# THE CHALLENGE OF RECREATION PLANNING: METHODOLOGY AND FACTORS TO CONSIDER

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*ABSTRACT.* The proposed methodology of planning is a description, explanation, and justification of the methods or techniques that a planner should use in preparing outdoor recreation development plans. The sequence of steps required is described.

## INTRODUCTION AND SCOPE

OUTDOOR RECREATION planning is a broad and complex activity. This paper deals with one aspect of that activity: development planning – that is, planning of the natural resource base to change its potential capacity for providing recreational opportunities. The primary orientation is toward providing guidelines for planning an individual outdoor recreation area or complex such as a state, county, or regional park. The planning guidelines are developed for large resource-based recreation complexes located in a rural environment and developed primarily around an extensive natural resource base that, in itself, provides opportunities for outdoor recreational activity.[1]

The primary focus is on public recreation areas, although the guidelines can be applied (with minor adjustments) to private areas. The principal audience addressed is the group of persons who prepare development plans for public outdoor recreation areas. The guidelines are broad enough to be applicable to a wide variety of natural resource bases.

In this paper, public outdoor recreation development planning is defined as a rational and systematic process, integrated with all the important social and physical factors, for determining appropriate action in developing the natural resource to provide outdoor recreational opportunities.[2]

The guidelines were developed from several sources. General planning theory, methodology, methods, and techniques for various kinds of planning (e.g., urban, enterprise, and military) were reviewed, integrated, and adapted to planning public recreation. Literature on all phases of outdoor recreation planning (theoretical and applied studies, and recreation proposals and plans) proved to be valuable sources of information, since they are directly related to the subject of this paper. Related subjects such as forestry and land-resource economics, economic growth and development, consumer economics, and decision theory, were also used to develop the guidelines.

The guidelines are designed primarily as a methodological tool for planning, and thus are not a detailed presentation of the

various methods and techniques that can be and are used in planning.

## PROPOSED METHODOLOGY

The proposed methodology of planning is a description, explanation, and justification of the methods or techniques that a planner should use to prepare outdoor recreation development plans.

Methods function to help the planner form concepts and hypotheses, make observations and measurements, build models and theories, provide explanations, and make predictions. Methodology aids the planner in understanding and undertaking the process of scientific inquiry by which he develops a plan.[3] *The planning process is an organized sequence of steps requiring conscious and continuous action.*

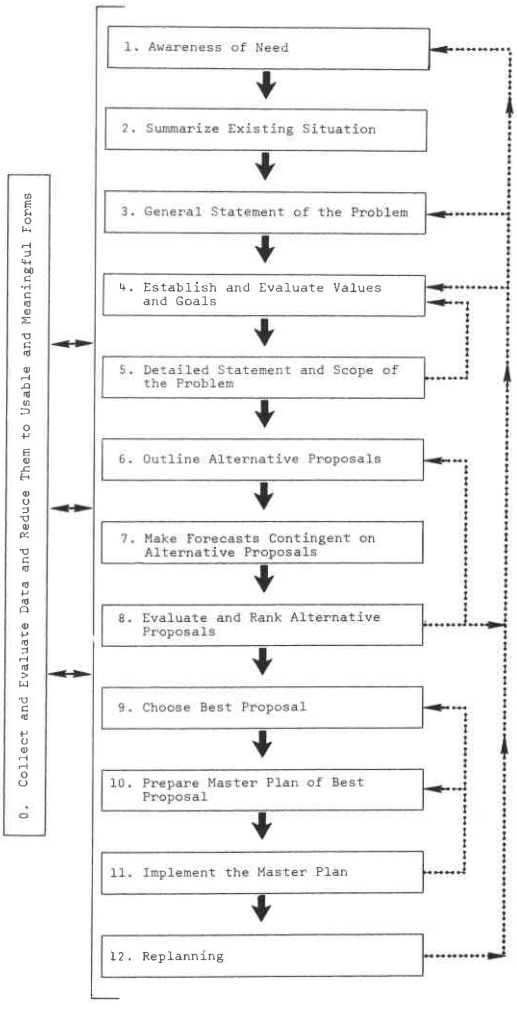
The methodology described here is oriented toward the planner whose concern lies primarily with preparing a master overall plan that takes into account all major social and physical factors of outdoor recreation development planning. These factors are intimately related to the methodology of planning. Examples of where and how some of these factors fit into the methodology are given in the planning steps outlined in this paper.

The master planner should *not* be burdened with the "nitty-gritty" concerns of specialists (e.g., the color to paint picnic tables, the composition of materials for road pavement, or recreation activity programming for weekend campers), for these tasks are performed only after a master plan has been prepared. He must, however, recognize that extent to which these concerns affect the development of the master plan.

