



planning workshop

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PORT HACKING WATERWAY
IMPROVEMENT STUDY

DEVELOPMENT CONTROL PLAN REPORT

Prepared for
PUBLIC WORKS DEPARTMENT
RIVERS AND PORTS BRANCH

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1. INTRODUCTION

In January 1987, Planning Workshop were engaged by the Public Works Department to prepare a Development Control Plan and report for waterway improvement works in Port Hacking. The overall aim of the study was to assist the Department in the formulation of specific development proposals for the waterway.

In association with PWD and Patterson Britton & Partners. This aim was achieved by undertaking:

- * a review of existing data;
- * discussions with State and Local government;
- * internal discussions with Senior PWD personnel; and
- * a review of the public participation program undertaken for the management options report.

This report has been prepared to document the principal findings of the Development Control Plan study. The report outlines the problems and opportunities offered by the waterway and the results of the public and government participation and consultation program.

2. WATERWAY PROBLEMS

The waterway problems which were identified, largely result from the shoaling of the downstream end of the waterway between Lilli Pilli and Cabbage Tree Point. A number of other problems were also identified relating mainly to the difficulties experienced in gaining access to the waterway and its foreshores.

2.1 Shoaling

The shoaling problems of Port Hacking and the alternative options for managing these problems were discussed in depth in the PWD Management Options Report. The studies undertaken by the Department have concluded that the principal shoaling area responsible for the majority of the waterway problems is located between Cabbage Tree Point and Burraneer Bay. Navigation is also affected by shoaling between Burraneer Bay and Lilli Pilli Point and at the entrances to Gunnamatta Bay and Fishermans Bay.

The shoaling of the waterway creates a number of constraints to the use of the waterway not only for recreational purposes but also for transportation, commercial purposes and tourism. In summary, the shoaling of the waterway:

- * prevents access to the waterway by large craft;
- * renders the Port inaccessible to a range of craft in adverse weather;
- * creates navigational impediments to the Cronulla - Bundeena commuter ferry service;
- * precludes the use of the upper waterway by tourist cruise craft;
- * prevents the use of a large proportion of the lower waterway for recreational pleasure craft;
- * prevents the use of the waterway for junior competition sailing whose traditional areas are being lost to swing moorings;
- * creates the potential for water quality deterioration further upstream; and
- * adversely affects existing seagrass beds and prevents the establishment of new beds within the waterway.

In the past, shoaling has been controlled by maintenance dredging with the dredge material being disposed of in a number of locations including Gunnamatta Bay, Deeban Spit and Hordens Beach. The problems associated with the traditional management methods for the shoaling problem are:

- * the \$100-200,00 annual cost associated with maintenance dredging;
- * the increasing environmental problems associated with traditional dredge material disposal sites; and
- * the need to re-dredge at regular intervals to maintain navigation.

2.2 Waterway Access

Despite the apparent length of foreshore on the northern side of the waterway, there are relatively few points of access to the water for boat owners and of lack of open space along the foreshore. Of the four existing boat ramps, three are of poor quality design and have inadequate car parking for their high level of use.

While a significant number of swing mooring areas exist on the northern side of the waterway, there are limited opportunities for additional swing moorings in Gunnamatta Bay and Burraneer Bay where demand is greatest. The growth in swing moorings in these Bays has also resulted in a reduction in the area available for recreational boating, particularly competition sailing.

There are a limited number of foreshore parks and reserves for public use. Where foreshore reserves are available, there is often difficult access and poor parking. Foreshore open space in areas such as at Lilli Pilli are also dominated by adjacent private properties and there is inadequate delineation of the extent of foreshore land available for public use and inadequate parking.

2.3 The Royal National Park

On the southern shore of the waterway a high proportion of the immediate foreshore falls within the Royal National Park. The exceptions to this are the private holdings near Gogerleys Point and the villages of Maianbar, Bonnie Vale and Bundeena. Due to the lack of defined access points from the water and the poor road access, parking and facilities on the landward side, most of the foreshore is inaccessible. This situation often results in indiscriminate use of the Park foreshore with a corresponding degradation of foreshore amenity.

