

SEPP 14 - WETLAND PROTECTION AND THE ROLE OF MITIGATION

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ABSTRACT

State Environmental Planning Policy No. 14 - Coastal Wetlands (SEPP 14) was introduced in 1985 to protect coastal wetlands in the environmental and economic interests of the State. The Policy requires the preparation of an EIS, the consent of local council and the concurrence of the Director of Planning for development in affected wetlands. Many developments do not proceed to the stage of development application because of the requirements of the Policy thus ensuring their protection. Development Applications are refused when the proposal involves the irrevocable destruction of large areas of wetland. In cases where development proceeds, concurrence is generally granted subject to a number of conditions specific to the site. Proposals are more likely to succeed if they include offsetting damage to wetlands by restoration or other mitigation measures. In this way, SEPP 14 has attempted to ensure that developments in wetlands have little impact on wetland values. Establishment of compensatory wetland at Ballina following the construction of a second river crossing in a SEPP 14 wetland is presented as a case study.

INTRODUCTION

State Environmental Planning Policy No. 14 - Coastal Wetlands (SEPP 14) was introduced in 1985 to preserve and protect coastal wetlands in the environmental and economic interests of the State. The Policy identifies over 1,300 wetlands of high natural value from Tweed Heads to Broken Bay, and from Wollongong to Cape Howe, including those located in national parks and nature reserves. Since its introduction, the Policy has contributed significantly to the protection of the remaining coastal wetlands in NSW.

This paper will provide some background information about the Policy, including the history of its introduction and its administration, and then discuss the role of

mitigation in meeting the wetland protection aims of the Policy.

BACKGROUND**Wetland Destruction**

As is well known, large areas of coastal wetlands in NSW have been totally destroyed or greatly modified so that they no longer retain their natural functions. It is estimated that over the past 200 years 60% of the State's coastal wetland resource has been lost or destroyed through draining, filling and clearing for agriculture, and urban and industrial uses.

SEPP 14 was introduced to ensure that the likely effects of development proposals in wetlands are properly considered, while allowing existing landholders to continue to use and manage their wetlands.

Provisions of the Policy

SEPP 14 does not prohibit any activity in wetlands. Rather, it requires the consent of the local council and the concurrence of the Director of Planning for development that involves clearing, filling, draining or levee construction in wetlands affected by the Policy.

The Policy provides for "continuing use rights" which allow an activity that was going on before SEPP 14 was introduced to continue, as long as new clearing, draining, filling or leveeing are not involved. As an example, clearing out an existing drain would not need consent under SEPP 14 but enlarging it would.

Current Attitudes to the Policy

On its introduction, SEPP 14 received considerable opposition, particularly from affected landholders. The level of this opposition can be traced to a number of factors including lack of understanding in the community about the values of wetlands and the provisions of the Policy, lack of communication with local government by

the State, and resentment based on the idea that the Policy was part of a Government "land grab".

Many of the community's fears about the Policy, however, have been found to be baseless and, because the Department of Planning has been seen to administer the Policy reasonably, the Policy is much more widely accepted and opposition has reduced significantly over time.

As awareness of environmental issues in the community has increased, recognition of the worth of SEPP 14 has grown. Increasingly, this is reflected in the attitudes of other government departments such as Agriculture, Fisheries, Public Works, and the National Parks and Wildlife Service which recognise the contribution of SEPP 14 to achieving their aims and meeting their responsibilities.

Technical Basis for Identification Under the Policy

The original mapping for SEPP 14 was based on aerial photographic interpretation supplemented by "ground truthing" (Adam *et al.* 1985). The identification of wetlands from aerial photographs was done on a botanical basis with field checking mainly to establish the vegetation types which could be reliably and consistently identified from the aerial photographs. An approximate definition of coastal wetlands for the SEPP 14 survey used was "wetlands as those whose formation was dependent on marine influenced processes (these processes may still be operating as in the strictly estuarine wetlands or were active in recent geological past)" (Adam *et al.* 1985).

Types of wetland components mapped in the survey for the coastal wetlands Policy include mangroves, salt marshes, *Melaleuca* forests, *Casuarina* forests, sedgeland, brackish and freshwater swamps, and wet meadows (Adam *et al.* 1985). Small water bodies and creeks were included with the mapped wetlands. However, large water bodies are not included and seagrass communities were not mapped as wetland in the survey (Adam *et al.* 1985).

