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ECONOMIC ASPECTS OF THE PROPOSED CALIFORNIA COASTAL PLAN

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ECONOMIC ASPECTS OF THE PROPOSED CALIFORNIA COASTAL ZONE PLAN 1/

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Abstract

This paper reviews the work recently conducted for the California Legislature on the analysis of the economic implications of the proposed California Coastal Plan. Five issues of significant economic impact were distilled from the array of proposed coastal management policies.

1. Coastal agriculture versus urbanization: What are the economic costs and benefits?
2. Development: Where?
3. Recreation: How much, what kind, and for whom?
4. Energy: What are the costs and benefits of restrictions on coastal energy facilities?
5. Ports: What would be the economic effects of restricted expansion?

The relationships of economic issues to coastal zone management policies proposed in the Plan are displayed in matrix form. Plan policies are translated into issues, and research requirements to provide economic information upon which to base action decisions are identified. The paper includes examples of the matrix and reviews the recreation issue.

Key words: Coastal Zone Management, Economic Impact, California, Policy, Recreation.

1/ This paper was presented to the Ocean Economic Potential Committee of the Marine Technology Society at the Brookings Institution in Washington, D.C., May 12, 1976. Copies of the paper may be obtained from Dr. Milton G. Johnson, Chairman of the OEP Committee, c/o Office of the NOAA Corps, U.S. National Oceanic and Atmospheric Administration, Rockville, Maryland, 20852 (301/443-8671), or from the authors. The authors are solely responsible for the contents of this paper.

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Introduction

In response to environmentalist concerns, California led the way in creating instruments for the permanent conservation of coastal zones. Through the initiative (rather than the legislative) process, the California Coastal Zone Conservation Commission was formed, charged with both watchdog functions and the preparation of a long-range Coastal Zone Plan (CZP). 4/ The fruit of its three-year creative labors, an immense and intricate CZP, has now been brought to the California Legislature for action. 5/

The Commission produced basically a land use and resources management plan, as called for in the Act. The CZP specifies what uses of land, water and natural resources -- what development -- shall be permitted and encouraged in certain types of locations under certain restrictions, and what shall be discouraged or prohibited.

There is nothing in the Act concerning economic implications as it emerged from the conservation-oriented initiative process. The Legislature, in converting this monolith of environmental desiderata into law, is aware of the need to consider its economic implications (e.g., Mr. Chairman, what is this going to do to the construction industry in this state? Mr. Speaker, what is this going to cost?).

Legislature Initiates Economic Study

Faced with this clear necessity, the Legislature's Joint Rules Committee initiated a process of providing the lawmakers with an understanding of the vast array of economic impacts that would result from legislative adoption of the Coastal Zone Commission's proposed conservation plan. The assignment was to "identify each public and private group affected by the recommendations (in the Coastal Plan)...(and) each cost and benefit which must be measured or, if immeasurable, recognized, in considering the Plan."

4/ California Coastal Zone Conservation Act (Proposition 20), Division 18, California Public Resources Code.
5/ California Coastal Plan, California Coastal Zone Conservation Commission, 1540 Market Street, San Francisco, California 94102 (415/557-1001), December 1975 (443 pp.).

However, rather than proceeding directly to examination of the economic impacts in depth and in detail, the Joint Rules Committee determined to first develop an outline and perspective of what kinds of economic impacts the Coastal Plan might have and on whom those impacts would fall, and prepared a proposed program for whatever investigation of those impacts could be completed in time for the 1976 meeting of the Legislature. The report we prepared comprises that outline and further proposals. 6/

Study Approach

Our exploration of the assignment led us to two novel approaches. One was to identify and rank the policies that emerge from the proposed Plan, translate these into issues (which is the form they would take in the legislative deliberations), and then define the research tasks the issues would require to determine the economic impacts involved. (See Appendix A: recreation example.) Secondly, we organized the impacts of policies in chart form to comprise a "Preliminary Outline of the Range of Economic Impacts of the Coastal Plan" (see Appendix B). Because of its chart form, we call this the "matrix." By using it, the reader can identify (1) the full range of activities, assets and interest groups that would feel economic impacts from the implementation of the Coastal Plan; and (2) the types of impacts -- benefits and costs -- that each policy would produce.

So far as we know, this matrix represents a pioneering effort for synthesizing and displaying economic implications of a coastal zone management plan. It is accordingly somewhat primitive, particularly since it is necessarily (at this preliminary stage of the total process) non-quantified. We would expect changes to be made in the entries of prospective costs and benefits, as well as extensive additions of explanatory notes that could not be produced in the present small-scale effort.

Even in its present form, the matrix is clearly useful, perhaps indispensable. It affords the perspective and overview (its primary purpose)

6/ Economics Research Associates and Alvin H. Baum Associates, Economic Impacts of the Proposed Coastal Plan - A First Report and Further Proposals, prepared for the Joint Rules Committee of the California Legislature, Sacramento, California 95814, October 10, 1975.

that both legislators and members of the public want and need to comprehand in order to take action on the Coastal Plan. It serves as a checklist against which to compare more detailed analyses of costs and benefits to ascertain whether the full range of impacts has been considered. In short, it constitutes a map of the "forest" so that one does not get lost in the myriad of "trees" -- the multiple and intertwined impacts of over 200 policies and sub-policies that comprise the proposed Plan.

Our report then proceeds to identify what we see to be the significant economic impacts of the Plan, based on key criteria such as the extent of the area to which a policy would apply, the intensity of the effects, and the research programs necessary to explore them. As previously noted, the format is Policies ⟶ Issues ⟶ Recommended Scope of Work.

Obviously, the numerous policies of the proposed Plan are not all of equal importance in their economic effects. There are 183 policies and countless sub-policies in the Preliminary Plan, and almost that number in amended versions. We selected five topics as the "Most Significant Impacts," and recommended special attention to them; the remaining significant impacts cover almost all the elements of the Coastal Plan, and many of the sub-elements, with specific sub-proposals tied to those sub-elements. A few of these numerous proposed research projects are relatively simple and involve relatively familiar methods; others are complex and involve new ground. Taken together, they cover an amazing variety of material, as does the Coastal Plan itself.

