitted to Council with the DA or an application for rezoning of land.

This policy is effective from xxxxx.

Updated October, 2007



# Social Impact Assessment Guidelines

for LCC Policy Number xxxxx

Fourth DRAFT  
October 2007

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## Abbreviations

|       |   |
|-------|---|
| DA    | Development application                       |
| DCP   | Development control plan                      |
| EIS   | Environmental impact statement                |
| LCC   | Lismore City Council                          |
| LGA   | Local Government Area                         |
| LEP   | Local environmental plan                      |
| SEE   | Statement of environmental effects            |
| SIA   | Social impact assessment                      |
| SIC   | Social impact comment                         |
| TOR   | Terms of reference                            |
| GLBTI | Gay, Lesbian, Bisexual, Transgender, Intersex |
| CALD  | Culturally and linguistically diverse         |

# 1. Introduction

---

## 1.1 Objective

The objective of the Social Impact Assessment Guidelines is to ensure that social considerations are an integral part of the development assessment process. These guidelines will assist applicants, the community and Council to identify and address potential positive and negative social impacts of any proposed development.

In order to realise this objective the Guidelines seek to:

- Indicate which proposals should include comment regarding social impacts or a detailed social impact statement;
- Provide clear guidelines as to when and how social impact assessments should be conducted;
- Enhance consistency and transparency in social impact assessment;
- Assist applicants and Council staff to improve their understanding and assessment of social issues relating to development.

## 1.2 Legislative and policy context

Lismore City Council has a statutory obligation under Section 79C of the Environmental Planning and Assessment Act (1979) to include consideration of social impacts of development, where relevant, in determining a development application.

Council also aims to ensure that development reflects and contributes to the six strategic priorities, in particular, to make Lismore a safe, healthy and caring community in which to live. Strategic initiatives to support this aim are:

- Increase social cohesion
- Support villages
- Promote community services
- Encourage sustainable development
- Promote recreation and leisure

These Guidelines should be read in conjunction with the Lismore Local Environmental Plan. This is the principal planning instrument governing development within the Lismore Local Government Area. The proponent of the proposal and council staff member responsible for assessing the project must also address relevant policies and plans, including (but not necessarily limited to):

- Lismore City Council Local Environmental Plan
- Lismore City Council Development Control Plan
- Lismore City Council Strategic Plan, 2004-2012
- Lismore City Council Management Plan, 2006/7 - 2009
- Lismore City Council Social and Community Plan, 2005 – 2009

- Lismore City Council Community Profile, 2004
- Lismore City Council Rezoning Guidelines, 2006
- Lismore City Council Crime Prevention Plan 2005 – 2009
- Lismore Rural Housing Strategy, 2002
- Lismore Urban Strategy, 2003 (amended 2005)
- Lismore Village Development Strategy, 1997, Re-edited 2002
- Lismore Contributions Plan, 2004
- North Coast Regional and Environmental Plan
- Far North Coast Regional Strategy 2006 – 2031
- Age-friendly built environments (ALGA)

### 1.3 Section 94 contributions

Section 94 Contributions Plans set out circumstances where Council may levy a contribution towards the capital cost of community facilities (such as roads, open space, and community centres). These plans have assessed the impact of various forms of development on the future demand for these services. Developments that are nominated in these Contributions Plans would be expected to make payment towards these services in the manner specified. The social impact assessments of a particular Development Application (DA) will not alter the provisions of the Section 94 Contributions Plans. For some rezoning applications for complex major developments, a special Contributions Plan or Planning Agreement may need to be made relating to the unique demands of that development.

## 2 Definitions and Principles

---

### 2.1 Social impact

Social impacts are changes that occur in:

|                         |   |
|-------------------------|---|
| People's way of life    | How they live, work, play and interact with one another on a day-to-day basis   |
| Their culture           | Shared beliefs, customs, values and language  |
| Their community         | Its cohesion, stability, character, services and facilities   |
| Their political systems | The extent to which people are able to participate in decisions that affect their lives   |
| Their environment       | Air and water quality; availability and quality of the food they eat; the level of hazard or risk, dust or noise they are exposed to; the adequacy of sanitation, their physical safety, and their access to and control over resources |
| Their health and        | Health is a state of complete physical, mental, social and  |

|                                    |  |
|------------------------------------|--|
| wellbeing                          | emotional wellbeing and not merely the absence of disease  |
| Their personal and property rights | Particularly where people are economically or otherwise personally disadvantaged   |
| Their fears and aspirations        | Their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children |

The changes identified above may involve significant impacts experienced by people as a result of development and need to be taken into consideration when formulating and assessing DAs.

## 2.2 Possible types of social impact

There are a number of social impacts that may occur as a result of a development. The list below identifies types of social impacts that should be considered for rezoning and development proposals:

- Demographic and population change (size and characteristics)
- Community services and facilities
- Pressure on infrastructure
- Community structure (severance, cohesion and identity)
- Social equity (displacement, needs of disadvantaged groups)
- Needs of specific social groups (women, aged, persons with disability, GLBTI communities, children, youth, indigenous people and CALD communities)
- Access and mobility
- Housing affordability
- Transport and traffic
- Crime, public safety and risk perception
- Heritage and culture
- Employment
- Health
- Local economic effects
- Impact on future generations
- Leisure and recreation facilities
- Property values

## 2.3 What is Social Impact Assessment (SIA)?

Social impact assessment is concerned with the human dimensions of environments. It balances social, economic and environmental objectives, and seeks to predict, anticipate and understand the potential positive and negative impacts of development.

## 2.4 Key principles of assessing social impacts

To achieve a useful and appropriate framework for assessing social impacts, a number of key principles are important.

### ⇒ **Socially sustainable development**

SIA should seek to support socially sustainable development, contributing to the determination of best policy or development alternatives not just economic benefits at social cost.

### ⇒ **Context**

SIA should be informed by relevant policy and legislation and integrate policy priorities in the assessment.

### ⇒ **Acknowledge the values of local communities**

### ⇒ **Participation**

When assessing social impacts the focus is on impacts on people. Persons and groups that may be affected by the proposal should be consulted. Participation is a means of gaining information about the potential positive and negative impacts of a proposal. It should not be seen as a process for gaining consent from the affected community.

### ⇒ **Use evidence based information and analysis**

### ⇒ **Positive as well as negative impacts**

When assessing social impacts, it is essential to consider the positive social aspects of developments as well as any negatives.

### ⇒ **Practical and action focussed**

When assessing social impacts it is essential to consider how the social effects of change can best be managed. Any assessment needs to be action focussed and practical. The applicant should incorporate practical measures that will enhance the positive impacts, may improve the development, limit any possible negative social impacts and take responsibility for implementing mitigation strategies.

Council may need to consider conditions of consent where impacts have not been adequately addressed in the development application. Amendments to proposed plans may be required during the assessment process or under the conditions of consent.

### ⇒ **Inter-generational equity**

When measuring social impacts consideration should be given to the effects of the development on present and future generations.

## **2.5 Relationship with other possible areas of impact**

It is difficult to neatly compartmentalise social impacts from other types of impact. Environmental impacts usually have social dimensions, such as with traffic, odour and noise impacts. Social impacts may have economic consequences, such as increased crime in a neighbourhood causing businesses to move away.

# **3 Role of Key Stakeholders**

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## **3.1 Role of the applicant**

- Consult with Council early in the development concept stage on SIA requirements and issues.
- Consult with communities potentially affected by a development. The level of consultation will vary according to the proposal. Applicants should discuss the proposed method of consultation with Council staff before preparing a SIA. This process should conform to the requirements of these Guidelines.
- Prepare SIA and adequately address any possible social impacts. This will help expedite the processing of the application by avoiding the need for Council to request additional information to enable a proposal to be properly assessed.
- Monitor social impacts.

## **3.2 Role of the community**

- Participate in the rezoning/DA process during the public consultation stage.
- Involvement through survey, community meetings or written submissions.
- Assist in monitoring social impacts.

### **3.3 Role of Council**

- Advise applicants as to whether SIA is required.
- Require SIA early in the rezoning and development assessment process.
- Provide guidance on the process of preparing a Social Impact Assessment (SIA).
- Evaluate all the potential impacts of a development, including social impacts. Council officers may request further information from an applicant if the information submitted is inadequate.
- Be satisfied that the social impacts of a development have been reasonably identified and addressed
- Prepare a report on the application recommending whether a development should be approved, approved subject to compliance with conditions of consent, or refused.
- Monitor social impacts of approved developments where appropriate and budgeted for.

### **3.4 Role of government agencies**

- State government agencies may be able to assist applicants with specific advice or information regarding a development.
- In the case of integrated development, certain government agencies will have a designated licensing or approval role.
- Applicants may seek specific advice from a government agency on a development. For instance, the Department of Community Services may advise on the observed impacts of group homes for people with a disability.

## **4 Levels of assessment of social impact**

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There are two levels of assessment for developments that require social impacts to be considered:

1. Social Impact Comment in the Statement of Environmental Effects
2. Social Impact Assessment

### **4.1 Social Impact Comment in the Statements of Environmental Effects**

Statements of Environmental Effects (SEE) are required to be submitted with all development applications. DA's are required to address the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality. The Department of Planning has expanded this requirement by specifying that the following matters are to be addressed in the Statement of Environmental Effects as part of the assessment of social impacts.

- The social benefits and costs of the development in terms of:
  - the health and safety of the community
  - social cohesion
  - community structure, character, values and beliefs
  - a sense of place and community
  - community facilities and links
  - the interaction between new development and the community
  - social equity, socio-economic and disadvantaged groups
  - social displacement
  - social change management.
- Would the development provide safety and security in terms of:
  - risk assessment and potential for accident, injury and criminal activity, particularly in residential areas and commercial/ shopping centres
  - measures used for safety, security and crime prevention such as situational measures and environmental design
  - natural surveillance and visibility in public areas, including active uses on adjacent ground floors and building frontages/edges, and lighting
  - maintaining the condition and use of public areas, reinforcing territoriality and reducing fear of crime
  - access controls and activity management
  - making it harder to target specific areas for crime.

Applicants which do not require the complete SIA report should address the above matters relevant to their proposal. The SEE should then describe how positive impacts are to be maximised, and how detrimental impacts are to be mitigated.

## 5 Social Impact Assessment (SIA)

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### 5.1 Social Impact Assessment

- Is required in circumstances outlined in Section 5.3.
- Provides an in-depth analysis of positive and negative social impacts in major proposals
- Is usually a stand-alone document accompanying a DA
- Should involve input from Council staff at an early stage
- Will usually require carefully planned community consultation
- Should aim to involve all interested and affected parties
- Will describe the positive social impacts
- Will describe how any potential negative social impacts are minimised or mitigated in the interests of both the users of the project and the wider community

It is strongly advised that suitably qualified social impact practitioners be engaged to prepare Social Impact Statements. An experienced social impact practitioner is likely to be familiar with relevant data and comparative cases. This knowledge may be invaluable in identifying significant impacts that may not be immediately apparent to either the Council or the community.

