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committee

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environment

GENERAL PURPOSE COMMITTEE - ENVIRONMENT

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Meeting Date: 30 June, 1998

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ITEM: 147 **Riverbank Rehabilitation Proposal**

FILE NUMBER: DA110/98/EVD/ENF30LAX.V12

Applicant: Grono Point Riverbank Landcare Inc
Applicants Rep: Mr Allan Gardner
Owner: 22 Property Owners along river
Stat. Provisions: HLEP 1989 and Hawkesbury/Nepean REP 20 1997
Area: 850m river bank
Zone: 7(d1) Environmental Protection (Scenic)
Advertising: Adjoining owners were notified and given 14 days to make submissions, 1 submission was received
Date Received: 4 May 1998. Additional information received 24 June 1998

Key Issues: Removal of all vegetation
 Erosion
 Visual Impact
 Impact on fish habitats
 Fauna and flora
 Hydrology and geomorphology

Action: Deferred Commencement Consent

REPORT:

The Proposal

The Department of Land and Water Conservation and Hawkesbury/Nepean Catchment Management Trust have received a grant of \$100,000 for rehabilitation works of the riverbank along the rural residential properties at Grono Point. The total cost of the works is \$230,000.

The project involves:-

- i) construction of a rock wall 1.5m above mean low tidal mark at the toe of the riverbank. The wall will also extend 1m below low tidal mark;
- ii) removal of all vegetation along 850m of the riverbank; and
- iii) regrading the riverbank to a flatter grade (IV:2.75H).

The objective of the proposal is to stabilise the riverbank from slumping during flood periods and minimise the extent the bank is undercut due to wave action.

It is proposed that the work will be done in 100m sections with the work being completed over a period of three months.

Statutory Situation*HLEP 1989*

The land is zoned 7(d1) Environmental Protection (Scenic) under the provisions of Hawkesbury Local Environmental Plan. The works are classified as riverbank improvement works. Consent is not required under Hawkesbury LEP 1989 as the Environmental Planning and Assessment Act 1979 model provisions exempts these types of works when carried out under the authority of the Department of Land and Water Conservation (DLWC).

Hawkesbury/Nepean REP 1997.

The proposed works are located in an area defined as a riverine scenic area under the Hawkesbury/Nepean REP 1997. Carrying out of works for the purpose of stabilising the riverbank requires consent for these areas under the REP.

Statutory Authorities*Department of Land and Water Conservation*

No formal referral to DLWC was carried out as they are primarily responsible for the project having prepared all the plans. The Geotechnical and Hydrological Reports submitted were prepared by an officer of the Department, however, were not under the Department's letterhead. None of the reports or plans apart from the cross-sections have been signed.

Hawkesbury/Nepean Trust

The Trust was not consulted as they are jointly funding the project through the Grant.

NSW Fisheries

NSW Fisheries have expressed an interest in the project. No formal referral was sent to Fisheries. The Fisheries Management Amendment Act 1997 takes effect from 1 July 1998. As the proposal has the potential to effect the downstream area of the river it is considered confirmation that they have no objections to the project should be obtained prior to works commencing. It is proposed that a deferred commencement consent be granted with a condition being that the project is referred to NSW Fisheries for consideration and that any requirements of the NSW Fisheries be complied with.

Community Consultation

The project was notified to all adjoining owners for a period of fourteen days. One submission was received at the close of the notification period. The submission was received from a property owner adjoining the restoration works. Concern was raised that his property would be undermined during periods of flooding as a consequence of the works.

Since the application was lodged, the owner of the land adjoining the landowner who made the submission has withdrawn from the project. This will minimise the risk to this landowner. The Hydrological Report submitted confirms this.

Any approval granted should not include the properties who have indicated they have withdrawn from the project.

Assessment

A full assessment has been carried out in accordance with Heads of Consideration under Section 90 of the Environmental Planning and Assessment Act 1979.

Removal of Vegetation

It is proposed to remove all vegetation for a length of 850m along the river bank. Vegetation is intended to be replanted and a landscape plan has been submitted, the following comments are relevant:

- Plant material chosen for the site is reasonable although some species/varieties could be considered doubtful.
- Whilst the removal of exotic species is positive, consideration should be given to the retention of present native species on site especially the Casuarinas and Melaleucas.
- The concept of block planting as shown on the plans should be discouraged, a more preferable planting scheme would be to mix the species/varieties to obtain both an even flow of height, spread and ground holding capabilities. The riparian vegetation should be retained and blended in with these proposed plantings and not removed.
- The Fauna and Flora Study report appears to rely heavily on information gleaned from the DLWC TSCA13 data base. There does not appear to be undue reasons for concern, although the consultant has mentioned that two species of fauna are likely to occur in the subject area and feed trees may also occur. Subject fauna is the Glossy Black Cockatoo and Osprey.
- Whilst the Fauna and Flora Study states that there would be no significant effect to the subject area and that no endangered population occurs or would be effected, it is recommended that the riparian vegetation be retained in this area if there is any likely possibility that a threatened species, population or ecological community may occur.
- The NSW Fisheries Management Amendment Act 1997 takes effect from 1 July 1998. As the proposed development does effect the present riverbank, riparian vegetation, and may have potential to effect both the surrounding area and localities down stream.