At Bonnie Vale and Bundeena, visitation is high, particularly in the summer months. Bonnie Vale is within the Royal National Park but is undeveloped in terms of facilities and much of the foreshore is alienated by squatter housing. This housing also degrades the visual quality of the area and is inconsistent with the general principles of national park management. Both Bonnie Vale and Bundeena experience parking shortages during peak visitor periods in summer.

2.4 Other Waterway Problems

Other waterway problems that were identified were:

- * the exposed location of the Bundeena ferry wharf which results in the suspension of ferry services in adverse weather; and
- * the silting of the heads of bays on the northern side of the waterway which restricts the access of craft to the foreshore and creates local amenity problems.

3. WATERWAY IMPROVEMENT OPPORTUNITIES

Following the examination of waterway problems the study identified the opportunities that existing for the improvement of the waterway. These opportunities were generally limited to those which could be undertaken under the Waterways Program although some of the opportunities, such as the improvement of facilities associated with boat ramps, could be achieved under Local Council initiative. The principal opportunities addressed however, were those relating to the long-term maintenance of the shoaling problem and specifically, the PWD preferred option of the Bonnie Vale tombolo and Lilli Pilli works.

3.1 Integrated Waterway Program

The main opportunity relates to the development of an integrated waterway program which has the dual aim of reducing recurrent maintenance costs and upgrading the navigability of the waterway. The program would embrace:

- * the construction of a tombolo at Bonnie Vale;
- * the dredging of the mouth of the Port upstream of the tombolo site;
- * the dredging of navigation channels to Lilli Pilli Point; and
- * the training of tidal flows at Lilli Pilli Point to maintain a permanent channel.

Undertaking these works creates the opportunity to address a number of previously identified waterway problems including:

- * the improvement of safety and navigability of the Port for a range of craft;
- * the creation of waterway development opportunities in the lee of the tombolo;
- * the creation of opportunities for seagrass growth by stabilising sand movement in sheltered waters;
- * the creation of tourist craft opportunities upstream; and
- * the maintenance of adequate tidal exchange to maintain a high level of water quality.

The tombolo structure itself addresses a number of waterway problems. Apart from being a site for the disposal of dredge material taken from the bed of the Port, the tombolo will increase the length of foreshore, the length of surfing beach and the area of public open space available on the southern side of the Port. The enclosure of Simpsons Bay also offers the opportunity to enhance the existing foreshore amenity and to provide for a wide range of recreational opportunities.

Opportunities may also be available to enhance existing residential services in Bundeena and Bonnie Vale and to upgrade access and parking for visitors at Bonnie Vale.

3.2 Other Opportunities

The remaining opportunities which were identified during the course of the study relate to the general improvement of waterway access and waterway facilities. These would need to be initiated by either Local Council, National Parks and Wildlife Service, Maritime Services Board and/or the Public Works Department. Funding may be possible under the NSW Waterways Program.

These opportunities were:

- * investigating the improvement and possible landscaping of head of bay areas on the northern side of the waterway;
- * rationalisation of existing moorings and swing mooring areas throughout the waterway;
- * reviewing existing boat launching and associated parking facilities throughout the northern portion of the waterway, particularly at the head of Gunnamatta Bay; and
- * creating stub jetties and walking trails to improve Park access from the waterway.

4. PUBLIC AND GOVERNMENT PARTICIPATION IN THE MANAGEMENT OPTIONS PROGRAM

4.1 Background

Since the early 1980's the Rivers and Ports Branch of the Public Works Department has been investigating the shoaling problems of the Port Hacking marine delta. While much of the work undertaken by the Department has been research into the causes of the shoaling, attention has recently turned to finding solutions to the problem that will satisfy not only engineering objectives but social, recreational and community objectives.

In 1985 a study was undertaken on behalf of the Department to sample resident attitudes to Port Hacking and the management options that were being considered at that time.

In 1986, the Department published a Management Options Study. Although largely a technical study which detailed the extent of the shoaling problem, the study presented a number of management options which would deal with the shoaling and improve the value of the waterway for recreational boating.

The report presented six options and recommended that the best long-term solution would be construction of an artificial sand spit at Bonnie Vale and a series of groynes at Lilli Pilli Point. The report was circulated to all relevant government authorities at the State and local level and a summary brochure of the report was letter-box dropped to residents in the Port Hacking region. Both the brochure and the report sought public and government reaction to the management options.