### 5.2 Stages of Social Impact Assessment

| Stage   | Process   |
|---------|---|
| Stage 1 | Determine whether a SIA is required.  |
| Stage 2 | Proponent to develop the Social Impact Assessment Scope in collaboration with relevant Council staff.   |
| Stage 3 | Undertake research and community consultation on likely positive and negative social impacts and mitigation measures or options for the proposal. |
| Stage 4 | Prepare Social Impact Assessment Report   |
| Stage 5 | Decision by Council to approve, approve with conditions of consent or refuse the development application.   |

### 5.3 Trigger criteria for SIA

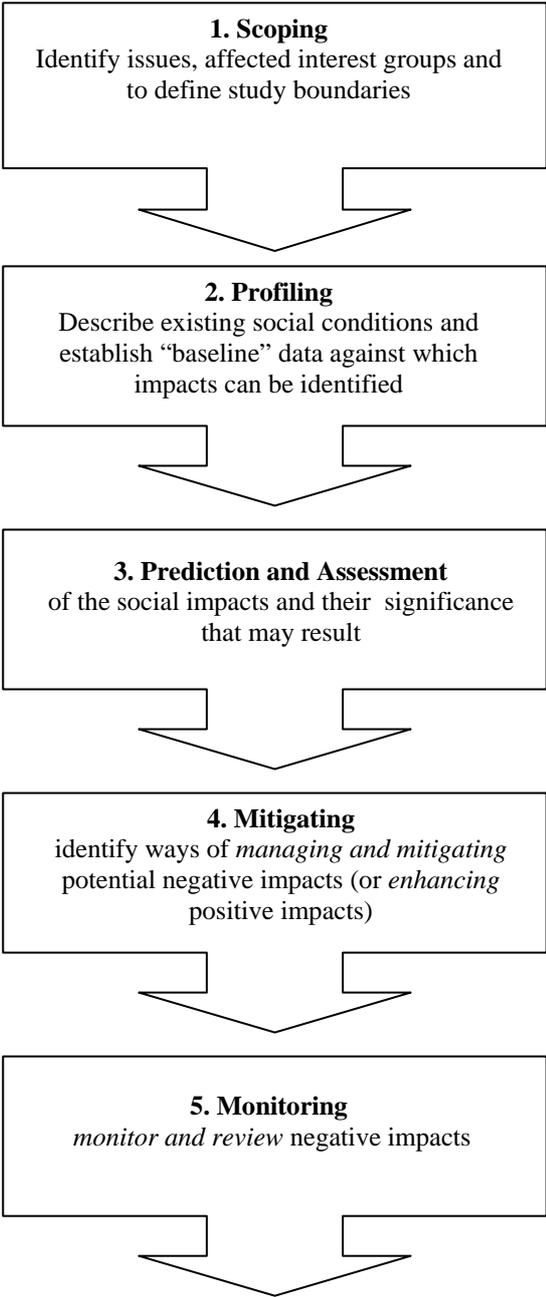
Lismore City Council requires a Social Impact Assessment be completed in the following instances:

Final determination as to whether a SIA will be required in support of a development proposal should be made in consultation with Council's Planning Services and Community Services Sections.

15. Rezoning resulting in significant change in land use eg more than 20 dwellings
16. DA for residential development for 20 dwellings or more in an urban area
17. An 'Affordable housing' project
18. Removal of facilities that are significant to target groups identified in the LCC Social and Community Plan.
19. Manufactured home estates or caravan parks
20. Commercial and retail development with a gross floor area of more than 5,000 sqm.
21. Industrial development with a gross floor area of more than 5,000 sqm.
22. Boarding houses, hostels, group homes, drug and alcohol rehabilitation centres
23. Tourist facilities providing overnight accommodation for 20 or more persons
24. Major new sports facilities
25. Major transport infrastructure and interchanges
26. Restricted premises and brothels
27. Designated Development pursuant to the EPA Act as directed by the NSW Department of Planning
28. Any other proposal deemed by Council to have likely significant social impacts and advised by Council staff at prelodgement meetings.

**5.4 SIA Process**

Once an applicant or Council has established that a social impact assessment is required for a particular proposal there are five key steps involved in carrying out that assessment. These are outlined below:



### **5.4.1 Scoping**

Scoping is an initial attempt at establishing the range of issues to be considered and the geographical reach of possible impacts:

- Delineate the study boundaries, including physical, social and economic areas
- Identify surrounding land uses
- Identify data requirements
- Outline public consultation requirements
- Gather background information and documents
- Identify resources required (consultants, staff etc)
- Establish timeline for project

### **5.4.2 Profiling**

A social profile should establish relevant baseline information used for the assessment and ongoing monitoring of the proposal. A good assessment should select data that draws on the issues and locations determined in the scoping step and examine the existing social conditions of the community it will affect. Appendix 1 provides a thorough range of inclusions for a community profile. Not every project will require this level of detail. The extent and detail of the profile will depend on the nature and scope of the development. Data for the community profile can be collected from a range of sources (Appendix 2).

### **5.4.3 Prediction and Assessment**

Prediction involves the use of the baseline data to determine the likely impacts of the proposal (Appendix 3). Assessment involves categorisation, prioritisation and evaluation of the identified impacts.

This step needs to address:

- who will be affected
- in what way will they be affected
- how long will the impacts last
- what level of social change will occur

These should be addressed on the basis of the future social environment with and without the proposal.

Impacts can be direct, indirect and cumulative. Some examples of likely impacts include:

- demand for community facilities and services
- accessibility to social and community facilities
- safety of residents within the identified area
- residential amenity
- increased traffic and noise
- change in housing choice, shopping, recreational facilities and services

- change to lives of specific groups eg. Aboriginal people, young people, older people, people with disability
- change to community or group values, traditions, lifestyle and culture
- employment opportunities
- effects on the wider community and economy
- changes in affordability of goods and services eg. housing
- urban infrastructure
- local rate base

Once predicted, impacts should be assessed based on their level of importance. This may involve assigning a weighting to the impacts, a cost-benefit analysis or some other form of comparison with similar proposals or previous issues. The assessment will need to include the “do nothing” options for comparative purposes.

The task of measuring social impacts gives rise to a second level of complexity. Social impacts have a number of dimensions that may require some type of measurement or evaluation. These include:

- **Directionality:** some impacts may be positive for some people, while the same impact may be negative for other people;
- **Certainty:** the likelihood or probability of occurrence of impact;
- **Frequency:** how often the impact will occur;
- **Severity:** the magnitude and/or strength of impact;
- **Chronicity:** over what time period;
- **Locality:** area of impact;
- **Susceptibility and vulnerability:** how susceptible the community/ environment is to impact;
- **Mitigability:** the potential of the impact to be mitigated and;
- **Intractability:** effects of other impacts and cumulative potential.

#### 5.4.4 Mitigation

This involves examining and evaluating impacts in order to spell out measures that might help prevent or alleviate negative social impacts. Measures may include:

- noise barriers
- design changes
- financial compensation
- additional community infrastructure and facilities
- employment of community workers
- improved access and accessibility to services and facilities

In relation to Council proposals and policies, measures may include:

- conditions of consent
- Section 94 contribution plans
- caveats, bonds
- review of associated Council policy
- commissioning of special studies (post-occupancy surveys, housing studies, recreational needs study).

In order to investigate possible mitigation measures it is useful to refer to a number of sources:

- previous studies, documents and proposals (where monitoring has been undertaken)
- measures identified during the public consultation process
- measures proposed by Council, other government agencies as a result of consultation

It should be noted that even though the proposal may have negative impacts which cannot be readily overcome, the proposal may be approved or adopted by Council for a variety of other reasons eg economic, environmental, political.

#### **5.4.5 Monitoring**

While many social impacts may be experienced on a “stand-alone” basis, impact categories can, and often do, overlap. Hence, any assessment of social impacts should be sensitive to the way in which impacts inter-relate.

As local governments across Australia adopt integrated, long-term planning objectives, SIA can be an invaluable tool for monitoring and managing social change deriving from local and regional growth patterns. The opportunity therefore exists for Council to take a longer term view with respect to the cumulative social impacts of development within Lismore and the region.

Opportunities to review and monitor the cumulative social impacts of development occur in the development and reporting on the following Plans:

- Social and Community Plan
- Community profile
- Management Plan
- Crime Prevention Plan

The public also play an important role in monitoring impacts of specific developments and categories of developments and are encouraged to provide feedback to Council.

### **5.5 The Social Impact Assessment Report**

The social impact assessment report is a summary of the research and conclusions from the social impact assessment research and consultation, together with the means of mitigating any detrimental effects identified. A template has been developed to provide content guidance and to improve consistency across proposals. (Appendix 4)

### **5.6 How to assess a SIA - Guidelines for Council and applicants**

Overall factors to consider include:

- Has the applicant considered all possible impacts?
- Has a balanced assessment of the project been provided?
- Is the data presented sufficient to demonstrate the benefits and justify the significance of the impacts?
- Is the data sufficient and reliable?
- Is the proposal reasonable in the context of its overall net benefits to the community?
- Can its impacts be adequately minimised or, a net benefit be demonstrated?
- Does it adequately address community concerns?
- Does the application adequately address the social impacts? or
- Will it need ongoing monitoring and consent conditions to ensure it does?

## **5.7 How to get advice**

Please contact Lismore City Council for further assistance on when and how to prepare an SIA:

- Customer Contact Centre on 6625 0500
- Community Services Section
- Planning Services Section

Or, visit Council at its administrative building at:

43 Oliver Avenue Goonellabah, during business hours (8.30am – 4.30pm).

## Appendix 1: Community Profile Considerations

|  |  |
|--|--|
| <b>1. HISTORY</b>                              | <ul style="list-style-type: none"> <li>▪ boundaries and statement of the historical characteristics of the impacted area</li> <li>▪ name of community, district; location; population</li> <li>▪ basic geographical / geological / ecological information</li> <li>▪ community characteristics</li> </ul>                        |
| <b>2. SOCIAL DEMOGRAPHICS</b>                  | <ul style="list-style-type: none"> <li>▪ population size</li> <li>▪ ethnic composition</li> <li>▪ age and dependency ratio</li> <li>▪ gender ratio</li> <li>▪ migration rate</li> <li>▪ current growth</li> <li>▪ trends / projection</li> <li>▪ family types and composition</li> </ul>   |
| <b>3. ECONOMIC BASE</b>                        | <ul style="list-style-type: none"> <li>▪ major economic base</li> <li>▪ changes in economic base over the past decade</li> <li>▪ specific problems in economy</li> </ul>   |
| <b>4. EMPLOYMENT</b>                           | <ul style="list-style-type: none"> <li>▪ employment status and workforce</li> <li>▪ wages and salary</li> <li>▪ occupations</li> <li>▪ unemployment rate</li> </ul>  |
| <b>5. INCOME</b>                               | <ul style="list-style-type: none"> <li>▪ average income per capita</li> <li>▪ degree of poverty</li> <li>▪ income distribution</li> </ul>  |
| <b>6. EDUCATION</b>                            | <ul style="list-style-type: none"> <li>▪ educational level of adults</li> <li>▪ proportion of residents attending university</li> <li>▪ educational facilities</li> <li>▪ number of students enrolled</li> </ul>   |
| <b>7. SOCIAL WELFARE</b>                       | <ul style="list-style-type: none"> <li>▪ services available</li> <li>▪ services most utilised</li> <li>▪ special vulnerable groups and problems</li> <li>▪ proportion of population receiving welfare payment</li> </ul>   |
| <b>8. LOCAL GOVERNMENT AND PUBLIC SERVICES</b> | <ul style="list-style-type: none"> <li>▪ local government and public services available</li> <li>▪ community relations</li> </ul>  |
| <b>9. LAW AND ORDER</b>                        | <ul style="list-style-type: none"> <li>▪ patterns of criminal activities and crime rates</li> <li>▪ specific problems</li> </ul>   |
| <b>10. HEALTH</b>                              | <ul style="list-style-type: none"> <li>▪ public facilities available</li> <li>▪ common diseases and health concerns</li> <li>▪ vulnerable groups</li> </ul>  |
| <b>11. TRANSPORTATION</b>                      | <ul style="list-style-type: none"> <li>▪ modes of available transportation / public transport</li> <li>▪ traffic pattern and volume</li> <li>▪ safety and accidents</li> <li>▪ road network and conditions</li> </ul>  |
| <b>12. HOUSING</b>                             | <ul style="list-style-type: none"> <li>▪ current housing stock and types</li> <li>▪ population distribution by housing type/ income level</li> <li>▪ demand and supply of housing</li> <li>▪ land and real estate values</li> <li>▪ cost of housing: owner/rental, style, bedrooms</li> <li>▪ specific local concerns</li> </ul> |
| <b>13. SPORTS AND RECREATION</b>               | <ul style="list-style-type: none"> <li>▪ public recreation facilities and opportunities</li> <li>▪ recreational and sports activity pattern</li> </ul>   |

|   |  |
|---|--|
|   | <ul style="list-style-type: none"> <li>▪ participation rate</li> <li>▪ physical setting</li> <li>▪ shopping and other entertainment activities</li> </ul>  |
| <b>14. VALUES AND LIFESTYLE</b>           | <ul style="list-style-type: none"> <li>▪ cultural values as reflected by local issues</li> <li>▪ community attitudes as reflected by local movements/action groups</li> <li>▪ dominant lifestyle as reflected by local festivals/events</li> <li>▪ attractiveness or appeal of community</li> <li>▪ cultural or historic landmarks</li> <li>▪ character of community</li> <li>▪ religious services and activities</li> <li>▪ presence of cultural diversity</li> </ul> |
| <b>15. COMMUNITY ORGANISATIONS</b>        | <ul style="list-style-type: none"> <li>▪ types and numbers</li> <li>▪ activities and purposes</li> <li>▪ community identity and cohesion</li> </ul>  |
| <b>16. NATURAL ENVIRONMENT / LAND USE</b> | <ul style="list-style-type: none"> <li>▪ natural and built environment</li> <li>▪ historical and existing land use patterns (eg. park land, zoning)</li> <li>▪ specific local concerns</li> </ul>  |

\* This is an exhaustive list the level of which may not be required for every proposed development.