## STEPS IN THE PLANNING PROCESS[4]

Figure 1 shows an organized sequence of steps in the Planning process. Heavy arrows (⟶) show the order in which the steps are performed. Dashed arrows (⇢) show some of the major feedback linkages between steps, that is, interdependencies between each step and preceding steps.

**Figure 1.—Steps in the planning process.**




The planner may enter the process at any of several steps. If the planner's task encompasses all the steps in the planning process, he may begin with step 1. If someone else in the political decision-making hierarchy (e.g., the director of the agency within which the planner is employed) has actually initiated the planning process to the point of setting goals for recreation development (see steps 1 to 4), the planner, because he must frequently accept the directives of his superiors, would begin his analysis with a detailed statement and scope of the problem (step 5). In situations

where each step in the planning process is performed by different individuals or agencies, the importance of performing all the steps in figure 1 in an organized and integrated sequence cannot be overemphasized.

### *Step 0. Collect and Evaluate Data and Reduce Them to Usable and Meaningful Forms*

The use of adequate data is an absolute necessity for sound planning. But data frequently are not available, coordinated, up-to-date, or in usable forms. In addition, data related to personal values are difficult to interpret.

Sources of available data are many and varied. In addition to data generated and possessed by the planning agency itself (e.g., from household surveys, on-site surveys, and inventories of the supply of recreational opportunities), many other informational (data) sources exist.

Federal, regional, state, and local governmental agencies have a broad base of data—for example, that possessed by census bureaus and agencies concerned with economic development, transportation, research and development, social services, soil conservation, civil engineering, and parks and recreation. Quasi-governmental agencies such as public utilities almost always have information on the spatial distribution and socio-economic characteristics of local populations. Information about specific aspects of recreation planning can also be acquired from colleges and universities and their cooperative extension services. Private businesses in recreation and related industries can also provide valuable information. Planning documents for other recreation areas can provide insights into the planning problem at hand.

Many types of data and the relationships among them prove relevant for planning. Data are needed for all the major social and physical factors to consider in outdoor recreation development planning. The following list identifies the types of data needed:

1. The institutional and social setting of the planning process.
2. Inventories of the existing natural and man-made features of the planned recreation area.
3. The supply of existing recreational opportunities on the planned recreation area.
4. The supply of recreational and other opportunities of other recreation areas and the local community.
5. The methods for increasing the supply of recreational opportunities on the planned area.
6. The consumption of recreational opportunities – present consumption levels, future consumption levels, and models to determine consumption levels.
7. Supply-consumption relations.
8. Land-use patterns surrounding the planned recreation area.
9. Site-planning data.
10. The impacts of recreation developments on local and regional communities—economic impacts on the private sector and on local governments, impacts on other recreation areas, and social impacts on local communities.
11. The relations between recreation development planning and management planning—management to control recreationists' use of the planned area, management of all the natural and man-made features of the area, water resource management, promotional policies, public relations, etc.
12. Data on financial planning.

Data should be evaluated for their accuracy and importance and should be interpreted and reduced to usable and meaningful forms that will facilitate preparing the master plan. *Data must be integrated into and used throughout the planning process.*

### *Step 1. Awareness of Need*

The actual planning process begins with an awareness of a need for planning. This need ultimately stems from a community's[5] dissatisfaction with existing and planned recreational opportunities. That is, the

community has a "felt difficulty" or "need" based upon the difference between the existing situation and some ideal situation. At this step in the planning process, the need is frequently not clearly stated. But a need is expressed to the planner by the community or by someone in the political or organizational hierarchy. The planner, of course, may be the first person to recognize such a need.

### *Step 2. Summarize Existing Situation*

A general summary and history of the existing situation provides the background for a clear awareness of the need for planning and for an explicit statement of the problem. Some factors that should be considered are: community aspirations, the supply and consumption of recreational opportunities, and a broad framework of unrefined data pertaining to the planned complex and to the community. The summary and history of the existing situation also provide a feedback of the impacts of current plans and policies, help to initiate the formal planning process, and are necessary for setting the planning problem in context.

### *Step 3. General Statement of the Problem*

A general statement of the problem serves many purposes. It presents the basic considerations and concepts underlying recreation development, enumerates conclusions that were previously stated as working references, expresses judgments and suggestions for periodic and constructive review, and formulates the planning problem as a basis for the master plan.[6] In other words, this step provides a clear overview of the whole planning problem.

More specifically, the purposes of a general statement of the problem are:[7]

1. To recognize the discrepancy between ideal and existing conditions.
2. To identify the overall problem and provide a broad overview of the social and physical factors to be investigated—e.g., the consumption and supply of recreational opportunities and the impacts of recreation development on local communities and the natural resource.
3. To provide an objective look at problems that had previously been matters of conjecture.
4. To give initial direction to the whole planning process.
5. To identify the problem as potentially actionable, that is, to formulate possible and realizable solutions to the problem.
6. To postulate future courses of action on the planning problem.