The following discussion summarises the findings of the public and government consultation that has occurred date. The conclusions of the consultation and the implications for the preparation of a development application are also discussed.

4.2 Study Of Resident Attitudes to Port Hacking - October 1985

The results to this study were obtained through a series of discussion groups (11 in all) consisting of residents in and around the Port Hacking area. It aimed at obtaining the attitudes and opinions of residents of the Shire to the Hacking River and the bays which make up the Port Hacking waterway main system.

The findings of the survey are summarised below on an issues basis.

4.2.1 Development Policy

The Residents initial request was for the development of a policy or management plan to look at the future of the port and the necessity to take all sections of the community into consideration in the formulation of development policy.

Residents realize the waterways are becoming more popular for leisure activities as a result of the population increase that is occurring in and around Port Hacking.

4.2.2 Controlled Dredging

The study found that the majority of people were strongly in favour of controlled dredging to alleviate the sand shoaling problems in the major navigations channels. The majority of residents considered shoaling a natural occurrence of rivers and waterways also aided by the force of the sea, the ocean currents, force of marine sand and river sand, additional boat users, changed soakage and seepage patterns as well as previous dredging attempts.

The participants of the discussion were adamant that a differentiation exists between silt and sand. Silt is considered a pollutant while sand is regarded almost as a cleaning agent.

The **shoaling** problems identified in regard to **silt** were:

- * decrease of water space;
- * pollution of the bays;
- * health hazard; and
- * affect on marine life.

The **shoaling** problems identified in regard to **sand** were:

- * limited water usage;
- * increase congestion; and
- * safety hazard.

4.2.3 Additional Boat Ramp Facilities

Boat ramp facilities and the need for upgrading and additional ramps was a major concern of Port Hacking residents. The lack of facilities is said to cause congestion, noise and disturbance for local residents in the vicinity of existing ramps. Therefore, it is the idea of the residents, that boat owners and residents want a firm policy, and immediate planning.

To alleviate the ramp problems residents suggested buying an old property to use as a site, for building a ramp. New ramps at Gunnamatta Bay and launching ramps further down stream were suggested by residents.

4.2.4 Safety Concerns

Increasing effects of shoaling and failure of navigation markers are just a few safety concerns voiced by residents. Increase use of waterways and increasing numbers of small aluminium boats are also safety concerns.

4.2.5 Marina

When discussions were directed towards marinas, the greatest concern was expressed in regard to the fear of over-development and the dominance of the waterways by large marinas.

Participants were adamant that it was inevitable that with the increase of leisure time so many people seek today, the acquisition of a boat at some time during their lives is a likely event for many residents of the Sutherland Shire. With the popularity of Port Hacking as a leisure and recreation facility it was considered impossible to keep people away from the water, and thus facilities have to be designed to accommodate usage of the waterways.

The question of swing moorings versus marinas is a contentious issue and brings into focus a number of conflicts between interest groups. One group believe swing moorings severely limit the usage of waterways, even though they were aesthetically more pleasing. On the other hand, one group considered marinas more space efficient, as well as providing greater safety and protection for boat owners. It was stressed that marinas also look tidier and neater than swing moorings.

4.2.6 Summary

In summary, the 1985 study found:

- * that the development of a policy or management plan for Port Hacking was favoured;
- * that controlled dredging to alleviate shoaling problems was also favoured;
- * that residents perceived a difference between silt and sand shoaling;
- * that additional boat ramps and possibly other boating facilities were considered to be needed in the region; and
- * that residents were concerned at the over use and over development of the waterway - a concern which was associated with marina development.

4.3 Sutherland Shire Residents Response to the Management Options Brochure - November 1986.

The brochure entitled 'Bringing Port Hacking Back to Life' was letterbox dropped to residents in the Sutherland Shire. The brochure was aimed at gauging public opinion to the management options and a mail-back response form was enclosed for the expression of local opinion.