## Appendix 2: Data sources

| <b>Main sources</b>   |   |
|---|---|
| <b>Lismore City Council<br/>(Subject to privacy legislation)</b><br><br>Fees may apply for some information | <ul style="list-style-type: none"> <li>• Social/community profiles and indicators</li> <li>• Cultural plan</li> <li>• State of the Environment Reports</li> <li>• Community Services Directory</li> <li>• Historical land use information (fee applicable)</li> <li>• Development approval data (fee applicable)</li> <li>• Rate information – number of dwellings, land use categories</li> <li>• Internet access at libraries</li> </ul>  |
| <b>Australian Bureau of Statistics</b>  | <ul style="list-style-type: none"> <li>• Census data (demographic, economic/employment, housing)</li> <li>• Census computer data products: CDATE, Cprofile, CLIB96 (check Newcastle Region Public Library and the University of Newcastle for availability)</li> <li>• Manufacturing and retail censuses</li> <li>• Building and construction data</li> <li>• Economic and employment/unemployment data</li> <li>• Social trends data</li> <li>• Disability data</li> <li>• Victims of crime survey</li> <li>• Health data</li> <li>• Tourism data</li> </ul> |
| <b>NSW Government Agencies</b>  |   |
| <b>NSW Bureau of Crime Statistics and Research<br/>(Attorney-General's Department)</b>                      | <ul style="list-style-type: none"> <li>• Crime statistics for NSW and LGAs</li> <li>• Specialist crime data and comparative trend analysis</li> </ul>   |
| <b>Department of Community Services</b>   | <ul style="list-style-type: none"> <li>• Supported accommodation information</li> <li>• Child abuse and domestic violence statistics</li> </ul>   |
| <b>Department of Education Training</b>   | <ul style="list-style-type: none"> <li>• Enrolments in government and private schools</li> <li>• Enrolment of special groups (Aboriginal and Torres Strait Islanders; Non-English Speaking Background students)</li> </ul>  |
| <b>Department of Fair Trading</b>   | <ul style="list-style-type: none"> <li>• Rental Bond Board data (rents, type of dwellings)</li> </ul>   |
| <b>Department of Housing</b>  | <ul style="list-style-type: none"> <li>• Waiting list numbers</li> <li>• Housing stock information</li> <li>• Boarding house data</li> </ul>  |
| <b>Transport Data Centre<br/>(Department of Transport)</b>  | <ul style="list-style-type: none"> <li>• Passenger travel for all modes of transport (by traffic zones and statistical local areas)</li> <li>• Freight movement survey</li> <li>• Journey to work data</li> <li>• Information on future road and public transport networks</li> </ul>   |

|   |   |
|---|---|
| <b>Department of Planning<br/>(including Housing Data and<br/>Analysis Service)</b> | <ul style="list-style-type: none"> <li>• Population projections (LGA and regions)</li> <li>• Demographic trend analyses</li> <li>• Urban Development Program (UDP) production data – new release areas</li> <li>• Employment Lands Development Program data</li> <li>• Housing data – quarterly Rent and Sales Report</li> <li>• Regional housing statistics and market analysis</li> </ul> |
| <b>NSW Health</b>   | <ul style="list-style-type: none"> <li>• In-patient statistics (Casemix)</li> <li>• Community health data</li> <li>• Hospital facility data</li> <li>• Waiting list information</li> <li>• Range of health indicators (eg mortality data)</li> <li>• Alcohol and drug dependency data</li> </ul>  |
| <b>Police Department</b>  | <ul style="list-style-type: none"> <li>• Mapped crime data by local commands (available through local police stations)</li> <li>• Crime data</li> <li>• Annual customer satisfaction surveys (levels of reporting and police response)</li> </ul>   |
| <b>Tourism New South Wales</b>  | <ul style="list-style-type: none"> <li>• Visitor numbers (by country of origin)</li> <li>• Tourist expenditure data</li> <li>• Hotel/motel accommodation figures</li> </ul>   |
| <b>Valuer General's<br/>Department</b>  | <ul style="list-style-type: none"> <li>• Average house prices by type of dwelling and locality (based on a 'typical' sale not survey data)</li> </ul>   |
| <b><i>Commonwealth Government Agencies</i></b>                                      |   |
| <b>Centrelink</b>   | <ul style="list-style-type: none"> <li>• Number of persons on social security benefits (by postcode or region)</li> </ul>   |
| <b>Department of Employment,<br/>Education, Training and<br/>Youth Affairs</b>      | <ul style="list-style-type: none"> <li>• DEETYA Small Area Labour Market Quarterly Statistics (unemployment rates, labour force data)</li> </ul>  |
| <b><i>Non-Government Organisations</i></b>  |   |
| <b>Northern Rivers Social<br/>Development Council</b>                               | <ul style="list-style-type: none"> <li>• Demographic and economic data</li> <li>• Housing</li> <li>• Aged</li> </ul>  |

### Appendix 3: Possible Social Impacts

|   |  |
|---|--|
| <b>Demographic change</b>                           | <ul style="list-style-type: none"> <li>▪ changing community needs and expectations</li> <li>▪ significant population changes</li> </ul>  |
| <b>Accommodation and housing</b>                    | <ul style="list-style-type: none"> <li>▪ low income housing</li> <li>▪ affordable housing</li> <li>▪ housing for older people and those with a disability</li> </ul>   |
| <b>Older people</b>                                 | <ul style="list-style-type: none"> <li>▪ access to services</li> <li>▪ availability of support services</li> </ul>   |
| <b>People with disability</b>                       | <ul style="list-style-type: none"> <li>▪ access to services</li> <li>▪ availability of support services</li> </ul>   |
| <b>Younger people</b>                               | <ul style="list-style-type: none"> <li>▪ Childcare</li> <li>▪ children's and young people needs</li> <li>▪ space</li> <li>▪ safety</li> </ul>  |
| <b>Aboriginal and Torres Strait Islander people</b> | <ul style="list-style-type: none"> <li>▪ needs specific to this community</li> </ul>   |
| <b>Health impacts</b>                               | eg obesity as a result of no space/opportunity for exercise  |
| <b>Cultural issues</b>                              | <ul style="list-style-type: none"> <li>▪ needs of people from culturally and linguistically diverse backgrounds</li> <li>▪ religious needs</li> <li>▪ needs of other cultural groups</li> </ul>                              |
| <b>Neighbourhood and community</b>                  | <ul style="list-style-type: none"> <li>▪ neighbourhood safety</li> <li>▪ community identity</li> <li>▪ community dislocation</li> <li>▪ community cohesion</li> </ul>  |
| <b>Facility requirements</b>                        | <ul style="list-style-type: none"> <li>▪ need for community services and facilities</li> <li>▪ recreation needs</li> <li>▪ education and health facilities</li> <li>▪ transport</li> </ul>                                   |
| <b>Economic issues</b>                              | <ul style="list-style-type: none"> <li>▪ local employment generation</li> <li>▪ unemployment</li> <li>▪ business development</li> </ul>  |
| <b>Transport/access issues</b>                      | <ul style="list-style-type: none"> <li>▪ is access equitable e.g. aged, disabled, youth?</li> <li>▪ will public transport be accessible?</li> <li>▪ what are the existing arrangements?</li> <li>▪ Safety impacts</li> </ul> |
| <b>Cumulative impacts</b>                           | <ul style="list-style-type: none"> <li>▪ redundant facilities and possible re-use</li> <li>▪ affects of similar developments in the locality</li> </ul>  |

## **Appendix 4: Social Impact Assessment Report**

### **Part A**

**Part A** is to be completed before the scope of the SIA is finalised. Please provide all available information and indicate when the remaining information will be available.

#### **INFORMATION ABOUT THE PROPOSED DEVELOPMENT**

1. Site or location of the development.
2. Describe the current use of the site.
3. For the proposed development please specify:
  - a. Total number of dwellings (e.g. 50 units, 60 apartments)
  - b. The size of the dwellings (e.g. 1 bedroom, 2 bedrooms)
  - c. Any community or shared facilities provided on the site
  - d. Whether properties are to be sold or leased for rent (if known)
  - e. Approximate expected market price or rental per week
4. Total population expected to be accommodated (or expected range).
5. The anticipated average number of persons per household
6. Estimated date of completion of development (when residents would be in place, specify stages if appropriate).

#### **FORECAST THE NEW RESIDENT PROFILE**

1. Expected demographic and cultural profile of the new residents.
2. Expected socio-economic profile of the new residents.
3. Considering the above, describe the likely needs of these new residents and demands for social support services and infrastructure. Do you anticipate that residents will require:
  - Home and Community Care (HACC)
  - Social support
  - Community Halls
  - Meals on Wheels
  - Community transport
  - Children's Services
  - Maternal and Child Health etc.

## **Social Impact Assessment Report Part B**

### **ESTIMATE CHANGES EXPECTED IN THE EXISTING NEIGHBOURHOOD**

Using baseline data from Council's Community Profile:

- Compare the profile of the new residents for the development against the profile of the surrounding community.
- What is the degree of change expected? How quickly will the changes occur?
- Include a scaled map showing the proximity of the proposed development to existing services and facilities required by the new residents, and which clearly demonstrates pedestrian and transport linkages to these.
- Are existing services and facilities suitable to meet the needs of the new residents (consider supply/capacity, likely demand and utilisation rates, access and equity issues)?

### **FEEDBACK FROM STAKEHOLDER CONSULTATIONS**

Document the results of any consultation with stakeholders, including community groups or individuals. In particular, report their perceptions of:

- Issues
- Social impacts (both positive and negative)
- Other views or concerns

### **DOCUMENT SOCIAL IMPACTS AND STRATEGIES FOR MANAGEMENT OF THESE IMPACTS**

1. Describe the likely social impacts of the development. Please specify:
  - The expected intensity of each impact (low, medium, high)
  - Whether the impact is direct or indirect
  - Any cumulative effects that this development may contribute to over time
  - What are the possible effects of the development on present and future generations
  - Ways to enhance positive impacts and reduce negative impacts.
2. Use Council's social impact variable list to describe how the impacts may influence the achievement of Council's goals for the community.

Council's expectation is that the developer will make as many changes to the proposal as is required to maximise positive impacts and minimise negative impacts.

## Appendix 5: Useful references

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Lane, M. (1997) Social Impact Assessment: Strategies for improving practice. *Australian Planner*. 34(2). 100-102.

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SEPP (Seniors Living) Amendment (2007)

McCamley, P (2000) *Safer by Design Evaluation* NSW Police Service

McCamley, P (2000) *A Companion to Safer by Design Evaluation* NSW Police Service



# **State of the Environment Report**

## **2007 Supplementary Update**



**Prepared by  
Environmental Health & Building Services**

## Introduction

### ***Reason for State of the Environment Reporting***

Under the NSW Local Government Act (1993) all Councils are required to produce annual State of the Environment (SoE) reports. A comprehensive report must be completed every four years and, between that period, annual supplementary reports. Lismore City Council's (LCC) last comprehensive report was in 2004. This report is therefore supplementary in nature.

SoE reporting is an effective way of informing the public about their natural environment. It describes the impacts of human activities on the environment and some of the activities being undertaken to protect, restore and better manage the natural environment.

