Appendices

APPENDIX A

THE OCC&DC TESTIMONY TO U.S. SENATE COMMITTEE ON COMMERCE SUPPORTING SB1988

United States Senate

COMMITTEE ON COMMERCE
ROOM 5202, DIRKSEN OFFICE BUILDING

Washington, D.C., 5/17, 1974

Referred to Mr. Wilbur Ternyik, President
Oregon Ports Assn.
P.O. Box 247
Florence, Oregon

Testimony on S1988 - Extending U.S. fishery jurisdiction

given by you before the Committee is attached. Please indicate any corrections thereon, furnish the information requested and return within 4 days after receipt so that your remarks as revised may appear in the final volume.

Changes in diction or expression or in the interest of clarity, brevity, or accuracy, or to correct any errors in transcribing are permitted. If changes in substance are desired, application must be made to the Chairman. PLEASE DO NOT RETYPE, WRITE LEGIBLY, and return original transcript.

Please return to:

James B. Olsen
Senate Commerce Committee
5202 Dirksen Office Building
Washington, D.C. 20510

GPO 29-654-h

has been going on for years ever since the 10-year period.

We thank you very much, gentlemen.

Now we aregoing to have some more field hearings and then we are going to have some hearings back down here.

I think Senator Hollings is going to have some hearings down in the southeast part, maybe Atlanta or someplace like that.

Mr. Rush. I want to thank you for the opportunity of appearing, Mr. Chairman.

The Chairman. We have two other witnesses, Oregon Coastal Ports Association, Mr. Ternyik, and Larry Qualman.

XXXXXXX STATEMENTS OF WILBUR E. TERNYIK, CHAIRMAN, OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION; AND LARRY QUALMAN, PRESIDENT, PORT COMMISSION OF COOS BAY, OREGON.

Mr. Ternyik. Mr. Chairman, my name is Wilbur Ternyik. I am Chairman of the Oregon Coastal Conservation and Development Commission, created by the Oregon State Legislature in 1971.

This Commission of 30 members is responsible for developing a natural resource management program for Oregon's coastal zone.

By resolution of the Commission on April 19, 1974 I was delegated to speak here on behalf of the entire Commission. We strongly support Senate Bill 1988 and urge its passage.

Our Commission is now entering its third year of work in developing long-range management guidelines to insure sustained yields of our coastal resources. In no other category do we feel there is a more serious threat, than that of the offshore fishery. Unless immediate steps are taken to regulate the harvest by domestic and foreign fishing fleets, the continental shelf fishery off the Oregon coast will be irreversibly damaged in the next three years.

The Chairman. It is going to take 20 years to revive it.

Go ahead.

Mr. Ternyik. The full impact of the foreign fishing fleet on the Americah fishery is hard to conceive until one looks at their gear. The foreign vessels now fishing off the Oregon coast are mainly the Soviet BMRT stern trawlers using illegal size nets by American standards.

I would like to show you here two illegal nets recently found off the Oregon coast near Winchester Bay. The first is constructed of monofilament and believed to be Japanese. This rather innocent looking piece of net is in fact a very insidious device. One small portion of an offhsore gill net sometimes used in 4 to 5-mile sets.

The second piece of net is a demonstration of total lack of concern for the resource. The American fleet is restricted to a single mesh net of 4-1/2 inch size. This net, as you can see, is one outside web with 4 liners. The towing cable I cut

this from was 1 inch in diameter. Oregon fishermen point out that the Soviet fleet is the only one having vessels capable of pulling such gear. Not even the smallest fish can escape this net.

Senator Stevens. It has 4 liners?

Mr. Ternyik. Yes.

Senator Stevens. I have a whole office full of some of these things we got in Alaska. As I told the Chairman, we got one that is 14 miles long.

Mr. Ternyik. The foreign fishing fleets and illegal nets being used off the Pacific Coast are causing the systematic destruction of this country's vital fishery resource.

This is a series of color photos I took directly west of Florence, Oregon on a day we counted 55 vessels fishing just outside the 12-mile limit. Please note the shoreline in the background. Last season the first Polish trawler fished off the Oregon coast. This vessel with a U.S. observer abroad took 17,000 pounds in one 10-minute tow.

The Chairman. You heard the testimony we don't have an agreement with them.

Mr. Ternyik. No agreement.

The Chairman. They will be back. Don't worry, they will be back.

Mr. Ternyik. We feel the Polish vessels are no Polish vehicle at all.

The grim picture of disaster facing the American fishery extends beyond our shoreline. The once great Alaska Bristol Bay salmon run is facing total depletion this season. The swift complete wipeout of the Oregon Pacific Ocean Perch Fishery is another example.

The American Ocean Perch Fishery catch reached a high of 13.7 million pounds in one year, but the fishery was completely depleted by the Soviet Fleet activities in two short years.

Next in line, the Dover Sole, a fish that lives to age thirty. U.S. net requirements enable escape of Dover Sole five years old and younger. Soviet fishing nets allow for no escape. The effect of the removal of Dover Sole and Ocean Perch on the offshore life chain is not known. Without proper knowledge developed by thorough resource inventories, this, too, could spell total disaster. Dr. Byrne of Oregon State School of Oceanography told me last Friday that no such data now exists. It is his opinion that the problems facing the Oregon Fishery stock may be beyond help if these studies are not started soon.

The Chairman. Even without these studies on Ocean Perch, it is just common knowledge they have gone down. They are pretty well gone. We don't have to have studies about it. Although Dr. Byrne ought to proceed and do what he is doing so we have more data.

Mr. Ternyik. Dr. Byrne and the Commission are not the only ones seeking action on this problem. During the 1973 Oregon Legislative session, H.B. 2821 passed the House by 56 to 0 and the Senate by 24 to 1. It was then vetoed by our Governor, only later to be overwhelmingly passed over the veto.

This strong bipartisan message called for a halt to this uncontrolled fishing.

The Chairman. Right there, Moore, this wasn't brought up this morning, but here is another problem we are going to have with the states proceeding unilaterally themselves. Here is the Oregon Legislature, and I have no doubt in my legislature if somebody introduced a 200-mile bill, it would pass.

Mr. Moore. I think one has passed in Massachusetts.

The Chairman. This is one of the problems also you have off the coast. Our Constitution, for the record, lends itself to this because the court decisions on the limits of the coastal zones, the court decisions said that we had control of the oceans as far as a man could row a boat. It didn't say how big a boat or how long. I suppose until he disappeared or until he got tired out. They have stuck, and that is part of the Constitution.

So, our state could pass a law just like Oregon did.

Mr. Moore. Senator Magnuson, I would have to say, though, the states would be bound by the same foreign relations

aspects.

The Chairman. I understand that, but it is a problem with these people. Governors can veto them all they want. My state would override his veto.

Go ahead.

Mr. Ternyik. This bill establishes a 50-mile offshore Fisheries Conservation Zone by the State of Oregon. We realize that it presents serious questions of international law; however, we need the problem solved now, not tomorrow. Therefore, this drastic action by the State of Oregon in absence of federal leadership. We welcome the introduction of S. 1988 to fill that void.

It is the opinion of our Commission that the State Department has failed miserably to protect our fishery resource. Each new treaty has heavily favored the Soviet Fleet. The passage of this bill would insure the needed interim protection. We need resource inventory studies, regulations and police powers developed in an orderly manner if this nation's fishery resources are to be protected from complete destruction.

Mr. Chairman, I would like to add that our fishermen on the Oregon Coast do not really need any more sympathy from the State Department. We need some action if we are going to conserve our fishery resources.

The Chairman. Thank you, very much. Is Qualman here?

APPENDIX B

RESOURCE SPECIALIST TEAMS

Beaches and Dunes

Bill Billings	Soil Conservation Service
Clyde Bowlsby	Soil Conservation Service
Herb Carnahan	Soil Conservation Service
Bob Corthell	Soil Conservation Service
Greg Hartman	U.S. Army Corps of Engineers
Harold Herndon	U.S. Army Corps of Engineers
Don Leach	Soil Conservation Service
Ernest Lund	Department of Geology, U. of O.
Frank Reckendorff	Soil Conservation Service
Herb Schlicker	Department of Geology and Mineral Industries
Wilbur Ternyik	Dune Stabilization Specialist

Estuaries and Wetlands

Dick Angstrom	Associated Oregon Industries
Glenn Carter	Department of Environmental Quality
Bob Hopman	U. S. Army Corps of Engineers
Duane Karna	Environmental Protection Agency
Jim Mason	Weyerhauser
Rollie Montagne	Division of State Lands/Montagne & Associates
Rollie Rousseau	Wildlife Commission of Oregon
Paul Rudy	Oregon Institute of Marine Biology, U. of O.
Lynn Steiger	Pacific Planning Associates
John Thompson	Georgia Pacific Corporation
Chuck Walters	Fish Commission of Oregon
Bill Wick	Marine Advisory Program/Sea Grant, O.S.U.

Continental Shelf

Robert Borovick	Bureau of Land Management
John Byrne	Department of Oceanography, O.S.U.
Don Christensen	Oregon Guides and Packers, Inc.
Edward Condon	Extension Oceanography, O.S.U.
Verne Cox	U.S. Coast Guard
J. Timothy Hill	Oregon Otter Trawl Commission
Jon Jacobson	Marine Law, U. of O.
Robert Jacobson	Marine Extension Agent, O.S.U.
Earle Johnson	Division of State Lands
John Lansing	Bumble Bee Seafoods
Ron Lee	Environmental Protection Agency
James Meehan	Fish Commission of Oregon
Arthur Oakly	Bureau of Land Management
Arthur Paquet	Oregon Otter Trawl Commission
Phil Peterson	Salmon and Dungeness Crab Fisherman
Phil Smith	OCC&DC Commission Member
Merrit Tuttle	National Marine Fisheries Service
Chuck Walters	Fish Commission of Oregon
Bob Hopman	U.S. Army Corps of Engineers

Fish and Wildlife

Doug Bennett	State Water Resources Board
Collier Buffington	OCC&DC Commission Member
Jack Donaldson	Oregon State University
Jim Johnston	Crown Zellerbach
Bill Luch	Steelheaders
Carlos Pinto	Siuslaw National Forest
Rollie Rousseau	Wildlife Commission of Oregon
Mike Scott	Fish and Wildlife
Merrit Tuttle	National Marine Fisheries Service
Chuck Walters	Fish Commission of Oregon
Ron Weaver	Bureau of Sport Fisheries and Wildlife

Floodplain Management (incorporated into Geologic Hazards)

Dick Angstrom	Associated Oregon Industries
Doug Bennett	State Water Resources Board
Dick Bewersdorff	Lincoln County Planning Department
Paul Coyne	Port of Siuslaw
Bob Evans	State Water Resources Board
Colonel Gilkey	U.S. Army Corps of Engineers
B. L. Harris	Department of Soil Science, O.S.U.
Hal McCall	Bohemia Lumber Company
Rollie Montagne	Division of State Lands/Montagne & Associates
Stan Hamilton	Division of State Lands
Warne Nunn	Pacific Power and Light
Newton Perry	State Engineer's Office
Frank Reckendorff	Soil Conservation Service
Rich Reiter	Department of Environmental Quality
Larry Vinton	Pacific Northwest River Basins Commission

Freshwater and Shorelands (separated into individual categories)

Dick Angstrom	Associated Oregon Industries
Doug Bennett	State Water Resources Board
Dick Bewersdorff	Lincoln County Planning Department
Paul Coyne	Port of Siuslaw
Pat Dugan	Coos-Curry Council of Governments
Bob Evans	State Water Resources Board
Colonel Gilkey	U.S. Army Corps of Engineers
Stan Hamilton	Division of State Lands
Bill Harris	Extension Service, O.S.U.
Harold Herndon	U.S. Army Corps of Engineers
Hal McCall	Bohemia Lumber Company
Rollie Montagne	Division of State Lands
Warne Nunn	Pacific Power and Light
Knute Perry	State Engineer's Office
Frank Reckendorff	Soil Conservation Service
Rich Reiter	Department of Environmental Quality
Larry Vinton	Pacific Northwest River Basins Commission
Andy Zedwick	OCC&DC Commission Member

Geological Hazards

Jackie Burton	Environmental Section, Highway Division
Paul W. Hughes	Consulting Geologist
Bob Lawrence	Department of Geology, O.S.U.
Jack Lesch	Clatsop-Tillamook Intergovernmental Council
Frank Reckendorff	Soil Conservation Service
Herb Schlicker	Department of Geology and Mineral Industries
John E. Schriner	OCC&DC Commission Member
Lynn Steiger	Pacific Planning Associates

Historical and Archaeological Resources

Steve Beckham	History Department, Linfield College
Dave Brauner	Anthropology Department, O.S.U.
Paul Hartwig	Historical Office, Department of Transportation
Mike Lowell	Private Developer of Cascade Head Ranch
Dick Ross	Anthropology Department, O.S.U.
Beatrice Wilcox	Lincoln County Historical Society

Uplands (currently Agriculture, Forest, Urban and Recreation Resources)

Stan Bennett	Siuslaw National Forest
Dick Bewersdorff	Lincoln City Planner
Jack Fitzpatrick	Fitzpatrick Realty
Bob Gerdes	Coos County Planning Department
Sue Gonor	Lincoln County Planning Commission
Everett Hunt	State Forestry Department
Ron Hyra	State Parks, Highway Division
Jack Lesch	Clatsop-Tillamook Intergovernmental Council
Gene Magee	Oregon Coast Association
James Mason	Weyerhauser
John Massie	Extension Service, Tillamook County
Dave Megrath	OCC&DC Commission Member
Dave Povey	Department of Urban Planning, U. of O.
Ted Spence	Department of Transportation
Lynn Steiger	Pacific Planning Associates

APPENDIX C

LC 1480
2/3/75
(25)

A Bill For An Act
LC 1480 - Draft

MEASURE SUMMARY

Establishes Coastal Conservation and Development Committee as advisory body to L.C.D.C.

LC 1480
2/3/75
(25)

A BILL FOR

AN ACT

Relating to the conservation and development of the coastal zone; creating new provisions; and repealing ORS 191.110, 191.120, 191.130, 191.140, 191.150, 191.160, 191.170 and 191.180.

Be It Enacted by the People of the State of Oregon:

Section 1. Sections 2 through 7 of this Act are added to and made a part of ORS 197.005 to 197.430.

Section 2. For the purpose of this Act the coastal zone is defined as that area lying between the Washington border on the north to the California border on the south, bounded on the west by the extent of the state's territorial jurisdiction, and on the east by the crest of the coastal mountain range, with the exception of:

(1) The Umpqua River basin, where the coastal zone shall extend to Scottsburg.

(2) The Rogue River basin, where the coastal zone shall extend to Agness.

(3) The Columbia River basin, where the coastal zone shall extend to the downstream end of Puget Island.

Section 3. As used in this Act, unless the context requires otherwise:

(1) "Coastal area" means a geographical area which lies within the coastal zone as defined in section 2 of this Act.

(2) "Committee" means the Coastal Conservation and Development Committee formed under this Act.

(3) "Governing body" means, in the case of a county, the county court or board of county commissioners of the county or, in the case of a city, the city council or other legislative body of the city, or in the case of a port district, the board of port commissioners.

(4) "Member" means a member of the committee as specified under section 4 of this Act.

(5) "Plan" means a generalized, coordinated plan for the orderly management and development of the lands within the region that interrelates all functional and natural systems and activities relating to all the use of the land, air and water systems, transportation systems, recreational facilities, air and

water quality management programs, residential, commercial and industrial developments and the provision of public services.

(6) "Region" means all the geographic area included within the boundaries of the committee.

Section 4. (1) There is established a Coastal Conservation and Development Committee.

(2) The committee shall consist of nine members appointed as follows:

(a) The Governor shall appoint one person who resides within the coastal zone and who has demonstrated an interest in the protection, conservation and orderly development of the environmental quality of life in the coastal zone.

(b) The Governor shall appoint three elective county officials, three elective city officials, one elective port district official, and one elective school district official from the coastal zone. Each county within the coastal zone shall be represented by at least one of the appointed members.

(3) The term of office of each member of the committee is four years. No person shall serve more than two full terms as a member of the committee.

(4) The committee shall select one of its members as chairman and another member as vice chairman, for terms and with duties and powers necessary for performance of the functions of

the offices as the committee determines. The vice chairman of the committee shall act as chairman in absence of the chairman.

(5) A majority of the members of the committee constitutes a quorum for transaction of business.

Section 5. The committee shall:

(1) Prepare and administer a plan which shall reflect a balancing of the conservation of the natural resources of the coastal zone and the orderly development of the natural resources of the coastal zone. The plan shall be prepared in a form designed to be used as a standard against which proposed uses of the natural resources of the coastal zone may be evaluated. In the event of conflicting uses of the natural resources of the coastal zone, the plan shall establish a system of preferences between conflicting uses that are consistent with control of pollution and prevention of irreversible damage to the ecological and environmental qualities of the coastal zone.

(2) Consider at least the following factors in preparation and administration of the plan:

(a) The quality, quantity and movement of estuarine and other coastal waters, whether tidal or nontidal in character.