Methodology

The report contains a number of proposals for research covering a diverse set of topics and with widely varied facts involved. A common thread of methodology runs through virtually all of them. Understanding this common denominator of methodology is the key to understanding both the possiblities of projecting the economic impacts of this particular Coastal Plan, and the limitations upon those projections.

The place to begin is with what it really means to measure "the economic impacts of the adoption of the Coastal Plan." It means, more precisely, "What difference would adoption of the proposed Coastal Plan make, over the period from now until 1990 or 1995, in such economic indicators as land values, amounts of production of goods and services, employment, business and personal income, in the State as a whole and in various regions of the State?"

That is the question which the research recommended would attempt to answer. It is an economist's question. But, as already pointed out, the Coastal Plan is not an economist's plan: it does not (and could not, in our opinion) address itself initially or primarily to economic questions, as some national or regional long-range plans do. So, just as printed data has to be converted into computer language before the computer can process it, the land use and resource management effects of the Coastal Plan have to be translated into economists' language before economic projections can be based on it.

Moreover, the Coastal Plan -- being a blueprint for the over-1,000-miles-long coastline of the State -- does not set forth acre-by-acre what development its policies would permit or prohibit. More like a local general plan than like a zoning ordinance or subdivision map, it establishes decision rules that have to be applied to the land in practice, both in the immediate future and over the years ahead. So predictions must also be attempted of how these policies would be interpreted and applied.

Therefore the consultants' task in assessing the economic impacts of the Coastal Plan is threefold: first, to project, insofar as it is possible to do so, what application of the Plan's policies will actually mean in decisions on the ground -- that is, what development for what purposes is likely to be allowed under the Coastal Plan; second, to estimate what the economic effects of that development would be -- that is, what levels of land values, production, employment, and income would result from those kinds of development at those locations; and third, to compare those levels of the economic indicators with the levels that would be likely to prevail if there were no Coastal Plan (but taking into account, of course, the restrictions and requirements of other State and Federal agencies).

The second and third of these tasks are economists' tasks; the first is a job for planners. It involves acquiring sufficient expertise on each of the Plan elements and sufficient knowledge of the geographic areas in question, so that the future decision process can be simulated with some confidence. In a way, the job of the consultants in this regard is similar to the job that faced the Coastal Zone Commissions and their staffs when they began work some three years ago; but fortunately the mass of material to be mastered has been organized and simplified in the Coastal Plan. Still, we concluded early in the explorations that preceded our interim report that it was not feasible to attempt to develop statewide data on the coastal zone so as to project for the entire State the effect on all sectors of the economy.

Because the "Coastal Zone" (or permit area) was not defined as a discrete geographic area in California until creation of the Coastal Zone Conservation Commission in 1972, no economic data for that area alone exist. Certain kinds of data can be separated out by going back to raw material and reassembling it, but this is a complex and expensive process. Above all, much of the key data for economists are unavailable at a geographic breakdown finer than counties, cities, census tracts or ZIP code areas. For these reasons, we have ruled out large-scale econometric and input-output modeling as feasible approaches to this assignment.

We concluded that it would be possible, however, to focus on certain geographic areas and segments of the plan where data would be available or feasibly constructed for each of the issues that needed to be dealt with. Clearly, not all areas of the State are involved in each of the issues: a prime coastal agriculture plain is not a potential tanker terminal site; a flood hazard area is not a timber resource area, etc. Using information already available or producible, one can assess the economic impacts of the Plan as they fall on certain issues, areas and groups.

In this work, careful attention must be given to the long-range effects, as well as the short-range; we propose that the cumulative effects from now through either 1990 or 1995 be the frame of reference. While it

is obvious that benefits must be given equal attention with costs, it needs stressing that the benefits that are not easily quantified must be given equal attention with all factors (benefits and costs) that are easier to quantify. The result may not have the neatness, or apparent preciseness, of smaller scale studies, or of traditional studies that have sacrificed completeness to mathematics.

It may not be possible, that is, to conclude any -- much less all -- of the research projects with a net cost or net benefit projection in dollars or jobs. And it is clear that even if such a single number could be produced for some of the research projects, no one overall figure for the entire Coastal Plan could be projected (just as mixing apples and oranges does not lend itself to counting). But, though the results will not all be numerical and precise, they will have meaning: it will be possible, we believe, to get a working projection of the economic impact of the key parts of the Plan (and of the overall Plan, the effects of the whole perhaps being different than the sum of the effects of the parts) to use as part of the decision process in the course of adoption.

There are a few other comments on methodology that should be noted:

1. While it is interesting to have a full picture of the present economy upon which the Coastal Plan will have its effects, one learns almost nothing about those effects from knowledge of how things are now.

For example, to know that "x" percent of the people of California live in a "coastal area;" "y" percent of the employed labor force works there; and "z" percent of the value of real property in the State lies there only confirms what everyone knows already -- the coastal zone (however defined) is a very important part of the State of California, and of its economy, by any conceivable measure. The question that this report and the research it recommends is addressed to is not, "What economy would the Coastal Plan affect?" but "What would be the effects, and how great would they be?"

Moreover, presenting a description of the present economy that is not tied directly to analysis is of limited value in relation to the costs of preparing the description, and also is subject to misinterpretation. For example, a major recent report contained a broad range of detailed data about the California coastal economy. 7/ But, for all their breadth and interest, the data did not describe the relevant geographic area: the study's data cover either the entire area of the fifteen coastal counties (some of which have concentrations of population and economic activity far inland) of the five-mile-wide Coastal Zone planning area, while the immediate impact of the Coastal Plan policies will be instead on the much narrower permit zone (1,000 yards from the shoreline) or the "coastal resource management area" where the coastal agency would have jurisdiction. (Effects elsewhere in the State, which should be considered, would be displacement effects.) The result is that this expensive, carefully prepared report is of little value to an economic impact study of the Coastal Plan, and its figures could be, and have been, misinterpreted as being some measure of the economic effects of regulating coastal development.

It may be possible now to tap some data in the computer memories of a private or public data bank for "now" data for the precise relevant coastal area. If so, we would propose that this be done. But even where this is possible, such overall descriptive data are of far less value than specific problem-oriented information such as would be elicited and presented as recommended in our interim study.