It is considered the retention of native vegetation along the riverbank is desirable to reduce the impact of significant erosion and protect any fauna habitat.

The NSW Fisheries Policy and Guidelines for Aquatic Habitat Management and Fish Conservation 1998 supports this view that riparian vegetation should be retained.

"To the greatest extent possible, riparian vegetation should be retained in an undamaged and unaltered condition."

In addition to this the Department of Fisheries guidelines recommend that riparian zones should be 50 metres in width and should be strengthened where possible.

The document titled "Rehabilitation of Riparian Vegetation of the Hawkesbury-Nepean River" prepared by DH Benson and J Howell for the Royal Botanic Gardens Sydney, provides the following guidelines for management of vegetation along river banks:

- Planting species should concentrate on the 50 metre wide riparian zone.
- Regeneration should be to repair and enhance. It should not impair those values in order to simplify the regeneration process.
- The best response is to adopt the principle of minimal interference.

One of the final recommendations in this documents is that:

"all remnant native vegetation and native trees along the river be protected, and that a substantial long term aim should be the establishment of a 50 metre wide strip of riparian forest vegetation on each bank along the full length of the river."

The subject strategy was made available to Council by the Hawkesbury-Nepean Trust.

The proposed rehabilitation works are contrary to these guidelines and the proposal should be modified to retain existing native vegetation. This could be a condition of any deferred commencement consent.

Erosion

The removal of vegetation along the river bank will significantly increase the risk of erosion, particularly in the short term until the new vegetation is established. Should a major flood occur shortly after the works being completed a significant amount of the river bank could be lost. In addition to this the work carried out would be lost and significant rehabilitation may be required at considerable expense.

This further reinforces the argument for retention of existing vegetation to minimise the risk should a flood event occur in the short term.

Visual Impact

The stretch of river to be rehabilitated is characterised by rural residential development with approximately twenty four (24) lots having frontage to the river. Frontages of lots are narrow. A large percentage of the lots have boat ramps which create breaks along the foreshore area. There has also been a number of unsightly retaining structures erected in an ad hoc manner.

The area is vegetated with a combination of exotics and natives. Vegetation at the lower end of the works is relatively sparse due to clearing and modification by land owners. Further along the river the vegetation becomes more continuous.

When the foreshore area is viewed from the centre of the river the vegetation becomes more continuous.

It is considered the vegetation along the river is visually significant providing the transitional zone between the river and rural residential pursuits, while providing continuity along the river.

The removal of all of this vegetation would break the continuity of vegetation along the riverbank and expose a number of structures associated with the rural residential uses of the land fronting the river.

The modification of the project to retain the majority of native vegetation would minimise the visual impact of the proposal while newly landscaped areas re-establish.

Plantings should be mixed so as to create a continuous vegetation strip of uniform height. The landscaped strip should extend 50 metres back from the river's edge.

Impact on Fish Habitats

The Department of Fisheries have advised that roots from trees which extend into the river provides habitat for fish. The proposal should be referred to the Department of Fisheries for confirmation that the project will not have a significant impact of fish species in the area.

Engineering Comments

The plans have been perused and the two reports prepared by an engineer who is employed by the DLWC.

Both reports conclude with the idea that the works are certainly not final and that movements will still occur and the outcome of the works is difficult to predict. Further ongoing maintenance will be required, ie. the works will certainly not solve all the failure problems and may introduce others.

With reference to the geotechnical report it is agreed, in principle, with the concepts contained therein.

Basically, the retaining wall is in theory stable and the likelihood of a slip failure is reduced - but certainly not eliminated. However, whenever a structure (ie. the retaining wall) is introduced on a river bank there is potential for failure due to the foundations being eroded and thus is true in this case. Apart from the possible unsightly result likely, this will still be better than the existing situation.

The report has not addressed the issue of the effect of removal of the existing vegetation which no doubt helps to hold the existing bank together. Care will be needed to ensure that the replacement vegetation is equally as effective.

The proposal is supported that works limited in scale will have little effect on the waterway area and general hydraulics of the river.

The general flattening and regularising of the batters are likely to improve the flow and reduce turbulence. The concerns occur where the continuity of the works are lost, ie. at the ends and in those sections being omitted. It is also considered that the problems will be more pronounced where the bank remains unexcavated and protrudes into the flow than the reverse where the area is excavated although both can cause turbulence. It is probably not possible to fully predict what turbulence will occur without modelling which would be extremely expensive.

There are two points where turbulence and scouring is likely to be particularly bad:

1. at the downstream end of the work beyond Lot 2 DP874065; and
2. towards the middle of the works downstream of Lot 19 DP739629.

In each case the lot is proposed to be heavily excavated which will leave the properties immediately downstream projecting into the flow.