The brochure outlined six management options for the Port which were as follows:

- * Option 1 - Do nothing;
- * Option 2 - Keep the existing channels open by dredging and disposal within the Port under government contract;

- * Option 3 - Keep the existing channels open by dredging on a commercial basis with the sand being sold on the open market;
- * Option 4 - Remove all the sand causing the shoaling in a commercial operation which would pipeline the sand to Kurnell for stockpiling prior to sale;
- * Option 5 - Construct a sand trap at the Deeban Spit and groynes at Lilli Pilli to eliminate the shoaling by natural processes; and
- * Option 6 - Construct an artificial sand spit (or tombolo) off Cabbage Tree Point and groynes at Lilli Pilli to eliminate the shoaling problem and to create a sheltered recreation area in Simpsons Bay.

While the six management schemes were presented as alternatives, Option 6 was described in the brochure as 'the best solution for Port Hacking and the people' while indicated the PWD support for this option as recommended in the management options report.

The responses (1815 in total) that were received by way of the mail back response form were collated and analysed by Elliot and Shanahan Research.

4.3.1 General Response

As with the 1985 survey, the majority of respondents wanted something done about the problem of sand shoaling in Port Hacking. Option 6 was seen to be the most favoured option with 1025 (56 per cent) of responses favouring this option. A total of 19 per cent of participants responded favourably to some development yet made no indication of which option was preferred. However, a low level of response was obtained in favour of each of the other alternatives (Option 1-5).

The responses tended to form two groups of differing positions:

- * those who supported management works and saw it as a positive event; and
- * those who oppose any development seeing this as detrimental to the ecology of the waterway.

A concern for the preservation of the natural environment was evident in both groups.

In response to specific issues, the following findings were made.

4.3.2 Response to the Brochure Itself

Some 10 per cent of total respondents gave negative responses to the brochure with the comment made that the government should seek professional advice as opposed to public opinion. Some 8 per cent of respondents commented favourably on the brochure.

4.3.3 Movement of Sand/Dredging

Sand removal, a major concern expressed by all residents, was commented on by 388 people (21 per cent). How will the sand be removed? How will alternatives improve the area? Should the area be permanently dredged? These are some of the comments and questions that residents voiced on the pamphlet.

4.3.4 Sewerage and Pollution

Fifteen per cent of respondents made reference to sewerage and pollution from development of the waterway. The safety and protection of wildlife was the predominant concern.

Thirty-five per cent of respondents who opted for Option 1 ('do nothing') expressed their concern for Port Hacking's wildlife.

4.3.5 Costs

Two-hundred and forty-eight (14 per cent) of respondents commented on, or made reference to the costs of the port development. The major concern was in a positive mode to the development - that if the government delayed any longer, costs will escalate. On the other hand, 13 per cent responded relating to costs of the project being 'too high'.

4.3.6 Boating and Sailing

Of the 190 people commenting on boating and sailing, 36 responses were concerned with making safer boating, while the opposite stance involved restricting the use of both large boats and jet skis that increase damage to the waterways.

4.3.7 Additional Facilities

The public recreation areas and preservation of the natural beauty together with the demand for more recreational beaches and more boat ramps were the most favoured additional facilities.

4.3.8 Spits/Tombolos

Overall, 5 per cent made reference to spits and tombolos. The unsightliness and artificial appearance of such structures was the most predominant objection. A small number of people qualified their attitude toward tombolos or spits, saying that it would be acceptable if it was well landscaped.

4.3.9 Tourism

Any changes or improvements to the area were anticipated to attract tourists. There were both positive and negative attitudes towards increased tourism: 'more pollution', 'more money and more jobs'.

4.3.10 Summary

The individual responses to the brochure revealed that:

- * most people who responded to the brochure are concerned with sand removal and dredging;
- * most respondents are also concerned with the natural beauty and wildlife of the area;
- * the majority of respondents support some form of management with the most favoured option being Option 6;
- * the most favoured additional facilities were recreational beaches and boat ramps; and
- * safer boating in the waterway was an issue with 'undestructive' boating preferred.

4.4 Formal Public Responses

A number of formal responses were received from local residents and community organisation who made comments on the management options in greater detail than the responses that were received from the mail-back form. Over 100 responses were received by the Department. A summary of the main issues by area of origin follows.