2. Experience with the prototype for the Coastal Plan in the period 1972-1975 is relevant in estimating the future impact of the Coastal Plan, but in no sense determinative.

Since passage of the California Coastal Conservation Act (by Proposition 20 in the November 1972 election), the Coastal Zone Conservation Commission has been administering a set of policies that bears some resemblance to those in the Coastal Plan that the Commission has recommended to the Legislature for adoption. One might suppose, therefore,

7/ Jay, Norman K., California Coastal Zone Economic Study: Vol. I - An Area Profile, and Vol. II, Statistical Appendix, Research Department, Security Pacific Bank, 333 South Hope Street, Los Angeles 90017 (213/ 613-7314), April 1975.

that the economic trends in those areas affected by the Act for the past three years might be a good predictor of the future economic impacts of the Coastal Plan, and so they might, subject however to two major qualifications.

In the first place, the Coastal Plan is significantly different from the body of policies contained in the Coastal Conservation Act that has been administered by the Coastal Zone Conservation Commission. Permit decisions individually may indicate interpretations of future policies, but great care must be taken in adjusting for the differences. Secondly, on an overall basis, there is an ever-present and difficult question of determining how much of the change in any economic factor in the coastal area over the past few years is due to the existence and actions of the Commission, and how much to other factors. That assessment is easy to make when a specific proposal was denied or approved conditionally; it is difficult to make when one tries to compare, for example, overall building rates in the coastal area during 1972-1975 with building rates in the same area in earlier periods, or in other areas during the same time period. When variations are found, one must separate out what part of the variation to ascribe to other factors (such as market conditions, availability of financing, transportation constraints, unrelated job opportunities, etc.).

With these limitations in mind, we propose in the report to the Legislature that the economic trends in the coastal area (specifically residential and non-residential building) be analyzed so far as data are available, and in light of the results of permit review by the Coastal Zone Commissions. But the qualifications are so severe, and the limitations of trend projections so great, that we do not consider this a key method of projecting economic impacts.

3. The research recommended in our report will not involve either a complex computer-based economic model, nor much computer time for data handling. We are aware of the work going on at the frontiers of this profession; however, we have concluded that it would not be feasible

at this time to attempt application of these techniques to the CZP analysis. Our method -- breaking down the impacts into recognizable and researchable components, and constructing data, however crude, that can be used with manageable assumptions -- seems to us most likely to provide the Legislature with understandable and best-possible estimates of what the Coastal Plan would actually mean to legislators' constituents.

Major Economic Issues

While the matrix is an indispensable way of conveying the panoply of economic effects of the over two hundred sub-policies in the Coastal Plan, it has the defect of appearing to treat all effects as being of equal importance. Clearly they are not. The areas of rare and endangered habitat, or of tsunami runup danger, for example, may be very small, while the prime agricultural lands in the Coastal Zone, for example, are very extensive: one site proposed for acquisition might serve hundreds of thousands of beachgoers per season, while another might serve only hundreds of visitors at its isolated location. Thus the interim report focuses on those policies that could be expected to have the greatest economic costs and benefits to the people.

The Five Most Significant Issues that arise from the prospective economic impacts of the Coastal Plan are these:

1. Coastal Agriculture versus Urbanization: What are the economic costs and benefits of preserving agricultural lands and thereby limiting urban expansion in the coastal zone?

2. Development: Where? Can already developed areas absorb future demand for housing (and related development) that would otherwise seek to be served in undeveloped coastal areas? What are the effects upon public revenues and expenditures, and upon private land values and employment throughout the State, of directing coastal zone development to already mostly-developed areas?

3. Recreation: How much, what kind, and for whom? What effect do public parks and beaches and commercial recreation have upon local economies? Where do second homes fit in? What recreation values are provided in the Plan? What is the role of the private developer in providing recreation and accommodation?

4. Energy: Just how would the many specific policies on various types of energy-related facilities affect their existence, location and timing of construction? And what would be the economic costs and benefits of those practical restrictions?

5. Ports: Would the Coastal Plan allow whatever expansion of port facilities will be needed to serve foreign and coastal trade? What will be the economic costs and benefits of what the Coastal Plan would and would not allow?

Each of these topics is the subject of a separate research proposal setting forth the policies in question, the arguments for and against the policies, and the scope of work that we recommend be performed so that the Legislature and the public can anticipate what the economic impact of the policies will be. (Some of the topics, such as Energy, are bundles of many policies that are only semi-related, so that the proposed scope of work actually contains several rather independent research proposals.) Two of the Five Most Significant Issues cover an entire element of the Plan (Recreation and Energy); the others cover only a portion of an element.

The report includes the "issues" (as we perceive them) raised by many of the policies for several reasons: because there actually are disputes as to meaning, interpretation, and effect of the policies between Plan proponents and Plan critics; because the reader's understanding of a proposal couched in general terms can often be deepened by spotlighting the controversy that the policy might cause; and because these are the questions that legislators will be asked to deal with when the Coastal Plan is brought

before them for adoption. In most cases the statements of "issues" were either derived from the Coastal Plan itself or from the critiques that we studied in the preparation of the report. In some instances, however, the consultants applied their own knowledge of planning and economics to the writing of the statements of issues. Whatever their origin, the issues are the essential logical link between the policies and the recommended scope of work.

The Other Significant Issues that arise from the prospective impacts of the Coastal Plan are also dealt with, presented in the same arrangement as the Coastal Plan itself, by elements (beginning with Marine Environment). But only those elements and sub-elements that, in the consultants' opinions, present researchable issues, or apparent ones, are treated. Though no one of these issues is as significant (in our opinion) as the Five Most Significant Issues, the large number of those presently researchable issues indicates their collective importance. These research proposals are not a group; some could be pursued while others were dropped. All could, in our opinion, be performed profitably in the attempt to project economic impacts of adopting the Coastal Plan, to the limits of the capabilities of economics.

Appendix A
Example of Recreation Policies, Issues, and Research Program [1]

As an example of Plan *policies*, their translation into *issues*, and the research requirements that follow thereon, the following from our report is on the Recreation element.

