

KEMPSEY SHIRE COUNCIL



CONSULTANT BRIEF

KILLICK CREEK ESTUARY MANAGEMENT PLAN

Strategy 'H'

*Bathymetric Survey – Sediment Quality Assessment - Environmental
Impact Assessment – Legislative/Consent Requirements*

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KILLICK CREEK ESTUARY MANAGEMENT PLAN 2006
Strategy 'H'
BATHYMETRIC SURVEY – SEDIMENT QUALITY ASSESSMENT-
ENVIRONMENTAL IMPACT ASSESSMENT &
LEGISLATIVE/CONSENT CLARIFICATION

CONSULTANT BRIEF

1.0 INTRODUCTION

1.1 General

This brief is to seek consultant services to undertake assessments that will provide the basis for implementing Strategy 'H' of the Killick Creek Estuary Management Plan 2006.

<http://www.kempsey.nsw.gov.au/estuarymanagement.htm>

These assessments will include;

- A comprehensive bathymetric survey
- A sediment quality assessment
- An Environmental Impact Assessment
- Identification of all statutory requirements to implement Strategy 'H'
- Design a suitable post-works monitoring program
- A 'peer' review of DRAFT Report

1.2 Location

The entrance to Killick Creek is located (31° 52 Lat & 152° 58 Long) at the coastal village of Crescent Head within the Kempsey LGA on the mid-north coast of NSW. Crescent Head has a population of 1209 (1996 ABS) and is about 20km from Kempsey located on the coast midway between Pt Macquarie and South West Rocks.

Crescent Head residents have a strong community spirit and actively seek action to maintain the health of their environment. Crescent Head and its environs is a popular tourist and surfing location that experiences a major influx of visitors during school holiday periods. This influx often doubles its population which exerts huge pressure on local resources.

Tourism is a major industry within the Kempsey LGA with 415,000 visitors spending an estimated \$90 million per year (Kempsey Tourist Information Centre). The main attractions in this area include the picturesque coastal setting of Crescent Head village and Hat Head National Park to the north, Goolawah Reserve and Limeburners Creek Nature Reserve to the south.