4.4.1 Residents of Bundeena

- * The tombolo will result in loss of usable waterway currently used for swimming, surfing and sailboarding.
- * The engineering works (the tombolo in particular) were opposed for reasons including:
 - visual impact
 - increase in currents and tidal velocities
 - increased potential for shark attack
 - Simpsons Bay is already adequately sheltered for its users
 - potential for Simpsons Bay to silt up.
- * The proposed recreation areas and recreational boating facilities were generally opposed due to:
 - area already overcrowded
 - insufficient services including police, parking, water supply, sewerage and visitor amenities
 - impacts on the Royal National Park
 - inadequate capacity on local roads
 - maintenance of the area by overtaxed National Parks and Wildlife Service resources

- * Potential aboriginal archaeological resources exist in the area which may be destroyed by any development.
- * Generally the Bundeena residents favoured either no adjustment to natural processes (Option 1) or maintenance dredging (Option 2) although there were letters of support for Option 6.

4.4.2 Residents of Maianbar

A public meeting was held in Maianbar in October 1986 and a unanimous motion was agreed to which objected to all management options with the exception of Option 2. Option 2 would be favoured by the Maianbar residents (maintenance dredging) providing that the sand was dumped well out to sea rather than onto Deeban Spit or Kurnell.

Other comments made by residents of Maianbar were:

- * The proposed marina would cause visual and water pollution.
- * There is a need for a boat ramp and enclosed tidal swimming pool as well as off beach launching facilities for small craft such as sailboards.
- * There is a current lack of amenities for recreational areas which would need to be constructed as part of any development scheme.

4.4.3 Lilli Pilli

The written responses from Lilli Pilli residents strongly opposed the creation of a large marina and other facilities at Lilli Pilli Point. The locality is currently quiet and attractive and such major development would transform the area by overcrowding, noise and water pollution.

Other comments made by Lilli Pilli residents were:

- * The depth of channel at Lilli Pilli could be reduced to 2 metres.
- * The restriction of the width of the channel to 150 metres will have an impact on water exchange and the movement of fish.
- * The sand bars currently contain benthic organisms which will be lost by the proposals.
- * Prefer an accessible spit less than 2 metre depth that can be used for snorkelling etc.
- * Do not encourage traffic to Lilli Pilli point.
- * Support for Option 3.

4.4.4 Other Residents and Organisations

A number of other residents and organisations in the Sutherland Shire expressed views on the proposal through written submissions. The main points raised were as follows:

- * Support for the tombolo providing that a retaining wall be constructed on the western side to prevent scouring.
- * Support for the efforts of the PWD and the recommendations of the report.
- * Support for Option 6 with the widening and deepening of the Gunnamatta Bay channel.
- * Objection to the tombolo due to the loss of a surfing location at Cabbage Tree Point.
- * Support for the removal of all sand (Option 4).
- * Objection to Option 6 and support for Option 2 with offshore dumping of sand.
- * Concern for impacts on Cabbage Tree Basin were it has been suggested that dolphins from the Warragamba Lion Park could be rehabilitated.

4.4.5 Summary

The submissions from local residents of Bundeena, Maianbar and Lilli Pilli were mainly objections to works in these localities and appear to have resulted from a perceived threat to local amenity which prompted a more formal response than the mail-back form provided for. The objections appeared to be locally based as it was acknowledged that the shoaling problem needed to be addressed but "not in our backyard".

Importantly, some letters of support were received from Maianbar and Bundeena with the acknowledgement that the tombolo could provide a location for locally needed waterside recreation facilities and amenities.

Overall, support was given to Option 2 with the offshore dumping of sand followed by the tombolo component of Option 6 with minimal development at Lilli Pilli.

4.5 Other Organisations

Responses were also received from non-government organisations with a concern for the environment. These organisations are not locally based but responded with a formal submission on the Options Report.

4.5.1 NSW Field Ornithologists Club

- * Concerned at population of waterbirds (including migratory waders) occupying shoals in the Bay particularly at Bonnie Vale, Maianbar and Lilli Pilli.
- * Maintenance dredging to accommodate small boats and ferry services is the only environmentally acceptable option.

- * Spoil disposal only to areas within the Port which will prevent further movement and will not disturb the underwater environment.
- * Spoil dumping over the deep drop-off areas within the Port should not be permitted.