(b) The ecological balance of estuarine and marine resources.

(c) The economic interests in the coastal zone, including but not limited to commercial and recreational fishing interests.

(d) The projected population growth and employment needs within the coastal zone.

(e) Scientific information regarding the hydrology, geology, topography, ecology and other relevant scientific data relating to the coastal zone.

(f) Plans, surveys and inventions that have been or are being made with respect to the coastal zone by federal, state and local government agencies.

(g) Comprehensive land use plans and local zoning ordinances administered by local governmental agencies having jurisdictions over lands within the coastal zone.

(3) Recommend adoption of the plan provided in subsection (1) of this section to the Land Conservation and Development Commission as a comprehensive plan for the region, consistent with state-wide goals and guidelines pursuant to ORS 197.005 to 197.430.

(4) Refine and update the plan as necessary and in coordination with local governments.

(5) Advise the Land Conservation and Development Commission on designation of coastal "Areas of Critical Concern" and "Activities of State-wide Significance".

Section 6. (1) All petitions filed with the Land Conservation and Development Commission pursuant to ORS 197.300 that pertain to the region within the committee's jurisdiction shall be reviewed by the committee after review proceedings are conducted under ORS 197.301.

(2) Within 30 days after receipt of the petition the committee shall submit recommendations to the Land Conservation and Development Commission.

(3) Any actions of the Land Conservation and Development Commission contrary to the committee's recommendations shall be supported by written findings and conclusions.

Section 7. The Land Conservation and Development Commission shall provide staff and financial assistance to the committee in carrying out its duties and shall provide an office for the committee within the coastal zone.

Section 8. ORS 191.110, 191.120, 191.130, 191.140, 191.150, 191.160, 191.170 and 191.180 are repealed.

LC 1041
11/22/74
Revised

APPENDIX D

A Bill For An Act
LC 1041 - Draft

MEASURE SUMMARY

Creates the Coastal Conservation and Development Commission; commission to act as local coordinating agency.

Requires coastal conservation and development plan; coordinate coastal development.

A BILL FOR AN ACT

Relating to the conservation and developmentof the coastal zone; creating new provisions; and repealing ORS 191.110, 191.120, 191.130, 191.140, 191.150, 191.160, 191.170 and 191.180.

Be It Enacted by the People of the State of Oregon:

Section 1. The Legislative Assembly finds and declares that:

(1) The coastal zone in this state is an important and valuable part of the natural resources of this state and that because of its value there exists a need for its protection through the development and maintenance of a balance between conservation and development interests with respect to such natural resources.

(2) There exists a conflict in the development and use of the natural resources of the coastal zone among industrial interests, commercial and residential development interests, recreational interests, power resource interests, transportation

and other navigational interests, waste disposal interests and fish and other marine resource interests.

(3) It is necessary and a matter of state-wide concern to provide for properly coordinated planning in coastal areas and to provide a method of organizing and managing coastal conservation and development commissions in such areas.

(4) For the purpose of this Act the coastal zone is defined as that area lying between the Washington border on the north to the California border on the south, bounded on the west by the extent of the state's territorial jurisdiction, and on the east by the crest of the coastal mountain range, with the exception of:

(a) The Umpqua River basin, where the coastal zone shall extend to Scottsburg.

(b) The Rogue River basin, where the coastal zone shall extend to Agness.

(c) The Columbia River basin, where the coastal zone shall extend to the downstream end of Puget Island.

Section 2. For the purposes of ORS 197.190, a commission formed under this Act shall exercise within the region of the review, advisory and coordinative functions assigned under subsection (1) of ORS 197.190 to each county and city that is a member of the commission.

Section 3. As used in this Act, unless the context requires otherwise:

(1) "Commission" means the coastal conservation and development commission formed under this Act.

(2) "Governing body" means, in the case of a county, the county court or board of county commissioners of the county or, in the case of a city, the city council or other legislative body of the city, or in the case of a port district, the board of port commissioners.

(3) "Member" means a member of the commission as specified under section 4 of this Act.

(4) "Coastal area" means a geographical area which lies within the coastal zone as defined in section 4 of this Act.

(5) "Plan" means a generalized, coordinated plan for the orderly management and development of the lands within the region that interrelates all functional and natural systems and activities relating to all the use of the land, air and water within such region, including but not limited to sewer and water systems, transportation systems, recreational facilities, air and water quality management programs, residential, commercial and industrial developments and the provision of public services.

(6) "Planning" means preparing a plan, modifying and amending the plan as necessary, and coordinating the plan as provided by this Act and the rules of the commission.

(7) "Region" or "regional" means all the geographic area included within the boundaries of a commission.

Section 4. (1) The commission shall consist of members appointed as follows:

(a) The governing body of each county having territory within the commission jurisdiction shall appoint one person and one alternate from its own body.

(b) A joint convention of the governing bodies of cities from each county having territory within the commission jurisdiction described in subsection (1) of this section shall appoint one person and one alternate.

(c) A joint convention of the governing bodies of port districts from each county having territory within the commission jurisdiction described in subsection (1) of this section shall appoint one person and one alternate.

(3) Each commission member shall serve at the pleasure of the governing body which appoints the member.

Section 5. (1) The commission shall prepare and coordinate the administration of a plan which shall reflect a balancing of the conservation of the natural resources of the coastal zone and the orderly development of the natural resources of the coastal zone. Such plan shall be prepared in a form designed to be used as a standard against which proposed uses of the natural resources of the coastal zone may be evaluated. In the event of conflicting uses of the natural resources of the coastal zone, the plan shall establish a system of preferences between such conflicting uses that are consistent with the control of pollution and the prevention of irreversible damage to the ecological and environmental qualities of the coastal zone.

(2) In preparation and coordination of the administration of such plan the commission shall consider at least the following factors:

(a) The quality, quantity and movement of estuarine and other coastal waters, whether tidal or nontidal in character.

(b) The ecological balance of estuarine and marine resources.

(c) The economic interests in the coastal zone, including but not limited to commercial and recreational fishing interests.

(d) The projected population growth and employment needs within the coastal zone.

(e) Scientific information regarding the hydrology, geology, topography, ecology and other relevant scientific data relating to the coastal zone.

(f) Plans, surveys and inventions that have been or are being made with respect to the coastal zone by federal, state and local governmental agencies.

(g) Comprehensive land use plans and local zoning ordinances administered by local governmental agencies having jurisdiction over lands within the coastal zone.

Section 6. (1) The coastal conservation and development commission shall receive 80 percent of the annual moneys accruing to the state from the United States Department of Commerce under the Coastal Zone Management Act of 1972.

(2) The moneys described in subsection (1) of this section shall be expended for duties undertaken by the commission pursuant to section 5 of this Act.

Section 7. (1) The coastal conservation and development commission shall constitute a municipal corporation of this state, and a public body, corporate and politic, exercising public power. It shall be considered a unit of local government for the purpose of ORS 190.003 to 190.110, and a public employer for the purposes of ORS 236.610 to 236.650. It shall be entitled to tax refunds as allowed under ORS 319.350 and 319.831 to cities. It shall have full power to carry out the objects of its formation and to that end may:

(a) Sue and be sued in its own name.

(b) Adopt an official seal.

(c) Contract with any federal, state or local governmental agency for the performance of services of the exchange of employes or services in carrying out its functions as provided by law.

(d) Contract for the services of and consultation with professional persons or organizations, not otherwise available through federal, state and local governmental agencies, in carrying out its duties under this Act.

(e) Perform any other functions that the commission considers necessary in carrying out this Act.

(2) The commission may not levy taxes for the purpose of financing its functions pursuant to law, but shall finance its operations as provided in this Act.

Section 8. In addition to the powers granted in section 7 of this Act, the coastal conservation and development commission may:

(1) Accept grants contributions and assistance from any federal, state or local governmental agency, any private foundation and any individuals.

(2) Appoint from among its members, committees to carry out specificied portions of its duties.

(3) Appoint advisory committees composed of persons selected from interested private organizations and the public at large to assist in carrying out its study and the preparation of its plan.

(4) Employ administrative, clerical and professional personnel considered by it to be necessary in carrying out its duties under this Act.

(5) Perform other duties considered by it to be necessary in carrying out the purposes of this Act.

Section 9. (1) All state and local government agencies shall cooperate, assist and participate with the commission and its coordinating committees in carrying out the purposes of this Act.

(2) The Governor shall designate members of state agencies that are affected by or interested in the studies and planning conducted by the commission pursuant to section 5 of this Act to

assist the commission in the performance of its duties set forth in section 5 of this Act.

Section 10. (1) The fiscal year of the coastal conservation and development commission shall commence on July 1 of each year and end on June 30 of the following year.

(2) Prior to the beginning of each fiscal year, the commission shall prepare and adopt, and may revise from time to time, a budget itemizing expenditures planned for such ensuing fiscal year and estimating the amount and sources of income available to pay such proposed expenditures. ORS 294.305 to 294.555 shall not apply to the preparation, adoption or revision of the budgets of the commission.

Section 11. ORS 191.110, 191.120, 191.130, 191.140, 191.150, 191.160, 191.170, and 191.180 are repealed.

OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

P.O. Box N
Florence, Oregon 97439
Phone (503) 997-8248

December 3, 1974

TO: Oregon Coastal Conservation and Development Commission

FROM: S. Lance Zaklan, WICHE Intern

SUBJECT: A system of preferences such that conflicts among uses of the natural resources of the coastal zone may be resolved.

I. INTRODUCTION

In the legislation that created the Oregon Coastal Conservation and Development Commission, the Commission is charged with developing a management program for the natural resources of the Oregon coastal zone. The same legislation further charges the Commission to establish, as part of the management program, a system of preferences such that conflicts may be resolved, and on 9 August 1974, the Commission adopted this charge as one of its major objectives. This system of preferences should provide the criteria necessary for choosing among alternative land uses, and establishing the system may be the most difficult task facing the Commission.

In this memorandum, I present a framework and methodology for such a system. In preparing this draft, I have sought the advice of several individuals whose comments have helped considerably.[1] This memorandum, of course, does not necessarily represent the views of any of the individuals.

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[1]Lawrence W. Abrams (University of California, Santa Cruz), David E. Black (Duke University), Daniel R. Blake (California State University, Northridge), Bernard H. Booms (City of Tacoma and Pennsylvania State University), Giles Burgess (Portland State University), William Clark (University of Oregon), David B. Frohnmayer (University of Oregon), John A. Hanson (Portland State University), John R. Harris (Massachusetts Institute of Technology), Robert S. Harris (University of Oregon), Raymond F. Hopkins (Swarthmore College), Charles Leven (Washington Universtiy), R. Bruce Rettig (Oregon State University), Clifford S. Russell (Resources for the Future, Inc.), Paul B. Simpson (University of Oregon), W. Ed Whitelaw (OCC&DC and University of Oregon).

II. INSTITUTIONAL STRUCTURE AND RESPONSIBILITIES

The institutional structure of the system would have two levels or tiers. The first level would be responsible for making the land-use decisions and for managing and updating the system of preferences. The second level would provide an opportunity for appeal of the land-use decisions made at the first level.

The first level should contain a land-use board that would have the power to decide among alternative uses for particular sites on the coast. This board would need expert staff assistance (or input from some group of experts) to keep the system current. Senate Bill 100 and the implementation report prepared for OCC&DC by Sedway/Cooke suggest that this function most likely would be performed by the Department of Land Conservation and Development.

The second level of the institutional structure would be an appellate body to which disputed decisions could be referred for mediation or arbitration. Given the OCC&DC policies coupled with the criteria presented below, the courts could provide this appellate function.

Since there is no consensus on the measurement of social preferences and since tastes change, a good system of preferences would require periodic updating and review. This could be accomplished in one of two ways (or in some combination of the two):

1. The staff of the land-use board would review and update the information it provided on the externalities of coastal land-use, where the externalities are defined broadly to include economic, ecological, aesthetic, and social characteristics; and

2. The new approaches in the field for each variable could be treated in separate research papers by experts at an annual seminar in much the same way that building codes are developed and modified.

The appellate body, while providing a politically important check on land-use decisions, would reflect the existing collective tastes and could accommodate changes in these tastes as such changes are embodied in new legislation.

III. THE SYSTEM OF PREFERENCES

A. Introduction

The best way to deal with the system of preferences appears to be to specify a relationship between the use to which a site might be put and

the social value a society derives from that use. The use in turn can be identified by the various characteristics it exhibits such as number of employees or significance as a wildlife habitat. A change in one of the characteristics will be reflected in a change in the social value of that land use. The technical term usually used to describe such a relationship is "objective function".

B. An Objective Function

On 9 August 1974, the Commission adopted a Goal and set of associated Objectives that contain sufficient information by which one can specify an objective function relating social value to the characteristics of particular land uses. The Commission indicated explicitly just which characteristics should be considered by the land-use board in its deliberations, and these characteristics are economic, ecological, cultural, historic, and aesthetic. Furthermore, the Commission established that the purpose of the management program was to "assure the greatest benefits to this and succeeding generations of Oregonians". In algebraic form, the relation or objective function thus established by the Commission can be expressed as:

$$B = f(Y, N, C, H, S, E)$$

where B = benefits
Y = per capita income
N = employment
C = cultural value
H = historic value
S = aesthetic value
E = ecological value

The task for the land-use board would be to find those combinations of the variables, (Y,N,C,H,S,E), that maximize the benefits, B in perpetuity. (The solution is not necessarily unique, i.e., for a maximum B, they may be two or more combinations of the variables.)

For the function to be maximized, each variable, e.g., Y or S, must have a weight (coefficient or multiplier) associated with it such that its relative importance among all variables is explicit. If one is concerned with consensus, or even a simple majority agreement, on what these relative weights should be, however, then this task is probably impossible. As a rough approximation to this approach, though, OCC&DC can use ranges instead of specific values for the weights, and it can accept the constraints on the weight implied by existing practices and policies.

C. Magnitudes and Weights for the Variables

It is important to repeat that the values and weights assigned to the variables should be reviewed and updated periodically, and this could be accomplished by the approaches described above in Section II. This updating is a logical implication of Objective 3 (adopted on 9 August), of the management program which requires that the resources be managed on "an evolving experimental and flexible basis".

In the remainder of this part, I suggest ways by which magnitudes and weights can be assigned to the variables in the objective function.

1. Ecological

In its 9 August meeting, CCC&DC adopted as constraints on the Coastal Zone Management Program the conditions that pollution be controlled and that irreversible damage to the ecological and environmental qualities be prevented. This collective aversion to pollution is reinforced and preceded by Senate Bill 448.305 in which pollution is judged to be harmful to the quality of life in Oregon, and the Department of Environmental Quality was formed (by SB 468) to control pollution.

Two useful measures can help to determine the pollution and irreversible environmental damage likely to be caused by prospective uses. Regarding pollution, the amount of residuals, or the cost of abating the residuals likely to be generated by a prospective activity can be estimated. Regarding environmental damage, the fundamental structural change likely to be caused by an activity can be predicted. Examples of such change are the building of piers and jetties, the destruction of dunes, and the filling of estuaries.

The existing legislation, of course, does not specify unambigous weights to assign to these measures of pollution and environmental damage. There is, however, a weak criterion implied for choosing among alternative activities. When the values of other characteristics of the competing uses (such as economic, cultural, historic, and aesthetic) are roughly the same, then the use likely to generate less pollution or environmental damage shall be permitted.

2. Economic

In choosing among competing uses for a site, the economic characteristics on which the land-use board should concentrate are employment (or the rate of unemployment) and per capita income, where

both direct and indirect employment and income generated by the activity are included in the measures.

Each of the two categories of employment must be broken down into two subcategories so that they are more easily measured. First, short-run or transitional employment and, second, long-run or stable employment. Direct employment, therefore, will be measured in two categories: 1) direct transitional employment generated (e.g., the number of construction workers used to build a proposed development); and 2) the long-run, direct effects (e.g., the number of employees used to run or maintain the facility). The indirect employment is measured similarly: 1) transitional (e.g., the number of jobs in supporting industries that are generated because of the construction needs); and 2) the number of jobs generated in other areas because of the increased demand from the use (e.g., more restaurants). It is imperative with these measures, of course, that the land-use board be consistent in distinguishing between those jobs that hire previously unemployed individuals and those that transfer labor from one activity to another.

The direct and indirect effects of the land-use on per capita income are measured in similar fashion to measuring the same effects on employment. In addition to distinguishing between the effects on those previously unemployed and the effects on those changing jobs, however, the land-use board must also measure the differences in pay scales associated with the alternative uses.

There are few hints in existing policies and legislation as to which relative weights to assign to these measures, but there are clear indications of various constraints that might be imposed. The state, for example, is committed (as is the nation occasionally) to a policy of full employment (i.e., zero unemployment). Senate Bill 184, for another example, establishes a policy of orderly economic development for the state subject to the constraint that environmental quality is protected.

3. Historic, Aesthetic and Cultural

The historic, aesthetic and cultural variables are most likely to enter the objective function as site-specific constraints. Senate Bill 271, for example, says ". . maintain all or part of the natural or existing state of recreational, cultural, scenic, historic or other

appropriate places of public significance." Futhermore, Senate Bill 390 spells out the conditions for public acquisition of a "significant" site. Finally, on 9 August, OCC&DC decided that the coastal zone management program "shall protect the unique character of life on the coast that is reflected in cultural, historic and aesthetic values".