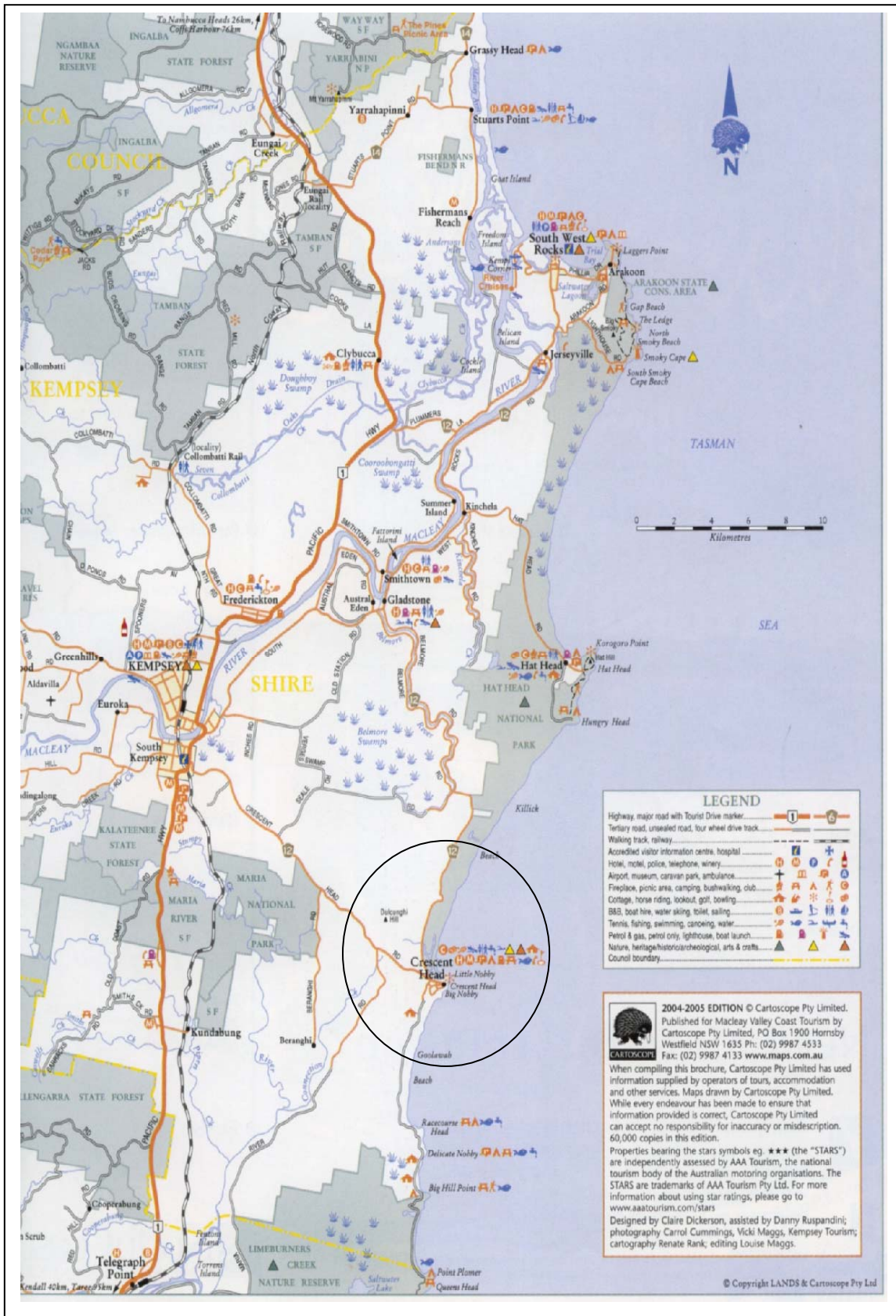


Figure. 1. Killick Creek location map. (Source MVC)

1.3 Background

Kempsey Shire Council in partnership with the Department of Natural Resource finalised an Estuary Management for the Killick Creek Estuary, Crescent Head in April 2006. Kempsey Shire Council adopted the Killick Creek EMP in September 2006.

During the EMP development and in recent times there has been significant community concern raised over the extent of sand build-up within Killick Creek and the economic, social and environmental impacts associated with the shoaling.

Strategy 'H' of the Killick Creek EMP recommends the removal of sediment shoals in Killick Creek which inhibits tidal flushing and flood water discharge.

It is intended that the activities required by this Consultancy Brief will culminate in a report that will comprehensively describe all environmental, social and economic considerations, discuss the likely effectiveness of achieving the objectives of Strategy 'H', determine the most effective methods, define all sediment extraction considerations, develop a post works monitoring program and detail all legislative requirements.

Council intends to undertake the activity described in Strategy 'H' compliant to the State Environmental Planning Policy 35 – Maintenance Dredging of Tidal Waterways. In accordance with the aims and objectives of the SEPP 35 policy, Council is required to undertake an environmental impact assessment to identify and appropriately assess any possible or likely impacts that may arise from implementing Strategy 'H' of the Killick Creek Estuary Management Plan 2006.

The **Actions** described for Strategy 'H' include;

- 1) conduct a detailed up-to-date hydrosurvey of the creek to determine locations and extents of shoals to be removed
- 2) prepare a detailed environmental impact assessment regarding removal of sand shoals (including sediment disposal options)
- 3) define consent conditions and carry out works in accordance with any conditions, and
- 4) monitor any potential impacts of the works.

In July 2001 the Department of Land & Water Conservation conducted a hydrographic survey of Killick Creek. The Killick Creek EMP indicated that as a result of the March 2001 flood event, the information described in that Hydrographic survey may not necessarily represent present day conditions.

Copies of both the Killick Creek Estuary Processes Study (MHL 2002) and the Killick Creek Estuary Management Study & Plan (WBM 2006) are available on Councils Webpage.

Please note: The Department of Lands has recently (Oct 07) released a Plan of Management – Maria River Regional Crown Reserve.

1.4 Description of Killick Creek

Killick Creek is a small estuarine creek that was an intermittently closed and open lakes and lagoon (ICOLL) however it has been substantially physically modified by

- Its formal connection into the Macleay Flood Mitigation Scheme as a swamp storage outlet during 1963/64 and the late 1950's (previous landholder efforts as early as 1890)
- Realignment and training of the entrance in 1957

Killick Creek formerly drained perched wetland swamp areas behind the main dunes to the north of the village. Killick is now connected to 90 sq km of the Upper Belmore River and its associated backswamp areas via Scotts and Killick drain as well as 40 sq km of the upper Maria River via Connection Creek.

Floodgates occur at Scotts Drain, Killick Creek cutting and upper Connection Ck.

Management of the Belmore Swamp areas has an integral influence on the ecology of Killick Creek during and after storm flood events.

Water quality in Killick Creek is influenced by inflows from its local catchment, the Macleay River catchment and its floodplain via Belmore River and its backswamp, and during extreme rainfall events by the Hastings River catchment via Connection Creek and the Maria River.

Council mechanically realigns the creek entrance to correct a meander, which is deemed to potentially erode the dune vegetation on the sand spit to the north of the entrance. The meander makes boat passage difficult, if not at times impossible. This has been undertaken on a regular basis since the 1970's.

1.4.1 Catchment

The natural catchment area of Killick Creek is approx 5 km² with a waterway area ~0.6 km² (see Fig 1) draining the coastal dune wetland SEPP No 476 areas up to Maquires Swamp just north of Ryans Cut. Upstream and to the north of the Killick Cut headworks, the upper Belmore River backswamp areas straddle an approx catchment area of 90 sq km.

Killick Creek is an intermittently open and closed coastal lagoon that is now mechanically kept open. Prior to drainage and flood mitigation Belmore Swamp included approx 13 km² of seasonal freshwater wetlands.

