DEVELOPMENT AND REVIEW OF AN APPROPRIATE METHODOLOGY FOR PLANNING AN AQUATIC RECREATIONAL ACTIVITY IN THE LOCAL GOVERNMENT CONTEXT.

Sue Moore
C/- CALM
Murdoch House
5 The Esplanade
MT PLEASANT WA 6153

SUMMARY

The objectives of this paper are firstly, to develop and review an appropriate methodology for planning an aquatic recreational activity, in the local government context, and secondly, to ensure that this methodology provides a general framework for recreation planning by local government.

The aquatic recreational activity chosen was cable water-skiing based on an existing wetland on the Swan Coastal plain, Western Australia.

The synoptic planning approach (with elements of transactive planning (Hudson 1979)) was chosen as it is generally most easily understood and implemented. A combination of the Recreation Opportunity Spectrum (ROS) and Limits of Acceptable Change (LAC) planning frameworks was chosen, as combined they enable generation of clear objectives, demand and capability analysis and the ready evaluation of alternatives.

The methodology used was based on eight steps:

i identify proposal and likely issues

ii estimate demand

iii determine resource capability

iv identify recreation opportunities currently provided

v recognise other planning underway (opportunities, constraints)

vi generation and analysis of alternatives

vii selection of preferred alternative using set criteria

viii implementation and monitoring

In combination, the ROS and LAC frameworks allowed proposal assessment in terms of demand, determination of the most suitable site, and determination of the best mix of site conditions. On its own the ROS lacks an objective setting step, does not set measurable limits or indicators and has no built-in monitoring phase. The LAC, on the other hand, has no demand or resource capability analysis, and does not demand recognition of other planning constraints and opportunities.

On the basis of this critical review, the eight step framework given in this paper is proposed as a suitable framework for recreation planning in the local government context.

CONTENTS

1. INTRODUCTION

1.1 Objectives of this paper

This paper has two objectives. The first is to develop and review an appropriate methodology for planning an aquatic recreational activity within a local government framework. The second is to ensure that the methodology developed is simple, flexible, and practical enough to provide a general framework for local government recreation planning.

1.2 Description of the project

The aquatic recreational activity chosen for this analysis is a cable water skiing development proposed by the Shire of Cockburn (southern suburbs of Perth, Western Australia), utilising an existing wetland. The proposal is being jointly developed by the Shire and a private company.

The majority of wetlands in the Shire are reserved for Parks and Recreation under the Metropolitan Region Scheme. Only one is gazetted as an Class A reserve for Conservation. (Under the W.A. Land Act, Class A reserves can only be changed following approval by both Houses of Parliament).

1.3 Terms of Reference

Cable water skiing requires a moderately deep lake (greater than 2 m depth) of sufficient area (greater than 5 ha), plus land areas to support cable pylons, infrastructures for launching, parking and other user facilities such as change rooms, ablution blocks, picnic areas, kiosk, ski hire, administration and plant.

In terms of application of planning methodology the bounds of the study area are taken as the Shire boundaries.

Methodology is explored in two ways - firstly, in terms of developing a planning framework, including a critical review, and secondly, and with much less emphasis, in terms of the necessary administrative processes.

2. DEVELOPMENT OF AN APPROPRIATE PLANNING METHODOLOGY

In 2.1 Available Planning Approaches the critical review is incorporated as part of the general discussions. In Sections 2.2 Development and 2.3 Application the discussion

is divided into 3 parts - methodology, application and critical review.

2.1 Available planning approaches and methodology

A range of planning approaches are available. Hudson (1979) used the rubric SITMAR (synoptic, incremental, transactive, advocacy and radical) to classify current planning theory. The most commonly used is the synoptic approach, which is based on four classical elements: (1) goal-setting, (2) identification of policy alternatives, (3) evaluation of means against ends and (4) implementation of decisions. This approach underlies most of the methodologies used today.

Selection of the most suitable methodology depends on a number of factors - the nature of the client, level of community interest, and available information and resources. This is not to say that only one method can or should be used; the best results are obtained by using a combination of techniques (Hudson 1979).

The following analysis is based on the synoptic approach, with limited elements of the four other approaches (particularly transactive, through public involvement). The synoptic approach was chosen for two main reasons; it is readily understood by most clients and it clearly specifies implementation, which after all is a good reflection of the success or otherwise of a given methodology.