POLICIES

- Lower-cost tourist facilities (campgrounds, moderate-cost hotels) shall be given priority over expensive facilities (private residential developments).
- Potentials for recreation use shall be evaluated before any other form of development is permitted.
- The use of private lands for commercial recreation and support facilities for the public shall have priority.
- Private uses will not be permitted unless commercial recreation is infeasible. Commercial recreation uses are permitted only if consistent with other Coastal Plan policies, including design standards within communities.
- A wide variety of recreational uses/facilities shall be provided in areas convenient to population centers. Large open space areas shall be preserved for low-intensity use.
- Water-dependent recreation (swimming, boating, etc.) shall have priority over activities that do not require access (golf, recreation vehicle camping, etc.). Open space and recreation requirements may be based upon National Recreation and Parks Association standards.
- City and county governments should ensure adequate public open space. Private development shall not be permitted until local plans are adopted. Private development must provide internal recreation facilities.
- Recreational uses that do not require significant facilities (picnic areas, hiking trails) shall have priority over those that require large-scale alteration of the natural environment (hotels, vehicle campgrounds).
- Public access to recreational areas shall be controlled to minimize impact on natural resources. Environmental carrying capacity shall determine the capacity of access and support facilities.
- A coastal trails system and supporting campgrounds shall be established.
- New marinas or recreational boating facilities shall not have adverse environmental effects. Dredging and filling of coastal wetlands shall not be permitted.
- Development and maintenance of recreation facilities should be financed through increased Federal and state support.

ISSUES

For	Against
Preserves and improves public recreation opportunities. Plan meets public needs by improving public access to beaches and scenic areas and limiting private housing development in favor of campgrounds and other commercial recreation appropriate to the needs of lower- and middle-income persons.	Plan limits recreation opportunities by overly restrictive transportation and environmental capacity constraints. Capacity constraints must be balanced with recreation demands and geographic proximity to population centers. (For example, it is doubtful that Golden Gate Park could be built under the removal of sand dunes restriction of the Coastal Plan.)
Additional public lands are necessary to improve public access to beaches and natural scenic areas.	Public acquisition of additional lands is generally unnecessary when over 54 percent of beach areas are already in public ownership. The costs of acquisition would not be offset by the slight incremental benefits.
Second homes limit beach access to high-income groups. If second homes are restricted on the coastline, construction will take place elsewhere so that there will be little net economic loss to construction activity.	Plan has severely impacted construction of second homes. Construction will not take place elsewhere because coastal recreation is a non-substitutable experience.
Plan maintains natural shoreline.	Plan should allow opportunities for commercial recreation development to meet public needs (marinas, etc.).
Plan is necessary and provides recreation benefits.	Plan is too expensive and cannot be justified on a cost/benefit basis.
Coastal Commission approval of coastal recreation/open space plans is necessary to insure protection of coastal resources.	Recreation planning is the proper responsibility of the State Department of Parks and Recreation and local recreation agencies.
Tourism/recreation expenditures provide a large economic benefit to the coastal zone.	Agreed, but tourism/recreation expenditures must be evaluated by type of visitor (day versus overnight) to determine net impact. By limiting middle- and higher-income oriented developments, tourism benefits will be reduced to the extent that costs may exceed benefits.
By giving preference to those uses which do not require significant facilities (hotels, recreation vehicles), the plan is limiting the alteration of the natural environment and also is providing recreation for a broader spectrum of income groups.	The Plan is going against established trends in preferences for overnight accommodations versus day use. This policy is also counter to energy conservation.
Campgrounds provide lower cost accommodations sufficient to meet the needs of most recreationists.	Campgrounds are not sufficient to meet low-income needs. They discriminate in favor of the young, and particular recreation preferences, while no provision is made to meet the needs of other low-income groups (e.g., elderly visitors) or those who prefer a variety of overnight accommodations.

RESEARCH PROGRAM

- Identify major elements of conflict in terms of demands for competing "uses" of land and natural resources (recreation versus housing versus agriculture).
- Review available literature and prior experience. Observed relationships of recreation use to access environmental carrying capacity constraints, tourism/recreation expenditure patterns, feasibility of public transit for recreation, recreation demand estimates, and relative economic impacts of day use and overnight visitation components should be investigated.
- Estimate the following components of coastal recreation demand:

  a. Day use activities

  b. Overnight accommodations by classification:

  Tent camping
  Vehicle camping
  Commercial resorts/hotels
  Hostels
  Motels
  Second homes

- Identify users of recreation facilities in terms of socioeconomic characteristics (age, income, travel patterns, family characteristics).
- Identify propensities toward day versus overnight trips. Estimate how these may change with increased leisure time, transportation costs, and so forth.
- Estimate the costs of providing recreational facilities to meet demand.
- Examine the respective roles of private and public sectors in meeting recreation demands, and particularly whether and to what extent lands already in public ownership could afford additional recreation opportunities.
- Examine whether the access and environmental carrying capacity restrictions recognized in the Coastal Plan would potentially reduce recreation supply. Review previous studies which have identified coastal recreation needs geographically (PARIS model) as compared to supply. Compare these needs with the proposed Coastal Plan.
- Evaluate the implementation of Coastal Plan recreation policies in terms of the impacts upon all levels of government. Evaluate public costs of acquisition and operations and maintenance. Evaluate cost/revenue aspects of commercial recreation developments in terms of recreation expenditures and service costs.
- Examine Coastal Plan impacts upon the second home construction industry in terms of the amount of building, employment, and propensity to shift activity inland. Examine the second home as both a recreation and an economic unit and compare with alternative forms of development. Do trends toward rental condominiums or multiple ownership/use tend to classify these developments as a commercial recreation resource (resort hotel) rather than a private residential development? Examine the impact of second homes upon local economic conditions, tax base, and service costs.

[1] McElyea, J. Richard and Clive B. Jones. "Economic Aspects of the Proposed California Coastal Zone Plan, Appendix A: Examples of Recreation Policies, Issues, and Research Program." Paper presented to the Ocean Economic Potential Committee of the Marine Technology Society, Washington, D.C., May 12, 1976. Economics Research Associates, 680 Beach Street, San Francisco, California 94101. (415/776-9226).