Hydrologically the Swamp connects to Killick creek via a drain through SEPP 14 Coastal Wetland No 479, a section of upper Connection Ck and Killicks Cut, which is floodgated (DLWC 1999, ASS Hotspot report p17,) Belmore Swamp ASS Priority area totals approx 35 km² (criteria p10 DLWC1999)



Figure 2. Killick Creek general area and highlighted study area.

1.4.2 Entrance

The management of the Killick Creek entrance is in accordance with the Killick Creek Estuary Management Plan 2006.

Aerial photograph (Figure 3) show Killick Creek as a lagoon with a narrow channel opened to the sea. Berm levels at entrances to intermittently open and closed lagoon systems on eastern facing NSW coastline may be up to 3.5m AHD and higher. (D Hanslow, 2000). Review of the 1942, 56, 69, 79, 81, 97, 2000 and 2003 aerial photographs shows significant geomorphic and vegetative changes in the entrance area over that period.

The entrance was realigned in 1957 6272/73 by Council and/ PWD as part of the flood mitigation scheme to allow for reclamation of the land that now forms the caravan park.

The channel has a tendency to meander northwards causing potential erosion of the dune vegetation. In recent years Council has realigned the entrance by straightening it to enter the sea immediately adjacent the surf club.

Refer Killick Creek Estuary Processes Study for tidal prism information.



Figure 3. Aerial photograph of Killick Creek showing sand shoaling.

1.4.3 Land uses & Tenure

The town of Crescent Head is located at the entrance with its urban residential areas largely in the south and southwest corner of the catchment. Hat Head National Park encompasses an inter-dunal coastal catchment to the north

Belmore Swamp in the north and Connection Creek area to the south are largely privately owned with cattle grazing being the dominant land use.

All land in the vicinity of the entrance to Killick Creek below mean high water is Crown Land. The adjacent foreshore and headlands are Crown Reserved Land for Public Recreation & Resting Place. Trusteeship of Reserve No R63725 is vested in Kempsey Shire Council.

1.4.3.1 SEPP 14 Coastal Wetlands

No 476 lies in the dunal headwaters of Killick,
No 482a area lies between Muddy Arm and main Creek
No 479 Belmore Swamp
No 484 Connection Creek Riparian Channel

1.4.3.2 LEP Land use zoning's in the;

West side range from 6(a) Open Space, 2(B1) Residential, 1(A1) Rural 7(d) Scenic Protection
Dunal headwaters, 8(a) National Parks and Recreation Environmental Protection
Belmore Swamp area Rural 1(a1) with some 4(a) industrial land to the north of Killick Cutting headwork's

1.4.4 Water Quality

The urban areas are sewered via the treatment plant located near the headwaters of the Muddy Arm tributary. Effluent disposal is via ocean outfall south of Little Nobby Headland. A recent assessment of its performance has been undertaken by MHL

Stormwater discharge from urban areas of Crescent Head largely discharge into the Killick Creek system. Council is currently developing management options for stormwater at Crescent Head.

Acidic and blackwater discharge from the Belmore Swamp areas access Killick Ck through the drain headwork's at Killick Cutting.

2.0 ESTUARY PLANNING PROCESS

2.1 Coastal & Estuary Management Committee

Kempsey Shire Council has an active Coastal & Estuary Management Committee with membership recently reviewed to ensure all key stakeholders are included. Their role is to facilitate the development of management plans for the estuaries

and coastal resources of the Kempsey Local Government Area, largely through funding derived from the State Estuary and Coastal Programs and Council.

2.2 Killick Creek Working Group

A small working group of stakeholders from Crescent Head and Belmore Swamp area assists in identifying local issues and providing local knowledge. This working group reports back to the main Coastal & Estuary Management Committee.

2.3 Estuary Management Policy

To encourage the integrated, balanced responsible and ecologically sustainable use of the States estuaries. (NSW Government 1992)

2.4 Planning Process

The estuary management planning process traditionally involves an eight stage process as follows:

1. Form an Estuary Committee
2. Assemble existing information
3. Carry out an estuary processes study
4. Carry out estuary management study
5. Draft estuary management plan
6. Review estuary management plan
- 7. Adopt and implement estuary management plan**
8. Monitor and Review management process

This brief is for step 7 of the process.

3.0 STUDY AREA (See Fig2).

3.1 Data compilation / Process Study

Completed by NSW Department of Public Works – Manly Hydraulics Laboratory – November 2002 (Report MHL1125)

3.2 Estuary Management Study & Plan

*Completed by WBM Oceanics – April 2006
(Document ID R.N0874.001.03.KillickEMS&P_final).*

<http://www.kempsey.nsw.gov.au/estuarymanagement.htm>

4.0 PROJECT OVERVIEW

There are two (2) possible scenarios that have been identified to implement Strategy 'H'.

- 1) The relocation of the sand shoal as described in the Killick Creek EMP and/or
- 2) Undertake a sand extraction/dredging program to remove the sand from the creek.