The staff of the land-use board should try to develop alternative methods (a required impact statement or staff evaluation or both) of incorporating these variables into the objective function.

D. Additional Considerations

OCC&DC has not completed its formulation of policies dealing with the variables in the objective function on which the system of preferences is based. When these policies are completed, they no doubt will increase the specification of the objective function. For example, the policies dealing with geologic hazards will constrain land-use in those areas in which geologically hazardous phenomena exist.

It seems reasonable also that consideration be given to:

1. the changes in the weights of each variable as more land uses are fixed (e.g., OCC&DC may recommend that the use of certain sites be fixed by designating certain estuaries for development); and

2. the changes in attractiveness or suitability of particular sites as uses on neighboring sites change (e.g., not many people would prefer to live next door to a pulp mill).

The general approach to maximizing benefits from the management of natural resources that I have suggested derives an objective function from the Goal and Objectives that OCC&DC adopted on 9 August and then maximizes the private and public values associated with that function subject to constraints imposed by statutes, policies and practices. The approach is necessarily general, because neither the measurement of the variables in the objective function nor the weights to assign them are refined sufficiently to allow rigorous application of the techniques.

I recommend, therefore, that the system of preferences evolve gradually toward a full and rigorous application of the technique, recognizing that it may never reach such precision.[2]

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[2]The formal technique from which I developed the general approach for the system of preferences is called linear programming. Rigorous application of linear programming to the system of preferences would be too inflexible and too expensive, but the conceptual framework it offers is excellent.

Until the completion of the policy formulation by OCC&DC, I can only speculate on what added constraints will be included in the system of preferences. The framework I have presented in this memorandum can accommodate these changes easily.

SLZ:fw

OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

WILBUR TERNYIK, CHAIRMAN
JEFF BRENNAN, VICE CHAIRMAN
ROBERT YOUNGER, SECRETARY-TREASURER
JAMES F. ROSS, EXECUTIVE DIRECTOR

P.O. Box N
Florence, Oregon 97439

Phone (503) 997-8248

February 13, 1975

TO: Oregon Coastal Conservation and Development Commission

FROM: S. Lance Zaklan, WICHE Intern

SUBJECT: An Example of a Quick and Dirty Application of the System of Preferences

I. INTROUDUCTION

At the 12 December 1974 meeting of the Commission, I presented a memorandum describing a system of preferences such that conflicts among uses of the natural resources of the coastal zone may be resolved.[1] At that meeting, I was asked to present an example of how the system might be applied, in effect, to do economics and make the system come to life.

In this memorandum I attempt to show how the system might work. This is an hypothetical case. The area in question, Tansy Point on the north coast, has not been considered officially for development. It is an area near the mouth of the Columbia which offers some obvious natural conditions advantageous for port development.

The memo is divided into two sections. First, each of the variables that represent the values that the Commission has adopted as reflecting social benefits (as decribed in my 3 December 1974 memo, the six values specified by the Commission) are measured or given explicit consideration. The second part is an explanation and example of how the weighing system might work, that is, how the relative importance of each of the variables to the net benefits might be determined.

I repeat that this is only an example of how the system might work. The data that are used to develop the variables are rough at best. Actual use of the system would require more study and a greater amount of time. This is intended only as an example of the steps taken to make the system work. It is not a definitive example.

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[1] Zaklan to OCC&DC, "A system of preferences such that conflicts among uses of the natural resources of the coastal zone may be resolved", 3 December 1974.

II. Consideration or Measurement of the Variables

A. Introduction

In this section I describe how each of the six values comprising social benefits might be considered by a planning commission or a statewide land-use board. The values as adopted by the Commission are ecological, economic, aesthetic, cultural, historic, and recreation.

B. Ecological

1. Estuary and Tidelands

The estuary at Tansy Point is described in the inventory as a Type VIII:

> "Drowned rivers/partially mixed or two-layered estuaries have low or moderate terrestrial biological value. They have a low to moderate percentage of eelgrass and tidelands."

Apparently, this is not a greatly productive biological area, but further study is necessary before one could determine what exactly might be lost or altered if port development occurred. The building of a port, for example, might not destroy or alter any of the ecological characteristics of the estuary.

2. Wildlife Habitat

While the estuary of the area is not very productive, it appears to have an important position as an aquatic life and wildlife habitat. It is a feeding area for water fowl, and surrounding waters are beds for shrimp and dungeness crab. The numbers of each species and, therefore, value of this habitat are not known. A study would be needed to determine what the estuary contains and to estimate the likely impact of port development on the aquatic life and wildlife habitats.

3. Environmental Research Station

Oregon State University has had a station at the mouth of Alder Creek for approximately ten years. Its primary activity is gathering radioecology data, which reflect the correlation between flow levels and the emissions of Hanford and soon Trojan. The concern for the site is that the construction of the port might invalidate all the baseline data making comparisons taken after the Trojan plant comes on line useless. If rendering future radioecological tests on the Trojan plant useless were costly enough to prohibit port development, then a hydrologic study would be required to determine the effects such port development is likely to have on the radioecological data.

C. Aesthetic, Cultural, and Historic

Few would describe the Tansy Point area as a pristine, scenic area. The shoreline already evidences some commercial and residential development. There is no specific site mentioned in the OCC&DC Historical and Archaeological Inventory that would be affected by port development. The building of a port would affect the cultural values by introducing light industrial uses into an area that is primarily residential.

Since aesthetic, cultural, and historic are each site-specific (that is, it is nearly impossible to develop a general, objective criterion for evaluating these values), a site-impact study would be required to provide the data necessary for considering consequences of port development on each of the values.

D. Economic

1. Per Capita Income

My intent in applying this system of preferences to prospective port development at Tansy Point was first to take a reasonable estimate of the direct payments that likely would be generated by construction and operation of the port facilities. Then, I intended either to borrow[2] or to estimate income multipliers and apply them to the direct payments in order to estimate the total change in income effected by the port development. Finally, I was going to compare the payscales of the hypothetical development with the average payscales of existing activities to distinguish between changes in per capita income and changes in number of employees at a given per capita income. As it turned out, however, acquiring these data would have taken longer than the time I had available, but the approach is sound.

2. Employment

The first two steps in the approach to calculating the effects on per capita income are appropriate for determining the impact on employment of construction and operation of the port facilities. I had intended first to obtain estimates of the direct employment and second to apply employment multipliers to the change in direct employment in order to take account of the indirect employment generated by the port development. As with the income estimates, acquiring the data for employment would have taken longer than the time I had available for this project.

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[2]For example, the Oregon Ports Commission estimated the earnings multiplier for the Port of Astoria to be 1.49, Oregon Ports Division, *Survey of Oregon Ports 1972: Economic Impact Section*, Oregon Department of Transportation, Salem, Oregon, June 1973, p. 24.

In order to consider fully the social benefits accruing to Oregonians from the (hypothetical) port development, one would need to determine (a) if the development effects a net increase in employment in Oregon or instead merely transfers employment from one community to another, and (b) the extent to which the jobs created hire previously unemployed individuals or transfer labor from one activity to another. Although these data require additional and occasionally sophisticated statistical analysis to acquire, they increase substantially the information available for evaluating social benefits over and above what the estimates of direct and indirect employment provide.

E. Recreational

None of the OCC&DC inventories addresses recreation in a sufficiently detailed manner to allow one to say anything specific about the likely effects on recreation of port development at Tansy Point. On the one hand, there now exist waterfowl hunting areas that might be reduced or destroyed if the port is developed. On the other hand, the port facilities might be characterized by scale economies that would lead to an increase in pleasure boating and perhaps the establishment of a boat basin at Tansy Point. Depending on how important these issues are to the overall decision, the decision-making body may want to devote many or just a few resources to estimating the likely effects on recreation of port development.

III. Weighting of the Variables

A. Introduction

It is important to understand that the system of preferences can facilitate the resolution of conflicts whether this section, the weighting of the variables, is applied or not.

B. Assigning the weights may be the most arbitrary part of the system. The values assigned to each weight must reflect collective tastes. The weights are the coefficients or multipliers for each of the variables. The greater the magnitude of the weight, then the greater is its importance relative to the others. (For example, given the current recession, the state would probably value economic variables more highly than aesthetic ones. That is, employment would have a larger coefficient than aesthetic values.)

C. An Example

The function is

$$B = a_1 \cdot Y + a_2 \cdot N + a_3 \cdot E + a_4 \cdot C + a_5 \cdot H + a_6 \cdot S + a_7 \cdot R$$

where B = benefits
Y = per capita income
N = employment
E = ecological value
C = cultural value
H = historic value
S = aesthetic value
R = recreation value

Each of the coefficients, a_1 .... a_7, is given a magnitude between one and zero, and because no one can claim to know collective tastes so precisely as to assign an exact magnitude to each coefficient, the best solution would be to use a range of values for each weight. For example, a_1 could be assigned a range of 0.1 to 0.4.

The following table presents the weight I chose to illustrate how this weighting scheme can be used. (I used the neo-dart board technique.)

Coefficient	Lower Bound	Upper Bound	Variable Variable
a_1	.05	.1	Per Capita Income
a_2	.2	.4	Employment
a_3	.1	.3	Ecological
a_4	.05	.1	Cultural
a_5	.05	.1	Historic
a_6	.1	.15	Aesthetic
a_7	.05	.15	Recreation

This table suggests that employment is more important than the other variables, because .2 and .4 are larger than any of the other coefficients. It is followed by ecological values, whose coefficients are second largest.

D. Alternative Approaches

This is not the only method for arriving at the weight for the variables. Another example would be a voting procedure involving the Legislature. Each legislator would be given, say, seven votes. Each would then be free to cast all, some, or none on each of the seven variables. (For example, he might cast all seven on one variable that he considered to be most important.) This would lead to a ranking of the variables in importance of collective tastes. This assumes that the state legislators are representatives of the collective tastes. There are other methods available for determining ranking among the variables, although they might be more difficult to justify politically.

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APPENDIX F

LETTER REQUESTING DEVELOPMENT OF BEACHES AND DUNES INVENTORY

June 15, 1972

Herbert E. Carnahan, Staff Leader
River Basin Survey Staff
USDA, Soil Conservation Service
431 Oregon Building
494 State Street
Salem, Oregon 97310

Dear Herb:

To confirm our telephone conversation of 14 June 1972, Governor Tom McCall has asked the OCC&DC to prepare an inventory of all fragile sand areas within Oregon's coastal zone. This inventory would be made available to the county planning commissions for use in making decisions on proposed developments on these areas.

It is my sincere belief that the Soil Conservation Service, with the cooperation of the local Soil Conservation Districts, are the only people who could develop such an inventory on an emergency basis. I know for a fact that most of the mapping has been done. In addition, the local citizen participation would be insured by the involvement of the District Supervisors.

Therefore, on behalf of the OCC&DC, I would like to officially request the Soil Conservation Service, in cooperation with the local Districts, develop an inventory of all sand dune areas, both active and recently stabilized, within Oregon's coastal zone. This inventory should include the following items as absolutely necessary to insure that the information will be useful:

1. Active dune areas where development could cause immediate problems:
   a. Foredune areas
   b. Inland dunes of bare sand
   c. Shifting sand spits subject to wind and water erosion

2. Recently stabilized areas:
   a. Those areas stabilized by man (with accurate explanation of how fragile these areas are if not handled properly)
   b. Those areas of sand that now support stands of Shorepine and appear to be stable (with accurate explanation of problems involved unless developed within stringent guidelines)

3. The identification of high surface water table dune sheets where migratory wildlife plantings could be made. The areas are especially important to replace areas of natural feeding grounds lost because of man's interference. (homesites, industrial sites, park sites, people)

4. The report should be in printed form with maps in different colore showing the different types of dune areas. Color scheme suggestion would be:

...Red - for extremely fragile areas,
...Yellow - for areas fragile, but with possibilities for some type of development,
...Green - for those areas relatively stable, but still requiring guidelines for development.

I fully realize that this might seem to be an immense task. However, I also believe that you and your agency are more than equal to the task.

As you know, my personal background for the past 24 years has been sand dune control on the Pacific Coast. I will be more than happy to assist in any way I can in the quick, thorough completion of this inventory. At your convenience, an early meeting of technicians to be involved would be helpful.

I would sincerely appreciate your early response to this request.

Very truly yours,

Wilbur E. Ternyik
Chairman

WET:mky
cc: Governor Tom McCall
Oregon Environmental Council
Oregon Shores Conservation Coalition
Charles V. Liles
OCC&DC Members

APPENDIX G

IDENTIFIED RESEARCH AND INFORMATION NEEDS

Identification of the location and characteristics of coastal resources and processes.

1. Identify on maps the geographic boundaries of shorelands based predominantly upon identification of landforms that limit or control the hydraulic action in the water course or in the periodically wetted fringes of the water course, such as wetlands and floodplains.

2. Prepare a series of descriptive analyses of the water characteristics and of the natural features of the shorelands. The descriptive analyses should be done on an area-by-area (e.g., using shore process zones described in the pilot study and/or a vegetation and soil classification system) basis and should be keyed to the map element in a clear and direct manner.

3. Complete a comprehensive resource inventory of Oregon's continental shelf.

4. Inventory the location, extent and distribution of ground water resources in each coastal basin.

5. Conduct a comprehensive archaeological survey of the coastal zone.

6. Investigate the population structure, life history, ecology, behavior and population dynamics of various fish and wildlife species.

7. Determine the stock size and the magnitude of the optimum sustained yield of fish and wildlife resources; particularly offshore fish species of commercial value and species of high recreational value.

8. Identify the cause for the decline in the salmon fishery and methods to correct it.

9. Investigate erosional, transport and depositional processes in shoreline areas.

10. Evaluate the extent to which littoral drift and longshore transport of sediment contribute to the sand supply of beaches, dunes and sand spits in comparison to more local sources (i.e., nearby headlands and shoreline erosion and coastal streams); projection of future trends in replenishment and identification of the drift sectors.

11. Investigate the rates of dune migration and the natural dune building process.

12. Investigate the rate of retreat of scarps (seacliffs) along the Oregon coast.

13. Investigate estuarine hydrologic patterns including circulation of the sediment and dissolved minerals contributed by inflowing streams in part through stream gauging and further analysis of chemical and biological quality.

14. Determine the original, pre-European extent of Oregon coastal wetlands, and the nature, rate and importance of marsh expansion (present and anticipated).

15. Evaluate the levels and types of production and nutrient cycling in different estuarine areas and wetland communities.

16. Evaluate the significance of particular estuarine areas to migratory waterfowl, rare and endangered species, and species of special interest.

17. Identify high productive site timberland to be reserved for timber production.

18. Evaluate the importance of driftwood in the natural dune building process.

19. Maintain and develop the historical inventory of the coast.

20. Identify historical and archaeological resources which contribute to the visual attractiveness and character of the coast.

21. Identify open space, scenic vistas and scenic corridors throughout the coastal zone with particular attention within areas of exceptional or strong visual association with coastal processes.

22. Identify and evaluate the undeveloped open space areas and scenic vistas in the coastal zone.

23. Identify those sand areas which should be preserved in their natural state to allow for continuance of dune processes for scientific study and protection of scenic, recreation and wildlife habitat values.

24. Identify potential scientific and natural areas, specific sites for recreational areas and areas of scenic quality (especially those areas in view of public roads and recreation areas).

25. Complete the geologic hazard studies for Curry County.

26. Identify those areas in the coastal zone which could be affected by 100-year frequency ocean flooding and tsunami runup areas.

27. Identify floodplains on mapping at a scale of 1" = 400' with ground contours at 5 foot intervals.

Assessment of the impact of various uses on coastal resources and processes.

1. Determine the impact on water quality of:
    a. land runoff from urban, agricultural and forest lands;
    b. irrigation return waters; and
    c. water impoundment (supply) reservoirs; and develop procedures to control or reduce adverse impacts from these sources.

2. Investigate proposed uses which may significantly alter water quality, hydraulics, tidal prism, surface area or volume to determine and evaluate the probable consequences according to the criterion of maximum net social benefits.

3. Investigate the quantity and quality of stream flows required to maintain and enhance anadromous fish populations. In addition, the extent, locations and effects on these populations of gravel removal, channelizations, sedimentation, barriers to migration, dredging and filling, and water pollution need to be known.

4. Additional research is needed to determine the effects of irrigation demands on streams and the actual benefits of established minimum flows to aquatic life.

5. Assess the economic and environmental impact of development proposed on the continental shelf including an inventory of the biological resources.

6. Assess the effects on fish and wildlife of land use practices resulting from agriculture, timber management, and urban and industrial development and other environmental modifications.

7. Assess the impact of water storage reservoir construction on recreational, aesthetic and other values in the coastal zone.

8. Identify and prioritize areas where major conflicts exist between historical and archaeological resources and existing or proposed development.

9. Investigate beneficial uses of thermal discharges and means of preventing damaging discharges.

10. Determine the long- and short-term effects of the log export industry on forest reserves, reforestation and log costs.