Appendix B

THE MATRIX SYSTEM FOR DISPLAYING ECONOMIC IMPACT OF PROPOSED CALIFORNIA COASTAL PLAN POLICIES

A matrix format was designed to provide an initial overview of the full range of costs and benefits of adoption of the California Coastal Plan. The matrix serves as a checklist against which to compare more detailed analyses of costs and benefits to ascertain whether the full range of impacts of over two hundred policies and sub-policies that comprise the proposed Coastal Plan is considered.

The matrix is built upon a vertical axis (the Policies Axis) printed along the left margin and a horizontal axis (the Effects Axis) printed along the top margin, as illustrated in the attached example of the recreation policy listing. Each policy is numbered and summarized briefly at the far left, and is represented by a line extending across the page opposite the summary. Each type or category of effect has a column of its own (there are 29 such columns). The intersection of each policy line with each effects column creates a "cell" for the possible cost or benefit of that type which that particular policy might cause. Where we have identified a potential significant, primary impact, we have entered a capital letter, B for benefit, and C for cost, in the cell. Where we have identified a potential less significant, secondary impact, we have entered a small b for benefits or c for cost, in the cell. The source or identity of that impact is explained by a brief phrase written across the full width of the line within the set of columns representing the appropriate one of the six major Categories of Effects (e.g., Housing, Land Values, etc.). And when there is need for further explanation, it appears in the Notes Column to the far right on each page of the matrix. Additional details concerning the matrix follow below.

Policies Axis

Several points need to be made about the policies. In the first place, the phrases that summarize each policy are extremely brief, as

is appropriate and even necessary for a matrix that must scan in order to serve its purpose. Secondly, the numbering, order and content of the policies follows the latest information that was available for the general public -- that is, the Preliminary Plan as modified by "Draft Amendments to Findings and Policies (Part II)," dated July 14, 1975, and "Further Revisions of Preliminary Plan Policies," dated August 13, 1975. (The result is that some of the original 183 numbers of policies are missing due to combinations of policies and parts of policies, and there are a few added or renumbered policies bearing "½" numbers.)

Effects Axis

The six major categories and 29 sub-categories represented on the effects axis are, in the opinion of the consultants, the briefest, most simple set that comprises the full range of economic effects of this Coastal Plan, as follows:

A. Commerce and Industry
   1. Mariculture and Commercial Fishing
   2. Agriculture
   3. Mineral Extraction (other than oil)
   4. Timber
   5. Tourism and Recreation
   6. Transportation
   7. Energy 1/
   8. Ports
   9. Non-Coastal-Dependent Industrial and Commercial

B. Housing
   1. Construction Volume and Employment
   2. Housing Cost
   3. Residents-Serving Activities and Employment

1/ Includes Petroleum Development.

C. Emerging Economic Values

1. Scientific/Ecological/Health
2. Scenic Quality
3. Social Equity
4. Coastal Public Use

D. Land Values

1. Undeveloped Acreage
2. Vacant Lots
3. Existing Commercial/Industrial
4. Existing Housing

E. Public Costs

1. Planning
2. Administration
3. Park Acquisition
4. Park Maintenance
5. Restoration
6. Capital Improvements
7. Services (and facilities maintenance)

F. Public Revenues

1. Property Tax
2. Sales Tax
3. User Tax
4. Special Fees (e.g., in-lieu fiees)

The following comments are important in dealing with the categories:

1. Each of the Commerce and Industry sub-categories should be understood as referring to three aspects: (1) the level of economic activity (which could be measured in physical output or dollar volume); (2) the number of jobs involved at that level of activity; and (3) the cost of the product or service (which could be reflected in "consumer" prices, proprietors' profits, or wage levels, or all three). No separation between

these three aspects was made in the matrix, both because it would have made the matrix unwieldy and because the three aspects are normally correlated. (By that, we mean that a positive effect -- a benefit -- to the level of economic activity of a certain type will normally also increase the employment in that activity, and also have a positive effect upon income, reflected either in lower consumer costs, higher profits, higher wages, or some combination of them.) Note that in the housing category we have broken out cost as a separate sub-category because of particular interest in that potential effect (including the effect upon owners of individual lots not yet developed).

2. None of the sub-categories is geographically specific (either to effects solely within the area where the Coastal Agency would have some regulatory powers, or to effects both there and elsewhere). It is clear that the study of economic impacts must not be restricted to those impacts in the Coastal Zone, since that area's gain may be another's loss, and vice versa. We might, therefore, have set up separate sub-categories for effects in the Coastal Zone and similar effects inland within California. Again, however, that would have made the matrix unusable. Instead, we have noted, either in the entry that explains an identified cost or benefit, or in an accompanying note, those instances where displacement effects are most likely or possible. The entire matrix, though, should be read with the possibility of such displacement effects in mind.

3. Category C -- what we have called Emerging Economic Values -- is perhaps the most innovative part of the matrix. The four sub-categories there are types of impacts that economists have long ignored and only recently begun to struggle with. But can there really be any question that a unique habitat or human health has economic value? When the State spends hundreds of thousands of dollars to build scenic overlooks on scenic roads, can one doubt the value of scenic quality? Is there dispute any longer that all benefit from assuring equal access to recreation and peace and quiet to those in our society who have less money and less mobility? Or is there disagreement that it was the availability

of public areas for recreation, particularly coastal ones, that helped draw the millions of immigrants to California and that provides much of what is left of the good life in the State? Surely some of the benefit of policies that preserve and enhance certain parts of the Coastal Zone are reflected elsewhere in the matrix, for instance in A5, Tourism and Recreation; but we believe that there is an economic value to, for example, the acquisition of a new public coastline park, that is beyond what is reflected in park employment, related sales tax revenues, user fees, etc. Whether and how these sub-categories can be quantified is discussed in various places in the report. But even if they cannot be quantified, they exist.