### *Step 4. Establish and Evaluate Values and Goals*[8]

The process of establishing and evaluating values and goals cannot be taken too lightly, for this step sets the stage for succeeding steps in the planning process. Values and goals, whether considered explicitly or not, determine the overall direction of the planning process once a general statement of the problem is expressed.

Values can be expressed as moral statements ("A recreation area 'ought to' provide recreational opportunities for everyone"); preference statements ("Plan A 'is preferred to' Plan B"); goal statements ("Providing recreational opportunities for persons of all age groups 'is the goal of' Plan A"); or criteria statements ("For choosing between Plan A and Plan B, choose the plan that minimizes financial costs to local governments"). Recognize that values are intimately related to facts (descriptions of what things are). That is, values and facts are affected by each other.

Requisites[9] are a category of values that specify limits to goals and the means by which goals may be realized and indicate what necessary conditions must be met in order for plans to be accepted. Requisites can be expressed in terms of feasibility (the fiscal, legal, and social conditions needed to implement a plan) and immediacy (the priority assigned to a plan in relation to existing social conditions). When specified levels of goals are to be attained, requisites are called constraints.

Values of individual persons are important for planning. But the planner operates within the framework of widely held public values such as conservation, preservation, and development of natural resources to best

serve the public's long- and short-range interests in providing recreational opportunities. Notice that these three values may conflict with or complement one another.

To facilitate choice among values and combinations of values, the conflicting and complementary natures of values must be reconciled. This can be accomplished by structuring a value hierarchy, a list of value priorities of an entire value system. To form a value hierarchy, values need to be expressed in rather specific terms that give clues to their source, history, and relevance.

When values are conflicting, that is, when some of one value has to be given up or traded off for another value, a value hierarchy can point to, reduce, or even eliminate inconsistencies among values in pursuit of a set of goals. Wherever possible, value hierarchies should be structured to provide a basis for establishing goals. Stating values explicitly and ordering them in terms of priority provides a framework for their appraisal and lends to their being transformed into objectively measurable goal statements.

A goal is an aim toward which planned action may be directed. Goals should imply commitment and reflect careful study, for they determine action proposals and the entire course of the planning endeavor. Furthermore, it is important that determination of goals assume equal importance with the ways in which they are to be attained.

Goals are dichotomous in that they can be expressed as either ends or means, depending on how responsibilities and concerns are specialized and the point of view adopted at a given time. Ends are aspirations for preferred states. Means are the ways in which ends are achieved. In any given goal chain (where each goal is a means to achieve higher level ends), a goal is an end when viewed from below in the chain and a means when viewed from above. To illustrate a typical goal chain, the goal "To limit the number of persons using a park at any one time" is an end in itself, but it is a means to "Conserve natural resources in the park by limiting use" which, in turn, is a means to "Achieve maximum community welfare."

Examples of realistic and explicit goal statements (that may be ends or means) for recreation development are: to maximize efficiency in allocating natural resources for recreation, to maximize regional growth and stability, to provide recreational opportunities for specific groups of people in the community, to maximize total use of the natural resource for recreation, and to preserve the natural resource for future generations. The goals of the plan should be established in a systematic manner. First, define the scope of concern and responsibility of the planner. Justify why some goals are accepted while others are rejected. Carefully choose goals that reflect the thinking of the community for which the plan is prepared.

Second, outline the range of choice of goals. Establish ultimate ends to which planned action will be directed, such as the ultimate end to maximize community welfare. Set out various goal chains that are means to achieve ultimate ends.

Third, identify the relationships among different goal chains. Identify which goal chains (1) are means to achieving other goal chains—e.g., goals to limit accessibility to a recreation area may be a means of preserving the natural features of the area; (2) are conflicting and complementary—e.g., preservation and development goals may be conflicting, while the goals of preservation and conservation may be complementary; and (3) are more applicable to certain levels of the planning problem than others—e.g., conservation goals may be more applicable to long-range planning than are goals for developing picnic areas to accommodate a sudden increase in the consumption of picnicking opportunities.

Fourth, goals must be evaluated to facilitate choice among many different goals. Each means within a given goal chain should be evaluated in terms of how it affects progress toward the highest end goal in that chain in view of the land, labor, capital, and managerial resources available and in view of recognized constraints.

Goal chains must also be evaluated relative to each other. This implies structuring a priority ranking of goal chains in terms of how each goal chain affects progress toward achieving ultimate ends. Structuring a priority ranking requires a clear understanding of the ultimate ends that

goal chains serve and of the relative value assigned to ultimate ends.