The Consultant when submitting their proposal must undertake the following requirements with consideration that either of the above scenarios may occur.

The Consultant is required to;

- a) Undertake a comprehensive Bathymetric Surveys of the waterway area within Killick Creek immediate to the proposed works site (excluding the Killick Cut Drain up stream of Killick Floodgates), that will describe;
 - 1) configuration and nature of bottom profile
 - 2) shoaling development dynamics
 - 3) location of any topographic features
 - 4) Discuss any noticeable bottom profile changes from the 2001 study (Refer Scope of Works)
- b) Undertake an estuary *sediment quality assessment* that will describe;
 - 1) the type of sediments within
 - 2) any heavy metal, acid sulfate soils, organic concentration, nutrients and pesticide content found within the core samplings,
 - 3) volumes and depths of sediments at strategic locations(relevant to Strategy 'H')
 - 4) identify sources of accretion materials
- c) Undertake an *Environmental Impact Assessment* that will identify and describe;
 - 1) the **ecological and biological dynamics** of the creek ecosystem with particular reference to sites that may be included within any proposed works program
 - 2) any **endangered or threatened** species or **habitats** or **communities**
 - 3) any **critical processes**
 - 4) the **health** of Killick Creek
 - 5) any likely **environmental, social** and **economic** costs/impacts associated with implementing Strategy 'H'.
- d) Identify, clarify and describe all federal, state and local *legislative requirements* for the purpose of carrying out either extraction or relocation dredging programs
- e) Describe possible extraction and relocation implementation *methods*, options and associated required works, evaluate and discuss the *effectiveness* of either extraction and/or relocation on achieving the objectives of Strategy 'H' recommend a post works *monitoring/review* strategy..
- f) Establish a '*peer review*' process for the final *draft* EIA & Legislative requirement component.

5.0 ISSUES

5.1 Sedimentation

Anecdotal evidence suggests a significant infilling of Killick Creek has occurred and the marine tide delta has expanded since the 1950's. This could be attributed to a number of processes and activities, including clearing of dunes, realignment of the entrance. Marine sediment movement into the estuary is also a significant process and can result in shoaling or blocking of the entrance and shoaling further up the creek, such as near the entrance to Muddy Arm.

A conceptual model of estuarine sedimentation has been produced for Killick Creek based on results from previous studies in similar systems and preliminary observations (Killick Ck Estuary Processes Study).

Major depositional environments within Killick Creek include sandy fluvial deltas and estuarine mud basin deposits. Surrounding soils are mostly sandy Pleistocene/Holocene deposits of marine sand.

5.1.1 Flood Mitigation

Killick Creek serves a major role in the Macleay River Flood Mitigation Scheme. As a result of sand build up in the Muddy Arm a reduced tidal prism has resulted in the creek between the Muddy Arm area and the floodgates located west of Loftus Rd. Concerns have been raised that this situation is diminishing the flood mitigation capacity of Killick Creek to remove nuisance flood waters from the Belmore and Upper Maria River areas.

5.1.2 Stormwater - Water Quality

There are a large number of stormwater drains discharging into Killick Creek, along the Caravan park foreshore which drains the Crescent Head urban area.

5.1.3 Recreational Use – community concerns

Killick Creek is the principal natural waterway through the township of Crescent Head and consequently is used extensively by local residents for a variety of activities. During holiday periods large numbers of tourist are attracted to the area that utilise Killick Creek extensively.

Recent community concerns have been raised that as a result of current condition of Killick Creek tourist will not come or return to the area.

There has been a significant community demand that something be done to address the sand build-up within Killick Creek including the entrance.

5.2 Entrance Management

The hydrology of the Killick Creek is determined by the frequency and duration of entrance openings. Killick Creek has fundamentally a stabilised opened entrance with a rock training wall and a periodic dredging program. However, in more recent years the frequency at which the entrance closes has increased.

The entrance sediment dynamics are influenced by the littoral sediment transport along the beach, transport within the channel due to tidal and flood flow currents and aeolian sand drift aerial beach.

The entrance is managed under the Killick Creek Estuary Management Plan 2006. KSC has mechanically opened the entrance approximately five (5) time over the last 18 months.

5.3 Ecology

There are several SEPP 14 wetlands adjacent to and surrounding Killick Creek. Estuarine habitat mapping field surveys undertaken in 1981 and subsequent years reported Killick Creek had an area of seagrass (*Zosteraceae*) and saltmarsh and stands of mangrove also recorded.

The Killick Creek Estuary Processes Study (MHL 2002) indicated that information on the fauna of Killick Creek was limited. Fauna surveys undertaken within Killick Creek found that the fauna of the creek entrance was typical of such habitats on the mid-north coast of NSW.