The Entries

1. The basic framework of how to read the matrix was presented above. Here are some details.

The abbreviation "C.A." means the proposed coastal agency. The use of parentheses () around a benefit or cost entry and around the phrase that accompanies it, means that the policy in question is addressed solely to a Federal or State agency or legislation that does not involve the coastal agency. A small number of "basic policies" are so labelled, and no entries are made for them; these policies are actually compendiums or introductions with specifics spelled out in following policies, the impacts of which are more easily examined. Some policies have both cost and benefit effects within a major category (e.g., Commerce and Industry); when this occurs, separate phrases are entered for the cost and benefit impacts.

2. Where a policy might have the effect of raising the cost of any building for any use, a "C" (for cost) might have been entered in Columns A-1 through A-8 and B-1 through B-3. This would have cluttered the matrix considerably. So instead we entered a "C" only in D-1, Land Values -- Undeveloped Acreage (and where appropriate also in D-2, Land Values -- Vacant Lots). This entry recognizes that increased costs of building on a site are ordinarily reflected in a purchaser's being willing to pay less for that site, and thus in a reduced value for properties subject to restrictions that raise development costs.

3. The matrix is very much a work-in-progress. As noted above, the content and arrangement of the policies were still in flux during the preparation of the report. It was, therefore, not feasible to spell out in great detail the qualifications, assumptions, and questions that relate to many of the entries. When the research recommended in the report is carried out, a matrix can be prepared that deals far more specifically with these matters, and particularly with the question of what particular groups are specially affected by certain policies of the Plan.

Economic Impacts of Recreation Policy in the Proposed California Coastal Plan [1]

CATEGORY OF EFFECT / POLICY	A. COMMERCE AND INDUSTRY									B. HOUSING			C. EMERGING ECONOMIC VALUES				D. LAND VALUES				E. PUBLIC COSTS							F. PUBLIC REVENUES				NOTES
	1. MARICULTURE AND COMMERCIAL FISHING	2. AGRICULTURE	3. MINERAL EXTRACTION (OTHER THAN OIL)	4. TIMBER	5. TOURISM AND RECREATION	6. TRANSPORTATION	7. ENERGY	8. PORTS	9. NON-COASTAL-DEPENDENT INDUSTRIAL AND COMMERCIAL	1. CONSTRUCTION VOLUME AND EMPLOYMENT	2. HOUSING COST	3. RESIDENTS—SERVING ACTIVITIES AND EMPLOYMENT	1. SCIENTIFIC/ECOLOGICAL/HEALTH	2. SCENIC QUALITY	3. SOCIAL EQUITY	4. COASTAL PUBLIC USE	1. UNDEVELOPED ACREAGE	2. VACANT LOTS	3. EXISTING COMMERCIAL/INDUSTRIAL	4. EXISTING HOUSING	1. PLANNING	2. ADMINISTRATION	3. PARK ACQUISITION	4. PARK MAINTENANCE	5. RESTORATION	6. CAPITAL IMPROVEMENTS	7. SERVICES (AND FACILITIES MAINTENANCE)	1. PROPERTY TAX	2. SALES TAX	3. USER TAX	4. SPECIAL FEES (E.G., IN-LIEU FEES)	
OPTIMUM RECREATIONAL USE OF THE COAST																																
74. INCREASE RECREATIONAL USE COMPATIBLE WITH RESOURCE PROTECTION	← BASIC POLICY: SET GOALS AND OBJECTIVES WHICH FOLLOWING POLICIES IMPLEMENT →																															
PRIORITY FOR RECREATIONAL USE OF THE COAST																																
75. EVALUATE PUBLIC RECREATION POTENTIAL AND FUTURE DEMAND BEFORE PERMITTING OTHER USES OF COASTAL LAND	MAINTAIN OPPORTUNITIES FOR PUBLIC RECREATION				B								ENSURE PUBLIC ACCESS			B	C	ANY DELAYS MIGHT INCREASE DEVELOPMENT COSTS				C	C	C.A., STATE AND LOCAL JURISDICTIONS TO CONDUCT EVALUATIONS, PURCHASE SUITABLE LANDS					b			REFER TO POLICY 67 ON ACQUISITION.
76. COMMERCIAL RECREATION SHOULD HAVE PRIORITY OVER OTHER PRIVATE DEVELOPMENT	ENCOURAGES COMMERCIAL RECREATION				B								SUCH DEVELOPMENTS PROVIDE PUBLIC ACCESS TO COAST			B						C		C.A., STATE AND LOCAL JURISDICTIONS TO ENFORCE					b			EXCEPTIONS SAFEGUARD SITES FOR AGRICULTURE AND COASTAL-DEPENDENT INDUSTRY.