Several independent ultimate ends can act as time constraints on goal chains that serve them. That is, goal chains cannot always simultaneously serve many ultimate ends. For example, a goal chain designed to "provide the maximum total number of recreational opportunities" may effectively serve the ultimate end of "providing recreational opportunities for all potential recreationists," but it may not simultaneously achieve progress towards the ultimate end of "providing the maximum number of recreational opportunities for certain kinds of recreationists such as fishermen."

Choose the means within each goal chain that best satisfy the end of the chain. Choose the goal chains that contribute most to the ultimate ends of the community. Given alternative goal chains (means) for achieving a given ultimate end, choose the goal chain that (1) most closely satisfies the ultimate end, (2) is most consistent with other goal chains, (3) is most manageable in terms of on-the-ground operations, (4) minimizes financial and social costs, and (5) has the greatest likelihood of achieving the ultimate end.

One remaining aspect of setting goals is to make goals operational; that is, to present them in a manner acceptable to the community and in a way that will enable succeeding steps in the planning process to functionally utilize them. Operational implies that progress toward goals can be measured objectively and that all costs and benefits of striving toward goals can be foreseen and estimated. Goals that lack operationality are difficult to communicate intelligently.

Some ways to make goals operational are:

1. Make goal statements clear and specific —e.g., use "The goal is to develop a variety of recreational opportunities throughout the park for all age groups of people" rather than "The goal is to develop recreational opportunities."
2. State goals in terms that will indicate constraints, benefits, and costs. For example, the goal "To develop a variety of recreational opportunities throughout the entire park for all age groups of people" gives some indication of: (1) constraints—no one type of opportunity nor age group dominates the plan; (2) benefits—recreational opportunities will be provided for people of all ages, and all land resources will be used; and (3) costs—possibly no part of the park will be "preserved"—providing recreational opportunities for all age groups may be more expensive than providing only a few types of opportunities for selected age groups.
3. Combine related goals to give specific direction to each part of the overall plan.
4. State short-range goals (within the context of long-range goals) whose effects on the community are immediately apparent.

### *Step 5. Detailed Statement and Scope of the Problem*

Once Step 4 is performed in view of a general statement of the problem, a detailed statement and scope of the problem can be outlined. In this step the planner decides what overview of the planning problem he should accept; that is, the scope of the problem. Here the planner is concerned with such matters as means-ends relationships, selection and use of data, recreationists to be accommodated, recreational and other activities affected by development of the natural resource, agencies involved in the planning process, determination of the planning region, and time horizons (short- or long-range) to which planning is directed. Each of these matters is important in a detailed statement of the problem. The following discussion on the planning region and time horizons will serve to illustrate how these matters are considered in a detailed statement of the problem.

Planning should be somewhat regional in scope. That is, it should consider not only the recreation area itself, but also the community and environment surrounding the recreation area. The planning region can change spatially or geographically over time. But the natural resources around which the planning process centers (e.g., wooded areas for camping and surface

waters for fishing) must be identified and defined to give clear direction to planning for the general design and spatial arrangement of recreational opportunities on the recreation area.

Explicit statements of the time horizons of various parts of a plan are important. Long- and short-range aspects of the plan must be coordinated. A certain amount of flexibility in the plan over time (that is, from the immediate to the distant future) should be included; for changes in values, goals, and the social environment may require changes (even major ones) in time horizons of individual aspects of the overall plan.

### *Step 6. Outline Alternative Proposals*

This step is a synthesis of all the different considerations required for solution of the problem stated in step 5. The purpose of this step is to outline the different ways a recreation area can be developed in view of the goals, constraints, and resources identified in preceding steps.

All relevant major proposals[10] or alternative courses of action, including a "no-action" alternative,[11] should be outlined. If the planner limits himself to only one proposal, he may overlook other possible solutions to the planning problem. In some cases, however, only one way to solve the problem may be feasible, in which case only one proposal is outlined.

The financial and time costs of preparing more than one proposal may be limiting factors. These costs can be held to a minimum by considering only the most important aspects of each proposal and by limiting the refinement of data and unneeded detail in the analysis.

Each proposal should, however, include enough detail to enable evaluation of its major costs and benefits (see step 8). That is, each proposal should contain statements on such matters as: (1) the physical-spatial design of the recreation area, such as the number and location of campsites and the extent and distribution of the transportation network; (2) the recreationists accommodated—e.g., campers and fishermen; (3) the natural resources used in developing the area—e.g., surface waters, riparian lands, and mountainous lands; (4) relations with local communities, such as the amount of private property to be acquired for public use; and (5) the management practices required after the area is developed.