Review of the Policy

SEPP 14 is periodically reviewed and amended to ensure that the Policy remains clear in its requirements and the mapped boundaries of wetlands identified are as accurate as possible given the scale of the mapping (1:25,000) and the information available. Changes to the maps are usually proposed by councils, landowners and public interest groups. All proposed mapping alterations are subject to field inspection by the Department of Planning, and assessments are made on the basis of the published mapping criteria.

Areas are only deleted from the Policy when they are found not to meet the mapping criteria for SEPP 14. Wetland which meets that criteria is never removed from the Policy. Areas are added to the Policy when inspection by the Department of Planning shows they meet the published criteria and following consultation with land owners.

Consideration of Concurrence

Consideration of development proposals for concurrence under SEPP 14 begins with the development proponent consulting with the Department of Planning about the development proposal. Many initial consultations never proceed to development application and environmental impact statement (EIS) stage. In such cases, proponents are dissuaded from proceeding with the proposal by the EIS requirement of the Policy or by the requirement that the wetland be protected. In those instances there is a tendency to look for alternative design solutions or avoid wetlands altogether in the final development proposal.

It is also true that SEPP 14 has not resulted in development applications affecting wetlands being refused. Development applications are refused when the proposal involves the irrevocable destruction of large areas of wetland but, in other cases, concurrence is granted subject to a number of conditions specific to each site.

The Policy requires the Director of Planning to consider a number of factors when examining the issue of concurrence. These factors include, "whether adequate

safeguards and rehabilitation measures have been, or will be, made to protect the environment" and also, whether conditions requiring the carrying out of works to preserve or enhance the value of surrounding wetlands should be applied.

Over the years of the Policy's implementation, greater emphasis has come to be placed on mitigation of the effects of developments. Proposals are now more likely to succeed if they include provisions for offsetting damage to wetlands by restoration works or other mitigation measures.

MITIGATION OF IMPACTS OF DEVELOPMENT IN SEPP 14 WETLANDS

A number of different approaches are available to lessen or mitigate the impacts of development on wetlands. These include:

1. Controlling adverse impacts by design, construction and management features so that the development is limited in area, and the spread of disturbance to the wetland is contained.
2. Off-setting the loss of wetlands by contributing to corresponding wetland values either on-site or nearby. Proposals could incorporate protective management of parts of a wetland outside the area directly affected by development (e.g. fencing and control of stock).
3. The establishment of new wetland habitats nearby to provide extra wetland values to offset the loss of wetland. This generally means rehabilitation of a disturbed wetland not included in SEPP 14 by re-establishing wetland communities in an area from which they have previously been lost.

In cases where concurrence is granted and development is permitted, the Department of Planning applies conditions of concurrence to off-set the loss of natural wetlands. Increasingly, where a substantial loss of wetland values is likely to result from the development these conditions incorporate the third of these mitigative

approaches - enhancement, restoration or creation of wetlands.

Examples of conditions of concurrence applied to developments by the Department to achieve mitigation of wetland loss include conditions that require:

- i) the preparation of a management plan which protects or enhances wetlands unaffected by the proposed development; or
- ii) the establishment, either on site or nearby, of a wetland habitat which functions to replace some values lost through the development or contributes to other wetland values.

The case study that follows is an instance where the Department required the proponent to establish wetland to off-set the wetland values lost due to the development.

CASE STUDY

Establishment of Compensatory Wetlands at Ballina Due to Loss of Wetlands Resulting from the Construction of a Road Bridge and Associated Approaches

In 1988 Ballina Shire Council proposed the construction of a second bridge crossing over North Creek to service the urban growth areas of Ballina and Lennox Head. Part of the proposed route of the approach road on both the southern and northern approaches crossed SEPP 14 wetlands. The approach road and its relationship to SEPP 14 wetlands in the area are shown in Figure 1.