4.5.2 Total Environmental Centre

A detailed submission which raised a number of objections to development proposals - the main issues being as follows:

- * The most acceptable option for management is occasional maintenance dredging of existing channels.
- * Major dredging is opposed due to increased turbidity, silt/alluvium waste disposal problem, impacts on benthic flora and fauna, impacts on dissolved oxygen and changes to bed characteristics.
- * Catchment protection measures should be implemented to minimise silt and sediment reaching the Port.
- * Opposed to marinas and boat launching ramps due to waterfront alienation, crowding of the waterway, water pollution, traffic increases in Bundeena and Royal National Park, noise, littering, long term impacts.
- * Increased boat usage would lead to greater usage of the Royal National Park foreshore with consequent fire and litter problems.
- * Environmental impacts of increased boating on the natural resources of Royal National Park.
- * Lack of regional planning and consideration for other port users such as small craft.

4.5.3 National Trust

- * Object to tombolo and large scale reclamation at Lilli Pilli.
- * Support for continued maintenance dredging of channels and small scale engineering works at Lilli Pilli or on Deeban Spit.

4.5.4 Summary

The response received from the above organisation can be summarised as being objection to any major engineering works and associated development in Port Hacking with support for continued maintenance dredging, possibly with small scale engineering works.

4.6 Responses From Government Departments

The management options report was circulated to the relevant Government Departments and agencies with jurisdiction in Port Hacking. To date the view of many of these organisations is not fully known and those such as the National Parks and Wildlife Service are continuing to discuss the matter with the Public Works Department. The response of Government Departments, as far as is known, is as follows.

4.6.1 National Parks and Wildlife Service

As mentioned above, there has been no formal reply from the Service regarding the Management Options Report. The Service has, however, responded to documents prepared by the Department and Sinclair Knight & Partners regarding the extraction of sand from Port Hacking including part of the bed of the Hacking River within the Royal National Park. The proposal also involved the use of part of the Park for processing dredging sand and the use of Park roads.

The Service stated that such an activity was prohibited under the plan of Management for the Park and would not be approved.

It is understood that the key issues of concern to the Service are:

- * the increased use of the Park by traffic associated with developments on the southern shore of Port Hacking;
- * the impacts of engineering works on the ecology of Port Hacking, particularly wading birds; and
- * the current level of usage of the southern foreshore of the Port and likely increases in usage as a result of any development.

4.6.2 State Pollution Control Commission

- * Insufficient data on the demand for recreational and commercial development and reservations on the rationale for development.
- * Lack of regional planning and the role of Port Hacking in the context of the usage of the Sydney metropolitan waterways.
- * More information to be provided regarding community attitudes, economic benefits, environmental issues.

4.6.3 Tourism Commission of NSW

- * Support for the recommended solution (Option 6).
- * Acknowledgement of the need for maintenance of navigable channels.
- * Need for wharves to allow boat access to Royal National Park.

- * Support for marina development within associated resort, shops, restaurants.
- * Need for more tourist development sites in Port Hacking.

4.6.4 Department of Lands

- * Need for a management plan and the evaluation of the management options in terms of:
 - . recreational demand and supply;
 - . ecological effects;
 - . visual quality, noise, traffic and overcrowding;
 - . the degree of confidence in the long term success of the preferred solution;
 - . a clear indication of the reasons for selecting a preferred plan.
- * Suggestion that any reclamation at Bonnie Vale and Lilli Pilli become Crown Land.

4.6.5 Soil Conservation Service

- * Soilcon able to advise the Department regarding stockpile management techniques if sand extraction were to be proposed.
- * Solicon also able to advise on revegetation of reclaimed areas.

4.6.6 Department of Agriculture

- * The Fisheries Research Institute will be considering the report in greater detail with emphasis on immediate impacts of dredging and reclamation and the need for monitoring of long term effects.

4.6.7 Summary

To date the views of other government authorities on the management options are largely inconclusive with little support being indicated for any particular options. The response indicated a need for further investigations and for further consultation.

4.7 Discussion

The public consultation undertaken as part of the Port Hacking project has resulted in some 2000 responses from residents in the Shire which represents about 7 per cent of the 1981 population of the Shire.

The response varied between those who replied by the mail-back form (supportive) and those who made a formal submission (mostly opposed to major works). This is likely to be due to the fact that people are generally more compelled to make a formal written response in objection to a proposal rather than one of support. A high proportion of the letters of objection were from local residents in the areas likely to be affected by the options with major engineering works (Bundeena, Maianbar and Lilli Pilli).