### *Step 7. Make Forecasts Contingent on Alternative Proposals*

Before alternative proposals can be evaluated, forecasts contingent on the alternative proposals are required. These forecasts depend on what actions each proposal specifies as well as on forecasts of autonomous factors such as population growth and the general level of economic activity in the national economy. Constraints identified in the evaluation of alternative proposals (see step 8) should be imposed only *after* proposals are identified in step 6.

Forecasts of alternative proposals should include all relevant aspects that will aid in evaluating the proposals and in choosing the best one. For example, forecast the likely relationships between the consumption and supply of recreational opportunities, the effects of a recreation development on land-use patterns, and the management practices required for each proposal.

### *Step 8. Evaluate and Rank Alternative Proposals*

Evaluating and ranking alternative proposals is a distinctly separate step in the planning process. The purpose of this step is to introduce greater rationality into the planning process in order to choose among proposals in an effort to maximize the attainment of ends stated in step 4. Because of the significance of this step for the planner, the following paragraphs include a brief discussion of some of the major methods and techniques that can be used to estimate the benefits and costs of recreation development proposals.

Methods for evaluating proposals are designed primarily to compare and rank alternatives, not to test their absolute desirability. If none of several proposals proves to be highly desirable, the planner may need to retrace step 6 and outline additional proposals. If no additional proposal is satisfactory, the problem should be

restated (step 3) and values and goals should be re-evaluated (step 4).

Criteria for the evaluation of each proposal include the following: (1) consistency of the overall proposal in terms of the integration of component parts; (2) internal consistency of each part of the proposal; (3) general feasibility of proposed actions; (4) resource requirements; (5) anticipated effects on the natural resource, the local community, and the recreating population; (6) availability of social and financial support; and (7) the degree to which different actions achieve stated goals.

Costs and benefits can be expressed in several ways, depending on how goals are stated. Some terms in which costs and benefits can be expressed are: (1) tangible and expressed in monetary terms—e.g., the dollar cost of constructing facilities; (2) tangible and expressed in quantitative, nonmonetary terms—e.g., the number of people that can be accommodated by a picnic area; and (3) intangible—e.g., the personal satisfaction derived from a recreational experience.

Identifying and evaluating the costs and benefits of a recreation development outlined in alternative proposals can be accomplished by using many different procedures and techniques.[12] A brief description of three techniques – traditional cost-benefit analysis, the "balance sheet of development," and the "goals-achievement" approach—for determining costs and benefits and the problems inherent in each technique will illustrate how alternative proposals may be evaluated.

Traditional cost-benefit analysis is derived from the theory of the firm. Costs and benefits are usually expressed in monetary terms. Some problems are inherent in the use of traditional cost-benefit analysis for determining the costs and benefits of public outdoor recreation development proposals.

Cost-benefit analysis is most applicable to situations where all costs and benefits of a given action can be identified and estimated. All costs and benefits of a large public resource-based outdoor recreation area sometimes cannot be identified, largely because of the changing nature of the natural environment and the social system that a recreation development affects and because the structure of the social system itself is difficult to determine.

For example, a major recreation development project is likely to alter the prices and outputs of many different goods and services throughout a small, local economy. In such a situation, all the effects (in terms of costs and benefits) of the recreation development on the social structure of the community, on recreation-related industries, and on other productive activities may be difficult to estimate.

Furthermore, use of cost-benefit analysis for evaluating investments in the public sector can be accomplished only if the following conditions are met: (1) barriers to the flow of funds and resources are minimal; (2) costs and benefits can be determined at market prices; (3) no external economies or diseconomies are present; and (4) no other external effects are created by the investments, such as social externalities in consumption (the notion that outdoor recreation contributes to, or is essential for, a well-balanced personal life that makes better and more productive citizens) that tend to enhance the welfare of the Nation as a whole.

These four conditions limit the applicability of cost-benefit analysis to public recreation investments. In the public sector, social costs and benefits (which are not easily measured by market prices) and intangibles (e.g., personal satisfaction) are important; and a minor importance is frequently assigned to economic efficiency.

Additionally, in order that cost-benefit analysis maximize economic welfare, one must assume that the existing income distribution is "best" and that costs are borne so as to maintain that distribution. The first assumption is questionable (but nevertheless made anyway) and the second is not likely true.[13]

Cost-benefit analysis, then, approximates maximization of public welfare only for those activities that can be priced in a market system. The analysis applies best to ranking proposals that are measured in the same costs and benefits. To choose among proposals, costs and benefits for each proposal are put in a ratio, and the

proposal that has the lowest cost/benefit ratio or the highest benefit/cost ratio is chosen.