SoE reports are also an effective tool for identifying information gaps and important issues to be considered when Council develops its annual Management Plan and budget. The 2004 comprehensive report contains a summary of recommendations to be considered as part of this process.

### ***Reporting Format***

This report builds on information from previous reports, and supplements it with updates for the 2006/07 financial year. The requirements of a supplementary report are to identify any new environmental impacts since last year's report and update the trends in environmental indicators that are important to each environmental sector (or theme).

### ***Themes and Indicators***

Council is required to report on eight environmental sectors or 'themes':

1. Land
2. Air
3. Water
4. Biodiversity
5. Waste
6. Noise
7. Aboriginal heritage
8. Non-Aboriginal heritage

In this report Air and Noise have been combined into one theme called Atmosphere, and Aboriginal and Non-Aboriginal Heritage have been combined into one theme called Cultural Heritage. Under each theme data is presented against a range of indicators. There are an agreed set of 21 indicators for the NSW North Coast. By using a consistent set of indicators trends can be monitored over time. Where adequate data exists trends have been included against each indicator.

### ***Pressure, State, Response Model***

Reporting is based on the pressure – state – response (PSR) model (Fig 1), which is based on the concept of causality, that is, human activities exert pressures on the environment, which change its state or condition, and society responds by implementing policies that influence those human activities, and so change or manage the pressures. This report does not cover every pressure on the environment and response to pressures.

### ***Consultation on the SoE***

Lismore City Council (LCC) liaises with a large number of local and State organisations to collect data used in this report. LCC is also working with community groups involved in managing and monitoring changes to the environment, such as Landcare, to improve reporting for the 2008 comprehensive report.

Feedback on the SoE report is provided by the Sustainable Environment Policy Advisory Group (SEPAG), a 9 member community-based group who provides comments on the draft report and will give strategic input for the 2008 comprehensive report.

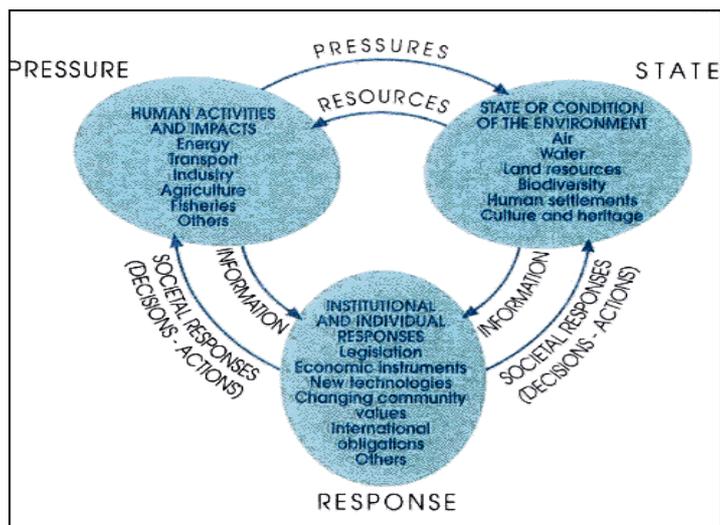


Figure 1: The pressure – state – response model.

### Council's Environmental Policies

Local government plays a significant role in implementing a range of Commonwealth and State environmental legislation. Also, under the Local Government Act (1993), a council has the following charter:

*To properly manage, develop, protect, restore, enhance and conserve the environment of the area for which it is responsible, in a manner that is consistent with and promotes the principles of ecologically sustainable development.*

A significant achievement of Lismore City Council in June 2007 was the Council adoption of its 'Policies and Strategies to address environmental priorities for Lismore City Council'. This policy document was developed by the Sustainable Environment Policy Advisory Group, and provides strategic objectives to better manage the local environment over the next 5 – 10 years. Individual policies have been developed under each of the SoE reporting themes, to provide consistency between the policies and SoE reporting.

Copies of the 'Policies and Strategies to address environmental priorities for Lismore City Council' can be obtained from Council.



Environmental education school tours on the Wilsons River

## LAND

The Lismore local government area (LGA) is 1,267 square kilometres. Land within the LGA is inherently fertile and amongst the most highly productive in NSW. Topography ranges from expansive floodplain in the south and rugged mountain ranges in the north. The region in between is characterised by highly dissected plateaus. Three major soil types exist in the LGA:

- **soils derived from Basaltic Rock (Krasnozems)** – volcanic in origin and deep and friable, occurring in the plateau areas north and east of Lismore.
- **Alluvial soils** – containing a mixture of material transported by creeks and rivers and deposited over long periods by flooding, occurring on the floodplain and includes Acid Sulphate Soils.
- **soils derived from Metamorphic Rock** - derived from sedimentary rocks altered by heat and pressure, occurring along the upper reaches of Goolmangar Ck, north of Coffee Camp and Nimbin, and along sections of Terania Ck.

### Trends at a Glance

| INDICATOR   | Type* | 01/02            | 02/03 | 03/04 | 04/05                     | 05/06            | 06/07                     | Trend                            |
|---|-------|------------------|-------|-------|---------------------------|------------------|---------------------------|----------------------------------|
| Population ** <ul style="list-style-type: none"> <li>▪ Urban area</li> <li>▪ Total LGA</li> </ul>   | P     | 28,764<br>43,384 |       |       |                           |                  | 29,321<br>44,225          | Pressure increasing              |
| % Annual Population Growth  | P     | 0.2%             |       |       |                           |                  | 0.39%                     | Pressure increasing              |
| No. of DA's for new dwellings <sup>#</sup>  | P     | 136              | 156   | 174   | 182                       | 118              | 103                       | Pressure decreasing (cumulative) |
| No. of lots approved in the rural residential zone  | P     | 7                | 20    | 18    | 0                         | 0                | 9                         | Pressure decreasing              |
| Area of rateable land (Ha): <ul style="list-style-type: none"> <li>▪ Urban</li> <li>▪ Rural</li> </ul>  | S     |                  |       |       | 6,216<br>116,504          | 6,248<br>111,776 | 6,248<br>106,437          | Trend uncertain                  |
| Area of rateable rural land by holding size (Ha) <ul style="list-style-type: none"> <li>▪ 40+ ha lots</li> <li>▪ 5-40 ha lots</li> <li>▪ &lt;5 ha lots</li> </ul> | S     |                  |       |       | 62,928<br>48,965<br>4,611 |                  | 53,850<br>47,990<br>4,597 | Trend uncertain                  |

\* Indicator Type – Pressure (P), Condition/ State (S) or Response (R) (see Intro).

<sup>#</sup> does not include dual occ, flats, units, dwelling resiting or dwelling conversion

### Pressures on the land

- **Population growth and residential development:** Accurate population figures are only available every 5 years through the national census. The 2006 census put Lismore's population at 44,225, which was a 1.9% increase since the previous (2001) census. The pressures from human settlement are widespread, and linked closely to residential development and associated infrastructure and services such as sewerage, roads, waste and stormwater. These pressures are considered lesser in Lismore compared to surrounding coastal areas because growth rates are smaller and coastal ecosystems are considered more fragile. The number of development applications for 'new dwellings' (houses) has decreased from 118 in 2005/06 to 103 in 2006/07.
- **Rural residential development:** Dispersed settlement in rural areas has a higher per capita impact on the environment compared to urban settlement and requires careful management. Lismore's rural residential zone is small (581 Ha) or 0.5% of the LGA and settlement is restricted through Lismore's Rural Housing Strategy. In 2006/07 subdivision applications were approved for nine lots in Nimbin and Richmond Hill.
- **Acid sulphate soils:** Lismore LGA has approximately 26,000 Ha of acid sulphate soils (ASS), which have the potential to cause major degradation of both land and water resources. Land areas impacted by exposed ASS have poor fertility, high vegetation dieback and are prone to surface scalding and erosion.

Lismore City Council (LCC) introduced a Development Control Plan for ASS in 2001 to improve their management. Lismore's ASS areas can be viewed at:

[http://www.lismore.nsw.gov.au/content/uploads/SOE\\_Map16.pdf](http://www.lismore.nsw.gov.au/content/uploads/SOE_Map16.pdf) .

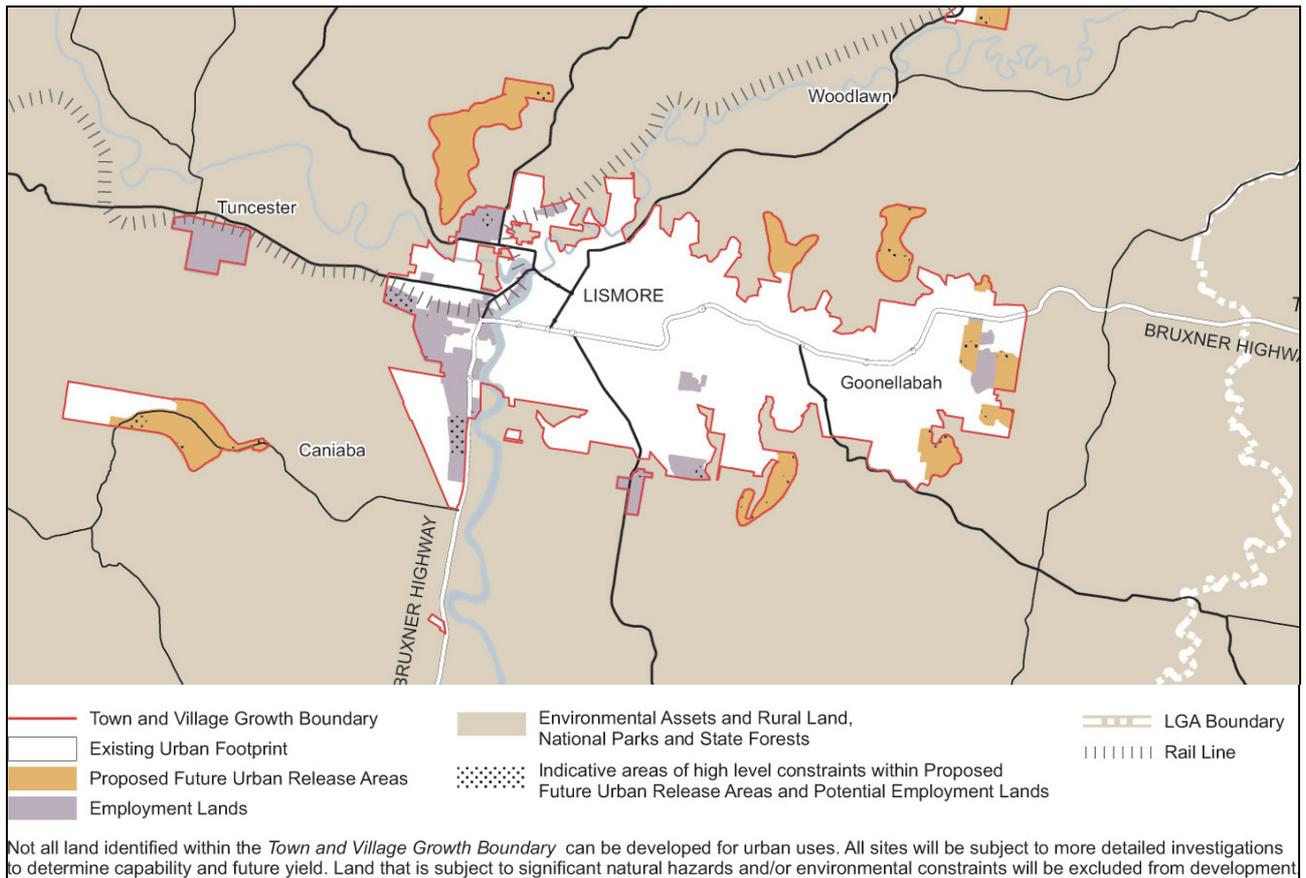
- **Vegetation removal:** Significant land degradation is caused by vegetation clearing and the long history of clearing in this region has placed ongoing pressures on the land. The removal of vegetation along creeks and rivers and on steep slopes causes significant soil erosion. The nature of basalt soils also makes them susceptible to erosion and leeching of nutrients and minerals.

