



Wyong Shire Council  
**ORDINARY MEETING**

**ENCLOSURES**

Wednesday, 14 April, 2010



**WYONG SHIRE COUNCIL**  
ENCLOSURES TO THE  
**ORDINARY MEETING**  
TO BE HELD IN THE COUNCIL CHAMBER,  
WYONG CIVIC CENTRE, HELY STREET, WYONG  
ON WEDNESDAY, 14 APRIL 2010 ,  
COMMENCING AT 5:00:00 PM

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**KEY ISSUES**

**2.1 Cabbage Tree Harbour Update**

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To the Ordinary Meeting

Director's Report  
Shire Planning Department

## 5.2 Cabbage Tree Harbour Update

TRIM REFERENCE: F2004/07782 - D02072359

AUTHOR: GW

### SUMMARY

This Report provides an update on the costs, funding arrangements and timing for construction of the Cabbage Tree Harbour Toe-Drainage Structure.

### RECOMMENDATION

- 1 *That Council proceed to the construction phase upon receipt of approval from the NSW Department of Environment, Climate Change and Water to provide a grant augmentation of \$823,819 to cover the cost of the Cabbage Tree Harbour Toe-Drainage Structure on a 50-50 basis.*
2. *That Council, in considering its Management Plan for 2010-2011, allocate additional funds of \$592,319 to the 2010-2011 financial year to match DECCW's grant augmentation.*
- 3 *That due to the benefits of managing project risks Council undertake construction of the Toe-Drainage Structure by day labour with supervision by Shirley Consulting Engineers.*
- 4 *That Council lobby the State Government via the Parliamentary Secretary for the Minister for the Central Coast, to augment its existing 50-50 funding for the Toe-Drainage Structure on the same basis to cover the increased cost.*
- 5 *That following completion of the required work by the residents at the top of the slope, Council seek geotechnical advice on the level of instability and risks posed to the community as a basis to reassess the need for continuing the beach closure and surveillance.*

### ORDINARY MEETING HELD ON 25 NOVEMBER 2009

**RESOLVED unanimously on the motion of Councillor EATON and seconded by Councillor BEST:**

***That Council defer this matter pending a briefing.***

FOR: COUNCILLORS BEST, EATON, GRAHAM, MATTHEWS, MCBRIDE, SYMINGTON,  
VINCENT, WEBSTER AND WYNN

AGAINST: NIL

## **BACKGROUND**

A confidential update on the status and cost estimates for the Cabbage Tree Harbour Toe-Drainage Structure project was provided for Council's information at its Ordinary Meeting of 14 October 2009. Since then, approval for the structure has been obtained under Part 5 of the EP&A Act subject to a number of conditions including the development of a Construction Environmental Management Plan (CEMP), a Landscape Plan that uses native endemic species only, including the Cabbage Tree Palm, and a Waste Management Plan.

In addition, a licence to undertake works on Crown lands has been obtained from the Lands Department. The necessary approval from the Department of Climate Change and Water (DECCW) to proceed to the calling of tenders or undertaking construction by day-labour, as it is partly funding the project, has also been provided. The project is now ready to proceed to construction, subject to funding.

Six Councillors visited the beach at Cabbage Tree Harbour as part of their inspections on 4 November.

## **PROPOSED WORKS**

The proposed works primarily involve the removal of the existing sub-horizontal drainage manifold (collection pipe and supports) and the construction of the Toe-Drainage Structure (TDS). The TDS comprises a gabion filter structure (GFS) or baskets of rocks that will be connected to the existing sub-horizontal drainage system. The GFS will be protected from wave action by layers of armourstone boulders thereby creating a rock lined uniform wall structure at the toe of the slope.

The GFS will be constructed from a series of gabion baskets filled with gravel and backfilled with sand and gravel. The GFS will be built on a weathered bedrock foundation, improved where necessary by the application of synthetic fibre reinforced concrete (SNFRC). Layers of armourstone boulders will be constructed over the gabions, with an outer layer being the primary protection layer and an inner layer creating a transition between the outer layer and the gabion baskets.

## **COST ESTIMATES AND FUNDING**

### **Preliminary cost estimates and current funding**

As indicated in the previous Report, Council's original estimated cost for the proposed Toe-Drainage Structure, based on the concept design but prior to detailed design was \$1,220,000. Based on this figure, Council applied to DECCW for grants on a 50-50 basis under the State's Coast and Estuaries Program. To date DECCW have provided two grants on a 50-50 basis totalling \$610,500.00 to cover both design development and construction costs. This is in line with the State Government's stated position that it will fund the project on a 50-50 basis with Council.

In addition to the grant funding, Council has budgeted for \$842,000 in the 09-10 Management Plan being an equivalent contribution of \$610,500 plus a contingency of \$231,500 for an all up total of \$1,452,500. Expenditure to the end of October 2009 covering design costs, project management and the approvals process was \$453,638 leaving \$998,862 for construction of the project.

### **Cost estimates for construction by tender**

Following extensive review by independent consultants and DECCW, the detailed design is now complete and the necessary approvals obtained. Pre-tender estimates based on the detailed design from quantity surveyors Currie and Brown indicate that construction tender costs could vary between \$2,638,000 and \$2,960,000 should the project go to tender. The different figures are due to estimates based on working either one or two shifts per day giving a construction period of either 22 or 44 weeks.