11. Determine whether the introduction of new fish and wildlife species will reduce the ecological values of the continental shelf or inland coastal zone waters before permitting such an action.

12. Investigate the potential for creation of geologic hazards in developing shoreland and channel structures (such as groins, jetties, breakwaters, seawalls and navigation channels).

13. Investigate methods of sand by-pass in developing structures which might cause diminishment of sand supply to adjacent areas or interruption of littoral drift.

14. Assess the problems associated with flooding through analysis of floodplain soils, land use and damage patterns, and the vegetation, burn areas, slopes, meteorology and hydrology.

15. Investigate the net social benefits of alternative actions to channelization and use of seawall and bulkhead methods for bank stabilization.

16. Assess the impact of freshwater flow augmentation or depletion on estuaries to determine best flow levels for each estuary and alternative methods for low flow augmentation.

17. Develop water conservation measures and water re-use techniques to reduce the demands for new water supply development.

18. Update the forest productivity study for coastal forest lands and research additional methods for improving potential productivity.

19. Investigate improved dredging and spoil disposal methods, baseline biological information for aquatic species utilizing estuarine areas and freshwater inflow requirements.

20. Investigate the feasibility and impact of commercial removal of driftwood.

21. Investigate methods, procedures, and suitable locations for the reclamation of diked or otherwise modified estuarine and tidal marsh areas.

22. Investigate practicable methods for fish and wildlife habitat enhancement and restoration.

23. Investigate techniques and methods of establishing commercial aquaculture in estuary areas without damaging essential functions and values.

24. Develop practical and satisfactory methods of controlling waste disposal from water craft, and they should control waste disposal from water craft, except in emergencies, by imposition of fees or regulations or both.

25. Investigate regulations for vessels carrying hazardous substances in Oregon waters to determine if the design, operation and maintenance standards are sufficient.

26. Investigate methods of inducing foredunes artificially on the continental shelf.

27. Investigate additional methods for regulating the use and visual attractiveness and character of outdoor advertising signs in the Oregon coastal zone.

Guidelines and criteria for allocation or rationing coastal resources among potential uses based on net social costs and benefits.

1. Determine land and water uses for specific areas in a manner consistent with developing regional water supply potentials, meeting stream flow requirements and maintaining in-stream water quality.

2. Determine the suitability of water sources for regional supply development (either groundwater or surface storage) and those areas in need of service from regional supply systems.

3. Develop criteria for evaluating the safety and adequacy of water supplies.

4. Conduct a surveillance and metering program to determine if the current level of water withdrawals is consistent with the level designated for the rightholders.

5. Determine those developments, plans, and programs likely to adversely affect areas of critical state concern.

6. Determine whether the net social benefits of alternative agricultural, forestry and urban development practices are less than the net social benefits of the practices that threaten significant aquatic life and wildlife habitats.

7. Designate uses for all forest lands in the first three classes (OCC&DC inventory) and those capable of growing at least 20 cubic feet of usable wood fiber per acre per year.

8. Identify productive agricultural lands within comprehensive plans. Identify lands suitable and environmentally acceptable for industrial and commercial uses including economically viable mineral, rock and petroleum resource removal.

9. Identify areas that have exceptional potential for recreational opportunities taking into account physical capabilities and limitations of the areas, identified recreational demands and areas for public or private recreational development.

10. Identify and designate seasonal roads and off-road areas on public lands where vehicles may be used for recreation.

11. Identify lands suitable and environmentally acceptable for industrial and commercial uses, including economically viable mineral, rock, and petroleum resource removal, and conserve sufficient quantities of this land to allow for location of new or expansion of existing industrial and commercial uses.

12. Describe the practices which may be used in various types of development to preserve or reduce damages to the environmental resources of shorelands.

13. Determine procedures for establishing harvests for those fish and wildlife species of commercial and recreational importance according to the criteria of net social benefits taking into account the impacts of harvest levels, the impacts from land and water uses on fish and wildlife resources, and the biological factors that determine supply.

14. Develop explicit criteria for identifying fish habitats appropriate for enhancement and using such criteria identify those habitats that should be enhanced.

15. Develop planning criteria for protection of visual values of the coastal zone and special criteria for evaluating the impact of development proposals on the visual quality and characteristics of areas with exceptional or strong visual association with coastal processes.

16. Develop guidelines and criteria which apply to the different levels of management which take into account the different geographic, physical, cultural, historic, aesthetic, recreational, environmental and economic characteristics associated with the development and use of the land and water resources.

17. Evaluate social costs and social benefits for proposed developments, plans, and programs that are likely to adversely affect areas of critical state concern.

18. Analyse the carrying capacity of each of the sand area landforms for recreational use (including ORV's and pedestrian access), livestock and development.

19. Identify methods for determining carrying capacity of land and water resources for recreation development, access and use.

20. Develop criteria and procedures to be used in evaluating support carrying capacity of existing and planned recreational areas.

Guidelines and criteria for regulating or prohibiting phenomena determined to have negative effects to an unacceptable degree.

1. Develop planning criteria for geologic hazard areas including all sand areas except older stabilized dunes. These criteria should address the degree of hazard present and designate uses which in their sum total will not exceed the short- or long-term limitations of the area.

    a. Evaluation of geologic hazards for projects involving activities of statewide significance or other uses characterized by high densities or major investment of public funds in those areas identified as hazardous.

2. Develop minimum criteria for geologic and soils site investigation reports to be used in evaluating development proposals in geologic hazard areas (including all sand areas except older stabilized dunes) with identification of the qualifications of those developing the reports.

3. Conduct engineering investigations to determine if geologic hazards will result from modification of natural shoreline processes by groins, jetties, breakwaters, seawalls or navigation channels.

4. Develop criteria and procedures to govern breaching of foredunes and restoration of breached foredunes.

5. Develop criteria for construction of beach front protective structures, and one of the criteria should be an evaluation of the net social benefits and costs.

6. Develop standards and regulatory actions to reduce the effects of storage and handling of materials in public waters.

3. Develop methods, guidelines, and criteria for the preservation, and management of scientific and natural areas including a net social benefit cost analysis for each area proposed to demonstrate that such a designation is in the public's best interest.

4. Establish a process in which the information gained from scientific and natural areas is incorporated in the coordinated information storage and retrieval program to facilitate future planning and management.

5. Develop planning and management criteria for both the preservation of species and the regulation of adverse impacts in significant habitat areas.

6. Identify possible incentives to be used in conservation of forest lands for forest uses.

7. Establish criteria to be taken into account in identifying areas having exceptional potential for recreational opportunities.

8. Develop programs that encourage private maintenance and enhancement of the visual attractiveness and character of the coast, particularly in open space areas.

Establishment of the public interest in coastal resources.

1. Determine criteria for designating uses in shorelands consistent with maximizing net social benefits which provide for:
   a. identification and designation of shorelands of regional or statewide concern;
   b. conservation of the natural character and amenities of waterways;
   c. increased public access where needed;
   d. increased public recreational opportunities;
   e. continuance of forestry and agricultural uses without restriction except as otherwise provided by law;
   f. retention of shoreland vegetation in as natural a state as possible and restoration of desirable vegetation; and
   g. regulation of building sites, placement of buildings and location of septic tank disposal fields to control pollution.

2. Estimate present and future demands for water, taking into account limitations or needs established by carrying capacity, methods to conserve and re-use existing supplies, non-structural techniques to meet demands and incentives to discourage waste.

7. Develop a fire or natural disaster contingency plan to avoid creation of extensive erosion and siltation to streams and estuaries and blockage of streams with debris from salvage operations.

8. Develop criteria for regulation of all energy resources including nuclear, fossil fueled, hydroelectric, geothermal, wind, solar and other sources.

    a. Develop site selection criteria (including landscaping, methods of development and maximization of net social benefits) for all sources of energy generated in the coastal zone.

9. Develop visual guidelines for offshore construction (if the need arises), mineral extraction, utility and communication structures, public facilities, timber harvest and revegetation, roads and parking, mobile homes, night lighting, signs and removal of abandoned structures.

Guidelines and criteria to establish processes which protect coastal resources.

1. Establish guidelines and criteria to designate:

    a. those estuarine areas which are to be managed in a high state of development;

    b. those estuarine areas which are to be managed for a moderate level of development;

    c. those estuarine areas which are to be managed for preservation in as close to natural conditions (undeveloped) as possible, while providing for certain appropriate, beneficial uses; and

    d. those estuarine areas which are to be managed for restoration, to provide greater benefits from resources which have been destroyed, damaged or degraded by some natural or man-made process.

2. Establish a process:

    a. to review the OCC&DC historical and archaeological resource inventory and to incorporate the National Register and other appropriate sites and areas into comprehensive plans; and

    b. whereby historical and archaeological resources identified in comprehensive plans will be protected by assuring that development is either avoided or that special restrictions, appropriate to the extent, characteristics and relative importance of the site, are placed on development to retain the values of the coast's cultural heritage.

3. Project demands for various uses of sand areas and identify criteria for selecting areas suitable for these uses.

4. Determine the recreational and non-appropriative and economic values of fish and wildlife in planning and decision making so they can be evaluated in relation to other resources.

5. Estimate existing and future demand for highway, rail, pedestrian, air and mass transportation facilities. Consideration of public transit facilities should include continuous bus service along the coast, intra-urban transit for the non-driving population, commuter air and water service and east-west bus and rail connections.

6. Estimate the present and future demand for public access to public lands and waters in the coastal zone.

7. Determine how much coastal land should be developed for recreation.

8. Determine the social, economic and environmental impacts of private, fee-simple recreation - second homes and resort condominiums - including the effect of a large seasonality of population.

9. Evaluate all the costs and benefits of the travel industry.

Assessment of the impact of existing and proposed state and federal policy and management programs.

1. Evaluate the impact of state and federal land and water management programs (in the estuary watershed) on the physical, biological and use characteristics of estuaries; (these would include the Forest Practices Act; water quality plans being developed by the Department of Environmental Quality; flood control and water resource allocation programs; and other local and regional projects).

2. Evaluate the shoreland and shoreland-related resource management policies of state and federal agencies and current land ownership and land use in all shorelands.

3. Review the laws and enforcement policies for restrictions on disturbance of historical and archaeological resources, building codes and taxing policies, and propose reasonable adjustments to provide additional protection to historical and archaeological sites.

4. Determine the costs and benefits of the regulation of geologic hazards in the Oregon coastal zone.

5. Determine the public liability under existing laws for individuals damaged as a result of development in an area of identified geologic hazard.

6. Evaluate alternative programs for increasing the per capita income and decreasing unemployment on the coast by using fishery resources.

7. Determine how the assessment of visual values can best be incorporated into land use and resource planning and management including a process for phasing coastal counties into design review.

8. Assess the feasibility of coordinating timber harvesting by drainage basins or by other means, in order to protect forest uses and watershed values.

Public information and education regarding coastal resources and their management.

1. Expand research, educational, and enforcement programs to help in carrying out the intent of aquatic life and wildlife regulation and management of the resource on a sustained yield basis.

2. Develop public information and education programs to prevent adverse environmental effects of excessive seasonal use of recreation facilities.

3. Develop public education and recreation programs which interpret the natural and cultural (i.e., historical and archaeological resources) environment of the coast and encourage greater understanding of its character and values.

    a. Develop a priority list for historical and archaeological resources which are particularly suited for cultural, educational and scientific activities.

4. Establish permanent management centers on or near each estuarine area or group for estuaries for data storage, interpretation, research and education as well as planning and regulation.

5. Record identified geologic hazard areas on local planning and assessor's maps, property deeds and in land transactions of the state Real Estate Division.

6. Information gained from scientific and natural areas should be incorporated in the coordinated information storage and retrieval program to facilitate future planning and management.

7. Identify possible incentives to be used in conservation of forest lands for forest uses.

8. Identify incentives to encourage private maintenance and enhancement of the visual attractiveness and character of the coast, particularly in open space areas.

APPENDIX H

ENVIRONMENTAL IMPACT ASSESSMENT

The concern of the Oregon Coastal Conservation and Development Commission for developing an analysis of the environmental consequences of resource management policies derives from:

(1) the charge of the State Legislature to develop a natural resources management plan which

a. balances the conservation and development of coastal resources; and

b. establishes a system of preferences between conflicting uses (of the coastal zone) that are consistent with the control of pollution and the prevention of irreversible damage to the ecological and environmental qualities of the coastal zone; and

(2) the requirement of the Coastal Zone Management Act of 1972 to submit an environmental assessment of the State Management Program.

In regard to the environmental significance of the Coastal Zone, the United States Congress has declared:

> "There is a national interest in the effective management, beneficial use, protection and development of the coastal zone." and that "in light of competing demands and the urgent need to protect and to give high priority to natural systems in the coastal zone, present state and local institutional arrangement for planning and regulating land and water uses in such areas are inadequate." (Section 302 (a) and (g) Coastal Zone Management Act of 1972).

In establishing a national policy for the environment the United States Congress authorized and directed that, to the fullest extent possible:

(1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this act, and

(2) all agencies of the Federal Government shall-

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment;

(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by title II of this Act, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision making along with economic and technical considerations;

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, and detailed statement by the responsible official on-

(i) the environmental impact of the proposed action,
(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
(iii) alternatives to the proposed action,
(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

(Section 102, (A-c) The National Environmental Policy Act of 1969)

These statements provide the focus for proceeding by suggesting the following questions involving the substance and procedures of the management program:

1. Has a systematic and interdisciplinary approach to planning and decision making been utilized both in the development of the management program and included in the provisions for its continuance?

2. Can it be said that coastal resources have been protected

based upon anticipated environmental impacts as examined on the basis of Section C of NEPA and as meant by the letter and spirit of the OCC&DC legislation and the Coastal Zone Management Act of 1972?

3. In what manner does the OCC&DC policy program and support process provide for effective management, beneficial use, protection, and development of the coastal zone?

4. As a whole is the OCC&DC policy program indicative of having struck a balance between conservation and development; and if so, what constitutes such a balance; and would the system of preferences provide the means for resolving conflicting land and water uses in a manner which would prevent irreversible damage to the coastal zone's ecological and environmental qualities?

5. Would the management program increase the adequacy of federal, state, and local institutional arrangements for planning and regulating land and water uses in the coastal zone?

Each of these questions will not be answered in total until some experience has been gained through actual implementation of the program. The questions do provide an opportunity to describe the way which the program has addressed these considerations. Accordingly, this assessment will include in:

Section I. A description of the environment affected by the program and the problems to overcome.

Section II. A summary of anticipated environmental impacts resulting from implementation of OCC&DC policies; and

Section III. A summary and evaluation of anticipated program effectiveness.

Section I. Characteristics of the Coastal Environment and Problems

Boundaries

As defined in ORS 191.120-191.180, the legislation which created OCC&DC, the boundary of the Oregon coastal zone closely approximates a natural physiographic unit. The boundary extends from the Columbia River to the California border and from the seaward limit of state jurisdiction inland to the crest of the coastal mountain range. All shorelands and drainage basins which have a significant and direct effect on coastal waters are included. With the exception of the Columbia, Umpqua and Rogue River basins where the boundary of the coastal zone marks the limit of significant tidal influence, the coastal river basins are contained within the

coastal zone. In total the Oregon coastal zone includes an area of approximately five million acres.

The Coastal Environment

The landscape of the Oregon coastal zone reflects the natural and cultural influences which have transformed it through time. The interrelationships between the physical and biological components of the natural environment or landscape are complex and dynamic. Marine influences modify climatic conditions, especially on the immediate coastal strip. The climate is mild with muted extremes and narrow diurnal fluctuations in temperatures; mean temperatures for January range between 41 and 47° F and between 57 and 61° F for July. Most of the precipitation falls as rain in the winter (i.e., from October to March) with summers remaining cool and dry. Late fall, winter and early spring cloudiness and rains are the result of the warm, moist marine air masses which are forced to ascend the coastal range. The resultant cooling intensifies the rainfall which averages 60-90 inches along the coast to 120 inches at higher elevations. In warmer months, a narrow coastal fog belt often occurs because the moist marine air is heated and forced upward as it moves inland.

Offshore ocean currents are associated with the seasonal wind regimes. The winter northward flowing Davidson Current is obliterated by summer up-welling, leaving only the more distant southward flowing California Current. The prevailing winds are generally from the south and southwest during the winter gradually reversing to the north and northwest in summer.

Diurnal tidal ranges vary from 7 to 8.5 feet; sea-surface salinity averages between 32 to 33 p.p.m. in winter; and spring and surface temperatures vary from approximately 45 to 55° F.

Geologic, physiographic and soils characteristics separate the Oregon coastal zone into two distinct regions:

(1) the Coast Range Province and

(2) the western portion of the Klamath Mountains Province (Franklin and Dyrness, 1973). North of the Coquille River all the rock formations are of Tertiary age. The topography is mature with the proportion of steep slopes and sharp ridges gradually decreasing in the northern section. Elevations range from 1,450 to 2,500 feet. Scattered igneous intrusions are characteristic of much of the region with extensive areas of volcanic rock, largely basalt, in the northern section. The rapid erosion of the sedimentary formations and eustatic changes in sea level during the Plio-Pleistocene were responsible for extensive deposits of sedimentary material creating a series of coastal terraces.