The wetlands in the area consist of mangroves (Grey, River and Orange mangroves) and associated salt marsh communities (Winders, Barlow & Morrison 1988). The proposed route of the bridge and the road approaches to the bridge meant the loss of approximately 3.4 hectares of mangroves and salt marsh along Little Fishery Creek, between Crowley Village and North Creek Canal and on the northern bank foreshore leading to Prospect Lake where 2.77 hectares of mangroves and 0.58 hectares of saltmarsh were to be destroyed.

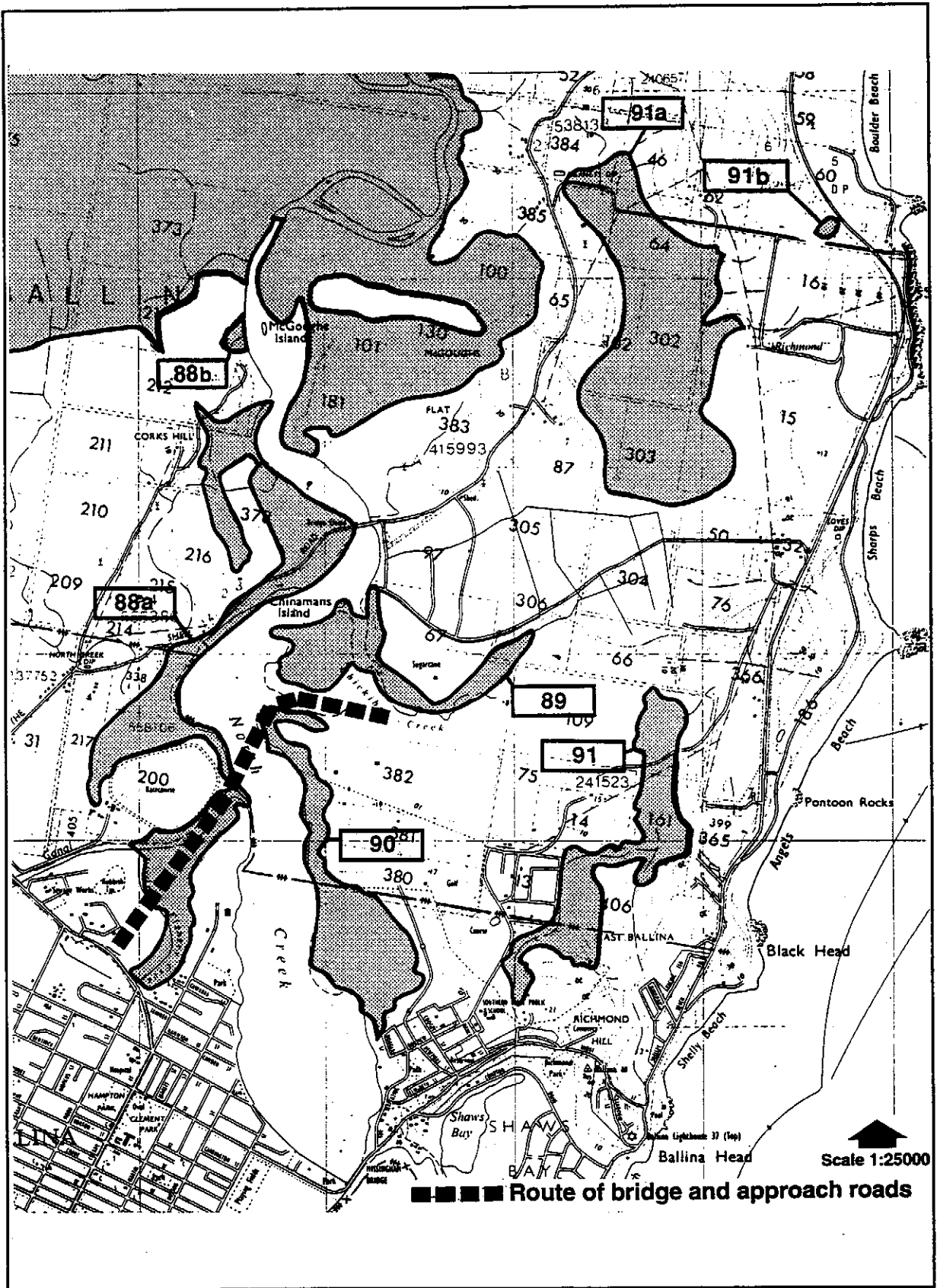


Figure 1 SEPP 14 Wetlands and bridge proposal. (Hatched areas correspond to SEPP 14 Wetlands)

The Department of Planning granted concurrence to this development application subject to a number of conditions. One of the conditions required the creation of wetlands so that there would be no "nett loss" of wetland as a result of the project proceeding.