The Killick Creek Estuary Management Plan (WBM 2006) suggest that over the past 50 years the ecology of Killick Creek has become more marinised due entrance conditions and that the ecological health is likely to be quite variable through time

6.0 SCOPE OF WORKS

6.1 BATHYMETRIC SURVEY

The Consultant is required to carry out a bathymetric survey to accurately determine marine and oceanographic data including: configuration and nature of bottom, location of topographic features and objects (ie landform/ sand shoals etc)

Undertaking the survey in a method that will produce outcomes that can be compared and evaluated against the result of the of the July 2001 survey (ie select cross section transect locations similar to the 2001 location within the proposed works location.

Specific attention given to describing;

a) in detail the bottom configuration, bathymetry and topography information

- b) locations and dimensions of sand shoals within the study area
- c) estimates on what volumes of sand would be required to be relocated to efficiently implement Strategy H.
- d) in Report format any recommended/suggested areas and/or locations where sand could be removed to achieve the best possible outcomes
- e) comment on any expected hydrological responses to the proposed works
- f) discuss shoaling development dynamics

6.1.1 Suggested Reference Sources would include at least:

- a) Kempsey Shire Council **Ron Kemsley**
- b) DECC (Kempsey, Grafton GIS Ray Whitty, Newcastle Coast & Flood Specialist Branch, CNR Coastal Ecology Group – **Estuaries Branch, Sydney Martin Fitzhenry.**
- c) Environment Protection Authority **Alex Purvis** Grafton
- d) Waterways Authority **Rod McDonagh** SWR
- e) DPI Fisheries Ballina **Marcus Riches**
- f) DPI Agriculture **Rick Whitehead** Alstonville
- g) DECC (NPWS) **Andrew Winter** Kempsey
- h) Department of Lands – **Brian Semple**

Note: The consultant will be liable for all search and copying fees.

6.2 ENVIRONMENTAL IMPACT ASSESSMENT

An Environmental Impact Assessment is considered one of the main tools used to minimize environmental degradation associated with human activity. Environmental impact assessment is the process in which environmental management is integrated into planning for development proposals.

The Consultant is required to undertake an Environmental Impact Assessment that is underpinned by a rigorous scientifically adequate sampling design/methodology for the purpose of implementing Strategy ‘H’ of the Killick Creek Estuary Management Plan 2006. The Consultant is required to collect and analysis data derived from all associated disciplines including science, engineering, social science and economics.

The EIA must describe at a minimum the following;

- 1) details of the types, locations and condition of any marine and/or terrestrial vegetation within the study area
- 2) details of any aquatic fauna habitats within the study area
- 3) any threatened species, populations or endangered ecological communities, or their habitats, known to be within the study area or likely to occur within the study area
- 4) an assessment of the likelihood of any threatened species, populations or endangered ecological communities, or their habitats, occurring or likely to occur within the study area, etc.

Any conclusions drawn within the EIA must be supported by data or referenced to literature (both published and unpublished). If any assertions are made, the reader should be able to track it back to the evidence and be able to make an independent assessment.

The Consultant is required to have the DRAFT EIA peer reviewed by an independent, suitably qualified person.

6.2.1 Desktop Assessment

6.2.1.1 Literature Review

The Consultants is required to undertaken an extensive literature review of material that is relevant to implementing Strategy H.

6.2.1.2 Flora and Fauna Sampling Design

The most important ingredient of any survey is the sampling design. An EIA as it relates to determining species conservation status has three fundamental components;

- 1) listing all species present within the impact zone, and
- 2) documenting their conservation status with particular emphasis on whether those species also occur outside the impact zone, and
- 3) assessing any likely impacts of the proposed activity

The Consultant should focus on the proposed works location and any other possible site associated with any works. The Consultant is to take into account the works proposed and design and undertake a comprehensive flora & fauna sampling program using recognised taxonomy and reference material, paying particular attention to any possible threatened species. The level of field work undertaken must reflect the habitats and species being assessed.

In the event that the EIA determines that there are threatened species, endangered ecological communities or their habitats are present and/or likely to occur, an Assessment of Significance for those species must be included in the EIA report.

6.2.1.3 Mitigation Measures

The EIA is to consider and recommend measures to address any impacts associated with implementing Strategy 'H' of the Killick Creek EMP.

6.2.1.4 Physico-chemical sampling

Dissolved Oxygen – pH - Salinity

The consultant is required to undertaken sampling of physico-chemical parameters throughout the estuary, collecting information such as dissolved oxygen, pH, salinity and depth at location of sampling. This information may help to explain any absence of species from within the area considered likely to obtain them.

Water column stratification

At all sites where physico-chemical sampling is undertaken the Consultant should test for water column stratification.

6.3 SEDIMENT QUALITY ASSESSMENT

Dredging has the potential to release contaminants to the overlying water, while the disposal of dredged sediments within the local environment or at sea also can have environmental impacts. For example, remobilisation of nutrients and toxins previously bound in the sediment has the potential to impact on marine systems at a number of levels, including biological processes within the benthic systems and water column in general.

The Consultant is required to undertake core sampling and analysis within the potential dredging area to determine the presence of acid sulfate soils, heavy metals, organic compounds and pesticides.