In contrast, the Klamath Mountain Province in the southern portion of the coastal zone is characterized by pre-tertiary formations. The terrain is rugged and deeply dissected with only a narrow margin of coastal terrace. Elevations range from 2,000 to 4,000 feet in the mountains with peaks reaching in excess of 7,000 feet. Most of the rock in the region has undergone extensive folding and faulting and is highly metamorphosed.

The irregular nature of the Oregon coastline is due to the rise in sea level following the last glacial episode and varying degrees of resistance to erosion in the rock formations. Bold headlands and numerous estuaries punctuate the coastline. Basaltic headlands are characteristic of the north coast while sedimentary and metamorphic formations occur in those to the south. With the exception of Netarts Bay and Sand Lake, all of the 21 estuaries in the Oregon coast formed in drowned river valleys as the sediments at their mouth created sandspits and bars. The Columbia River estuary is unique in terms of size and sphere of influence. The watershed of this estuary includes parts of five states and extends into Canada.

Sand dunes are associated with 62 percent of the coastline. In two areas, the Clatsop Plains and the Coos Bay Dune Sheet, the dune systems are particularly extensive and well developed. With the rise in sea level, sand dunes advanced inland and caused the formation of many coastal lakes by damming the smaller stream valleys.

The mild winters and dry summers on the Oregon coast generally give evergreen conifers the advantage over other types of vegetation and contribute significantly to the productivity of the forests. Sitka spruce characterizes the narrow zone along the entire length of the immediate coastal strip and fingers further inland along the river valley bottoms. This zone is mild and humid with frequent summer fogs and generally remains below 500 feet in elevation. Western red cedar and western hemlock are also usually associated with the spruce especially in older stands with wetter conditions. In the south, the zone narrows and coast redwood, myrtle and Port Orford cedar join the other species. Shore pine occurs with spruce in low wet areas and in the dunes and replaces it on sites with less favorable moisture conditions, such as dune ridges where pine may be associated with western hemlock and Douglas fir. Red alder like pine, often colonizes on open, disturbed areas. Because of regional variation in rainfall, temperature and frequency of fog, the dense ocean-front forests of the north coast are gradually replaced by herb- or shrub-dominated communities in the south. Specialized, non-forest vegetation communities occur in fresh and salt water marshes, coastal swamps and bogs, sand dune areas and headlands.

The environmental differences between the Coast Range and Klamath Mountains are more distinct away from the moderating influence of the coastal strip. In the Coast Range, Douglas fir, the dominant species, is associated with the more shade-tolerant climax species, western red cedar and western hemlock. There are few stands of old growth forest due to the

fire history and logging activity in the last 150 years. Early successional sites and river bottom communities are dominated by deciduous hardwoods such as alder. In the Klamath Mountains environmental variations (primarily in geology, soils and climate) are responsibile for a highly diverse and complex vegetation mosaic. The mixed-evergreen zone (Franklin and Dyrness, 1973) is dominated by Douglas fir and tan oak and includes a wide variety of evergreen conifers and hardwoods. Chaparral communities occur either as a result of fire in moist areas or as climax vegetation on sites with severe conditions. Major forest tree species in the mixed conifer zone (Franklin and Dyrness, 1973) include Douglas fir, sugar pine, ponderosa pine, incense cedar, white pine, and evergreen hardwoods.

Many diverse, aquatic and wildlife species of high commercial and recreational importance are associated with the coastal zone, primarily as a result of the diversity of habitats provided in the uplands, shorelands, rivers, lakes, streams, estuaries and on the continental shelf. Predominant species in the uplands include the Roosevelt elk, Black-tailed deer, Black bear, Ruffed Grouse and Band-tailed pigeon. An important fur bearer associated primarily with shorelands is the beaver. Several anadromous species such as salmon, steelhead and cutthroat trout, and striped bass make use of the many rivers, lakes and streams of the coastal zone for spawning. These areas are also inhabited by other resident fish species among which the trout and bass are the most well known. The estuaries of the coastal zone are highly diverse in habitat characteristics and are well known for the fish, shellfish and other invertebrates they harbor. These areas also are the principle habitat for the Great Blue Heron, Green Heron, Bald Eagle and Osprey. They also provide habitat for the diverse species of migratory and marine waterfowl. Offshore, the continental shelf provides habitat for many pelagic and ground fishes of high commercial value. Among these are the sole, flounder, halibut, tuna and salmon. Several species of marine mammals use this area as well as the estuaries and rocky islands, reefs and shore of the open coast. These areas also are inhabited by a unique complement of other vegetation forms, invertebrates, fishes and birds.

The environment of the Oregon coastal zone is the sum of inter-related natural and sociocultural components. The cultural environment has been transformed directly or indirectly from man's interaction with the natural environment. Man's activities have had a profound effect on the environment of the Oregon coastal zone. Coastal Indian habitation sites were clustered along the shoreline of rivers, estuaries and the ocean because of the ready availability of food and ease of travel. For these same reasons, patterns of human settlement continued to reflect a high level of resource association and adjustment to the landscape. These first coast dwellers had little long-range impact on the natural environment other than increasing the frequency of fires. Most of the significant changes in the coastal environment have occurred within only the last 100 years.

During early white settlement in the mid-1800's and through the early 1900's fishing, trapping and hunting, logging, and agriculture were

the predominant pursuits carried on in the coastal zone. As the human population and the intensity of activity increased, the characteristics and values of most elements of the environment were affected. Forts and settlements became cities and trails became highways as man increasingly extended his influence over the natural environment.

Much of the coastal zone, particularly in and around the estuaries, is subject to the intense pressures of residential, industrial and other types of development. Lack of adequately controlled filling in coastal wetlands is threatening critical marine and waterfowl habitats. The handling of dredging spoils and other fill in the estuaries, although controlled by permit, etc., is becoming an increasingly difficult problem. Consumption patterns and industrial practices are creating various forms of pollution within coastal waterways. Shoreline erosion, coupled with the stabilization of sand dunes, requires constant attention and discretion in terms of land use. Increasing siltation of the streams, rivers and estuaries of the coast is occurring due to land and water use practices elsewhere in the watershed. Visual pollution of the landscape, created by insensitive development and unfortunate signing practices, conflicts substantially with the scenic values for which the coastal area is renowned. The absence of appropriate performance standards for new development, particularly in areas of critical environmental concern, heightens the peril that such development may despoil the very landscape which is the attraction for those who live and play on the coast.

The Oregon coast today continues to be an areas of environmental, cultural and economic importance far beyond its immediate boundaries. The coast is many things to many people. To its year-round inhabitants, it represents a source of livelihood. However, per capita income on the coast must increase if it is to be comparable to the standards enjoyed elsewhere in the state and nation. To those owners of seasonal residences and others who come to enjoy the mass scenic and environmental attributes of the coastline, the coast is a place to go to get away from crowded cities and the hectic pace of modern life.

The great majority of people,whether residents or non-resident, share a common concern for the coastal environment. However, conservation of the natural resources which are now enjoyed and are, in many instances, threatened will not come cheaply. It is unrealistic to think in terms of environmental preservation without regard to the socio-economic status of those who live in that environment. In this respect, conservation and development cannot be regarded as mutually exclusive for it will take enlightened (wisely managed) development to provide the economic and cultural resources required to accomplish the necessary level of conservation. What must occur is a responsible stewardship of the land and water resources of the coastal zone to ensure that development is compatible with the environment in which it is placed, and to minimize further misuse of land and water at the expense of the environment and at the same time, maintain a viable economy. This, the balancing of conservation and development, is the charge and objective of the OCC&DC in developing a coastal zone management program.

Section II. Assessment of Environmental Impacts

The two central tasks of the OCC&DC, in developing a plan for the conservation and development of the coast, required that standards be provided against which proposed uses of natural resources could be evaluated and that a system of preferences be established in the event of conflicting uses.

Accordingly, to establish policies for land and water uses in the coastal zone, the OCC&DC conducted a planning process which included: (1) the definition of the impacts of uses and activities on the resources of the coastal zone; and (2) the establishment of a process to increase the objectivity in allocating resources and resolving conflicts (as required by the OCC&DC legislative charge).

As part of examining the anticipated environmental impacts of the management program, the role of natural resource inventories in developing the policies must be reviewed. Each inventory (as is discussed in more detail in the OCC&DC final report) addresses five main questions regarding the resource in question (such as estuaries):

(1) what is the location and extent of the resource in the coastal zone (which provides an opportunity for subsequent evaluation of such factors as rarity vs. abundance, and criticality in terms of location);

(2) what are the natural functions and values of the resource (which provides an opportunity for subsequent evaluation of such factors as the social benefits provided by the operation of natural systems, and the organizational characterisitcs and tolerances of ecosystems);

(3) what are the main uses and activities associated with the resource (which provides an opportunity for subsequent evaluation of such factors as demands to maintain income and employment levels, pollutant loadings, and desires of Oregonians regarding the uses of resources);

(4) what are the impacts of those uses and activities on the resource (which provides an opportunity for subsequent evaluation of such factors as carrying capacity, sustained yield in perpetuity, and constraints on resource use to maintain expressed levels of environmental quality); and

(5) what management recommendations are obvious from a brief review of the conclusions of the inventory.

Because of the topographic diversity of the coastal zone, impacts of uses and activities were assessed by resource category. These assessments, in part, led to the formation of management policies necessary to control adverse impacts of uses and activities. By employing such an analysis of capability and suitability of coastal resources the policies

identify permissible land and water uses with the priority of uses to be designated for particular resource areas.

The purpose of this section is to assess the environmental impact of the management program. In doing so it focuses on those particular policies and support processes which directly address the uses, conditions, and characteristics of the environment. The comments are general estimates and it should be realized that in the development of the program, particularly in regard to the resource inventories and the manner in which they figured into the policies (as indicated above), a great amount of detailed information regarding environemtnal impacts has already been considered. The applicable policies and the manner in which they combine to produce certain effects is discussed first. Secondly, the support processes are examined for their anticipated consequences on the environment.

Anticipated Impacts of Selected Policies

(1) Providing Mutliple Use of Natural Resources. Multiple use, generally, has the potential for providing positive environmental impacts when uses are compatible with each other and with maintaining valued resource characteristics. The concept recognizes that compatibility is based on intensity of the types of use being accommodated and that there also exists potential for adverse impacts which have to be adjusted through management.

(2) Requiring Water Supply and Sewage Disposal for Development. This policy would have direct beneficial environmental impacts to the extent that groundwater contamination from septic tank drainage is prevented and healthful living conditions are provided by assuring high quality water supplies. Indirectly, adverse impacts, such as sprawl and non-orderly development, generated or induced by developments not capable of being adequately serviced, would be avoided.

(3) Evaluating Development Proposals. This policy may be anticipated to have positive environmental impacts to the extent that related resource characteristics are considered and protected and development does not take place in incompatible or inappropriate areas. Secondary effects of more significant adverse impact (such as sprawl, premature land conersion, etc.) also may be reduced.

(4) Requiring Maintenance of Vegetative Cover. This policy would have definite, if only localized, positive environmental impacts. It would result in the reduction of wind and water erosion which have secondary impacts on sedimentation of water bodies. It would also reduce visual impacts and provide for re-establishment of vegetation of use to wildlfie.

(5) Locating Utility Lines. The location of utility lines in common rights of way would reduce environmental impacts by concentrating use in selected corridors. This would prevent unnecessary and damaging modification of other resource areas for single-purpose uses. Indirectly, other adverse impacts would also be avoided because rights of way frequently involve maintenance practices which include vegetation removal, spraying, etc. having impacts on wildlife habitat values and scenic quality.

(6) Protecting the Visual Attractiveness of the Coast. The major impact of this policy is the positive effect it will have on the protection of open space and scenic values in the coastal zone. The impacts resulting from the planning and review process include: protection of the area of primary public interest; prevention of damage to property, the quality of life and recreational opportunities; and encouragement of more sensitive developmental and use responses to the coastal environment. The guidance provided by the criteria for review provides social, economic and environmental benefits by protecting the visual quality and character of the coast. In some cases, this will generate increased costs for development or selection of an alternative site. However, these increased costs to the developer and potential loss of income and employment must be weighed against the net social benefits of development which is visually compatible with the character of the coast and preservation of undeveloped areas.

(7) Protecting Historical and Archaeological Resources through the Comprehensive Planning Process. Economic impacts generated by this policy fall into two general categories: impacts associated with the regulatory process; and impacts resulting from the regulations (e.g., retention of the cultural and aesthetic quality of a historic district). More time, labor and material would be expended on developments adjacent to historical and archaeological resources included within comprehensive plans.

Special restrictions on development in these areas may increase the initial costs of development, either through the denial of a permit or additional requirements. However, in the long run, development which is compatible with recognized historical and archaeological sites may prove to be more beneficial to the local economy. The Oregon coast is a recognized "destination" for those who wish to appreciate the unique cultural heritage of the region.

Through costal zone management, adverse and irreversible impacts upon historical and archaeological resources can be avoided. This is not to say that every old structure must be preserved, but rather, that the cultural heritage must be retained and the protection, or the degree of impact tolerated, must be considered according to the nature of the site. For many sites, this would involve a minimal economic impact, but a major impact in terms of enhancing the environmental qualities of the coastal zone.

(8) Establishing Scientific and Natural Areas (SNA). Costs would accrue to the State of Oregon for the establishment and management of a scientific natural areas system. These would be derived from the identification of areas, from acquisition in some cases, and from management. At this time, however, it is impossible to estimate costs because the number and types of areas, and management needs for each, have not been established.

Because of the relationship of scientific natural areas to the management of the coastal zone it is anticipated that these areas would have a major beneficial impact on the environmental and ecological qualities of the coastal zone. Because management policies could be evaluated in terms of impacts on the resources, over time, increasingly effective conservation and development controls could be implemented.

(9) Managing Continental Shelf Resources and Regulating Mineral Resource Development on the Continental Shelf (CS1 and CS2). These policies recognize the many interrelated values of the resources of the continental shelf. They also establish provisions for their protection and restoration in the event of damage, particularly, in the case of mineral extraction where the potential for irreversible damage is high.

(10) Protecting Significant Habitats of Fish and Wildlife Resources (FW1 and FW2). Because of the great variety (in terms of type, location, and extent) of significant habitat areas in the coastal zone, it may be expected that compliance to planning and management criteria will, in particular cases, preclude or limit certain types of uses and activities. In general, the economic impacts of this policy would fall into two categories: (1) the economic benefits generated by the preservation, protection and management of the habitats; and (2) the economic costs generated by restricting the uses and activities that adversely affect the habitats. The environmental impact would primarily be to the benefit of fish and wildlife resources by maintaining the long-term productivity, diversity, and stability of their habitats.

(11) Managing Fish and Wildlife Resources on a Sustained Yield Basis (FW3). The economic impact of applying sustained yield management to all fish and wildlife resources is variable depending on the commercial or recreational uses and values of the resource. Generally, for commercial species, the impacts will depend on whether present harvest rates are above or below the rate of sustained yield harvest. If below, the economic impact would be an increase in net social benefits in employment, income, or both. If harvest rates are now higher than those of a sustained yield rate, then decreases in income and employment benefits could be expected until that time when the resource stock could sustain a higher rate of harvest.

The environmental impact of sustained yield management is also variable depending on the species or group of species being managed. Generally, most species would benefit from both established harvest levels and enhanced ecological conditions which would help insure long-range production potential.

(12) Maintaining Values and Uses of Sand Areas (BD1). Understanding of the physical and biological limitations in sand areas for various uses provides a better basis for comparison of sand areas with other resource and social and economic considerations and will generate more appropriate land use decisions. Some uses will be encouraged to seek alternative locations, but adverse economic impacts can be reduced by providing incentives for development in areas which are most suitable. Positive social, economic, and environmental impacts will result from the reduction and avoidance of adverse effects upon the values of sand areas.

(13) Regulating Alterations of Foredunes (BD3). The positive impact of this and the above policy is that the potential for damage to property and the environment, as well as for loss of human life, would be reduced. This in turn would have a beneficial economic impact in that replacement and repair costs to facilities and property damaged also would be reduced.

(14) Maintaining Values and Uses of Estuarine Areas (EW1). This policy would have a positive impact on the estuarine areas of the Oregon coastal zone, because: (1) uses which do not require a waterfront location would be encouraged to locate elsewhere, preserving the water surface area; (2) some uses which were proposed on fill would be developed on pilings, preserving water surface area; (3) scattered, or strip residential development of estuarine areas would be reduced; and (4) transit corridors which could be located elsewhere would be encouraged not to locate in estuarine areas. In addition many indirect beneficial impacts would accrue as a result of this policy. For instance, fish and wildlife habitat within estuaries would be maintained or enhanced, adding to the long-term productivity of the estuarine systems and related systems which exhibit high degrees of dependence (offshore fishery resources, visual quality and continuity, recreational uses, etc.).