A variant of cost-benefit analysis, "the balance sheet of development," is another technique for evaluating costs and benefits.[14] In this technique, all "good" and "bad" consequences of proposed actions are compared and all benefits and costs with respect to the social and natural environments are considered. A "balance sheet" is constructed which distinguishes monetary and non-monetary costs and benefits and identifies the sectors (e.g., public and private) that bear those costs and benefits.

A drawback of this technique, like cost-benefit analysis, is that it does not always enable evaluating proposals that incorporate a diversity of actions and that are designed to satisfy many independent goals. Proposals must have common grounds for evaluation. Goals must be well-defined and their desirability and worth must be assured. The "balance sheet" technique, however, has a broader perspective than traditional cost-benefit analysis because it does not rely so heavily on monetary costs and benefits.

Another technique for evaluating costs and benefits of alternative proposals is the "goals-achievement" approach.[15] Its key elements are the weighting of goals and groups effected (e.g., types of recreationists, the public sector, and the private sector) that were outlined in the scope of the problem.

Costs and benefits are always defined in terms of *goal achievement*, that is, benefits represent *progress toward* goals and costs represent *retrogression from* goals. The value of each cost and benefit is expressed in terms of each goal, and, where possible, the same units of measurement are used for each goal.

The final product for the goals-achievement approach is a "goals-achievement matrix." A typical goals-achievement matrix for three alternative proposals, each having one goal chain designed to maximize the same ultimate end, is shown in table 1. Here I, II, and III are descriptions of the highest goals in the goal chains for proposals 1, 2, and 3, respectively. The goal of each proposal is assigned a relative weight, which is derived from the priority ranking established in step 4. The groups of people, institutions, land resources, etc. affected by goals I, II, and III are identified by a, b. . . . e. These groups are assigned a relative weight derived from a priority ranking similar to that established for goals. The groups may be combined in any meaningful manner to show differential incidences of costs and benefits. The letters A, B, . . . are costs and benefits expressed in monetary units, non-monetary units, or qualitative states (e.g., the amount of personal satisfaction derived from recreational experiences).

Costs and benefits are recorded for each goal for each group affected. A dash (—) indicates that no cost or benefit would accrue if the proposal were put into practice. Note that a group may derive both costs and benefits with respect to a particular goal. For example, under proposal

Table 1.—*A typical goals-achievement matrix*

| *Goal* | *Proposal 1* | | | *Proposal 2* | | | *Proposal 3* | | |
|---|---|---|---|---|---|---|---|---|---|
| Description | I | | | II | | | III | | |
| Relative weight | 2 | | | 3 | | | 5 | | |
| Incidence | Rel. weight | Cost | Benefit | Rel. weight | Cost | Benefit | Rel. weight | Cost | Benefit |
| Group a | 1 | A | D | 4 | E | — | 1 | | M |
| Group b | 3 | K | | 5 | — | Q | 2 | | — |
| Group c | 1 | J | H | 3 | — | F | 3 | N | — |
| Group d | 2 | — | | 2 | T | — | 4 | | — |
| Group e | 1 | — | K | 1 | | U | 5 | | P |
| | | Σ | Σ | | | | | Σ | Σ |

1, group a (say campers) may be provided with more campsites on a given tract of land (benefit D), while simultaneously incurring a loss of privacy due to the close spacing required for the development of additional campsites on that tract of land (cost A).

For certain goals, namely I and III, Σ indicates that summation of the costs and benefits is meaningful and useful. That is, total costs and benefits of proposals 1 and 3 are expressed in similar terms. Thus these two proposals can be evaluated relative to each other, especially when all costs and benefits are expressed in quantitative units such as dollars or numbers of campsites.

The goals-achievement approach is helpful for identifying and comparing costs and benefits of alternative proposals, especially the explicit listing of costs and benefits for each goal and each incidence group. But several problems are inherent in the approach. As mentioned above, the summation of costs and benefits can be difficult or even impossible. The whole approach breaks down when relative weights for goals and the groups affected cannot objectively be determined. The technique does not explicitly provide for or register interaction and interdependence among goals. The goals-achievement matrix becomes somewhat unwieldy when many proposals are included and when each proposal has more than one goal chain. And like the other evaluation techniques discussed above, costs and benefits can be difficult to determine, even in quantitative terms reflecting goal achievement.

### *Step 9. Choose the Best Proposal*

After each alternative proposal is evaluated, the best one should be chosen. The best proposal is the one that most closely achieves, in terms of maximizing benefits and minimizing costs and in terms of recognized constraints, the goals set out in step 4.

### *Step 10. Prepare Master Plan of Best Proposal*

Preparation of the master plan designed around the best proposal is one of the most rewarding experiences in the planning process, for it represents the culmination of the efforts of all previous steps.

The master plan is a statement of willful intention that sets forth accepted goals and the ways those goals are to be achieved. The master plan systematically outlines the actions that are to be taken in acquiring land, in designing and constructing facilities, and in structuring human behavioral patterns associated with the development plan.