### Our response to pressures

- **Standard Local Environment Plans:** In March, 2006 the State Government introduced a requirement that all Local Environment Plans (LEP) across NSW be consistent in both format and content. A mandatory standard template has been developed for all LEP's prepared throughout NSW. LCC has 3 years from March 30, 2006 to prepare it's new LEP using the standard template. The new LEP will also have to satisfy the requirements of the Far North Coast Regional Strategy.
- **Far North Coast Regional Strategy:** The FNCRS defines spatial limits to town and village growth boundaries throughout the region and identifies nominated 'new release areas'. Some of the nominated new release areas are also included in Council's current urban and village development strategies. In these cases Council can accept rezoning submissions for those sites at any time during the life of the current strategies.

Where land is identified as a new release area but not included in a current local strategy, rezoning may only proceed once Council has prepared a new strategy in accordance with the FNCRS. Council will be required to prepare a Local Growth Management Strategy to demonstrate how future development within the new release areas will be staged, serviced and designed. Local Growth Management Strategies must be agreed to by the Department of Planning. Copies of the draft Far North Coast Regional Strategy can be found at: <http://www.planning.nsw.gov.au/plansforaction/northcoast.asp>

- **Restoration Activities:** Council provides support for a number of projects to establish vegetation along rivers and creeks to prevent the erosion of riverbanks, especially in the CBD area. (see Biodiversity Chapter)
- **NSW Sugar Industry Audits:** The NSW sugar industry has a self regulation scheme for the management of earthworks and drain management in ASS areas. In 2006/07 30 members of the NSW Sugar Milling Cooperative were audited (3 in Lismore LGA). Of these fifteen, or 50%, had undertaken some drain cleaning, this is a decrease from 67% in 2005/06. The majority of drain cleaning was shallow (<300mm) cleaning using a drain spinner or drain plough. Nine growers had modified drains to shallower depths, up from five last year, and fifteen were involved in floodgate management, up from nine in 2005/06.
- **Clearing Controls:** To prevent further land degradation and loss of biodiversity through broad-scale vegetation clearing new legislation and guidelines were introduced in 2005. Vegetation clearing, outside urban areas, is regulated by the Native Vegetation Act 2003. Under this Act local Catchment Management Authorities can approve the clearing of remnant vegetation or protected regrowth through the negotiation of a Property Vegetation Plan with landowners. For more info see: [www.nativevegetation.nsw.gov.au/](http://www.nativevegetation.nsw.gov.au/)



**Growth Boundary Map for Lismore City – sourced from the Far North Coast Regional Strategy (Requires colour)**

## WATER

The Lismore LGA lies entirely within the Richmond River Catchment, and covers sections of the upper, middle and lower catchment. The Richmond River has historically had poor water quality due mainly to high sediment and nutrient loads. Assessments of water quality between 1994-96 by the EPA found that water quality was generally poor, especially under low flow conditions. The average yearly discharge of the Richmond River is 1,920,000 megalitres. This discharge figure can fluctuate significantly from as little as 15% to over 230% of average annual discharge, illustrating the extreme variability of flows in dry to wet years. Climate change is likely to reduce average rainfall in the catchment, and place additional pressures on water demand.

### Trends at a Glance

| INDICATOR   | Type * | 2000 /01 | 2001 /02 | 2002 /03 | 2003 /04 | 2004 /05         | 2005/ 06         | 2006/ 07         | Trend                            |
|---|--------|----------|----------|----------|----------|------------------|------------------|------------------|----------------------------------|
| Total reticulated water consumption (ML/yr)               | P      | 4105     | 4081     | 3013     | 3663     | 3852             | 3920             | 3417             | Pressure decreasing              |
| Per capita reticulated water consumption (KL/yr)          | P      |          |          | 89.3     | 108.6    | 112.8            | 113.7            | 98.4             | Pressure decreasing              |
| Total volume of wastewater treated in STP's (ML/yr)       | P      | 2961     | 3454     | 3289     | 3482     | 3537             | 3867             | 3183             | Pressure decreasing              |
| No. of point source discharges                            | P      |          |          |          |          |                  |                  |                  | Pressure static                  |
| ▪ Stormwater outlets                                      |        |          |          |          | 72       | 73               | 75               | 75               |                                  |
| ▪ STPs  |        |          |          |          | 3        | 3                | 3                | 3                |                                  |
| ▪ Industrial outlets                                      |        |          |          |          | 6        | 6                | 6                | 6                |                                  |
| ▪ Floodgates  |        |          |          |          | 68       | 125 <sup>Δ</sup> | 125 <sup>Δ</sup> | 125 <sup>Δ</sup> |                                  |
| No. of new onsite sewerage management systems (OSMS)      | P      | 364      | 400      | 597      | 144      | 143              | 119              | 72               | Pressure decreasing (cumulative) |
| % of secondary treatment facilities installed in new OSMS | R      | 12%      | 16%      | 15%      | 41%      | 77%              | 38%              | 35%              | No trend                         |

\* Indicator Type – Pressure (P) on the environment, Condition or State (S) of the environment, Response (R) to pressure.

Δ increase in floodgates due to improved data, not construction of additional floodgates.

### Pressures on Water

- **Water Storage and Extraction:** Water storage and extraction includes any removal of water from a natural water body for domestic, commercial and/or agricultural purposes. The more the flow regime of a river differs from its natural levels, the greater the stress that is placed on ecosystems that are dependent upon natural flows. Total reticulated water consumption has reduced by 12.8% from 3920 megalitres (ML) in 2005/06 to 3417 ML in 2006/07, and is the lowest water consumption since 2002/03, when water restrictions reduced water use for that year. Under the Lismore Source proposal up to 30 ML/day of water will be pumped from the Wilsons River upstream from Lismore to the water treatment plant near Rocky Creek Dam. For more info on the Lismore Source see [www.rouswater.nsw.gov.au/cmst/rw006/nova.asp](http://www.rouswater.nsw.gov.au/cmst/rw006/nova.asp)
- **Stormwater Quality:** Rainfall which runs off roofs and roads and other hard surfaces picks up chemicals, rubbish, faeces and soil before it flows into the drainage system and ultimately into creeks and rivers. The majority of stormwater is not treated, so anything that enters the stormwater drains pollutes our creeks and rivers. Water quality monitoring within Lismore's stormwater system indicates that stormwater contributes high loads of nutrients and pollutants to our waterways, particularly total phosphorus and faecal coliforms.
- **Land-use Activities:** Past clearing of most of the LGA has had a detrimental effect on water quality. Loss of vegetation means that more water hits the ground and moves faster across it and enters watercourses without being filtered by organic matter. As it moves this water picks up soil and sediment (causing

erosion) and nutrients and other pollutants. This problem is exacerbated by a range of activities causing soil disturbance near watercourses such as livestock, road construction and building development.

- **Wastewater Treatment:** Lismore LGA has three sewage treatment plants to treat wastewater from the sewerage system before it is discharged into the river. Outflows from sewage treatment plants place a pressure on receiving waters, the degree of which depends on the extent to which water is treated and the volume being discharged. The volume of wastewater treated has reduced by 17.7% from 3867 megalitres (ML) in 2005/06 to 3183 ML in 2006/07, and is the lowest water consumption since 2002/03 when water restrictions were in force. For areas not connected to the sewerage system wastewater must be treated on-site, which places a pressure on the environment, especially where they are poorly designed and managed. An increasing number of these systems are being installed with secondary treatment facilities, which will reduce pressures on the environment.

### Our response to pressures

- **Policy development:** Lismore City Council's (LCC's) Sustainable Environment Policy Advisory Group formed in August 2005 and has developed a range of policies to address environmental priorities in the LGA, including the quality and quantity of water. Objectives included in the policy for water are:
  - To protect, restore and actively manage the riparian zone
  - To improve stormwater quality
  - To improve practices in rural areas
  - To reduce per capita demand for potable waterSpecific strategies have been developed to meet these objectives in the long-term.
- **BASIX (Building Sustainability Index):** Introduced by LCC in July 2005, BASIX ensures homes are built to be more energy and water efficient. BASIX is an on-line program that assesses a house or unit design, and compares it against energy and water reduction targets. The design must meet these targets before a BASIX Certificate can be obtained. Every development application for a new home must be submitted to Council with a BASIX Certificate. <http://www.basix.nsw.gov.au>
- **On-site sewerage management systems (OSMS):** LCC is a state leader in the field of on-site sewerage management with many innovative systems being installed within the LGA. LCC has the largest amount of compost toilets in the state and supports collaborative research into the design and effectiveness of OSMS with the Centre for Ecotechnology at Southern Cross University. Over 15% of OSMS in Lismore have some form of secondary treatment, with the proportion growing each year. LCC's on-site sewerage management strategy can be viewed at: [http://www.lismore.nsw.gov.au/view\\_doc.asp?id=1048&cat=148](http://www.lismore.nsw.gov.au/view_doc.asp?id=1048&cat=148)
- **Water Quality Monitoring Program:** LCC undertakes monthly water quality monitoring across 15 sites to assess the quality of natural waters within the Lismore LGA. The objectives of this program are to develop long-term trends in water quality and advise the public that water quality is suitable for particular uses. Results from this program are summarised in Attachment 1.
- **Richmond River Estuary Management Plan:** LCC is a member of the Richmond River Estuary Management Committee, which is overseeing the development of an Estuary Management Plan for the Richmond River. In 2006/07 this group was mainly involved in overseeing the development of the Richmond River Estuary Process Study – which provides the scientific basis for the Management Plan. A copy of the Processes Study can be found at <http://www.rrcc.nsw.gov.au>

▪ **Stormwater Management**



**Stormwater Management Services Charge**

The Stormwater Management Services (SMS) Charge was successfully introduced into the Lismore urban area in July 2006. The NSW state government introduced the legislation entitled 'The Local Government Amendment (Stormwater) Act 2005' to enable Council's to introduce an annual SMS charge. This recognised the need for improved environmental management, and the difficulty in funding these activities through Council's general budget. These funds enable Council to undertake much needed stormwater treatment and remediation work.

Activities undertaken as part of the SMS charge in 2006/2007 include -

Lismore Urban Stormwater Management Plan 2007

To ensure the appropriate implementation of the SMS funds, the stormwater management plan was updated to address current issues of concern and best practice management actions.

Honours Research Project

Council sponsored an Honours student at the Southern Cross University to undertake research titled '*Determining the Sources of Faecal Pollution in Urban Stormwater using Carbon Stable Isotope Ratios of Selected Faecal Sterols*'. The aim of the study was to identify and quantify the sources of faecal contamination of the Wilsons River, via the Browns Creek urban stormwater catchment using faecal sterol sampling. This type of sampling can now be undertaken at the Southern Cross University, where prior to this project the sampling could only be analysed at CSIRO Tasmania.

Structural Remediation Projects

Projects included the remediation of the stormwater outlet at Rotary Drive and repair of grassed swale on Uralba Street. Both these projects aimed to 1) improve the quality of stormwater flow by reducing erosion around outlet and scouring of swale thereby preventing sedimentation of the stormwater flow, and 2) reduce the application of pesticides for weed management and protect the receiving waterways from pesticide contamination.

**Rotary Drive Outlet**



Before



**Uralba Street Swale**



After



## BIODIVERSITY

Biological diversity is the variety of all life forms — different plants, animals and micro-organisms, the genes they contain, and the natural systems of which they form a part. Biodiversity encompasses both terrestrial and aquatic environments. The Northern Rivers is located in an area of extremely high biodiversity, that is, the overlap between tropical and temperate ecosystems, which is known as the Macleay/ Macpherson Overlap. This area is the southern-most limit for many tropical species and the northern-most limit for many temperate organisms. The region is recognised as one of the highest areas of biodiversity in Australia, and contains a disproportionate number of rare or threatened species.