(15) Regulating Alterations of Estuarine Areas (EW2). In general this policy would reduce the rate at which estuaries are being filled. And as the most irreversible impact which may affect estuarine areas this policy would reduce physical alterations which frequently induce changes in estuarine physical processes and biological components.

(16) Managing Estuarine Areas within the Comprehensive Planning Process (EW3). The environmental impact of this policy would be positive because (1) the trend towards development of estuarine areas which are relatively undeveloped would be slowed or altered; and (2) discrete, single-purpose management of estuarine areas would be better coordinated.

This policy would also contribute to the environmental quality of the coastal zone by maintaining a diversity of resources and situations, rather than generating a uniformity in the level of degradation.

(17) Designating Geographic Boundaries of Shorelands (S1). Because boundary definition is an important step in the management of shorelands it is anticipated that this policy will have a beneficial impact on the

environmental quality of the coastal zone. Such action would include protection of the biological and amenity values associated with shorelands and this would be especially true to the extent that this resource influences or is influenced by related resource impacts (e.g., water quality, watershed activities, etc.).

(18) Maintaining Values and Uses of Water Resources (F1). The environmental benefits from implementation of this policy in the comprehensive planning process would include prevention or reduction of problems involving conflicting uses of the water resource. This would come about primarily because of the number of coordinated resource considerations that will be made in allocating a limited resource to a number of beneficial uses. Here, multiple-use management may be applied to the single use of a resource or to the use of the resource as it relates to areas encompassing a variety of resources with which it is related. Management of the water resource on this basis and through the comprehensive planning process would allow flexibility of use and protection of the resource base and related resources.

(19) Developing Potential Water Supplies and Providing Flow Protection to Maintain Values of Water Resources (F2 and F3). The environmental impacts generated from the implementation of these policies would be of two kinds. The first would be those impacts on the water resource and related land resources in the area where ground water was withdrawn or surface storage developed. The negative impacts may range from reduction of lake levels and intrusion of salt water to loss of habitats for anadromous fish and other wildlife species. The positive impacts of low flow augmentation, in particular, would benefit aquatic life, certain types of water-based recreation and water quality.

The second type would be those impacts on the water resource and related land resources as a result of establishing minimum stream flows in streams where low flow augmentation would or could not be developed. Here the positive impacts on the environment are similar to those above but do not entail the loss of resources, such as upland meadow and valley sites and stream habitat, usually experienced in the development of storage.

(20) Conserving Forest Lands (AFUR1). The major positive impacts of this policy would be increased timber production on public, non-commercial and small tract forest lands and greater protection of all uses and values of all forest lands. Also, conversion of valuable forest lands to other than forest uses, although not considered to be a serious problem at present, will be controlled.

(21) Preserving Productive Agricultural Lands (AFUR2). The results of implementing this policy will be generally positive in that the agricultural resource with its economic, social and environmental values will receive greater protection. Conversion of productive agricultural lands to other than agriculture use will be reduced.

(22) Managing Urban Growth (AFUR3). Restricting urban uses to designated areas may reduce locational options available to developers and force an increase in cost of developable land. However, this cost may be offset by savings realized in providing public services and in protecting valuable resources from urban encroachment.

(23) Preventing Overuse of Recreational Resources (AFUR5). This requirement for evaluation of carrying capacity will place cost burdens on both state and local governments as well as private developers. However, by avoiding overdevelopment and overuse of recreation resources, damage to these resources should be reduced. This in turn should decrease maintenance and repair costs.

(24) Providing Access to Public Lands and Waters (AFUR6). Providing access which is consistent with the carrying capacity of the environment and resources of the site will increase the costs of the Highway Division's access program and of other state and local efforts in providing access. Meeting all identified needs may also increase costs. Pressure on private landowners to provide easements or sell portions of their property may also increase.

However, these costs should be offset and even exceeded by the benefits which accrue to the public through increased use and enjoyment of public land and water resources. Also, damage to the access site should be reduced.

(25) Regulating Off Road Use of Vehicles (AFUR7). Implementation of the policy should have the positive results of reducing noise, air and water pollution and damage to soil, watershed, vegetation and other natural resources. It should also reduce harassment to wildlife and disruption of wildlife habitat and minimize conflicts between off road vehicle use and other existing or proposed uses of the permitted zone or neighboring land.

(26) Evaluating Geologic Hazards in the Comprehensive Planning Process and Regulating Uses in Geologic Hazard Areas (GH1 and GH2). Environmental benefits from implementation of these policies will include prevention or reduction of critical erosion problems in shoreland and hillside areas where the rock and soil formations are not tolerant to extensive disturbance or the increased runoff from developed uses; enhancement of floodplain areas may be expected from emphasizing these areas as a natural resource in planning; and, an eventual lessening of sediment load in streams may result from a decrease in erosion.

(27) Regulating Alterations of Shorelands to Avoid Geologic Hazards (GH3). It is anticipated that this policy would result in a reduction of critical erosion problems. After an evaluation of the impacts of the project on coastal geologic processes, beneficial projects would be approved. Recent research indicates that for a specific locality, design of the structure has a considerable bearing on impact.

Interrelationships and Character of Impacts

The above policies would essentially regulate compatible land and water uses based on the resource characteristics needed to sustain specified uses. The division of policies into resource categories does not intentionally ignore the unity of natural systems but rather, focuses on those factors which are identifiable and are capable of being controlled and managed.

Consequently, the direct and identifiable effects of a policy contribute to numerous indirect and subtle effects that would serve to maintain the integrity and viability of natural systems. This happens primarily as a result of overlapping coverage of resource characteristics and conditions which are to be maintained. For instance, identifying use limitations in riparian habitats to protect significant values for wildlife would be reinforced by the identification of shoreland boundaries and designation of use limitations.

Similarly, the regulation of upland watershed uses reduces erosion as well as the loading on shorelands which function as sediment filters. This would, in turn, decrease the sedimentation rates in estuaries and avoid the direct impacts on this biophysical system. In addition, indirect impacts generated by activities aimed at counteracting the effects of sedimentation, to maintain other related uses and values such as navigation requiring dredging because channel depths decrease with increased sedimentation, also would be reduced.

These secondary impacts may even be extended further by decreasing the frequency of dredging and the volume of material to be disposed of each time. This would indirectly reduce demands upon estuarine values because it is most frequently within the locale of estuaries that dredge spoil sites are developed. The important point is, however, that each of the policies addresses particular uses and impacts that together would be interactive in producing a range of effects in terms of magnitude, location, and time.

On the whole the character of the policies is positive. As these policies are applied in management (resource allocation) they do not represent irreversible commitments of resources. Rather, they guide particular actions and uses to prevent irreversible damages and maintain environmental quality to assure that irretrievable commitments of resources are made only when the net social benefits of doing so exceed the net social costs.

This criterion is assumed to be generally applicable to all situations. Within the management program, however, it becomes explicitly applicable in controversial cases or when significant and irreplaceable resources are allocated. This criterion is not attached to every policy because most resource allocation decisions occur at the local level and therefore costs and benefits are most appropriately estimated and agreed upon at this level of decision making. Correspondingly, most allocation

decisions directed by these policies will occur through local application and prescription. An important provision of the coastal zone management program in regards to the application of the social costs and benefits criterion is through the system of preferences. This system would be applied when allocation issues and weighing of impacts are of regional or state significance. These necessitate a broader perspective and base of decision making. In such cases the resource area under consideration may be designated as being of critical statewide concern.

An additional point is that each policy, by itself, does not constitute the only means through which resource uses may be regulated. Rather, it is at the local, state, and federal level that a body of law exists designed to regulate, in most cases, specific and often single purpose activities. In this regard the OCC&DC policies act to focus and synthesize the direction and intention of management and are, therefore, the necessary antecedents to intergovernmental cooperation and coordination of resource management in the coastal zone.

Areas of Critical Statewide Concern and Management Units

Because these policies are concerned with particular resource areas (types) and as a result of the way in which they are geographically distributed, a great number of uses, activities, and impacts may coincide in an area and cause an element of criticality in regards to their management. The separating factor for criticality is based on the level of state interest in the value mix of resource characteristics, uses and activities, and environmental impacts. When interest is high with regards to either preservation or development, the management program provides for the designation of areas of critical statewide concern. In these areas, the state would require local governments to apply the management policies in a particular manner both necessary and sufficient to protect its interest. In other areas of general state interest, but of important local concern, the management policies would receive general application. This would conceivably result in designation of management units encompassing large areas where uses and activities occur based on:

1. the capacities and suitabilities of resources for satisfying demands; and

2. the capabilities of resources to support demands without a significant deterioration of resource quality.

In terms of environmental impacts of these procedures the effects, in a spatial or geographical sense, would be that the greatest amount of area would be managed to assure a general level of environmental protection and that certain areas would be managed to insure a specific level of protection. Specific environmental impacts would depend on the particular natural systems identified within a critical area and the provisions made for their management. This would range from preservation to development.

Section III. A Summary and Evaluation of Anticipated Program Effectiveness

In the above section the National Environmental Policy Act provided clues to considering adverse impacts and some of their characteristics. Even more helpful to this section is an evaluation of the Act's basic purpose and substance. Experience indicates that the Act's intent was clearly to insure the explicit recognition, integration, and consideration of environmental factors and potential impacts, resulting from actions, within the planning and decision making processes and to insure that there be full public disclosure of information. In a similar fashion, the Coastal Zone Management Act of 1972 requires that state programs demonstrate (1) the involvement of the public both for the purposes of input and review; and (2) the use of scientific information in program development.

The OCC&DC coastal zone management program, which is to guide future planning and decision making in regards to coastal resources, has, in its development, included these concerns and is in many ways based on them. The basic framework of the OCC&DC program included the following elements:

(1) an extensive public involvement program;

(2) an inventory and evaluation of coastal resources;

(3) a survey and analysis of the coastal economy; and

(4) the development of recommended methods of implementation for resource management policies.

Here, it is necessary to consider the interrelationships of these four elements. The public involvement program has been the primary expression of the way Oregonians would like to see the coast either conserved or developed. This may be regarded as the expression of value preferences regarding actions to be taken or foregone. The development of implementation methods, on the other hand, has been the determination of the manner in which an action is to be carried out after a decision has been made. Thus, by viewing this in simple terms, value preferences establish the end toward which actions will be carried out, and implementation provides the means for accomplishing the task. Linking these two process components is the decision making process which has been the OCC&DC function and responsibility in establishing resource management policies.

In the last section the anticipated consequences of the policies and support processes were outlined as they related to environmental impacts. It has also been indicated in what manner the inputs figured into the development of policies. To evaluate what effects the program might have on the future planning and decision making of local and state government it is necessary to observe: (1) the way in which the program has provided for the continuation of the above inputs into both the planning

and decision making processes; and (2) what factors will positively influence or constrain the outcome.

In nearly every instance the different policies require the development of criteria and guidelines to be included with the comprehensive planning process of local governments in designating resource uses. Generally, these criteria and guidelines are to be developed cooperatively by local governments and the single-purpose resource management agencies of state government. The inclusion of such information within the comprehensive planning process, is a particularly significant point because (1) it will be at the local level where the majority of resource allocation decisions will be made; and (2) past experience indicates that the use of such information by local governments has generally been superficial, frequently resulting in poor land use decisions. Thus, by requiring the inclusion of information regarding resource characteristics and suitabilities explicit within the planning processes of local government it is anticipated that the quality of land and water use decision making will be improved and will result in a better balance between resource preservation and development.

This is not stated as an assertion but is, rather, an assumption which may not be well founded. The decision making process is influenced by an array of socio-political factors which are not easily controlled or overcome when they fail to reflect a consensus of social value; even by an upgrading of the information base and related processes such as public involvement (for purposes of input and accountability). In this regard, improvements in the information base and subsequent improvements in planning processes may not be sufficient to influence decision-makers.

Some indication of the programs effectiveness, however, may be determined as time passes, both by attempting to answer the questions posed earlier in this assessment and through measurements of achievement of the Commission's Goal and Objectives. In this regard:

(1) it may be anticipated that local and state decision making processes will be characterized by a more open process which incorporates active citizen involvement in planning and decision making (objective 1);

(2) increased efforts of coordination should result in a more unified direction for management of coastal resources which should decrease the number of conflicts among single purpose actions (objective 2);

(3) a willingness to change and restructure decision making and planning processes, based on increased knowledge, should become apparent (objective 3); and

(4) a commitment to a process which reflects a genuine effort to resolve conflicts in a manner which considers all social costs and benefits should become evident (objective 4).

APPENDIX I

ECONOMIC IMPACT ASSESSMENT

Economic Analysis of Policies, Necessary Actions and Recommended Actions

For each of the categories of Phase II policies that were approved for public review by the OCC&DC (except "Scientific and Natural Areas"), an economic analysis was prepared. Three types of comments were provided: analysis, general reaction, and suggested rewording.

In the analysis of the policy, necessary action and recommended action, questions were raised that must be answered before a rigorous estimate of the economic consequences of the policy can be made. If a ready answer was available for existing knowledge or from the inventories, such was recorded. If the question could not be answered immediately, it was placed in one of the following three categories: (1) a question that the staff economist could answer within a short time span (e.g., two or three days) using only the inventories; (2) a question that the staff economist could answer with substantially more time (e.g., five to ten days) using the inventories plus other existing data and expertise; or (3) a question that the staff economist could answer only with as yet nonexisting data or with a considerable amount of research (e.g., two or three months or more) or with both.

In the general reaction to the policy, an estimate of the likely economic consequences of the policy (if it were implemented) was presented. In the suggested rewording to the policy, an alternative statement of the policy or action was presented so that criticisms implied by the analyses or general reactions might be eliminated or at least blunted.

The complete text of the analysis for each policy category is included as part of this appendix.

Basis for Approach Used

After consideration of the first few policies, it became obvious that there were too few resources available to answer most of the questions raised.

A complete and rigorous estimate of the economic consequences of each of the policies, necessary actions and recommended actions was not possible even if the Commission had had unlimited resources, because in most cases, data simply do not exist that would be sufficient to complete such an analysis. Enough data do exist, however, to provide rough but informative answers to questions about the economic consequences of most of the policies. Even in this case, though, the Commission did not have the resources to complete the analysis. Therefore, a necessary but not sufficient set of questions to be answered before a rigorous estimate of the economic consequences was possible was provided. Also provided was an estimate of the time it would take two researchers to answer the questions. This latter datum served as an estimate of the lower bound of the costs of an economic analysis of the policies.

Some General Findings

Implementation of the policies will generate two types of economic consequences. First, there will be an impact on the costs of government and of society in general in administering the policies. For example, implementation of most of the policies will increase the costs of application, enforcement and compliance associated with permits. Second, there will be an impact on economic behavior itself. Changes in costs and benefits for firms, individuals and society in general will be effected through changes in revenues, operating costs, pollution, ecological systems and other factors.

In practically all cases, the so-called administrative costs of managing natural resources on the coast will increase unless there occurs either reductions in other governmental activities or marked increases in the efficiency of governmental activities or both. For the other category of economic consequences, that is the non-administrative or substantive economic consequences, it is impossible to generalize. The consequences appear to range from trivial to substantial, but a general analysis is hampered by the fact that the consequences are likely to vary from site to site. Furthermore, the inclusion of the criterion of net social benefits derives precisely from the impossibility of estimating all or even most of the consequences of the policies, and, therefore, it was adopted in part as a safeguard.

Economic Analysis by Policy Category

OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

P.O. Box N
Florence, Oregon 97439

Phone (503) 997-8248

February 4, 1975

TO: Oregon Coastal Conservation and Development Commission

FROM: Ed Whitelaw, Staff Economist

SUBJECT: Economic Analysis of the Phase II Approved Policies for "Geologic Hazards in the Oregon Coastal Zone"

I. INTRODUCTION

The discussion that follows applies to the Phase II Policies for "Geologic Hazards in the Oregon Coastal Zone" that were approved for public review by OCC&DC. My analysis has benefited from written and oral comments from members of the OCC&DC Economic Steering Committee as well as from G. Anthony Kuhn and S. Lance Zaklan. My comments, of course, do not necessarily reflect the views of any of these individuals.

For each of the policies, necessary actions and recommended actions, I have provided at least one of the following three types of comments:

A. ANALYSIS: I raise those questions that need to be answered before a rigorous estimate of the economic consequences of the policy can be made. When I have a ready answer (from my own knowledge or from the inventories), I record it. When I cannot answer the question immediately, I try to place it in one of the following categories:

1. a question I (and an assistant) could answer with a little more time (e.g., two or three days) using ONLY the inventories;

2. a question I (and an assistant) could answer with substantially more time (e.g., five to ten days) using the inventories plus other EXISTING data and expertise; or

3. a question I (and an assistant) could answer ONLY with as yet nonexisting data or with a considerable amount of research (e.g., two or three months or more) or with both.

B. GENERAL REACTION: I present my general or gut reaction to the policy, and I do so (somewhat hesitantly) at the request of a couple of members of the Economic Steering Committee.

C. SUGGESTED REWORDING: I present an alternative statement of the policy or action so that criticisms implied by my analysis might be eliminated or at least blunted.