Within the synoptic approach a range of methodologies or frameworks are available. The most relevant of these to recreation planning are the Recreation Opportunity Spectrum (ROS) and Limits of Acceptable Change (LAC) frameworks. The basic assumption underlying the ROS is that quality recreational experiences can be best assured by providing, through planning, a diversity of recreation opportunities (Leonard and Holmes 1987). The LAC framework is a further development of the ROS to provide a 'logical series of interrelated steps for natural area planning' (Prosser 1986).

A combination of these two frameworks was chosen as together they provide a methodology for the generation of clear objectives, demand and resource capability analysis, the evaluation of options and selection of the best alternative, and

monitoring. This combination allows clear, justifiable decision-making. Also, and just as importantly, the level of input at each stage can be adjusted according to available information and resources, and differing degrees of public involvement (dependent on the level of community interest).

2.2 Development of the Methodology

METHODOLOGY

The two frameworks used are the ROS (or Recreation Opportunity Planning System - Stankey and Brown 1981) and the LAC. The following paragraph and diagram summarise these approaches.

Stankey and Brown (1981) describe seven steps in the ROP system:

1) Estimate demand for specific Recreation Opportunities (ROs) defined along the ROS.

2) Determine the potential of the resource to provide different ROs by conducting a resource capability analysis.

3) Identify which ROs are currently provided on the planning area.

4) Determine where and how different ROs should be provided through analysis of demand and resource capability information.

5) Integrate RO recommendations with recommendations for other forest resource outputs (e.g., timber).

6) Develop alternative plans for forest resource allocations.

7) Develop recreation action and project plans which are consistent with the allocation chosen.

Prosser (1986) uses a circular diagram to summarise the LAC (Fig. 1).

A combination of these approaches is suggested (Table 1).

APPLICATION

A detailed discussion of the application of the eight steps given in Table 1 is given in Section 2.3.