### Trends at a Glance

| INDICATOR  | Type* | 2000 /01      | 2002 /03 | 2003 /04    | 2004 /05    | 2005 /06    | 2006 /07    | Trend               |
|--|-------|---------------|----------|-------------|-------------|-------------|-------------|---------------------|
| Area (Ha) and % of LGA with woody vegetation**                         | S     | 41,185<br>32% |          | No new data | No new data | No new data | No new data | No Trend            |
| Area (Ha) of protected lands   | R     | 9,341         |          | 13,686      |             | 13,720      | 13,725      | Response improving  |
| Time spent restoring Council's bushland reserves# (no. of person days) | R     | 108           | 108      | 108         | 156         | 234.5       | 238         | Response improving  |
| No. of tree removal applications<br>▪ Received (Total)<br>▪ Approved   | P     |               |          | 180<br>152  | 157<br>120  | 101<br>87   | 153<br>147  | Pressure declining  |
| No. of endangered flora species  | S     | 31            |          | 35          | 42          | 42          | 42          | State steady        |
| No. of endangered fauna species  | S     | 63            |          | 69          | 71          | 70          | 70          | State declining     |
| No. of endangered ecological communities                               | S     | 1             |          | 1           | 6           | 6           | 7           | State declining     |
| No. of declared noxious weeds in the LGA                               | P     | Na            |          | 43          | 43          | 99▼         | 100         | Pressure increasing |
| No. of environmental weeds in the LGA                                  | P     | Na            |          | 62          | 187         | 187         | 187         | Pressure increasing |

\* Indicator Type – Pressure (P) on the environment, Condition or State (S) of the environment, Response (R) to pressure.

\*\* Woody vegetation is defined as forest or woodland, native or exotic, with >20% canopy cover.

# Includes both maintenance and primary restoration work, does not include Work For Dole and Green Corps teams.

▼ Increase due to changed legislation.

### Pressures on Biodiversity

- **Vegetation Clearing & Damage:** Ecosystem diversity is strongly correlated with the extent and condition of native vegetation. Different types of vegetation reflect different ecological conditions and in turn provide habitats for different fauna species. The original vegetation around Lismore has been highly modified and extensively cleared (e.g. less than 1% of the original Big Scrub Rainforest area remains). The coverage of woody vegetation in the LGA is 32%, much of which would be exotic. However it also represents a high number of threatened flora and fauna. Whilst large scale clearing has ceased it is important to protect the remaining native vegetation from potential threats such as urban development, weeds and poor agricultural practices. No new data on extent of woody vegetation has been available since 2000, however LCC will have it's own vegetation data in late 2007.
- **Weeds:** The climate and soils around Lismore are very favourable to weed growth. The Noxious Weeds Act 1993 was amended in 2006, resulting in an expanded list of noxious weeds. To create the new list, the NSW Department of Primary Industries has added the twenty Weeds of National Significance, weeds previously listed in the Seeds Act 1982 and also several new weeds of particular concern. In 2006/07 one

aquatic weed ~ Dense waterweed (*Egeria Densa*) was added to the noxious weeds list to make a total of 100 noxious weeds in 5 classes, each with differing control requirements.

- **Feral Animals:** Introduced species place substantial pressure on biodiversity and have caused extensive damage to native ecosystems and contributed to extinctions through predation, habitat alteration and out-competing native species. The presence of introduced species can also significantly reduce the condition of natural habitat, which in turn, makes it further susceptible to invasion by exotic species. Both domestic and wild dogs are considered a major threat to Lismore's Koala population.
- **Water Quality:** The quality of water in our creeks and rivers impacts on the ability for aquatic ecosystems to function and survive. This has been demonstrated by major fish kills in the lower Richmond River, caused by poor water quality through, for example, artificial drainage of acid sulfate soils on the floodplain. Water quality parameters have been established for healthy aquatic ecosystems, which are assessed as part of LCC's monthly water quality monitoring program.
- **Land management practices:** numerous practices including herbicide and fertiliser use, disposal of waste and poor livestock management can all place pressures on biodiversity through, for example, contamination of soil microbes and nutrient cycles and impacts on soil structure and stability.

### Our response to pressures

- **Policy Development:** LCC's Sustainable Environment Policy Advisory Group formed in August 2005 and has since developed draft policies to address environmental priorities in the LGA, including the protection, restoration and management of native flora and fauna. Objectives in the policy for biodiversity are:
  - To ensure Council has the information needed to protect and manage native flora and fauna.
  - To improve the habitat value of remnant and regrowth native vegetation.
  - To foster and promote protection and restoration activities.Specific strategies have been developed to meet these objectives in the long-term.
- **Vegetation Mapping:** in early 2007 LCC developed a consultant's brief for the mapping of all native vegetation across the Lismore LGA. The information gathered through the project will be used to inform Council's new Local Environment Plan, and improve Council's capacity to consider vegetation in its decision-making for rezoning land, assessing development applications and developing vegetation restoration projects. The project is expected to be complete by early 2008.
- **Tree Preservation Order:** In 2005 LCC adopted a revised Tree Preservation Order (TPO) that prohibits the partial or total destruction of trees in urban zones without the prior consent of Council. The TPO aims to promote the retention of trees and tree cover, within urban, village and rural residential areas so as to conserve the existing landscape quality and remaining natural ecosystems. LCC also encourages the planting of suitable native trees to provide integration of trees into existing land uses.  
[http://www.lismore.nsw.gov.au/content/uploads/DCP\\_17\\_Tree\\_Preservation\\_Order.pdf](http://www.lismore.nsw.gov.au/content/uploads/DCP_17_Tree_Preservation_Order.pdf)
- **Koala Habitat Management:** Koala habitat rehabilitation works are underway on over 35 properties as part of a two year project in partnership with landowners and Friends of the Koala Inc. The project is funded by LCC and the NSW Environmental Trust and includes weed control, fencing, tree planting and education field days. A Green Corps project is being run in conjunction with this project. The Green Corps team is working with qualified bush regenerators, landowners, Friends of the Koala and Council staff to implement on-ground restoration works.

A River Reach plan development project was successfully funded for a 7 km reach of Tucki Tucki Creek in the Rous Road area. The plan is being developed in partnership with 28 landowners and aims to restore healthy riparian vegetation along the creek. The project was funded through the Northern Rivers Catchment Management Authority

- **Weedbuster Week:** A Backyard Weed Display and Information Stand was held at Lismore Shopping Square during in October 2006. The initiative was partnered with Far North Coast Weeds and Richmond

Landcare Services, and aimed to raise community awareness about local weeds, the problems they cause, and methods to combat their spread. Further information on Weedbuster Week can be found at <http://www.weedbusterweek.info.au>

- **Lowland Rainforest Restoration:** In March 2006 LCC secured \$74,000 under the NSW Government's Environmental Trust program to undertake restoration works on 4 sites of Lowland Rainforest. Year one of the project saw 76 person days of primary restoration work carried out in 9Ha of lowland rainforest in Ruthven, Spring Grove and Currie Park in Lismore. Lowland Rainforest on Floodplain is listed as an endangered ecological community under the NSW Threatened Species Conservation Act. <http://threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10497>
- **Green Corps Projects:** In Feb 2007 LCC and Environmental Training & Employment Inc. (EnviTE) received funding from the Australian Government to run a Green Corps project in Tucki Tucki Creek Recreation Park, in the heart of Goonellabah. Green Corps is a youth development and training program for 17 - 20 year olds which gives them the opportunity to be involved in activities that help conserve, preserve and restore Australia's natural environment and cultural heritage. Over 6 months, the team planted over 2500 trees and shrubs, removed weeds along 500m of creek, built and installed 30 nest boxes for microbats, gliders and birds, surveyed local residents and hosted an information day.
- **Council Land Restoration:** In 2006/07 LCC's contracted team of bush regenerators carried out 238 person days of bushland restoration works across 12 of Council's bushland reserves. This is an increase from 234 in 2005/06 and doubles that of annual person days from 2000-2003. These works include primary restoration of 'new' areas and follow-up maintenance of areas previously treated. Activities are carried out in accordance with Vegetation Management Plans, which have been done for 11 of Council's parks and reserves.
- **City to Sea Catchment Tours:** In 2006 funding was received from the Northern Rivers CMA to run the 'City to Sea' Catchment Tour. A total of eight groups of students (133) and teaching staff participated in the tours which included a canoe trip through Lismore and then a bus tour visiting key Natural Resource management sites i.e. Pelican Creek Fish Passage site, North Codrington Wetland Remediation (photo), Baggotville Barrage, Vistoria Park, and the South Ballina Fish Haven.
- **World Environment Day:** Over 300 primary students, teachers and parents attended World Environment Day which consisted of educational activities presented by organisations including Rous Water, NPWS Discovery Rangers, NEWF (North East Waste Forum), Dorrroughby Env. Ed. Centre, Friends of the Koala and the Climate Change Action Network. Consultants for LCC presented a tree planting activity, climate change activity and CAM (Catchment Activity Model). The day finished with the presentation for the winners of the No Waste Lunch Challenge and environmental theatre "The Grass is Greener".
- **Clearing Controls:** To prevent further land degradation and loss of biodiversity through broad-scale vegetation clearing new legislation and guidelines were introduced in 2005. Vegetation clearing, outside urban areas, is regulated by the Native Vegetation Act 2003. Under this Act local Catchment Management Authorities can approve the clearing of remnant vegetation or protected regrowth through the negotiation of a Property Vegetation Plan with landowners. For more info see: [www.nativevegetation.nsw.gov.au/](http://www.nativevegetation.nsw.gov.au/)



**Green Corps Team  
removing aquatic  
weeds on Tucki Creek**

## ATMOSPHERE

The atmosphere has recently become our greatest environmental issue, with growing and widespread concern about the effects of air pollution, particularly greenhouse gases, on global warming at a regional and global scale. The consequences of which will effect all of our natural resources – water, vegetation, biodiversity, land etc. While Lismore enjoys excellent air quality compared to metropolitan areas, noise emissions remain an important community and environmental issue, which Council has a strong role in managing.

### Trends at a Glance

| INDICATOR   | Type* | 2000 /01 | 2001 /02  | 2002 /03 | 2003 /04 | 2004 /05        | 2005 /06        | 2006 /07        | Trend               |
|---|-------|----------|-----------|----------|----------|-----------------|-----------------|-----------------|---------------------|
| No. of EPA licensed premises                      | P     |          |           | 15       | 15       | 12              | 14              | 14              | Little Trend        |
| No. of air quality complaints to Council          | S, P  | 3        | 11        | 12       | 12       | 18              | 39              | 41              | Pressure increasing |
| No. of noise complaints to Council:               | S, P  |          |           |          |          |                 |                 |                 |                     |
| ▪ Barking dogs                                    |       | 50       | 45        | 73       | 48       | 55              | 79              | 53              | Pressure increasing |
| ▪ Other   |       | 9        | 29        | 42       | 31       | 89 <sup>Δ</sup> | 54 <sup>Δ</sup> | 71 <sup>Δ</sup> |                     |
| % of sugar cane volume harvested green            | R     |          |           | 9.6      | 6.0      | 4.5             | 6.4             | 5               | Little Trend        |
| % of those who travel to work by 'car as driver'. | P     |          | 60        | -        | -        | -               | -               | 63              | Data limited        |
| Level of CO <sup>2</sup> emissions (tonnes):      | P     |          |           |          |          |                 |                 |                 |                     |
| ▪ Community                                       |       |          | 617,051** |          |          |                 | No new data     | No new data     | Data limited        |
| ▪ Council   |       |          | 10,669    |          |          |                 |                 |                 |                     |

\* Indicator Type – Pressure (P) on the environment, Condition or State (S) of the environment, Response (R) to pressure.

\*\* 2001 Calendar Year. Δ increase in complaints partly due to improved reporting from 2004.

### Pressures on the atmosphere

- **Greenhouse Gas Emissions:** Carbon dioxide and other gases warm the surface of the planet naturally by trapping solar heat in the atmosphere. This is a good thing because it keeps our planet habitable. However, by burning fossil fuels such as coal, gas and oil and clearing forests we have dramatically increased the amount of carbon dioxide in the Earth's atmosphere and temperatures are rising. The vast majority of scientists agree that global warming is real, it's already happening and that it is the result of our activities and not a natural occurrence. Per capita, Australia is one of the highest greenhouse gas producers in the world. Emissions in the Lismore LGA were calculated for both Council, and the community in 2001 as part of the Cities for Climate Protection program (see below). These will be re-calculated in 2009.
- **Air Pollution:** Most local air quality issues in the Lismore LGA include;
  - Intensive agricultural emissions e.g. odour and dust from intensive animal establishments, chemical spray drift from intensive horticultural plantations, dust
  - from agricultural pursuits and green burning of sugar cane crops.
  - Backyard burning.
  - Solid fuel heating appliances, and
  - Industrial air emissions.