II. POLICY 1 and NECESSARY ACTIONS 1 & 2

Statement of Policy 1: "State and local government shall assure that development in geologic hazard areas is avoided, or that special limitations to protect life and property are established for development allowed in these areas."

Statement of Necessary Action 1: "Local units of government shall adopt and implement a geologic hazards element of the comprehensive plan which includes an identification of the geologic hazards that exist within the unit's jurisdiction, and the limitations on the use of these hazard areas."

Statement of Necessary Action 2: "The State of Oregon shall develop planning criteria (policies and procedures) for geologic hazards and shall require that these criteria be included in the geologic hazard element of local comprehensive plans."

A. ANALYSIS: The policy implies that unless "special limitations .... are established for development allowed" in geologic hazard areas, development will be avoided. Necessary Actions 1 & 2 then require that geologic hazards be identified and that developmental limitations and criteria be established for the identified areas. The phrase "development in geologic hazard areas is avoided" is irrelevant to the analysis of the economic consequences of the policy, therefore, because "special limitations" must be established for all identified geologic hazard areas. What is important to the analysis are the as-yet-unspecified limitations and criteria. Until they are established, a rigorous analysis of the economic consequences of this policy is not possible.

III. POLICY 1, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "In developing comprehensive plans for geologic hazard areas, local government should evaluate the degree of hazard present and designate uses which in their sum total effect will not exceed the short- or long-term limitations of the areas."

A. ANALYSIS: Before one could estimate rigorously the economic consequences of this recommended action, one would need to know answers to the following questions:

1. Question: What activities are most likely to compete for sites in geologically hazardous areas in the coastal zone?

Answer: The OCC&DC Geologic Hazards Inventory identifies the activities that are likely to compete for such sites by type of geologic hazard, and it also lists the types of activities likely to create geologic hazards. The critical part of this analysis is embodied in the following set of questions.

2. Questions: Of those activities most likely to compete for sites in geologically hazardous areas, which ones are likely to exceed the short- or long-term limitations of the areas? Of these, what is the present expected loss of life and damage to property and environment due to development in geologically hazardous areas? How much of this loss and damage would be reduced by implementation of this recommended action? For those activities likely to be affected by implementation of this recommended action, what are the comparative private costs and revenues associated with sites inside and outside geologically hazardous areas?

   Answers: Until limitations are established, it is impossible to answer these questions. Once the limitations are established, I and an assistant would answer these questions with about two or three months of work.

IV. POLICY 1, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "In developing comprehensive plans for floodplain areas, state and local government should:

(a) prefer regulatory programs over major engineering projects such as dams, dikes and levees;

(b) designate low-density uses (particulary in the floodway portion) which are least subject to loss of life or property damage due to flooding, such as forestry, agriculture, recreation (e.g., golf courses and public hunting);

(c) assure that providing public facilities (such as roads, highways, or sanitary systems) will not stimulate the possible uneconomic, hazardous or unnecessary use of floodplain lands; and

(d) preserve for public or private recreational development areas within floodplains having exceptional recreational potential (in preference to other areas of comparable recreational potential)."

A. ANALYSIS: The analysis of the economic consequences of this recommended action is hampered by the lack of precision in the terms "prefer", "uneconomic", "hazardous", "unnecessary", and "exceptional recreational potential".

B. SUGGESTED REWORDINGS: "In developing comprehensive plans for floodplain areas, state and local government should:

(a) require regulatory programs (instead of allowing major engineering projects such as dams, dikes and levees) unless is it demonstrated that the net social benefits of an alternative exceed the net social benefits of regulatory programs;

(b) designate low-density uses (particularly in the floodway portion) which are subject to the least loss of life and property damage due to flooding, such as forestry, agriculture, recreation (e.g., golf courses and public hunting);

(c) prohibit public facilities (such as roads, highways, or sanitary systems) that would increase the propensity of individuals and private or public organizations to initiate or continue uses that would exceed the limitations established for the floodplain areas unless specific steps are taken in the provision of the public facilities to avoid such effects; and

(d) preserve for public or private recreational development those areas within floodplains that have been identified as having exceptional recreational potential (in preference to other areas of comparable recreational potential)."

V. POLICY 2

Statement of Policy 2: "State and local government shall base, in part, approval or disapproval of development in identified geologic hazard areas upon a geologic and soils report, provided by the applicant and prepared by a qualified geologist, engineering geologist or civil engineer. The report shall include an evaluation of the potential geologic problems and the capability of the site to support the proposed development without endangering life, property and environment.

Local government shall disapprove development proposals which will exceed the geologic hazard limitations of the site unless the applicant agrees to safeguards, recommended and certified by a qualified engineering geologist or civil engineer, that generates social benefits in excess of social costs for the geologic hazards noted in the geologic and soils report."

A. ANALYSIS AND GENERAL REACTION: The economic consequences of all the policies on geologic hazards can be divided into two general categories: those consequences associated with the regulatory process itself (e.g., the increased time it takes to get a permit) and those consequences resulting from the regulations (e.g., the reduced losses from geologic hazards).

The increased regulations require both public and private activities to devote more resources (i.e., labor and material) to seeking approval for locating in areas in which there exist geologic hazards. (For example, POLICY 2 calls for greater use of geologists, engineering geologists and civil engineers.) It is possible (though unlikely), however, that OCC&DC will effect an increase in efficiency in the permit system and other regulatory activities in which case the net opportunity costs of the entire management program would be negligible.

The economic consequences of the regulations themselves are impossible to estimate until the "geologic hazard limitations" are established, and the establishment of these is demanded in POLICY 1, NECESSARY ACTION 1. Once these limitations are established, then before one could estimate the consequences of this policy, one would need answers to the questions I raised above in the ANALYSIS of POLICY 1, RECOMMENDED ACTION 1.

VI. POLICY 2, NECESSARY ACTION 1

Statement of Necessary Action 1: "When development involving activities of state-wide significance or other uses characterized by high densities or a major investment of public funds are proposed for areas identified as high-hazard, the State of Oregon shall assure public safety by reviewing, approving or disapproving the geologic evaluation of the project in addition to the regulation process at the local level."

A. ANALYSIS AND GENERAL REACTION: The analysis of the necessary action is hampered by the vagueness of the terms "high densities", "major investment", and "high-hazard" as well as by the apparently inadvertent implication that the State of Oregon must review, approve or disapprove the "regulation process at the local level". The rewording I suggest below clears up two of these four problems. The other two either should be deleted, defined, or left to the State of Oregon to define in its implementation of the necessary action.

B. SUGGESTED REWORDING: "When development involving activities of state-wide significance or other uses characterized by high densities or a major investment of public funds are proposed for areas in which there exist geologic hazards, then in addition to the regulations imposed by local government, the State of Oregon shall assure public safety by reviewing, approving or disapproving the geologic evaluation of the project."

C. ANALYSIS AND GENERAL (Continued): The effect of this necessary action is to increase the resources devoted to the regulatory process involving geologic hazards. I assume that the same criteria involving limitations of the areas would be applied in the state's evaluation, and therefore the same questions I raised above in the ANALYSIS of POLICY 1, RECOMMENDED ACTION 1 apply to the ANALYSIS of this necessary action.

VII. POLICY 2, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "The state or local government which reviews site evaluations in areas of geologic hazards shall state findings of fact which substantiate either the approval or disapproval of a development proposal."

A. ANALYSIS AND GENERAL REACTION: This seems terribly reasonable.

VIII. POLICY 2, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "The State of Oregon should develop minimum criteria for geologic and soils reports to be used in evaluating development proposals in geologic hazard areas."

A. ANALYSIS AND GENERAL REACTION: Except for the term "minimum", this recommended action seems reasonable, too.

B. SUGGESTED REWORDING: "The State of Oregon should develop criteria for the geologic and soils reports that are to be used in evaluating development proposals in geologically hazardous areas.

IX. POLICY 2, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "The State of Oregon should develop a statement of qualifications for professional engineers and geologists to assist local government and the public in selecting individuals to conduct evaluations of projects in geologic hazard areas.

A. ANALYSIS AND GENERAL REACTION: Again, this seems reasonable and not costly.

X. POLICY 2, RECOMMENDED ACTION 4

Statement of Recommended Action 4: "Local government should not approve development of structures on the ocean front in areas identifies as subject to "critical coastal erosion" unless an engineering investigation has determined that the structure has an adequate setback, in consideration of the rates of erosion and the possibility of extensive cliff failure."

A. ANALYSIS AND GENERAL REACTION: To estimate the consequences of this policy rigorously would require knowing the magnitude and frequency of developments seeking to locate in such areas. My general reaction is that this recommended action can only increase net social benefits.

XI. POLICY 3

Statement of Policy 3: "State and federal government shall assure that construction on or modification of shorelines shall not interfere with natural processes to the extent that geologic hazards are created in adjacent areas, unless it can be demonstrated that such construction or modification to the shoreline generates social benefits in excess of social costs."

A. SUGGESTED REWORDING: So that this policy is worded consistently with the Commission's past actions and so that its precision is increased, I suggest the following rewording:

"State and federal government shall assure that construction on or modification of shorelines shall not interfere with natural processes to the extent that geologic hazards are created in adjacent areas, unless it is demonstrated that the net social benefits of such construction or modification exceed the net social benefits of prohibiting the construction or modification."

XII. POLICY 3, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "The State of Oregon should support and encourage studies and surveys of erosional, transport, and depositional processes in shoreline areas."

A. ANALYSIS AND GENERAL REACTION: This seems reasonable, and as long as the state doesn't get carried away with "support", it shouldn't be costly.

XIII. POLICY 3, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "State and federal government should conduct or require engineering investigations prior to the construction of shoreland and channel structures (such as groins, jetties, breakwaters, seawalls and navigation channels) to assure that hazards will not result from the modification of natural processes."

A. ANALYSIS AND GENERAL REACTION: This is an obviously necessary action that should follow POLICY 3. As such, it should be reworded.

B. SUGGESTED REWORDING (as NECESSARY ACTION 1): "State and federal governments shall conduct engineering investigations, or shall require engineering investigations to be conducted, prior to the construction of shoreland and channel structures (such as groins, jetties, breakwaters, seawalls and navigation channels) to determine if geologic hazards will result from the modification of natural processes.

XIV. POLICY 4

Statement of Policy 4: "State and local government shall adopt and enforce the following specific regulations for known and designated flood hazard areas within the coastal zone.

(1) Developments housing restrained or incapacitated persons (hospitals, rest homes and jails) and emergency service structures (police and fire stations) shall be prohibited in floodplains.

(2) Residential structures shall be prohibited in floodways and other structures and fills shall be permitted in floodways only if measures are taken to insure that there will be no increase in flood level due to the development.

(3) Structural developments shall be permitted in flood fringe areas only if designed to provide flood elevations or flood proofing to a height above that of the 100-year flood.

(4) The coastal high hazard area shall be identified, and no land below the level of the 100-year flood in this area may be developed unless the new construction or substantial improvement:

(a) is located landward of the reach of the mean high tide;

(b) is elevated on adequately anchored piles or columns to a lowest flood level at or above the 100-year flood level and securely anchored to such piles or columns; and

(c) has no basement and has the space below the lowest floor free of obstructions so that the impact of abnormally high tides or wind-driven water is minimized."

A. ANALYSIS: Before one could estimate rigorously the consequences of this policy, one would need to know the answers to the following questions:

1. Questions: What are the types and magnitudes of the activities that are likely to violate each of the regulations in the policy? Among these activities, what is the present expected loss of life and damage to property and environment due to development in the hazardous areas? How much of this loss and damage would be reduced by implementation and rigorous enforcement of this policy? For those activities likely to be affected by implementation, what are the comparative private costs and revenues associated with sites inside and outside the hazardous areas?

Answers: I (and an assistant) could answer these questions (with varying precision) with about two or three months of work.

B. GENERAL REACTION: Implementation of this policy is likely to change the private costs and revenues of some activities, but the impact on employment and per capita income would be negligible compared to the reduction in loss of life and damage to property and environment. Implementation of this policy, therefore, is likely to have a strong positive impact on net social benefits.

XV. POLICY 4, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "Wherever practicable and economically feasible, federal, state and local government should provide for:

(a) the removal from floodways of natural or man-caused obstructions which threaten increased flood damage;

(b) the approval of design for all developments constructed in floodplains, to assure the least adverse hydraulic effect considering expected regional flood levels and debris leads; and

(c) the application of floodproofing measures to existing facilities in order to reduce flood damage potential."

A. ANALYSIS AND GENERAL REACTION: Any rigorous analysis of the consequences of this recommended action is hampered by the vagueness of the terms "practicable" and "economically feasible". To increase the precision of the statement, I suggest the rewording that is consistent with past Commission action.

B. SUGGESTED REWORDING: "Unless it is demonstrated that the net social benefits of the following actions are less than the net social benefits of inaction, then federal, state and local government should:

(a) remove, or cause to be removed, from floodways any natural or man-caused obstructions which threaten increased flood damage;

(b) evaluate the design of all developments proposed or constructed in floodplains with special emphasis on achieving the least adverse hydraulic effect considering expected regional flood levels and debris, and should base approval on the evaluation; and

(c) apply, or cause to be applied, floodproofing measures to existing facilities in order to reduce flood damage potential."

XVI. POLICY 4, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "Cities and counties in the coastal zone having flooding or mudslide hazards within their jurisdictions should become eligible for the National Flood Insurance Program."

A. ANALYSIS AND GENERAL REACTION: This recommended action confuses me. If the criteria for eligibility for the National Flood Insurance Program already account for cities and counties having flooding or mudslide hazards, then why is this necessary? If they don't, then this amounts to an innocuous request that they be changed. Surely, there are more specific wordings and more direct approaches that would serve the apparent purpose better.

XVII. POLICY 5

Statement of Policy 5: "State and local government shall made readily available information concerning the location, type and characteristics of geologic hazards."

A. ANALYSIS AND GENERAL REACTION: Unless the costs of providing such information are staggering, this policy could hardly do anything but increase social benefits. It is important to note that this policy does not require the governments to collect the information but only to provide already existing information.

XVIII. POLICY 5, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "The Oregon Department of Geology and Mineral Industries, in cooperation with federal and local government, should complete geologic hazard investigations of western Douglas, Coos, and Curry counties, and make findings of these studies available to the general public."

A. ANALYSIS: Before one could estimate rigorously the consequences of this recommended action, one would need to know answers to the following questions:

1. Questions: At what cost can these investigations be completed? How will the investigations be financed? What alternative means of providing this information exist?

   Answers: I (and as assistant) could provide answers to these questions within one day.

B. GENERAL REACTION: It seems like a good idea.

XIX. POLICY 5, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "Local government in the coastal zone should (through the planning commission and the assessor's office) provide information on identified geologic hazards within their jurisdictions to the general public."

A. ANALYSIS AND GENERAL REACTION: Since this calls for providing information on already "identified geologic hazards", the cost is likely to be small relative to the benefits of the information.

XX. POLICY 5, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "Deeds for property located within areas identified as geologic hazards should include a statement that the area has been identified as hazardous, and a reference for more detailed information."

A. ANALYSIS AND GENERAL REACTION: This seems terribly beneficial and virtually costless.

XXI. POLICY 5, RECOMMENDED ACTION 4

Statement of Recommended Action 4: "The Real Estate Division should require data on geologic hazards to be included in land sales reports for those transactions involving land identified as being a geologic hazard."

A. ANALYSIS AND GENERAL REACTION: Developers could sidestep too easily what appears to be the intent of this recommended action, because it is not clear just what data should be included.

B. SUGGESTED REWORDING: "For those transactions involving land in which geological hazards occur, the Real Estate Division should require disclosure of the existence and nature of such geological hazards to be included in land sales reports.

WEW:fw
2/5/75

OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

WILBUR TERNYIK, CHAIRMAN
JEFF BRENNAN, VICE CHAIRMAN
ROBERT YOUNKER, SECRETARY-TREASURER
JAMES F. ROSS, EXECUTIVE DIRECTOR

P.O. Box N
Florence, Oregon 97439

Phone (503) 997-8248

February 11, 1975

TO: Oregon Coastal Conservation and Development Commission

FROM: Ed Whitelaw, Staff Economist

SUBJECT: Economic Analysis of the Phase II Approved Policies for "Fish and Wildlife Resources of the Oregon Coastal Zone"

I. INTRODUCTION

The discussion that follows applies to the Phase II Policies for "Fish and Wildlife Resources of the Oregon Coastal Zone" that were approved for public review by OCC&DC. My analysis has benefited from written and oral comments from members of the OCC&DC Economic Steering Committee as well as from S. Lance Zaklan. My comments, of course, do not necessarily reflect the views of any of these individuals.

For each of the policies, necessary actions and recommended actions, I have provided at least one of the following three types of comments:

A. ANALYSIS: I raise those questions that need to be answered before a rigorous estimate of the economic consequences of the policy can be made. When I have a ready answer (from my own knowledge of from the inventories), I record it. When I cannot answer the question immediately, I try to place it in one of the following three categories:

1. a question I (and an assistant) could answer with a little more time (e.g., two or three days) using ONLY the inventories;

2. a question I (and as assistant) could answer with substantially more time (e.g., five to ten days) using the inventories plus other EXISTING data and expertise; or

3. a question I (and an assistant) could answer ONLY with as yet nonexisting data or with a considerable amount of research (e.g., two or three months or more) or with both.