The analysis is also required to determine particle size and depth of sediment profile.

Core sampling should be measured using refined field sampling and laboratory analysis protocols. Sampling should be undertaken in accordance with the *Australian Guidelines for Water Quality Monitoring and Reporting* (ANZECC/ARMCANZ 2000b) and the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC/ARMCANZ 2000a).

Based on the outcomes of the sediment quality assessment the Consultant is to include within their report, utilising the hydrological information provided in the Estuary Process Study & Management Plan, an assessment of potential plume activity or transport mode and any possible effect such a plume activity may have on nearby seagrass or aquatic habitats integrity.

PLEASE NOTE: For all on-ground activities and investigations the Consultant is required to include within their Consultant Proposal a ‘Survey Method Statement’ describing proposed methods, staff, tools/equipment, and data management and quality assurance information.

6.4 MONITORING

In order to determine the robustness and longevity of implementing Strategy ‘H’ the Consultant is required to develop a monitoring/review strategy that can be easily implemented to evaluate the effectiveness of any works program undertaken.

6.5 LEGISLATIVE/CONSENT REQUIREMENTS

Undertaking such works as described to implement Strategy H within a coastal zone can enact a number of federal, state, local legislative instruments.

The Consultant is required to investigate and document all relevant federal, state and local legislative requirements to undertake the works described in Strategy ‘H’ of the Killick Creek Estuary Management Plan 2006. All legislative investigation must cover the possible scenarios;

- 1) Removal of sand from the system by either private or government entities, and/or
- 2) Relocation of sand from the creek to another location within the coastal

process zone

Such investigations include but are not limited to;

- 1) identification of all SEPP 35 requirements
- 2) identification of Consent Authority
- 3) confirmation of all relevant agencies
- 4) identification of conditions of consent
- 5) identification of environmental assessment requirements,
- 6) Crown Lands requirements, etc.

The Consultant is required after determination of all legislative requirements to present that information in clearly defined procedural steps to assist Council to implement works.

The Consultant is required to have the DRAFT legislative information peer reviewed by an independent, suitably qualified person.

7.0 REPORTING

7.1 Prepare reports that address those matters listed above via;

- 1) Hydrosurvey**
- 2) Environmental Impact Assessment**
- 3) Sediment Quality Assessment**
- 4) Works Monitoring Review Strategy**
- 5) Legislative/Consent Requirements**

7.2 Report Format

Where applicable all reports are to be presented in the following format;

Background
Scope of Objectives
Survey Design & Sampling Methods
Survey Team
Limitations of Survey/assessment
Results & Discussions of Surveys/assessments
Discussions of Risks
Conclusions
Recommendations

8.0 SUBMISSION OF PROPOSAL

The Consultant's proposal for the Killick Creek surveys/assessments is to detail activities proposed to undertake the work. The proposal is to be presented in the three stages shown in Table 1

Table 1 Stages of Work required

Stage	Work required	Time (wk's)
1	Bathymetric survey	
2	EIA	
3	Sediment Quality Assessment	
4	Legislative / Consent Requirements	

Note: Consultants Submissions to forwarded to Kempsey Shire Council no later than 4:00pm Friday 29th January 2008.

9.0 DATA AND REFERENCE DOCUMENTS

The Consultant will be responsible for collecting adequate information for review to fulfil the requirements of the brief. There will be no charge to the Consultant for access to reports and files held by DNR offices or Kempsey Shire Council.

All spatial data and relevant metadata must be forwarded to Kempsey Council and DNR Kempsey office upon completion of the project on CD-ROM.

Data must comply with the requirements as set out in "DNR North Coast Region Spatial Information Management Manual Nov 2003" All data obtained or developed through project funding are regarded as Department deliverables, including relevant license documents.

10.0 REPORTING AND TIMETABLE

Progress Reporting

The Consultant is to provide regular and comprehensive progress reports. The Consultant must notify Council of any significant issues or outcomes arising during any of the investigative/assessment studies undertaken.

Draft Report

The Consultant is to provide to Council a "DRAFT" Report (peer reviewed where required) to be placed on Public Exhibition and distributed to relevant agencies.

Final report

Following consideration of community comments and review by the Committee of proposed amendments, and written Council approval, the Consultant shall

- print ten (5) copies (with colour exhibits) of the final Report to allow for distribution to Council, libraries, key stakeholder groups and State Agencies
- 5 CD Rom copies of the final reports in pdf format

In addition the Consultant shall supply to Council one (1) unbound printing quality master copy (including artwork) of the reports plus a copy in the following electronic form:

- textual data (report) - Word 6.0 for Windows or later version
- format suitable for web listing eg pdf file format

- graphical data - Mapinfo.TAB format or Autocad.DXF format, Mapinfo version 4.6 Autocad Version 14
- Tabular data - Excel 6.0 format or later version

The final report including figures must be published in format for distribution on CD ROM and by a web site.