The master plan need not (and probably should not) contain all the details of means-end identification. The plan should be somewhat flexible to accommodate change with a minimum of cost and effort. And it should serve as an instrument for evaluating and overseeing the actual physical development of the natural resource base to judge progress toward stated goals.

### *Step 11. Implement the Master Plan*

Some of the important aspects of implementing the master plan are: (1) organizing the necessary personnel and resources into a well-formed field organization that will actually do the on-site development of the recreation area, (2) engaging the necessary political powers and financial resources to support the plan, and (3) appraising the field organization in terms of its actions and the consequences of its actions to meet planning goals.

Field work on implementing the master plan sometimes uncovers problems that were not recognized or anticipated in step 10. Some of these problems may have been overlooked in step 10, others may arise because of changes in the techniques for on-site development between the time the master plan was prepared and the time it is actually implemented, and still other problems may arise because of inaccurate estimates of the costs and benefits of development.

If such problems are minor, appropriate adjustments can be made in the master plan. If problems of implementation require major changes in the design of the master plan, retracing the planning process from step 9 may be necessary. Step 11, however, should not necessarily have to be

regenerated beginning with steps 1 to 8 if those steps were adequately performed.

### *Step 12. Replanning*

Replanning is the step that makes the whole planning process continuous and dynamic. In a society where the growth and distribution of the population are changing, where values are changing, where the natural environment is changing, and where the whole social structure of society is changing, continuous research on and evaluation of planning is needed. Replanning, then, is a post-construction step that essentially provides for the retracing of any or all steps in the planning process.

## THE PLANNING PROCESS AS A CIRCLE OF INTERDEPENDENCE[16]

The steps in the planning process are interdependent. That is, the planning process is a circle of interdependence incorporating both feedback and feedforward between the steps.

Feedback enables the planner to correct for future action in light of past experience. Feedback is inherent in all steps where actions are reviewed, amended, or discarded and can stem from the planner himself, from the local community, and from political decision-makers.

The dashed arrows in figure 1 show some, but not all, of these feedback mechanisms. The sequence of steps (the feedforward mechanism) in the planning process presented in this paper lends itself to feedback adjustments. Some feedback mechanisms were discussed in the planning steps above. The following discussion will serve to further illustrate these mechanisms.

Goal-setting feedback is the mechanism that adjusts for new constraints (such as changes in financial support) that are external to the initial goal-setting step. Feedback stemming from changes in values and goals held by society can also influence the original goals of the plan. Feedback relating to goals also affects values, so in reality values and goals are jointly determined.

The process of collecting, processing, transmitting, and using data is circular in nature. Analysis of data back and forth between the past, present, and future helps to achieve a balance between stated goals and on-the-ground operating requirements.[17]

Time horizons in planning also are related in a circular fashion. Long-range goals for the master plan are partly derived from shorter-range component plans, and partly shape and direct them. An unforeseen problem or opportunity within a component plan may lead to a modification of the master plan.[18]

Plan revision between steps 9 and 11 and other revisions in the form of replanning (step 12) are other forms of feedback. But practical limits to regular revision, such as the limitations of time, money, or personnel, must be recognized.

## Footnotes

1. Note that a single park may contain many individual resources such as lakes, mountains, and wooded areas.

2. Unless otherwise specified, "planning," "plan," and "planner" refer to public outdoor recreation development planning, plan, and planner, respectively.

3. The distinction between "methodology" and "methods" is made clear in: Abraham Kaplan. THE CONDUCT OF INQUIRY. Chandler Publishing Co., San Francisco, pp. 18-33.

4. For outlines and discussions of these steps, see: (1) Louis Hamill, THE PROCESS OF MAKING GOOD DECISIONS ABOUT THE USE OF THE ENVIRONMENT OF MAN, Nat. Resources J. 8(2):279-301, 1968; (2) Willard B. Hansen, METROPOLITAN PLANNING AND THE NEW COMPREHENSIVENESS, J. Amer. Inst. Planners 34(5):295-302, 1968; (3) Britton Harris, THE LIMITS OF SCIENCE AND HUMANISM IN PLANNING, J. Amer. Inst. Planners 33(5):324-335, 1967; and (4) G. Marion Hinckley, PLANNING—A FIRST STEP IN RECREATIONAL DEVELOPMENT, *in* COUNTY PARKS AND RECREATION . . . A BASIS FOR ACTION, Philip Warren, Jr. (ed.), Nat. Assoc. Counties, Washington, D. C., and Nat. Recreation Assoc., New York, 1964, pp. 117-118.