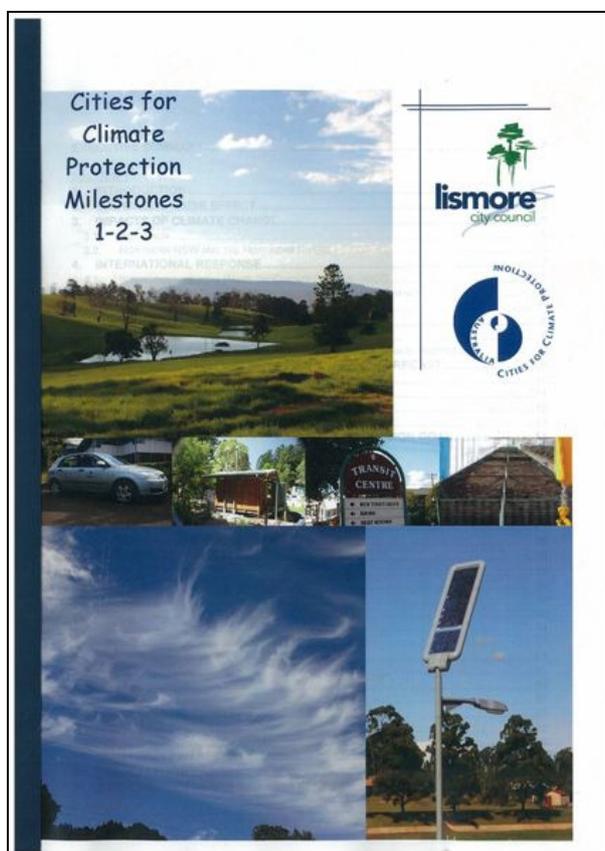
The number of air quality complaints has increased only slightly from 39 in 05/06 to 41 in 06/07.

- **Noise Pollution:** As communities become more urbanised and rural areas more developed with both agricultural pursuits and residential growth, noise can increasingly intrude on people's lifestyles. Effective control of noise is a difficult issue for the community and regulatory agencies, because an individual's definition of offensive noise is usually subjective. The adverse effects of noise on communities are well

reported. These vary from direct effects including sleep disturbance and annoyance, to indirect or secondary effect, such as long-term effects on physical and mental health. The total number of noise complaints to Council has gradually decreased over the last 3 years from 144 in 2004/05 to 124 in 2006/07.

### Our response to pressures

- **Code of Practice for Macadamia:** In November 2004 LCC formally adopted the Code of Practice for Noise Management of on-farm processing of macadamia nuts. The Code of Practice was developed to reduce levels of conflict resulting from potentially noisy on-farm nut processing taking place in close proximity to rural residential neighbours. The introduction of this code has led to a decrease in the number of noise complaints due to macadamia nut processing.  
[http://www.lismore.nsw.gov.au/content/uploads/code\\_practice\\_macadamia.pdf](http://www.lismore.nsw.gov.au/content/uploads/code_practice_macadamia.pdf)
- **Noise Monitoring & Investigations:** LCC through its Environmental Health Section manages and monitors air and noise emissions through the utilisation of statutes and guideline documents. LCC's environmental health staff responds to community noise complaints by investigation and undertaking noise monitoring. This includes point source incident investigation and ongoing monitoring of issues such as urban, agricultural and industry noise sources.
- **Broadwater Co-generation Plant:** The NSW Sugar Milling Co-operative has formed a joint venture (called Sunshine Electricity) with Delta Electricity – a State owned generating company to build and operate two renewable energy plants at Condong Mill on the Tweed River and Broadwater Mill on the Richmond River. These plants will supply over 400 gigawatt hours of "green electricity" per annum into the state grid. The plants will be fuelled predominantly by sugar cane waste products, bagasse fibre, which results from milling cane, and cane trash and leaves, which is currently burnt off in the field. The Broadwater plant will be completed in the end of 2007, from when there will be a reduction in burning of green cane.



Lismore City Council's Local Action Plan for reducing greenhouse gases.

## Cities for Climate Protection Program

In 2004 Council resolved to participate in the Cities for Climate Protection (CCP) Program and endorsed the Program's 5 milestones. Each Milestone guides Council towards reducing their greenhouse gas emissions:

- Milestone 1: Establish an Inventory of greenhouse emissions for both Council and Community.
- Milestone 2: Set an Emissions Reduction Target.
- Milestone 3: Develop plan of ACTION to achieve those reductions.
- Milestone 4: Implement actions outlined in the plan.
- Milestone 5: Monitor and report on greenhouse gas reduction



After successfully completing Milestones 1 and 2 in 2005 Council progressed to Milestone 3 in April 2007 when the Local Action Plan was endorsed. Below are some of the actions that have been implemented to reduce greenhouse gas emissions in 2006-2007 and which constitute Milestone 4 of the CCP Program.

### 2006 – 2007 Actions for Lismore City Council

#### Local Action Plan

The local action plan (see photo previous page) is a detailed list of all actions Council intends to investigate and implement that will reduce greenhouse gases and effectively meet council's 20% reduction goal by 2012. The plan outlines actions for both Council and community and ranges over a variety of areas.

#### Street lighting

Lismore City Council (LCC) joined with Ballina Shire, Richmond Valley and Clarence Valley Council to tackle the issue of street lighting efficiency at a regional level. Council has engaged the services of a consultant to develop a comprehensive inventory of all streetlights as well as provide options for their upgrade to higher efficiency technology.



#### Education

LCC has been involved in a variety of community education programs including workshops on Climate Change and energy audits at the "Student Using Sustainable Strategies" Youth Forum and the "World Environment Day" Primary School event. Council has manned educational displays at the Organic Farmers Market and Lismore Shopping Square, and given lectures at public forums at the Climate Change Road Show and for Policy Advisory Groups.

#### Installation of Light Globe and Shower Heads

Council has partnered with various companies to deliver energy efficient compact fluorescent globes and water saving shower heads to both the community and council owned buildings. In total 28 457 globes and 1021 shower heads were installed by June 2007 saving 4244 tonnes of equivalent CO<sub>2</sub> and \$654 250 per year for the community.

#### Sustainable Christmas program

Council successfully acquired funding from the Australian Greenhouse Office to work collaboratively with Ballina and Byron Shire Councils to deliver the Sustainable Christmas Project. This program targeted residents in typical "light up" streets to reduce energy, waste and water consumption over the Christmas period. There was free give-a-ways, street parties and even a visit from Green Santa.



#### Fleet

Council purchased its first hybrid car this year with the arrival of hybrid servicing in Lismore. The Hybrid car uses an electric motor to boost the petrol run engine reducing the fuel consumption from 12L/100km to approximately 6.5L/100 Km. Council has introduced a Light vehicle policy to encourage staff to take up 4 cylinder cars instead of the traditional 6 cylinder variety by offering a reduced lease option fee. The increased fleet options have also expanded to include LPG vehicles which create fewer greenhouse gases than petrol vehicles.

#### Timers on hot water systems

Council realised the inefficiency of boiling water for tea and coffee 24 hours a day 7 days per week and installed timers on the hot water systems in the administration center so that water was only heated for business hours.



## WASTE

Waste places considerable pressures on our environment and its ecological systems through resource use. Waste also has significant economic and social impacts when a community relies on 'end-of-pipe' technologies and clean-ups. Just about everyone in our community is willing to make positive changes that they believe are beneficial for the environment. Initiating consumption and disposal behaviour changes in a society is not an easy task, however, given how the community has responded to recent changes to recycling collection, there are clearly opportunities to take the next step towards the concept of waste avoidance.

### Trends at a Glance

| INDICATOR  | Type* | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | Trend               |
|--|-------|---------|---------|---------|---------|---------|---------|---------------------|
| Total volume (tonne) of waste disposed to landfill   | P     | 20,513  | 22,456  | 23,038  | 24,797  | 23,544  | 22,839  | Pressure decreasing |
| Total volume (tonne) of waste diverted from landfill | R     | 8,780   | 9,684   | 10,864  | 10,856  | 11,736  | 15,351  | Response improving  |
| Percentage of total waste diverted from landfill     | R     | 30      | 30      | 32      | 30      | 33      | 40      | Response improving  |

\* Indicator Type – Pressure (P) on the environment, Condition or State (S) of the environment, Response (R) to pressure.

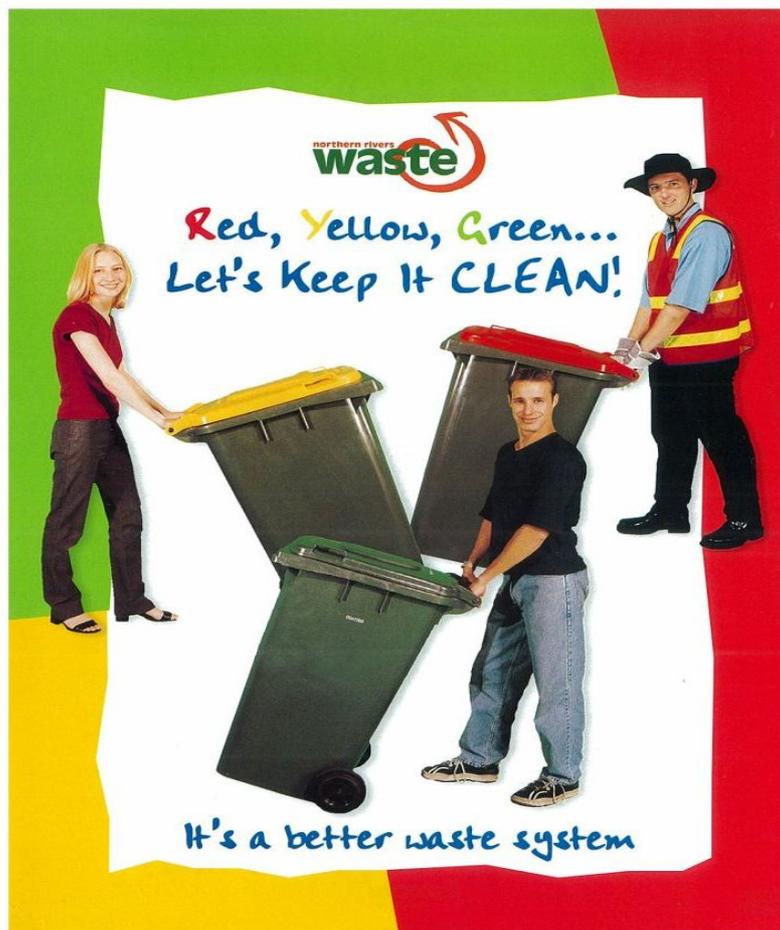
### Pressures on our waste system

- Over 6 million tonne of waste is disposed of to landfill in NSW each year and even though we have reduced waste and increased our recycling effort in many areas, we continue to face an enormous challenge. Lismore's Wyrallah Road Waste Facility is filling up and we have only four or five years landfill space left in the existing 'cell'. Increasing environmental controls and stringent licence conditions mean it is expensive to gain approval and prepare a new cell for landfill. It is therefore important that we continue to focus on waste avoidance, reuse and recycling to make precious landfill space last as long as possible.