Given that design development expenditure to the end of October 2009 was \$453,638 the total project cost estimates for design and construction would be \$3,091,638 and \$3, 413,638 respectively.

Within these figures the consultants Currie and Brown estimated the risk components for the project incorporating ocean or weather delays (allowing for 30 working days), a construction contingency of 15% and an allowance for the Principal (ie; Council) effecting insurance of the works (as a means of risk control) rather than leaving it to a contractor. Costs associated with the contractual risk were \$488, 000 and \$610,000 respectively.

### Cost estimate for Construction by Day Labour

The option of constructing the Toe-Drainage Structure by Council's day labour within the Roads and Drainage Unit has been investigated. Council has estimated that the cost of construction based on the detailed design, with Council supervision and project management and quality control provided by designing engineers Shirley Consulting Pty Ltd is \$2,415,000. Given expenditure to the end of October 2009 was \$453,638 the total project cost is estimated at \$2,868,638

### Summary of Project Costs

Total project costs for the 3 options are given in the table below:

	Pre Construction Costs	Construction Costs	Total Project Costs
Day Labour	453,638	2,415,000	2,868,638
Tender 22 Weeks	453,638	2,638,000	3,091,638
Tender 44 Weeks	453,638	2,960,000	3,413,638

### Funding shortfall

The funding shortfall for the day labour option is given in the table below. Note: that the difference in funding augmentation between Council and DECCW is due to the fact that Council has already budgeted for a contingency of \$231,500 in this financial year.

	Total Cost	50/50 Contribution	Existing Funds	Existing Grants DECCW	Council - Augmentation of funds to meet 50/50 basis	DECCW - Augmentation of funds to meet 50/50 basis
Day Labour	2,868,638	1,434,319	842,000	610,500	592,319	823,819

### CONSTRUCTION TIMETABLE

Construction can commence as soon as the additional funds from the State Government are secured. The best construction window would be late winter where seas would be flat and the beach and access points are less used by the community. Construction would cover a period of around 22 or up to a maximum of 44 weeks giving a completion time of approximately December 2010 or May 2011 respectively.

### Beach Surveillance

Beach closure and surveillance is currently being carried out to address the risks posed by unstable slopes and the threat of sudden landslips. This action is based on geotechnical advice that the slope will remain unstable until the residents at the top of the slope carry out the works required by the Orders issued by Council and remove the fill material and structures built without Council approval.

This process is well underway with 4 of the 5 landholders either completing, undertaking or about to commence works.

There has also been instability at the toe of the slope due to beach erosion, however, whether the beach closure and surveillance should continue will need to be reassessed by Council's Geotechnical Consultant following completion of the work by the residents.

## **CONCLUSION**

### **Funding the shortfall**

Council has previously committed to funding the Cabbage Tree Harbour Toe Drainage Structure on a 50-50 basis and DECCW has to-date provided some \$610,000 in grant funds based on preliminary cost estimates. Following design amendments and completion of detailed design, the total estimated cost of the project has risen to approximately \$3,400,000 if undertaken by tender or \$2,868,638 by Council's day labour. Whilst the State Government has met its share of the cost to date, it is necessary that this commitment continue by way of a State Government contribution to the shortfall on a similar 50-50 basis.

### **Construction risks – Tender Or Day Labour**

There is a significantly higher risk profile presented by constructing the toe drainage structure by contract compared to day labour. The main risk is the impact of potential ocean conditions that prevent access to the site, prevent construction activity on the site and cause damage to constructed works requiring repair. While these present the same risks to either a contractor or day labour, the management of the risks is very different.

A contractor will include in the tender price the potential costs of these occurrences. Given the unpredictability of the ocean conditions, the expectation is that the allowance in the tender would be significant. In the event the potential conditions do not occur, the contractor makes additional profit and Council pays for the risk of something that did not happen. In the event the conditions occur or occur to a greater extent than costed by the contractor, the contractor loses money and Council is better off. Neither scenario is an equitable sharing of the risk between the contracting parties.

If the work is undertaken by day labour, the final cost will not be subject to these unknowns. If ocean conditions are unfavourable, day labour has the flexibility to move to other works and delay costs to the toe drainage project do not occur. The final cost will reflect whatever is the actual cost of potential disruption and repair of damage caused by the ocean but nothing else in terms of risk. This option is a better management of the risks compared to undertaking the work by contract. Consequently, it is recommended that the works be undertaken by day labour instead of going to tender.

### **Government policy**

Construction of the Toe-Drainage Structure would appear to be consistent with the recently released Coastal Reform initiatives from the State Government. The principles applying to protection measures require a risk assessment, which has been carried out as part of the detailed investigations, and management actions to address the risk. The Toe-Drainage Structure is designed to address the risks to both current development and maintain the amenity and safety of the beach and as such is an appropriate management response under the State's Draft Guidelines. Cabbage Tree Harbour is also one of the State's "hot spots" and is targeted as a priority location for current beach erosion as well as for erosion under a climate change scenario.

## **ATTACHMENTS**

*Nil.*