RECREATIONAL USE OF SHORELINE AND UPLAND AREAS																																
80. FIRST PRIORITY TO COASTAL-DEPENDENT RECREATION, SECOND TO WATER-DEPENDENT, OVER NON-DEPENDENT ACTIVITIES	MAINTAIN OPPORTUNITIES FOR COASTAL RECREATION				B								ENSURE AREAS BE PROVIDED FIRST FOR ACTIVITIES THAT CANNOT READILY BE PROVIDED AT NON-COASTAL SITES		B	B						C		C.A., STATE AND LOCAL JURISDICTIONS TO ENFORCE								
83. LIMIT SUBSTANTIAL ALTERATIONS OF THE SHORELINE, EVEN FOR RECREATION	RESTRICTS RECREATIONAL DEVELOPMENT				C								B MAINTAIN COASTAL ECOLOGY AND SCENIC VALUES	B								C		C.A., STATE AND LOCAL JURISDICTIONS TO ENFORCE								SUBSTANTIAL ALTERATIONS FOR COASTAL OR WATER-DEPENDENT RECREATIONAL USES PERMITTED WHERE THERE IS NO LESS ENVIRONMENTALLY DAMAGING ALTERNATIVE AND THE ALTERATION IS IN ACCORD WITH COASTAL PLAN POLICIES. USES NOT REQUIRING SUCH ALTERATIONS PREFERRED.
RECREATION AND DEVELOPMENT																																
77. PROVIDE A VARIETY OF RECREATION NEAR METROPOLITAN AREAS	PROVIDES RECREATION WHERE POPULATION CONCENTRATIONS ENSURE INTENSIVE USE				B	b							PROXIMITY TO METROPOLITAN AREAS MAXIMIZES ACCESS OPPORTUNITY BY MINIMIZING TRANSPORT COSTS		B	B					C	C		C.A., STATE AND LOCAL JURISDICTIONS TO FORMULATE PLANS AND ENFORCE					b			
79. INSTITUTE A STATEWIDE RESERVATION AND USE SYSTEM FOR COASTAL RECREATION													(CROWD CONTROL ENSURE ACCESS FOR DIVERSE SOCIOECONOMIC GROUPS.)		(B)	(B)						(C)		(STATE DEPARTMENT OF PARKS AND RECREATION TO IMPLEMENT)								
81. RESERVE UPLAND SUPPORT AREAS FOR RECREATIONAL USES WHICH ARE NOT DEPENDENT UPON A SHORELINE LOCATION AND WHICH MIGHT DEGRADE THE SHORELINE					b								B MAINTAIN COASTAL ECOLOGY AND SCENIC VALUES	B	b	b					C	C	C		C	C					
82. BALANCE DEVELOPMENT LOCALLY WITH OPEN SPACE AND RECREATIONAL FACILITIES		PROVIDE RECREATION FACILITIES			B								ENSURE PUBLIC ACCESS			B	c	c		b	C	C	C	C		C	C		b	b		REQUIREMENT THAT OPEN SPACE AND RECREATION FACILITIES BE PROVIDED MAY RESTRICT DEVELOPMENT IN AREAS FOUND TO BE DEFICIENT.
82½. REQUIRE NEW RESIDENTIAL DEVELOPMENT TO PROVIDE ON-SITE RECREATION		PROVIDE RECREATION FACILITIES			B					NEW RESIDENTIAL DEVELOPMENT TO PAY FOR REQUIRED FACILITIES			PREVENT CROWDING OF EXISTING PUBLIC AREAS			B						C		C.A., STATE AND LOCAL JURISDICTIONS TO ENFORCE			b	b		b		PROVISION OF ON-SITE RECREATION WILL ADD TO VALUE OF NEWLY DEVELOPED PROPERTIES.
CONTROLLING RECREATION TO PROTECT RESOURCES																																
84. LIMIT ACCESS AND RECREATIONAL USE WHERE NECESSARY	ENSURE LONG-RANGE RECREATIONAL ENJOYMENT OF FRAGILE RESOURCE AREAS				b								B MAINTAIN COASTAL ECOLOGY; PROTECT PUBLIC SAFETY								C	C		C.A., STATE, AND LOCAL JURISDICTIONS TO DESIGN CAPACITY OF ROADS, PARKING AREAS, AND OTHER SUPPORT FACILITIES WITHIN ENVIRONMENTAL CARRYING CAPACITY; ENFORCE								
													ENSURE AVAILABILITY OF SUCH AREAS TO POTENTIAL FUTURE USERS		b	b																
85. RESTRICT OFF-ROAD RECREATIONAL VEHICLES ALONG THE COASTLINE	RESTRICTS ONE TYPE OF RECREATION;BENEFITS OTHERS				C/B								B MAINTAIN COASTAL ECOLOGY AND GENERAL RECREATIONAL OPPORTUNITIES			B						C		C.A., STATE AND LOCAL JURISDICATIONS TO ENFORCE								
86. ESTABLISH LONG-RANGE PROGRAM TO PROTECT RECREATIONAL RESOURCES AND MANAGE THEIR USE		MAINTAIN RECREATIONAL RESOURCES			B								B MAINTAIN COASTAL ECOLOGY AND SCENIC VALUES WHILE PROVIDING A VARIETY OF PUBLIC ACCESS OPPORTUNITIES ASSOCIATED WITH POPULATION CENTERS AND TRANSPORTATION CORRIDORS		B	B					C	C		C.A., STATE, AND LOCAL JURISDICTIONS TO ANALYZE RECREATIONAL NEEDS AND TO DEVELOP LONG-RANGE PROGRAM FOR IMPLEMENTATION, INCLUDING RESTRAINTS ON USE AT PEAK TIMES AND INDUCEMENTS TO USE AT OFF-PEAK					b			
					b																											
87. ENCOURAGE EDUCATION ON THE COASTAL ENVIRONMENT													B PROMOTE ENVIRONMENTAL EDUCATION AT ALL LEVELS								C	C		C.A., STATE AND LOCAL JURISDICTIONS TO PLAN FOR ENVIRONMENTAL EDUCATION IN SCHOOL CURRICULA AND IN THE DESIGN OF PUBLIC FACILITIES AND TO ADMINISTER SUCH PROGRAMS							C	