The Consultant shall supply a realistic timeframe and program timetable for completion to draft study report and time required from receipt of community comments to final study report stage.

11.0 PERSONNEL

The Consultant's proposal is to include the qualifications and relevant experience of each team member proposed to be employed on the study/plan including any sub consultants. Any similar studies/plans recently undertaken by the Consultant are to be detailed.

Note: the consultant's personnel or sub consultant is to include a suitably qualified and recognised coastal process practitioner/engineer.

12.0 BUDGET

A fee proposal is to be submitted on lump sum basis with the exception of hourly rates for additional work or meetings requested by Kempsey Council.

A maximum budget of \$50,000.00 has been set for the work as outlined.

Should the consultant consider the budget inadequate for the scope of the work required, an alternative fee proposal can be submitted.

13.0 LIAISON

Personnel responsible for briefing and liaison are:

- ◆ Mr. Ron Kemsley Kempsey Shire Council (tel no. 6566 3248)
- ◆ Mr. John Schmidt, DECC Kempsey Office (tel no. 6561 4975)

15.0 CONDITIONS OF ENGAGEMENT

15.1 General Conditions of Engagement

The tasks as identified in the brief are based on Council's assessment of the study. The consultant may suggest any amendments required to achieve the study objectives during the course of the study.

Any proposed departure from the agreed study tasks must first be ratified by Council before proceeding.

The conditions under which the consultant will be engaged shall be generally in accordance with the Association of Consulting Engineers Australia Guide to Consulting Engineering Services and this Brief.

15.2 Termination

The consultant's commission to carry out the study may be subject to termination due to non-performance or inability to meet set deadlines. The consultants will be informed by letter of such termination. This letter will be final and not subject to further correspondence.

15.3 Confidentiality

Investigations and reports will remain confidential unless, or until, released by the Council.

15.4 Sub-Consultants

The primary consultant may engage a sub-consultant for a specified part of the study subject to the written approval of Council. The primary consultant is responsible for the sub-consultant's work and compliance with the terms of the study. The sub-consultant has no claim on Council for fees or expenses.

15.5 Insurance

15.5.1 Professional Indemnity

The consultant shall maintain a current Professional Indemnity policy of insurance at a sum not less than \$300,000 or not less than that sum specially nominated in the Letter of Engagement. The consultant shall maintain a policy of insurance for an amount that is sufficient to indemnify the consultant after completion of the commission.

15.5.2 On Site Public Liability

The consultant is responsible for taking out at least \$10 million public liability insurance giving cover to himself/herself, his/her employees and any agent engaged by consultant for the duration of the work.

The consultant should also be aware of the obligations and liabilities under the "Occupational Health and Safety Act, 1983" and National Code of Practice pertaining to the Act.

15.5.3 Employees or Agents

Before commencing work under the commission, the consultant shall ensure that a suitable insurance policy is taken out giving cover to the consultant, the consultants employees and agents against any liability, loss, damage, costs and

expenses arising at common law or under any statute as a result of personal injury to or death of any person employed by the consultant or the consultant's agents in or about the work.

15.5.4 Inspection of Insurance Policies and Receipts for Premiums

The consultant shall make available for inspection the policies of insurances effected, for the purpose of complying with this section and the receipt for payment for the current premiums or other such evidence of insurance as may be requested by Council.

15.6 Copyright

Results of the study and the models developed in the course of the study are the ownership of Council. All data files are to be provided to Council on completion of the study.

15.7 Conflict of Interest

The consultant shall inform Council immediately of any matter connected with this study which could give rise to an actual or potential conflict of interest. This information will be treated as confidential.

15.8 Certification

All final documents prepared by the Consultant must be signed by the Project Director nominated in the consulting proposal to certify that they have been prepared by competent professional staff, checked for accuracy and comply with relevant regulations and the requirements of the brief.

15.9 Corrections

Any error, ambiguity or deficiency, which becomes apparent during the course of the study, shall be referred to the consultant for correction or clarification. The consultant shall not be entitled to an additional fee where the correction or clarification arises from a fault of the consultant.

15.10 Acceptance of Commission

Written confirmation of acceptance of the commission for the study, in accordance with the conditions of engagement, is required before work commences.

15.11 Payment and Costs

Monthly progress payments will be made after project progress reports. Progress payments are not acknowledgment of the satisfactory performance of work and Council reserves the right to recover any overpayment.

Council will retain 10% of project costs on completion of the draft documentation. All monies will be paid on acceptance of the final documentation.

Clause SC2 - Goods and Services Tax

"Goods and Sales Tax (GST)" means any tax on goods and/or services, including any value added tax, broad based consumption tax introduced in Australia.

"GST Law" includes an Act, order or regulation which imposes or otherwise deals with the administration or imposition of a GST in Australia.