Although the work is shown over each of the lots the report states they have withdrawn from the project and no works are to be carried out on the lots. The proposed excavation on the properties upstream of these sites is much less so the general flows will be less affected reducing any likely adverse impacts.

Hawkesbury-Nepean Regional Environmental Plan No. 20 1997

Part 3, Clause 16, requires Council consent for the proposed work as the area is defined as an area of scenic significance. In considering whether to grant consent Council must consider the following matters under the REP:

- (a) *The need to prevent large scale, high density or visually intrusive development on waterfront land or on slopes and ridgetops which are visible from the river or the surrounding visual catchment. (this requires consideration of the proposed form and siting of buildings, of the colours and building materials used, and of landscaping.*

The clearing of vegetation will have an impact on the visual appearance of the landscape from the river in the short term. The proposed rock wall will significantly improve the appearance of the existing foreshore area as it will tidy up a number of unsightly structures.

- (b) *Whether the materials used in stabilising the banks are consistent with the scenic character of the area as described in the Scenic Quality Study.*

The Scenic Quality Study suggests that retaining work in this area should produce uniformity and less conspicuous structures. It is considered the rock wall proposed is consistent with the objective. The material proposed in the wall is considered acceptable.

- (c) *Whether the development will damage the banks of the river or creeks.*

The removal of vegetation has the potential to result in damage to the bank of the river should a large flood occur in the short term. The rock wall at the toe of the bank will reduce erosion from wave action.

- (d) *Whether the development is adequately set back from the river.*

The proposal is for river bank restoration and therefore is not required to be set back from the river.

- (e) *Whether it is necessary and appropriate to increase public recreational and visual access to the river.*

Not applicable to this proposal.

- (f) *The need for conditions of consent to protect the scenic character, such as conditions requiring tree planting.*

Conditions are proposed requiring retention of the existing natives and planting of additional trees. This will require the earthworks to be redesigned.

- (g) *Whether any proposed works will improve scenic quality by repairing degradation.*

The overall project when completed will improve the scenic quality of the area. However the removal of all vegetation would have a significant impact on visual quality of the area in the short term. It is therefore recommended that vegetation of value be retained.

Conclusion

River bank restoration work carried out in association with DLWC would normally be exempt of Council approval under the EPA Act Model Provisions, however in this case consent is required under the Hawkesbury-Nepean REP 1997.

Concern is raised regarding the removal of all vegetation along the river bank and the potential risks this creates should flooding occur prior to re-establishment of vegetation. The preferred option is to retain existing native vegetation and provide additional plantings extending 50 metres inland from

the river bank. This would be consistent with guidelines published by NSW Fisheries and a report prepared by the Royal Botanical Gardens Sydney for rehabilitation of the Riparian Vegetation of the Hawkesbury-Nepean River.

As these projects are normally the responsibility of DLWC and they have prepared the majority of documentation for the project, certification of plans and reports should be provided by the Department prior to any works commencing.

It is considered appropriate that Council issue a deferred commencement consent to address the outstanding issues and provide amended plans showing retention of native vegetation.

RECOMMENDATION:

That "Deferred Commencement" development consent be issued pursuant to Section 91AA of the Environmental Planning and Assessment Act 1979 for the proposed river bank rehabilitation works subject to the following conditions.

- A. Upon compliance with all conditions appearing in Schedule 1, and with the issue of confirmation to that effect in writing from Council, this "Deferred Commencement" consent shall commence to operate as development consent inclusive of all conditions appearing in Schedule 2 pursuant to Section 91 of the Act.
- B. The "Deferred Commencement" consent will lapse in twelve (12) months from the date of this consent unless all conditions appearing in Schedule 1 have been complied with.

Schedule 1

- 1. All plans and reports submitted as part of this application are to be certified by the NSW Department of Land and Water Conservation.
- 2. The proposal is to be amended to retain all native vegetation which currently exists along the river. Amended plans are to be submitted showing how this vegetation is to be retained.
- 3. A letter is to be submitted indicating that NSW Fisheries have been consulted and no objections are raised to the amended proposal.

Schedule 2

- 1. A detailed plan of landscaping shall be submitted and approved by the Divisional Manager Environment and Development prior to the commencement of works. Plantings should comprise a mix of natives and form a continuous strip 50 metres wide for the length of the proposal. (Note: The landscape plan submitted with the development application was unacceptable).
- 2. Excavated areas are to be turfed, not seeded.
- 3. No works to be carried out on Lot 2 DP874065 and Lot 19 DP739629.

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4. All works to be carried out in accordance with the submitted plans except where amended by conditions of this consent. This is to be certified by a practising civil or structural engineer upon completion of the works.
5. The works are to be carried out in stages and each section stabilised by revegetating prior to commencement of the next section.
6. Sediment control devices are to be installed to ensure that the works including the rock retaining wall do not lead to degradation of the river water including any increase in turbidity in the vicinity of the works.

ATTACHMENTS:

There are no supporting documents for this report.

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