To offset the loss of the wetland, a rehabilitation area of 3.5 hectares was set aside adjacent to Little Fishery Creek (Area A, shown on Figure 2). A second smaller area of 1.1 hectares was set aside on the north shore of North Creek (Area B, shown on Figure 2). These areas were later augmented with a further area to the west of Little Fishery Creek (Area C, shown on Figure 2). The total area of recreated wetlands associated with the development is now approximately 7 hectares.

Area B to the north of North Creek was rehabilitated in a limited way. Work was undertaken to improve the tidal influence to assist wetland to rehabilitate itself in the area. NSW Fisheries indicate that this area appears to be recovering.

Area A, the main rehabilitation area located along Little Fishery Creek, is reclaimed land resulting from soil stockpiling during a channel dredging operation. Prior to commencement of rehabilitation work in the area, natural re-growth of mangroves was observed. It was clear that the sandy outwash provided a substrate suitable for propagule settlement and mangrove establishment (Winders, Barlow & Morrison 1988).

The sandy loam soil base in Area A has provided an ideal base for the establishment of mangroves. Restoration work began with the measurement by topographic survey of specific shoreline levels between 0.3 and 0.6 AHD which suit the local species (*Avicennia* - Grey mangrove, *Aegiceras* - River mangrove and *Bruguiera* - Orange mangrove). To ensure maximum trapping, hand-planted specimens were clumped and an uneven corrugations were created in the substrate to act as natural traps for the propagules (Winders, Barlow & Morrison 1988). Clumping of the plantings of *Avicennia* was found to be more effective in promoting establishment of the mangroves compared to planting in rows.

Seedlings in the 0-1 year age class were transplanted from the disturbed areas along the edge of established mangroves into clumps in the rehabilitation areas. A system of drainage culverts associated with bunding was established to provide appropriate tidal flushing and flood residence times.

Restoration of Area B, to the west of Little Fishery Creek and adjoining an industrial area, is following a similar restoration path to Area A.

This restoration work is one of the few projects where the Department of Planning is aware of any documentation concerning the progress of the operation. This is surprising given the number of projects in recent times in which the Department's conditions of concurrence under SEPP 14 have included restorative work. Even in this example, it would appear that monitoring carried out has not been extensive and does not include the more complex attributes of the rehabilitated wetlands by which their true value, particularly in comparison to the wetland that was destroyed by the road construction, can be assessed.

Despite the Department of Planning's requirement for such work under the Policy, it has surprisingly little to add to discussions about the success of such operations and it is an issue which the Department of Planning needs to address in its conditions of concurrence in the future. There would appear to be scope for conditions requiring such restorative work to also require explicit monitoring programs and reporting procedures.

CONCLUSION

While the main thrust of the Policy will continue to be the protection and preservation of wetland identified under the Policy, ameliorative work such as restoration and rehabilitation of wetlands will play a legitimate and important role in achieving the Policy's aims. As part of this, it will be essential to ensure that the progress and success of such projects are monitored and properly documented. This could be achieved by incorporating monitoring programs into management