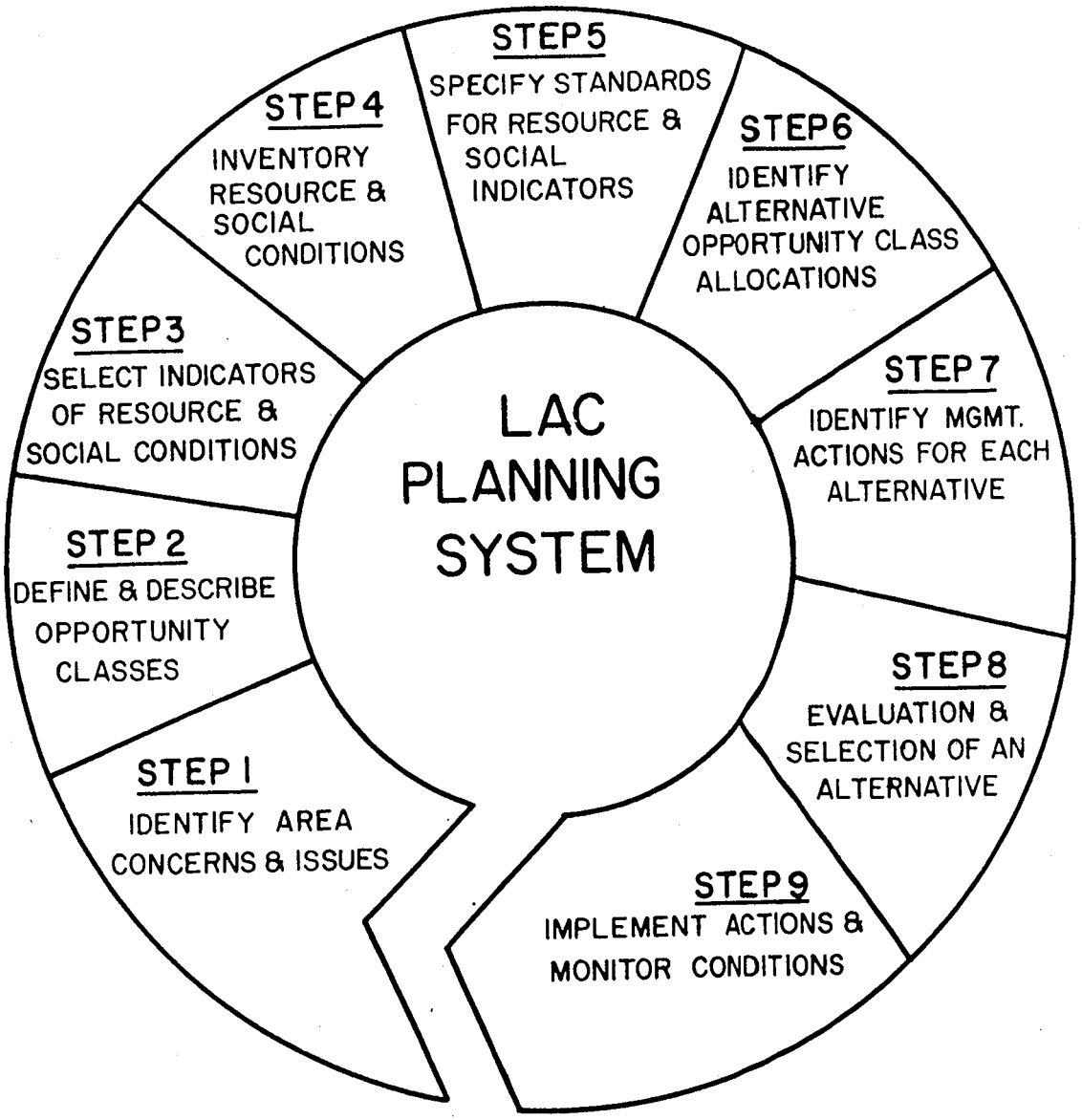

Figure 1 The Limits of Acceptable Change (LAC) Planning System

TABLE 1. PROPOSED RECREATION PLANNING FRAMEWORK

PROPOSED FRAMEWORK		ROS/ROP	LAC
STEP 1.	Identify proposal and likely issues, set objectives	-	STEP 1
STEP 2.	Estimate demand	STEP 1	-
STEP 3.	Determine resource capability	STEP 2	-
STEP 4.	Identify recreation opportunities currently provided	STEP 3	STEPS 2,4
STEP 5.	Recognise other planning underway	STEP 5	-
STEP 6.	Generation and analysis of alternatives	STEPS 4,6	STEPS 6,7
STEP 7.	Selection of preferred alternative using set criteria	-	STEP 8
STEP 8.	Implementation and monitoring	STEP 7	STEPS 3,5,9

This framework also needs to provide a basis for administrative decision-making, namely consideration according to the Metropolitan Region Scheme and Environmental Protection Act. Details on these administrative processes are provided in Section 3.

CRITICAL REVIEW

The ROS/ROP methodology has three major shortcomings. These are a lack: of an objective - setting step; of measurable indicators; and of a built-in monitoring phase. Step 1, Steps 3,4 and 5 and Step 9 respectively of the LAC compensate for these shortcomings. The LAC, in turn, has three problem areas - there is no demand analysis, resource capability analysis or integration with other planning - Step 1, Step 2, and Step 5 of the ROS respectively offset these difficulties.

2.3 Application of the Methodology

The following discussion is based on the eight steps given in Table 1. Each step is ordered similarly to the above section (2.2) - namely "methodology", "application" and "critical review".

STEP 1. Identify proposal and likely issues

METHODOLOGY

Issues and concerns should be identified by analysis of reports for similar proposals and through discussions with the community. If time and funds are limited, discussions between several Council officers involved in the recreation/parks management will suffice.

Once issues have been identified objectives can be set (Prosser 1986).

APPLICATION

Issues which seem relevant to this proposal are:

- social: increased traffic, competition with existing recreation facilities.
- biological: light pollution from night lighting, destruction of wetland habitat by dredging, chlorination, pumping of ground water, impacts on biota (e.g.migratory, refugial species).
- physical: changes to groundwater interactions

CRITICAL REVIEW

Issues and concerns can only be clarified once demand and resource capability analysis have been completed. One of the most common planning errors is identifying issues and setting objectives before a more complete knowledge of the resource and its limitations have been obtained. Such an approach is useful as it provides a "first cut", but it should be thoroughly reviewed once Steps 2 and 3 have been completed.

STEP 2. Estimate demand

METHODOLOGY

This is a difficult step, as noted by King and Davis (1980) ...'Assessment of the demand for non-market goods and services is still in the development stages.....'. Leonard and Holmes (1987) advocate the use of discussions with user groups, review of enquiries made to relevant officers, plus professional perceptions, to determine demand.