5. A community refers to the people living together in a given geographical area and includes the entire social and economic structure within which those people function. A community may be a local town, a county, a state, a geographical region, or even a nation. As used in this paper, a community refers to the community that affects or is affected by a given recreation development.

6. These purposes are adapted from: Melville C. Branch, PLANNING: ASPECTS AND APPLICATIONS, John Wiley & Sons, Inc., New York, 1966, p. 62.

7. The following list is derived largely from James Oakwood and Michael Chubb, PLANNING PUBLIC RECREATIONAL BOATING FACILITIES IN MICHIGAN. Mich. State Univ. Coll. Agr. and Nat. Resources Dep. Resource Develop. Tech. Rep. 1: 7-20; East Lansing, 1968.

8. General discussions especially applicable to step 4 can be found in the following selected references: (1) Paul Davidoff and Thomas A. Reiner, A CHOICE THEORY OF PLANNING, J. Amer. Inst. Planners 28(2):103-115, 1962; Harris, *op. cit.;* (3) Morris Hill, A GOALS-ACHIEVEMENT MATRIX FOR EVALUATING ALTERNATIVE PLANS, J. Amer. Inst. Planners 34(1):19-28, 1968; and (4) Robert C. Young, GOALS AND GOAL-SETTING, J. Amer. Inst. Planners 32(2):76-85, 1966.

Selected references relating specifically to values and goals of recreation and other natural resource developments are: (1) Ronald Beazley, CONSERVATION DECISION-MAKING: A RATIONALIZATION, Nat Resources J. 7(3):345-360, 1967; (2) S. V. Ciriacy-Wantrup, THE ECONOMICS OF ENVIRONMENTAL POLICY, Land Econ. 47(1):36-45, 1971; (3) William A. Duerr, GOALS AND VALUES, a chapter in a forthcoming book on forest resource management; (4) George R. Hall, STRATEGY AND ORGANIZATION IN PUBLIC LAND POLICY, Nat. Resources J. 7(2):162-182, 1967; (5) Roger Tippy, PRESERVATION VALUES IN RIVER BASIN PLANNING, Nat. Resources J. 8(2):259-278, 1968; and (6) R. S. Whaley, MULTIPLE USE DECISION MAKING—WHERE DO WE GO FROM HERE?, Nat. Resources J. 10(3):557-565, 1970.

9. For a discussion on requisites, see Hill, *op. cit.*, especially p. 22.

10. A proposal is actually a plan that has at this step in the planning process not been accepted or rejected by the planner or the community as *the* course of action to pursue in developing a recreation complex.

11. A "no-action" alternative implies that no action is taken to solve the apparent problem because the statement of the problem in step 5 indicates that no problem really exists or because no proposal can satisfy the goals set out in step 4.

12. See the discussions and literature cited in the following selected references: (1) Marion Clawson and Jack L. Knetsch, ECONOMICS OF OUTDOOR RECREATION, Chaps. 11—"The Value of Land and Water Resources Used for Recreation," 12—"Economic Impact of Outdoor Recreation in Local Areas," and 13—"Cost and Investment Considerations in Providing Public Recreation Facilities" published for Resources for the Future, Inc., by The Johns Hopkins Press, Baltimore, 1966; (2) Robert J. Kalter and Lois E. Gosse, OUTDOOR RECREATION IN NEW YORK STATE: PROJECTIONS OF DEMAND, ECONOMIC VALUE, AND PRICING EFFECTS FOR THE PERIOD 1970-1985, Chap. V—"Demand Projections, Economic Value, and Pricing Effects," N. Y. State Coll. Agr. at Cornell Univ., Ithaca, 1970; (3) Leonard Merewitz, ESTIMATION OF RECREATIONAL BENEFITS AT SOME SELECTED WATER DEVELOPMENT SITES IN CALIFORNIA, U.S. Dep. Interior Tech. Rep. Washington, D. C., no date; and (4) A. R. Prest and R. Turvey, COST-BENEFIT ANALYSIS: A SURVEY, Econ. J. 75(3):683-735, 1965. This article surveys cost-benefit analysis techniques in general and includes references on outdoor recreation and other natural resource developments.

13. For a discussion of the public welfare aspects (including the distribution of income) related to outdoor recreation, see: G. A. Norton, PUBLIC OUTDOOR RECREATION AND RESOURCES ALLOCATION: A WELFARE APPROACH, Land Econ. 46(4): 413-422, 1970.

14. See: Hill, *op. cit.* pp. 20-21.

15. The "goals-achievement" approach discussed below is adapted from Hill, *op. cit.* pp. 21-28.

16. For a discussion of the planning process as a circle of interdependence, see Branch, *op. cit.* pp. 303-309.

17. Adapted from Branch, *op. cit.* p. 305.

18. Adapted from Branch, *op. cit.* p. 305.

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