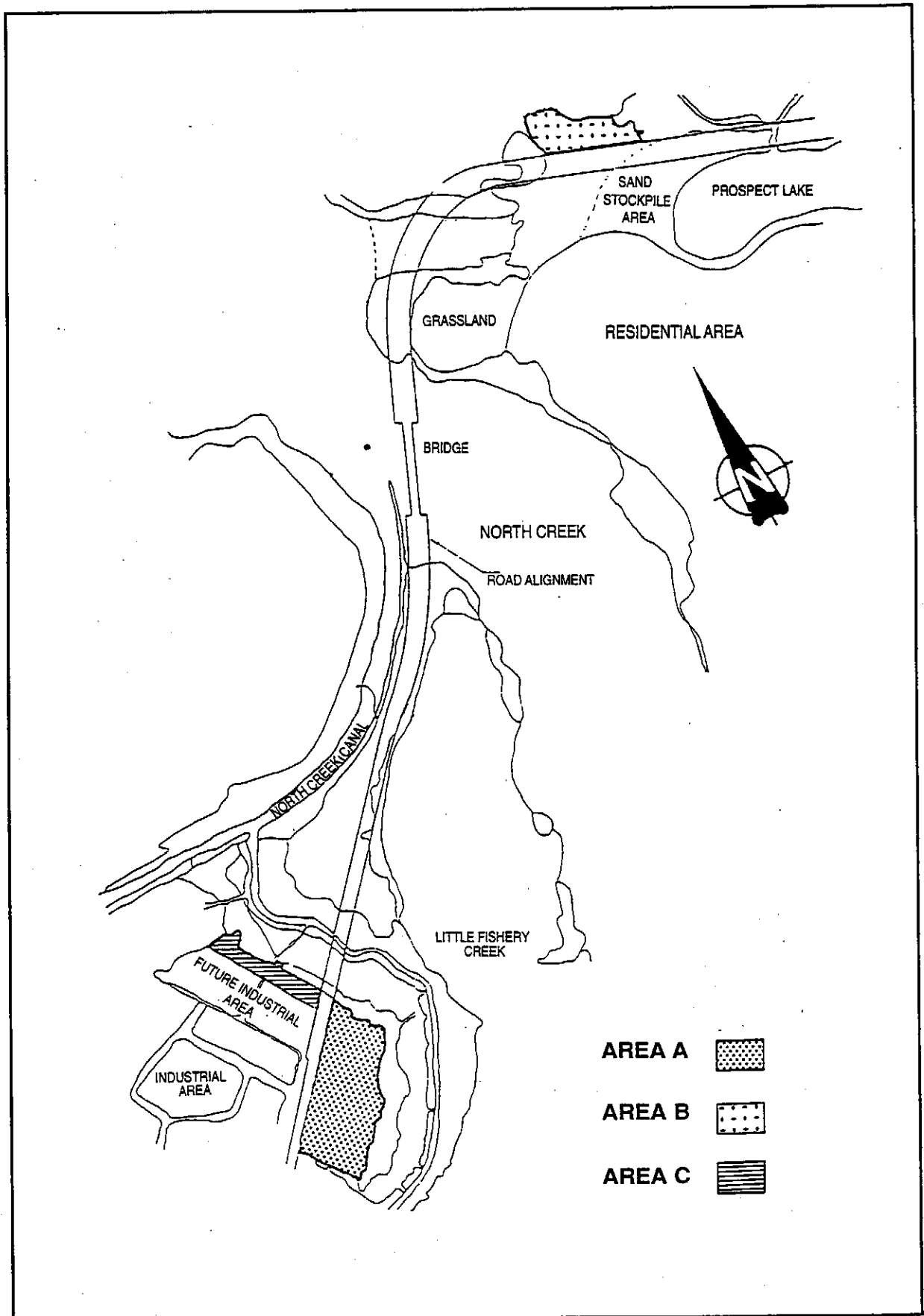


Figure 2 Areas for rehabilitation. (Source: Winders, Barlow & Morrison Pty Ltd)

plans, which are required by the Department of Planning in conditions of concurrence under SEPP 14.

It is also necessary for monitoring to go beyond assessments of rate and area of re-vegetation, to include measures of productivity, diversity and other attributes which give some indication of the re-establishment of a functioning ecosystem. It is in this way that assessments of the value of such operations will be able to be made.

In the experience of the Department of Planning, access to information about restoration and rehabilitative work is also an issue. The Department is often contacted with requests for such information. Although literature which deals with these issues conceptually is available, what is lacking are accounts of restoration operations such as those required by concurrences issued under SEPP 14. Decision-makers and those working in the field need access to information about methods employed, outcomes achieved and conclusions reached regarding the success of such projects.

If monitoring these projects reveals that the vegetation communities established do not provide adequate wetland functions, or that the successful establishment of valuable wetland is so expensive as to make it unviable, alternative approaches may need to be adopted in dealing with development that threatens wetlands.

It is only when enough of such projects have been monitored and conclusions drawn that judgements of this kind will be able to be made.

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