APPLICATION

For the given proposal, the Shire should examine demand where such facilities already exist, plus discuss the concept with, and gauge the level of interest among rate-payers.

CRITICAL REVIEW

Generally demand analysis can only give an indication of present demand; predicting future demand is far more difficult.

Phases such as 'Developing Recreation opportunity planning demand information often requires application of professional judgements to existing demand projections which have been developed along tratitional activity lines' (Stankey and Wood 1981) are indicative of the difficulties experienced. Re-interpreted this phrase means "professional guestimates"!

STEP 3. Determine resource capability

METHODOLOGY

Most of the literature uses this term to identify the recreation opportunity potential of the resource based on existing conditions (e.g.

access), rather than the more fundamental concern, that of the capability of the resource to support, without adverse effects, a given recreation opportunity. This analysis uses the latter rather than the former approach.

The issues identified in Step 1 must form the basis for capability analysis. The differing levels of capability of various sites to support the proposal then contributes to the evaluation of options in Step 7. Also, capability analysis guides directly, the collection of resource information.

APPLICATION

A matrix, based on the issues identified in Step 1 and for all sites being considered, should be prepared. Each issue at each site should be scored high, medium or low in terms of the capability of the wetland to support the proposal with no adverse impacts. A similar matrix should be prepared for beneficial impacts.

The questions that need to be answered to complete the matrices then drive resource information collection. Also, this methodology can be used as a basis for planning balance sheets or benefit cost analysis which may assist in option evaluation and any environmental assessment required by legislation.

CRITICAL REVIEW

As given in the majority of the recreation planning literature, resource capability is severly limited as it 'does not account for how management investments might alter this potential' (Stankey and Brown 1981). The methodology used above overcomes this hurdle by going back to the capability of the resource.

STEP 4. Identify recreation opportunities currently provided

METHODOLOGY

Although the methodology so far in this paper is strongly activity-based, examination of existing social and managerial settings is also required.

Six factors are commonly used (Clark and Stankey 1979, Stankey and Brown 1981). These are - access, other non-recreational resource uses, onsite management, social interaction,

acceptability of visitor impacts and acceptable level of regimentation.

APPLICATION

Description of existing areas used for water skiing provides an outline of existing settings.

CRITICAL REVIEW

Again, the ROS framework is based on the assumption that decisions can be made based on existing settings (or levels of facility development). Thus, the ROS incorporates strong elements of incremental planning theory. These elements are insidious as this incremental or historic basis is not clearly indicated in any descriptions of the ROS methodology.

STEP 5. Recognise other planning underway

METHODOLOGY

Step 5 is vitally important. Recreation planners should always be cognisant of town planning schemes, groundwater planning, conservation planning and traffic flow planning. These outside influences may be local, regional, state, national or international.

APPLICATION

The next stage (Step 6) should be based on a recognition of current planning for utilisation of other resources. Examples include - local (town planning scheme revisions), regional (ground water planning), State (management plans for conservation reserves), national (National Estate nominations) and international (treaties such as Japan-Australian Agreement for migratory waders).

CRITICAL REVIEW

This step is not part of the LAC framework. Its omission is a major oversight.

STEP 6. Generation and analysis of alternatives

METHODOLOGY

Stankey and Brown (1981) suggest 'using demand, recreation opportunity potential and present conditions within the constraints of budget, technology, legislation and administrative policy, resource capability and potential use of the same

resource base for non-recreational outputs' to determine the recommended recreation allocation.

These authors then go on to explore carrying capacity, a concept which has been replaced in the LAC framework by indicators and identification of standards.

APPLICATION

Demand, resource capability and recreation opportunities currently provided should be used to decide if a cable water skiing facility is required; and if it is, which wetland should be used. Once a wetland has been chosen, the same method can be used to determine the range of opportunities which should be provided at the site.

A single solution should not be generated immediately, instead a range of options should be generated and assessed.

CRITICAL REVIEW

The LAC approach provides good detail on this evaluation stage. Rather than determining acceptable resource and social conditions (Step 5), allocation in this paper has been based on a more general approach of minimising adverse impacts and maximising beneficial impacts, while at the same time recognising demand and existing available recreational facilities. However, once an alternative is chosen using this more general approach, monitoring should be on a LAC basis.