Notwithstanding any other provision of this Agreement:

- (a) If a GST applies to any supply made by any party or in conjunction with this Agreement, the consideration provided or to be provided for that supply will be increased by an amount equal to the GST liability properly incurred by the party making the supply.
- (b) If the imposition of a GST or any subsequent change in the GST law is accompanied by or undertaken in connection with the abolition of a reduction in any existing taxes, duties or statutory charges (in this clause "taxes"), the consideration payable by the recipient of the supply made under this Agreement will be reduced directly or indirectly as a consequence of the abolition of or reduction in taxes.

Each party warrants that at the time any supply is made under this agreement on which GST is imposed, that party is registered under the GST law. If the other party requests written evidence of registration, the party claiming to be registered will promptly produce evidence satisfactory to the party seeking such evidence.

Any invoice rendered by a party to this agreement which seeks to recover an amount of GST payable by that party must conform to the requirements for a tax invoice (as that term is defined in the GST law). If requested to do so by the recipient of the supply, the supplier must provide a tax invoice within 14 days.

Council shall not be obliged to make any payment unless it is satisfied that the work satisfies the requirement of the brief.

The consultant shall be responsible for all his/her own costs for travel, accommodation and other expenses.

15.12 Selection Criteria

Proposals shall be assessed by a sub-committee of the Macleay Coast & Estuary Management Committee. The sub-committee is likely to be comprised of representatives from Council, DECC, DPI and the community.

Proposals will be assessed on an objective basis in general accord with the following selection guidelines. Factors to be considered in the assessment process will be:

- a) methodology;

- b) demonstrated level of understanding of what is required to produce a quality outcome;
- c) the quality of the Consultant's team in terms of demonstrated experience in the field. Proven track record. Of particular importance is the presence of sufficient depth of experience to cover the broad range of skills needed to address the issues and formulate objectives and strategies;
- d) community consultation proposal and skills;
- e) overall fee;
- f) project timetable; and
- g) understanding of the Estuary Management Process.

15.13 Acceptance

Written acceptance and agreement from the Consultant that the work will be undertaken in accordance with the Brief is required before the Commission can begin.

16.0 RESPONSIBILITY OF CONSULTANT

- 16.1** The responsibility for the preparation of the entrance management strategy and the supervision of sub consultants and their integrity, effectiveness and suitability for the purpose rests with the consultant. Council is relying upon the consultants knowledge, skill and judgement to produce a finished product which is fit for its intended purpose.
- 16.2** The consultant shall accept full responsibility for all work undertaken as a requirement of this brief.
- 16.3** The consultant is responsible for ensuring that adequate data and information to meet the requirements of this brief have been supplied are obtained from the appropriate sources.
- 16.4** Draft documents submitted for review by Council shall be signed by the consultants principal nominated in the proposal to certify that the documents represent adequate professional presentation for the particular of the work. All final documents prepared by the consultant must be signed by the consultants principal nominated in the proposal to certify that the documents have been prepared by competent professional staff and have been checked for accuracy, compliance with relevant regulations, the requirements of the brief and fully co-ordinated with all related documents.
- 16.5** Any errors, ambiguities or deficiency, which becomes apparent during the commission, shall be referred to the consultant for correction or clarification in suitable form. The consultant shall not be entitled to an additional fee where the correction or clarification arises from the fault of the consultant.
- 16.6** The consultant should ensure that the documents produced under the commission comply with relevant Acts, Codes, Ordinances and Regulations. The consultant

shall immediately advise Council and obtain direction if the work requirements conflict with any such statutory requirement.

- 16.7** The consultant is to advise Council of any conflict of interest that may arise in the undertaking of this study from other work undertaken by the consultant in the study area.

17.0 FEES

- 17.1** The fees to be paid for the work described in the Brief shall be a lump sum nominated by the consultant in the proposal for the work. The lump sum is to include all fees for sub-consultants. The fees for sub-consultants shall be stated separately.
- 17.2** The lump sum fee may only be exceeded if work additional to the extent of this Brief is requested by Council.
- 17.3** Items not specifically mentioned in the Brief but which are necessary for the satisfactory completion and performance of the work shall be executed by the consultant without adjustment to the nominated fees.
- 17.4** No payment for additional work will be made in excess of the nominated fee unless the additional work is first authorised in writing by Council. The fees shall be deemed to include all works and costs necessary to carry out the work set out in the brief.
- 17.5** The lump sum fee submitted by the consultant shall be a true reflection of the cost of professional services to be provided. The lowest fees submitted will not necessarily be accepted by Council.

KILLICK CREEK
Strategy 'H' Implementation Investigative Requirements

FEE SCHEDULE

ITEM	AMOUNT \$
Stage 1 Bathymetric survey	
Sub total	
Stage 2 Sediment Quality Assessment	
Sub total	
Stage 3 Environmental Impact Assessment	
Sub total	
Stage 4 Works Monitoring Strategy	
Sub total	
Stage 5 Legislative/Consent Investigation	
Sub total	
Stage 6 Peer Review Process	
Sub Total	
Reports	
Sub Total	
TOTAL FEE	
Additional Meetings	
Attend any additional meetings as directed (per meeting).	