The one clear issue that came out of the public consultation was that there is a perceived need for some type of action to address the shoaling problem. The residents see a need to maintain navigation in the Port for both recreational and commercial boating.

It is more difficult to identify overall support for one particular management option, however, it can be said that the two options which emerged from the consultative process were Options 2 and 6.

Option 2 was the most favoured of the options which do not involve major, visible engineering works. While the option described in the brochure stated that sand would be disposed of within the Port (mainly on Deeban Spit), sea dumping of dredging spoil was seen as a more environmentally acceptable solution.

Apart from the obvious costs of continued dredging, the following matters raised in consultation would be satisfied:

- * The shoaling of navigation channels would be controlled and sand would be removed from the system over the long-term.
- * The natural beauty of the area acknowledged both by supporters and objectors would be unaltered.
- * Impacts on residents of Bundeena, Maianbar and Lilli Pilli would be inconsequential.
- * Potential impacts on the Royal National Park would be avoided.
- * Public opposition would be diffused and the image of the Government may be enhanced in the minds of local residents and conservationists.

Such an option, however, is understood to be unfavoured by the Department as it is not considered to be a long-term solution to the shoaling problem and costs are likely to be higher than for the Department's favoured management option.

It is fair to say that the tombolo option (Option 6) received favourable public response with some respondents realising the potential in the tombolo option to improve recreational facilities and to provide additional boating facilities.

In taking account of public attitudes it would be prudent to limit the scale of works proposed at Lilli Pilli and to minimise the area to be reclaimed. Public support for the narrowing of the Lilli Pilli channel is generally positive but the establishment of traffic generating facilities is not favoured by the (mainly local) community.

The tombolo itself was either supported or opposed with no suggestions to reduce its size. The public support for a marina was not clear however the continued use of Simpsons Bay for small craft and swimming is seen as important to enhance. The provision of a boat ramp, tidal swimming pool and launching area for small craft was suggested.

The lack of clear support for particular Options may be a result of a lack of understanding of the engineering and development works associated with each option. While the brochure illustrated engineering works only, the report contained details of marinas and other development on the reclaimed land but was not as widely circulated as the brochure. At best, Option 6 was seen as undeveloped sand spits at Bonnie Vale and Lilli Pilli. At worst, these were seen as being highly developed for commercial, recreational and even public housing purposes.

As a result, the conclusion cannot be drawn that support for Option 6 was for major engineering works and major development.

In summary, the conclusions that can be drawn for the future of the Port Hacking project are as follows:

- * There is considerable public support for the Departments active role in providing solutions to the shoaling problem in Port Hacking.
- * There is support both for solutions that require engineering works as well as those that do not involve any visible works.
- * Opposition appears to be greatest for the construction of tombolo (and associated works) as well for the establishment of major facilities at Lilli Pilli. There is, however, a section of the community that favours the tombolo option.
- * There is considerable public support (particularly local residents and environmental groups) for maintenance dredging to continue providing that spoil disposal can be undertaken in an environmentally acceptable manner (such as offshore).
- * The actual opposition to major engineering works and associated development may be underestimated due to the lack of detail in the brochure and a possible lack of understanding of the extent of works by the community.

4.8 Implications

It is clear from the response to the public participation program that local and regional opposition will be encountered if the Department proceeds with the preferred Option 6. It can be concluded that the extent of opposition would be minimised by:

- * reducing the extent of works at Lilli Pilli; and
- * reducing the level of development at Bonnie Vale.

It is also clear that there is considerable public support for Option 2, i.e. continued maintenance dredging although with offshore disposal of dredge material. The implications for the project are that there will need to be considerable attention in the EIS to the examination of feasible alternatives to the proposed development. In this regard, a detailed evaluation of alternatives will need to be provided together with sound argument for discarding the other management options, particularly Option 2. The discussion in the EIS will need to withstand

considerable public scrutiny. It must also be assumed that the evaluation of alternatives could also come under examination in the Land and Environment Court and/or a public inquiry.

The sections on the need for the proposal and the examination and evaluation of alternatives will therefore be important components of the EIS.