STEP 7. Selection of preferred alternative using set criteria

METHODOLOGY

Criteria should be used to determine the preferred option.

APPLICATION

Some possible criteria are:

- demand studies indicate whether or not facility is required, also mix of site conditions
- level of adverse/benificial impact on the resource
- contribution to available recreation opportunities at various scales

- feasibility of management implementation (Prosser 1981)

CRITICAL REVIEW

The comments made under "Critical Review" Step 6 also apply to Step 7.

STEP 8. Implementation and Monitoring

METHODOLOGY

Once an alternative has been selected and a mix of opportunities decided, implementation should follow. Implementation should aim to provide the particular mix of conditions and settings identified in Step 7.

Monitoring should be directed towards resource and social indicators that are measurable, relate to conditions described in opportunity class (Step 4), reflect changes in the amount of recreational use and can be controlled (Prosser 1986).

APPLICATION

Once a particular site and mix of conditions has been identified, action and project plans should naturally follow (Stankey and Brown 1981).

Monitoring should be based on measurable, controllable indicators e.g. traffic volume and associated congestion, area of bare ground or wetland edges versus level of use. For each indicator a standard should be selected (generally a recorded "guestimate").

CRITICAL REVIEW

In terms of indicators the following quote is particularly relevant:

'There is no need, however, to be paralyzed by concerns as to whether the 'right' indicators have been chosen or whether the standards are 'correct'... Because monitoring and evaluation are an integral part of this procedure, management will be able to revise indicators and standards in response to improved information. Moreover, the judgements are made in a visible fashion so that they can be reviewed by others'

(Stankey et al 1985 in Prosser 1986).

3. ADMINISTRATIVE PROCESSES

The following diagram (Figure 2) summarises the relevant administrative process.

STEP 1. Joint proposal formulation by proponent and council officers based on the methodology given in Section 2. above

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STEP 2. Submission to Council

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Wetland reserved for Parks and Recreation under Metrolpolitan Region Scheme	Other	Wetland Class A reserve for Conservation
↓	↓	↓
		HALT

STEP 3. Direct to State Planning Commission for consideration

STEP 4. Consideration under Environmental Protection Act, generally on basis of referral. Notice of Intent prepared for all referred projects, followed by a Public Environmental Review or Environmental Review and Management Program (equivalent to EIS under Federal and most legislation in most other States); level of review dependent on perceived impacts of the proposal as determined by the EPA.

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STEP 5. Implementation

NOTE a. Each subsequent stage assumes approval of preceding stage, otherwise the process is halted.
b. Each stage should have some level of public involvement/consultation. There are legislative requirements for public involvement in Steps 3 and 4.

4. A PROPOSED FRAMEWORK FOR LOCAL GOVERNMENT RECREATION PLANNING

The following eight step framework is based on the preceding discussion and critical review, and has wide applicability to recreation planning in the local government context. The steps are:

STEP 1. Idenfity proposal and likely issues, set objectives. Re-evaluate once Steps 2 and 3 have been completed.

STEP 2. Estimate demand
- look at demand for similar facilities elsewhere and mix of conditions provided
- ask rate payers what they want

STEP 3. Determine resource capability
- look at adverse and beneficial impacts on physical, biological, social and economic environment
- use a matrix to summarise and use later to assist in evaluation of alternatives

STEP 4. Identify recreation opportunities currently provided.
- describe according to conditions (on Shire basis)

STEP 5. Recognise other planning underway
- make sure recreation planning recognises Town Planning Schemes, planning by State Government, including nature conservation and ground water management, and national and international considerations.

STEP 6. Generation and analysis of alternatives
- generate alternatives
- alternatives should be presented for a range of sites as well as for a mix of conditions at given sites.

STEP 7. Selection of preferred alternatives using set criteria.
- use criteria to select best alternative

STEP 8. Implementation and monitoring
- select measurable, controllable indicators
- develop standards for indicators
- monitor

This framework provides a justifiable basis for any further analysis required, whether it be by Council or at a State or Federal level according to Environmental Assessment legislation.

5. CONCLUSION

The above framework can be used to plan any recreational development on a Shire basis. This framework is particularly useful as it allows the objective selection of the best site(s), and the

selection of the best mix of conditions at given sites. Finally, the identification of indicators and determination of standards ensures that the quality of the experience is not inadvertently lost.

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