### Our response to pressures

- Kerbside Recycling:** Kerbside recycling was introduced for urban residents on 3 July 2006 and was extended to some rural areas in late 2006. In 2005/2006 Council diverted 1,431 tonne of co-mingled recyclables from landfill and the introduction of kerbside collection resulted in 3,887 tonne of co-mingled recyclables in 2006/2007, more than doubling previous diversion rates. Kerbside collection will be extended to other rural areas as requested and proven feasible.
- Drop Off Centres:** Drop Off Centres remain in operation at Brewster Street and the Wyrallah Road Waste Facility. In 2006/2007 Council diverted 545 tonne of paper and cardboard and 598 tonne of co-mingled recyclables from landfill through the Drop Off Centres.
- Fees and Charges:** The fees and charges structure aims to encourage separation of material for re-use and re-processing. Weighbridge operators continue inspect every load and divert material to collection and reprocessing areas on site.
- Lismore Revolve Centre:** The Revolve centre resulted in a diversion of 205 tonne of reusable material from landfill in 2006/2007 and the Revolve centre continues to deliver greater cost savings to LCC.
- Lismore Waste Audit:** LCC carries out a waste audit every year to provide quantitative and qualitative data for future waste recovery planning and to divert education activity to reduce contamination in recycling and organic streams to 'hot-spot' areas. The 2006/7 audit was completed in September 2006 and showed that contamination in the recycling recovery stream was 6% and that organics contamination were the lowest to date at 0.5%.

- **Business Waste Services:** Business customers now have a weekly waste and weekly organics service, providing enhanced customer service levels. Trials will be conducted of various commercial waste management systems with the aim of having a system in place to enable more focus on commercial recycling in the 2008/2009 financial year.
- **Fluorescent Tube and Bulb Recycling:** Northern Rivers Waste has introduced fluorescent tube and bulb recycling to assist in reducing mercury contamination in the landfill. Every component of the fluorescent tubes and bulbs will be recycled and recycling will be undertaken onsite at the Wyrallah Road Waste Facility.
- **Dry Cell Battery and Smoke Detector Collection:** A collection program for dry cell batteries and smoke detectors was introduced at the 2007 Lismore Show. The program aims to reduce heavy metal contamination in the landfill. Linking to this program is a schools battery collection program that will provide education to local school children.
- **Revised Education Program:** Northern Rivers Waste has revised its Waste Education Program and is introducing a number of new educational initiatives targeted at each level of the community. This program aims to promote waste management and recycling and reduce recycling contamination.
- **Resource Recovery Facility:** A recommendation will go to the October '07 Council meeting requesting funds for the development of a Resource Recovery Facility at the Wyrallah Road Waste facility. The purpose of this facility will be to recover additional material from the waste stream, particularly the construction and demolition stream. The target recovery for this Facility is 5,000 tonne per annum.



Lismore Council's waste and recycling brochure.

## HERITAGE

Natural and cultural heritage is worth conserving because it helps build individual, community and national identities; defines who we are and maintains links with the past and often is of scientific and economic value. Heritage objects provide material evidence of Australia's natural and cultural environments or its historical and cultural life and biophysical evolution. There are a number of levels of significance recognised for heritage – world, national, state and local.

### Trends at a Glance

| INDICATOR                                    | Type* | 1999/<br>2000 | 2002<br>/03 | 2003<br>/04 | 2004<br>/05 | 2005<br>/06 | 2006<br>/07 | Trend              |
|--|-------|---------------|-------------|-------------|-------------|-------------|-------------|--------------------|
| No. of heritage conservation areas**         | R     | 10            |             | 23          | 23          | 23          | 23          | No Trend           |
| No. of Non-aboriginal heritage sites in LEP# | R     | 140           | 140         | 109         | 109         | 109         | 109         | No Trend           |
| No. of known aboriginal heritage sites^      | R     | 36            | 42          | 45          | 45          | 45          | 46          | Response improving |

\* Indicator Type – Pressure (P) on the environment, Condition or State (S) of the environment, Response (R) to pressure.

\*\* Total of those listed in the Lismore LEP, North Coast REP and National Trust of NSW

# Some non-aboriginal heritage sites have been moved into heritage conservation areas.

^ These figures are for Aboriginal Sites/ Place recorded on DECC's Aboriginal Heritage Information Management System (AHIMS).

### Pressures on heritage

Pressures on heritage include urban development, infrastructure (particularly for communications and transport), agriculture, tourism and recreation. Alterations and additions to existing heritage buildings may also pose a threat if they are done in an unsympathetic manner.

### Our response to pressures

- Heritage Grants Scheme:** These grants assist owners of heritage items and items within heritage conservation areas, listed in the Lismore Environmental Plan (LEP) or identified in LCC's Heritage Study, with conservation projects for their heritage properties. Examples of projects eligible for funding include: exterior painting and reinstatement or repair of missing items such as decorative external features, original fences and verandahs. Applications for funding to undertake emergency repairs and weatherproofing are also considered. Unfortunately the programme cannot cover routine maintenance, nor will new additions or unsympathetic work be eligible. The Heritage Grants Scheme for the 2006/07 financial year again proved a complete success with all the available grant funds being used for worthy heritage conservation projects.
- Lismore Development Control Plan Part A Chapter 12 – Heritage Conservation:** This chapter of the Lismore DCP aims to give guidance in design and conservation principles for people wishing to undertake works on or in the vicinity of heritage items and within heritage conservation areas. This Heritage Conservation chapter of the Lismore DCP was adopted by Council in August 2006 and ever since, has been effectively used in the assessment of applicable development applications.  
<http://www.lismore.nsw.gov.au/content/uploads/dcp50.pdf>
- Heritage Advisor:** LCC engages a Heritage Advisor on an 'as needed' basis – the main role being the provision of heritage restoration and conservation advice to property owners under the Local Heritage Assistance Fund and advice on selected development applications. This position is partially funded from the Heritage Office.

For additional information see Lismore's 2004 Comprehensive State of the Environment report:

<http://www.lismore.nsw.gov.au/lp.asp?cat=109>

## Feedback

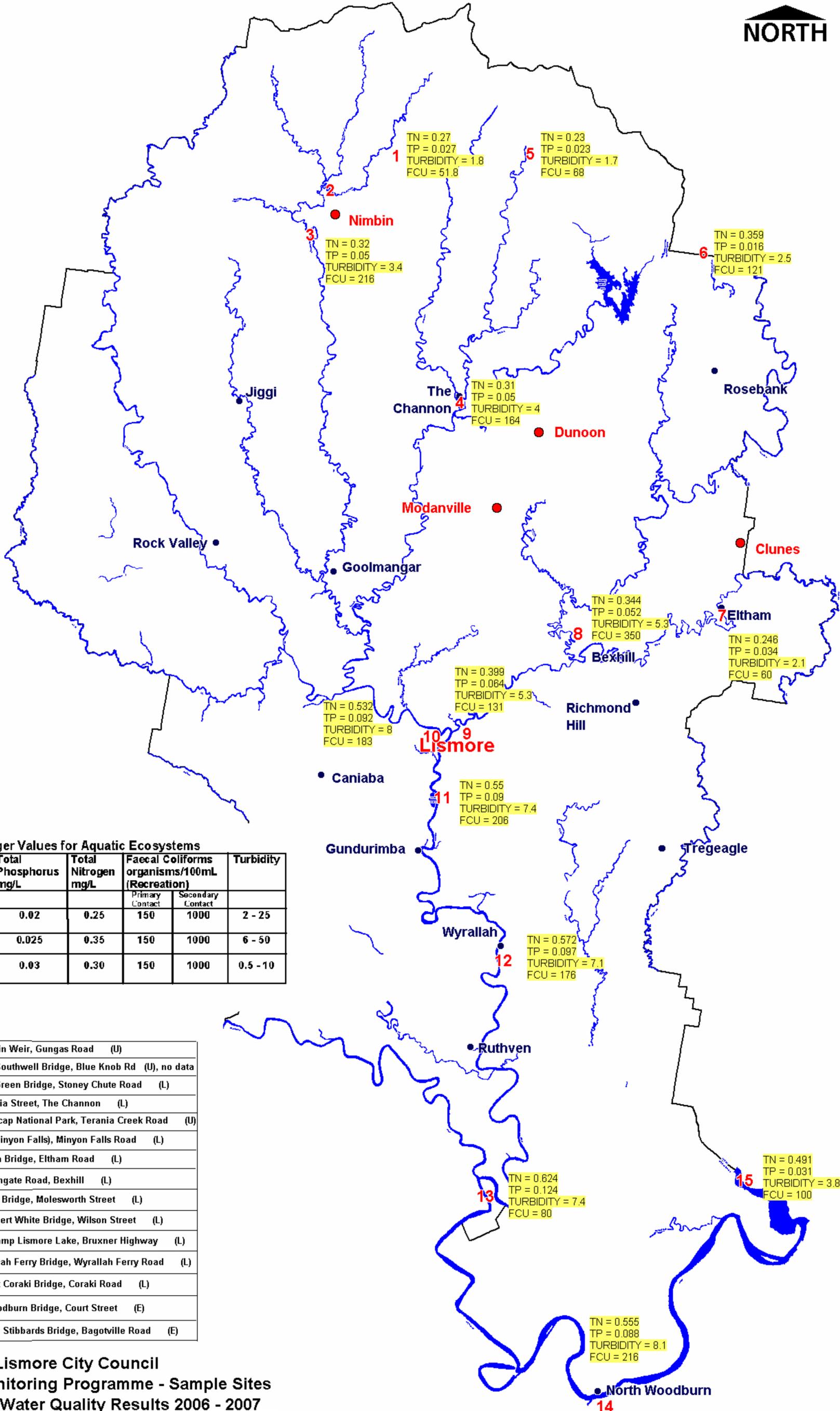
**Please give us your feedback on this report so we can make future ones better !!**

Contact Environmental Health & Building Services  
Lismore City Council  
Ph: 6625 0569 or  
Email: [council@lismore.nsw.gov.au](mailto:council@lismore.nsw.gov.au)

**More for detailed information please refer to our 2004 Report**  
[www.lismore.nsw.gov.au/](http://www.lismore.nsw.gov.au/) (under 'Council Services' / 'Natural Environment')

**Also the 2006 National SoE report:**  
<http://www.environment.gov.au/soe/2006/index.html>

**Attachment 1 – Annual Mean Water Quality Results 2006-2007 by location.**



**ANZECC Default Trigger Values for Aquatic Ecosystems**

| Ecosystem type     | Total Phosphorus mg/L | Total Nitrogen mg/L | Faecal Coliforms organisms/100mL (Recreation) |                   | Turbidity |
|--------------------|-----------------------|---------------------|---|-------------------|-----------|
|                    |                       |                     | Primary Contact                               | Secondary Contact |           |
| Upland Rivers (U)  | 0.02                  | 0.25                | 150   | 1000              | 2 - 25    |
| Lowland Rivers (L) | 0.025                 | 0.35                | 150   | 1000              | 6 - 50    |
| Estuaries (E)      | 0.03                  | 0.30                | 150   | 1000              | 0.5 - 10  |

**KEY**

|    |   |
|----|---|
| 1  | Mulgum Creek, Nimbin Weir, Gungas Road (U)                    |
| 2  | Goolmangar Creek, Southwell Bridge, Blue Knob Rd (U), no data |
| 3  | Goolmangar Creek, Green Bridge, Stony Chute Road (L)          |
| 4  | Terania Creek, Terania Street, The Channon (L)                |
| 5  | Terania Creek, Nightcap National Park, Terania Creek Road (U) |
| 6  | Repentance Creek (Minyon Falls), Minyon Falls Road (L)        |
| 7  | Wilsons River, Eltham Bridge, Eltham Road (L)                 |
| 8  | Numulgi Creek, Greengate Road, Bexhill (L)                    |
| 9  | Wilsons River, Simes Bridge, Molesworth Street (L)            |
| 10 | Leycester Creek, Robert White Bridge, Wilson Street (L)       |
| 11 | Wilsons River, Boatramp Lismore Lake, Bruxner Highway (L)     |
| 12 | Wilsons River, Wyrallah Ferry Bridge, Wyrallah Ferry Road (L) |
| 13 | Richmond River, East Coraki Bridge, Coraki Road (L)           |
| 14 | Richmond River, Woodburn Bridge, Court Street (E)             |
| 15 | Tuckean Broadwater, Stibbards Bridge, Bagotville Road (E)     |

**Lismore City Council  
Waterways Monitoring Programme - Sample Sites  
Annual Mean Water Quality Results 2006 - 2007**



**LISMORE CITY COUNCIL**