LEGEND

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Economic Impacts of Recreation Policy in the Proposed California Coastal Plan [1] (continued)

POLICY \ CATEGORY OF EFFECT	A. COMMERCE AND INDUSTRY									B. HOUSING			C. EMERGING ECONOMIC VALUES				D. LAND VALUES				E. PUBLIC COSTS							F. PUBLIC REVENUES				NOTES
	1. MARICULTURE AND COMMERCIAL FISHING	2. AGRICULTURE	3. MINERAL EXTRACTION (OTHER THAN OIL)	4. TIMBER	5. TOURISM AND RECREATION	6. TRANSPORTATION	7. ENERGY	8. PORTS	9. NON-COASTAL-DEPENDENT INDUSTRIAL AND COMMERCIAL	1. CONSTRUCTION VOLUMES AND EMPLOYMENT	2. HOUSING COST	3. RESIDENTS—SERVING ACTIVITIES AND EMPLOYMENT	1. SCIENTIFIC/ECOLOGICAL/HEALTH	2. SCENIC QUALITY	3. SOCIAL EQUITY	4. COASTAL PUBLIC USE	1. UNDEVELOPED ACREAGE	2. VACANT LOTS	3. EXISTING COMMERICAL/INDUSTRIAL	4. EXISTING HOUSING	1. PLANNING	2. ADMINISTRATION	3. PARK ACQUISITION	4. PARK MAINTENANCE	5. RESTORATION	6. CAPITAL IMPROVEMENTS	7. SERVICES (AND FACILITIES MAINTENANCE)	1. PROPERTY TAX	2. SALES TAX	3. USER TAX	4. SPECIAL FEES (E.G., IN-LIEU FEES)	
COASTAL RESERVE SYSTEM					B								B	B		B					C	C	C									
88. ESTABLISH A COASTAL RESERVE SYSTEM		MAINTAIN RECREATIONAL RESOURCES											MAINTAIN COASTAL ECOLOGY, SCENIC VALUES, AND EDUCATIONAL AND RECREATIONAL RESOURCES								C.A. AND OTHER STATE AGENCIES TO INVENTORY NATURAL HABITAT AREAS IN ORDER TO DESIGNATE NEW RESERVES: COORDINATE MANAGEMENT ACTIVITIES OF PUBLIC AND PRIVATE BODIES; ACQUIRE APPROPRIATE SITES								b			
89. MANAGE RESERVES FOR RESOURCE PROTECTION		MAINTAIN RECREATIONAL RESOURCES			B								B	B		B					C	C			C				b			
													MAINTAIN COASTAL ECOLOGY, SCENIC VALUES, AND EDUCATIONAL AND RECREATIONAL RESOURCES								C.A., STATE AND LOCAL JURISDICTIONS TO PLAN AND OPERATE PROGRAMS TO PROVIDE PUBLIC ACCESS FOR EDUCATION AND RECREATION CONSISTENT WITH HABITAT PROTECTION, RESTORATION, AND ENHANCEMENT											
90. ESTABLISH COASTAL RESERVE COORDINATING COMMITTEE																																THERE ARE NO DIRECT BENEFITS OR COSTS ASSOCIATED WITH THE CHOICE OF A FORM OF MANAGEMENT. THE COMMITTEE WOULD ACT AS AN ADVISORY BOARD.
COASTAL TRAILS SYSTEM					B									B	B	B						C	C			C	C					
91. ESTABLISH COASTAL TRAILS SYSTEM	PROVIDE TRAILS FOR COASTAL RECREATION												PRIORITY IS GIVEN TO SYSTEMS IN AND NEAR URBAN AREAS TO PROVIDE PUBLIC ACCESS AND SCENIC VIEWS TO DIVERSE URBAN POPULATIONS								STATE AND LOCAL JURISDICTIONS TO IMPLEMENT, MAINTAIN AND POLICE TRAILS SYSTEMS, USING EMINENT DOMAIN TO ACQUIRE RIGHTS-OF-WAY WHEN NECESSARY; AND TO PROVIDE CAMPGROUNDS AND OTHER FACILITIES								b	b		TO PROTECT AGRICULTURAL LANDS, TRAILS GENERALLY SHOULD NOT CROSS SUCH PROPERTIES.
MARINAS					B								B	B								C							b			
92. ACCOMMODATE NEW RECREATIONAL BOATING FACILITIES	PROVIDES FOR DEVELOPMENT OF NEW BOATING FACILITIES												MAINTAIN COASTAL ECOLOGY AND SCENIC VIEWS								STATE AND LOCAL JURISDICTIONS TO ANALYZE PROPOSALS FOR NEW RECREATIONAL BOATING FACILITIES, AND TO REGULATE TO ENSURE ENVIRONMENTAL PROTECTION											
93. MAXIMIZE USE OF BOATING FACILITIES	INCREASE OPPORTUNITIES FOR MORE VARIED SOCIOECONOMIC GROUPS TO EXPERIENCE RECREATIONAL BOATING				B								B	B	B							C							b			THIS POLICY FAVORS RENTAL AND MULTIPLE OWNERSHIP OF BOATS, THEN ALLOCATES REMAINING SLIP-SPACE TO SINGLE OWNERS ON A FIRST-COME-FIRST-SERVE BASIS.
													PROVIDE PUBLIC ACCESS FOR VARIED SOCIOECONOMIC GROUPS CONSISTENT WITH PROTECTION OF ENVIRONMENTAL QUALITY								C.A., STATE AND LOCAL JURISDICTIONS TO EVALUATE PROJECT PROPOSALS, FAVORING THOSE WHICH WOULD BROADEN PUBLIC ACCESS TO BOATING											
94. PROVIDE PUBLIC ACCESS TO MARINAS	MAXIMIZE RECREATIONAL VALUE OF MARINAS FOR NON-BOATERS, AS WELL AS BOATERS				B									B	B							C							b			PRIVATE MARINAS MAY ALSO INCUR INCREASED SECURITY COSTS.
													PROVIDE ACCESS TO VARIED SOCIOECONOMIC GROUPS								C.A., STATE AND LOCAL JURISDICTIONS TO ENFORCE POLICY AND PROVIDE SECURITY MEASURES											
FINANCING COASTAL RECREATION					(B)											(B)						(C)	(C)		(C)	(C)						
95. INCREASE FUNDS FOR COASTAL RECREATION FACILITIES	(PROVIDE PUBLIC RECREATION FACILITIES)												(PUBLIC FACILITIES WOULD PROVIDE ACCESS OPPORTUNITIES.)								(FEDERAL AND STATE GOVERNMENTS TO PROVIDE SPECIAL FUNDING PROGRAMS FOR RECREATION FACILITIES.)								b			
															b																	
													(PUBLIC FACILITIES MAY BE AVAILABLE TO MORE DIVERSE SOCIOECONOMIC GROUPS THAN WOULD PRIVATE FACILITIES.)																					
96. ESTABLISH EQUITY IN COST OF MAINTAINING COASTAL RECREATIONAL FACILITIES																																THE SHIFTING OF COSTS FROM LOCALITIES TO LARGER UNITS OF GOVERNMENT (FEDERAL, STATE, COUNTY) FOR FACILITIES USED BY NON-LOCAL POPULATIONS DOES NOT CREATE NEW COSTS, BUT DOES EFFECT GREATER EQUITY.

LEGEND

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[1] McElyea, J. Richard and Clive B. Jones. "Economic Aspects of the Proposed California Coastal Zone Plan, Appendix B: The Matrix System for Displaying Economic Impacts of Proposed California Coastal Plan Policies." Paper presented to the Ocean Economic Potential Committee of the Marine Technology Society, Washington, D.C., May 12, 1976. Economics Research Associates, 680 Beach Street, San Francisco, California 94101 (415/776-9226). Single copies available.