B. GENERAL REACTION: I present my general or gut reaction to the policy, and I do so (somewhat hesitantly) at the request of a couple of members of the Economic Steering Committee.

C. SUGGESTED REWORDING: I present an alternative statement of the policy or action so that criticisms implied by my analysis might be eliminated or at least blunted.

II. POLICY 1

Statement of Policy 1: "State and local governments shall protect the significant aquatic life and wildlife habitats of the Oregon coastal zone, identified and described in the OCC&DC inventory, through the management, planning, and regulation of uses that would adversely affect these areas. Furthermore, the state shall develop programs and incentives for improvement and restoration of potentially significant habitat areas."

A. ANALYSIS: Before one could estimate rigorously the economic consequences of this policy, one would need to know answers to the following questions:

1. Questions: What activities (other than aquatic life and wildlife) are likely for use of the significant (and potentially significant) aquatic life and wildlife habitats identified in the OCC&DC Fish and Wildlife Inventory? Which of these activities are likely to affect these habitats adversely? If the activities that are likely to affect these habitats adversely are forced to alter their operations such that they no longer adversely affect the habitats, what will happen to their private costs and revenues and to their employment?

   Answers: I and an assistant could answer these questions within six weeks.

B. GENERAL REACTION: My general reaction is that protection of the significant aquatic life and wildlife habitats can be accommodated without increasing the rate of unemployment and decreasing per capita income on the coast below what they would be in the absence of the accomodation.

III. POLICY 2

Statement of Policy 2: "State and local governments shall manage habitats of threatened and endangered species, and other species of special interest, as identified in the OCC&DC inventory, in such a manner to preserve these species in the Oregon coastal zone."

A. ANALYSIS AND GENERAL REACTION: The ANALYSIS and GENERAL REACTION that I presented for POLICY 1 applies to POLICY 2.

IV. POLICY 2, NECESSARY ACTIONS 1 and 2

Statement of Necessary Actions 1 and 2:

1. "Local units of government shall incorporate in comprehensive land and water use plans consideration for significant habitat areas, habitats of threatened and endangered species and species of special interest, and shall specify use limitations for these habitat areas."

2. "The State of Oregon shall develop planning and management criteria for both the preservation of species and the regulation of adverse impacts in significant habitat areas and shall require that these criteria be included in local comprehensive plans."

A. ANALYSIS AND GENERAL REACTION: Until one knows what the "limitations" and "criteria" are in these necessary actions, one cannot estimate what the economic consequences of them will be.

V. POLICY 2, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "The State of Oregon, through the Oregon Wildlife and Fish Commissions and Sea Grant should conduct studies to determine the recreational, non-appropriative, and economic values of fish and wildlife to assist in planning and decision making."

A. ANALYSIS AND GENERAL REACTION: This seems reasonable especially because estimating the social costs and benefits of fish and wildlife requires measurements of these values.

VI. POLICY 2, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "The State of Oregon should cooperate with the local units of government in developing and carrying out habitat improvement and restoration programs. In particular, wherever appropriate, state and local government should create, enhance and restore spawning areas in coastal streams."

A. ANALYSIS AND GENERAL REACTION: The first sentence of the recommended action seems reasonable and does not need an estimate of its economic consequences. Analysis of the second sentence, however, is hampered by the phrase "wherever appropriate". The phrase either should be deleted without replacement or should be replaced by a phrase urging application of the criterion of maximum net social benefits.

B. SUGGESTED REWORDINGS

1. "The State of Oregon should cooperate with the local units of government in developing and carrying out habitat improvement and restoration programs. In particular, state and local governments should create, enhance and restore spawning areas in coastal streams."

2. "The State of Oregon should cooperate with the local units of government in developing and carrying out habitat improvement and restoration programs. In particular, state and local government should create, enhance and restore spawing areas in coastal streams according to the criterion of net social benefits."

VII. POLICY 2, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "The Oregon Fish Commission should establish a program for the management of marine vegetation."

A. ANALYSIS AND GENERAL REACTION: Before one could estimate rigorously the economic consequences of this recommended action, one would need to know how much such a program is likely to cost and what benefits are likely to occur from the management of marine vegetation. In light of the likely increase in commercial exploitation of kelp along the Oregon coast, and given the rather limited knowledge of what yields can be sustained, the benefits of this recommended action are likely to exceed the costs.

VIII. POLICY 2, RECOMMENDED ACTION 4

Statement of Recommended Action 4: "Local units of government should approve development on freshwater and shorelands, which will result in alterations of water characteristics, only if the proposed uses or activities will be conducted in a manner to minimize adverse effects on significant aquatic life or wildlife habitat areas."

A. ANALYSIS AND GENERAL REACTION: The clause "which will result in alterations of water characteristics" is superfluous since there do not appear to be any developments on freshwater or shorelands that would not alter water characteristics in one way or another. Aside from that, the ANALYSIS AND GENERAL REACTION that I presented above for POLICY 1 applies here.

B. SUGGESTED REWORDING: "Local units of government should not approve development on freshwater and shorelands unless it is demonstrated that the proposed uses or activities will be conducted in a manner to minimize adverse effects on significant aquatic life or wildlife habitat areas."

IX. POLICY 2, RECOMMENDED ACTION 5

Statement of Recommended Action 5: "The State of Oregon and local units of government should discourage agricultural, forestry, and urban development practices which threaten significant aquatic life and wildlife habitats when reasonable alternative practices exist."

A. ANALYSIS: Rigorous analysis of this recommended action is hampered by the terms "discourage" and "reasonable", because until one knows how rigorously the practices are going to be discouraged and until one knows the criteria by which alternative practices are determined to be reasonable or unreasonable, it is impossible to estimate the economic consequences.

B. SUGGGESTED REWORDING: "The State of Oregon and local units of government should prohibit agricultural, forestry, and urban development practices which threaten significant aquatic life and wildlife habitats unless it is demonstrated that the net social benefits of alternative practices are less than the net social benefits of the practices that threaten significant aquatic life and wildlife habitats."

C. ANALYSIS (Continued): Before one could estimate rigorously the economic consequences of this rewording of the recommended action, one would need to know answers to the following questions:

1. Questions: What agricultural, forestry, and urban development practices are likely to threaten significant aquatic life and wildlife habitats? How common is the use of such practices today? What are the private costs of such practices compared to the private costs of alternative practices, i.e., practices that do not threaten significant aquatic life and wildlife habitats?

   Answers: I and an assistant could provide rough answers to these questions within two months. Providing complete and precise answers would take much longer.

D. GENERAL REACTION: Since this recommended action, if it were implemented, forces changes in agricultural, forestry and urban development practices if and only if (a) such practices threaten significant aquatic life and wildlife habitats and (b) there exist socially beneficial alternative practices, then it would increase the net social benefits of Oregonians.

X. POLICY 2, RECOMMENDED ACTION 6a

Statement of Recommended Action 6a: "The State of Oregon and local units of government should provide public access in appropriate habitat areas for hunting, fishing, and wildlife observation in a manner that also provides for public health and safety."

A. ANALYSIS AND GENERAL REACTION: This seems reasonable, and it does not warrant rigorous analysis.

XI. POLICY 2, RECOMMENDED ACTION 6b

Statement of Recommended Action 6b: "In particular, when any access is provided to significant habitat areas it should be done in a manner which minimizes adverse effects on aquatic life and wildlife resources."

A. ANALYSIS AND GENERAL REACTION: This recommended action does not eliminate access. It merely requires that when such access is provided, the resulting adverse effects be minimized. Implementing this action, therefore, would require, first, that the adverse effects of various methods of access be determined and, second, that the method that minimizes these effects be selected. If it has been the practice, whether by intent or by chance, in the past to select the method that minimizes the adverse effects, then the cost of construction and maintenance would remain unchanged if this recommended action were implemented. If not, then the costs are likely to increase, although not significantly.

XII. POLICY 3 and NECESSARY ACTION 1

A. Statement of Policy 3: "The State Fish and Wildlife Commissions shall make planning and management decisions regarding the harvest of both aquatic life and wildlife resources on an optimal sustained yield basis in perpetuity, using evolving scientific principles of resource management, to insure the continued supply of these resources."

1. ANALYSIS: By failing to specify the criterion by which optimality is achieved, the Commission is failing to provide the guidance that it has given in other policies it has approved. The following suggested alternative rewordings, provide the necessary guidance.

2. SUGGESTED REWORDINGS:

a. "The State Fish and Wildlife Commissions, using evolving scientific principles of resource management, shall plan and manage the harvest of both aquatic life and wildlife resources so that the optimal yeild of these resources will be sustained in perpetuity. The criterion of optimality is maximum net social benefits accruing to Oregonians."

b. "The State Fish and Wildlife Commissions, using evolving scientific principles of resource management, shall plan and manage the harvest of both aquatic life and wildlife resources so that the yield from these resources will maximize the net social benefits accruing to this and succeeding generations of Oregonians."

I prefer the second of these alternative rewordings, although either is sufficient to provide what I interpret to be the guidance the Commission has intended to provide.

B. Statement of Necessary Action 1: "The State of Oregon, through the Oregon Fish and Wildlife Commissions, shall establish allowable harvests for those fish and wildlife species of commercial and recreational importance, taking into account the impacts of harvest levels, the impacts from land and water uses on fish and wildlife resources, and the biological factors that determine supply."

1. ANALYSIS: As the original statement of POLICY 3 failed to do, this version of NECESSARY ACTION 1 fails to provide a criterion by which to establish allowable harvests. In order to provide this criterion and to make this statement consistent with the suggested rewordings of POLICY 3, consider the following suggested rewording.

2. SUGGESTED REWORDING: "The State of Oregon, through the Oregon Fish and Wildlife Commissions, shall establish allowable harvests for those fish and wildlife species of commercial and recreational importance according to the criterion of maximum net social benefits accruing to Oregonians in perpetuity, taking into account the impacts of harvest levels, the impacts of land and water uses on fish and wildlife resources, and the biological factors that determine supply."

C. ANALYSIS AND GENERAL REACTION (to Policy 3 and Necessary Action 1): Until the allowable harvests are established, it is impossible to determine what the economic consequences of Policy 3 and Necessary Action 1 are likely to be. In effect, the combination of this policy and necessary action is requiring that the consequences of various levels of harvest be estimated and that those levels be allowed that will maximize the net social benefits accruing to Oregonians. Our knowledge of the wildlife and especially the aquatic life in Oregon is sufficiently limited that the Commission is doing all it can by requiring that these two steps be taken.

XIII. POLICY 3, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "The State of Oregon should encourage and cooperate in the international management of the offshore ocean fishery on an optimal sustained yield basis to protect the viability of the remaining fishery stocks."

A. ANALYSIS AND GENERAL REACTION: The problem with specifying the criterion of optimality for this recommended action is that it isn't clear whether Oregon should lobby exclusively for the benefits of Oregonians or for Oregonians and others as well. Given that dilemma, I'll suggest a rewording that merely increases the precision of the recommended action without resolving that fundamental problem.

B. SUGGESTED REWORDING: "The State of Oregon should encourage the appropriate authorities to assure that the offshore ocean fisheries be managed so that an optimal yield of the remaining fishery stocks be sustained in perpetuity."

XIV. POLICY 3, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "The Oregon Fish Commission should place greater emphasis on development of new commercial and sports fisheries for unutilized and underutilized species to lessen pressure on some species while increasing the available supply of fish protein."

A. ANALYSIS AND GENERAL REACTION: This one is confusing and premature. To support this recommended action, I would need precise estimates of (a) the magnitude of present stocks of utilized, unutilized and underutilized species, (b) the present rate of exploitation of these species by this and other nations, and (c) the interdependence among various offshore species of fish. I am skeptical that such estimates exist, and, therefore, it is not clear that increasing the exploitation of unutilized and underutilized species can occur at the same time the available supply of fish protein is increased. Even if it could, increasing the supply of fish protein is only one of several reasons why such increased exploitation should be considered or controlled or whatever.

B. SUGESTED REWORDING:

"The Oregon Fish Commission should determine:

(a) why certain species of fish have remained unutilized or underutilized; and

(b) if it would benefit Oregonians for there to be governmental encouragement of the exploitation of these unutilized and underutilized species."

XV. POLICY 3, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "The Oregon Fish and Wildlife Commissions should initiate an expanded program of research to develop the biological information needed to establish harvest levels and should, thereafter, monitor the impacts of harvest levels and land and water uses on the supply of fish and wildlife resources."

A. ANALYSIS AND GENERAL REACTION: This is obviously necessary if NECESSARY ACTION 1 is ever to be implemented.

XVI. POLICY 3, RECOMMENDED ACTION 4, 5 & 6

Statement of Recommended Action 4: "The Oregon Fish Commission should cooperate with the federal government in conducting studies to identify the cause for the decline in the salmon fishery and methods to correct it."

Statement of Recommended Action 5: "The federal and state government, as well as private individuals should supplement wild fishery stocks with hatchery stocks."

Statement of Recommended Action 6: "Sea Grant should encourage and fund research on the expanded use of unexploited fish stocks."

A. ANALYSIS AND GENERAL REACTION: These all seem reasonable and sufficiently innocuous as to not require rigorous analysis.

XVII. POLICY 3, RECOMMENDED ACTION 7

Statement of Recommended Action 7: "The State of Oregon should expand research, educational, and enforcement programs to help in carrying out the intent of aquatic life and wildlife regulation and management of the resource on a sustained yield basis."

A. ANALYSIS AND GENERAL REACTION: Why is it necessary to state this recommended action? It seems strictly redundant to POLICY 3 and NECESSARY ACTION 1.

WEW:fw

OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

P.O. Box N
Florence, Oregon 97439
Phone (503) 997-8248

February 12, 1975

TO: Oregon Coastal Conservation and Development Commission

FROM: Ed Whitelaw, Staff Economist

SUBJECT: Economic Analysis of the Phase II Approved Policies for "Beaches and Dune Resources of the Oregon Coastal Zone"

I. INTRODUCTION

The discussion that follows applies to the Phase II Policies for "Beaches and Dune Resources of the Oregon Coastal Zone" that were approved for public review by OCC&DC. My analysis has benefited from written and oral comments from members of the OCC&DC Economic Steering Committee as well as from S. Lance Zaklan. My comments, of course, do not necessarily reflect the views of any of these individuals.

For each of the policies, necessary actions and recommended actions, I have provided at least one of the following three types of comments:

A. ANALYSIS: I raise those questions that need to be answered before a rigorous estimate of the economic consequences of the policy can be made. When I have a ready answer (from my own knowledge or from the inventories), I record it. When I cannot answer the question immediately, I try to place it in one of the following three categories:

1. a question I (and an assistant) could answer with a little more time (e.g., two or three days) using ONLY the inventories;

2. a question I (and an assistant) could answer with substantially more time (e.g., five to ten days) using the inventories plus other EXISTING data and expertise; or

3. a question I (and an assistant) could answer ONLY with as yet nonexisting data or with a considerable amount of research (e.g., two or three months or more) or with both.

B. GENERAL REACTION: I present my general or gut reaction to the policy, and I do so (somewhat hesitantly) at the request of a couple of members of the Economic Steering Committee.

C. SUGGESTED REWORDING: I present an alternative statement of the policy or action so that criticisms implied by my analysis might be eliminated or at least blunted.

II. POLICY 1

Statement of Policy 1: "State and local government shall maintain or enhance the values of Oregon's sand areas by assuring that public and private uses do not exceed the physical and biological limitations of these areas."

A. ANALYSIS: Before one could estimate rigorously the economic consequences of this policy, one would need answers to the following questions:

1. Questions: What economic activities currently occur in sand areas? What is their relative magnitude in the coastal economy measured in employment or earnings?

   Answers: Recreation is the primary economic activity that occurs in sand areas. I and an assistant could provide reasonably complete answers to these questions (e.g., a list of the other activities as well as estimates of their relative magnitudes) within three days of work.

2. Questions: Among the activities identified in II.A.1. above, are there any that exceed the physical and biological limitations of these areas or that might be expected to in the future? If so, which ones are they? In which sand areas are they concentrated? How much decrease in their employment or earnings in the sand areas would be necessary to put the activity within the physical and biological limitations?

   Answers: I and an assistant could provide partial answers to these questions within one day, but complete answers would require new data.

3. Question: What benefits are likely to be generated by constraining activities in sand areas to the physical and biological limitations of these areas?

   Answer: Within a few days, I and an assistant could estimate, at least roughly, the increment to the future stream of benefits likely to be generated by prolonging the usefulness and attractiveness of sand areas.

B. GENERAL REACTION: Policy 1 could be implemented without markedly affecting employment orearnings in recreation and related activities. There may be particular cases for other activities, however, in which marked change could occur, but as yet I have no evidence to that effect.

III. POLICY 1, NECESSARY ACTIONS (a) and (b)

Statement of Necessary Actions (a) and (b):

(a) "Local government shall include within their comprehensive plans an identification of the various types of sand areas (as identified in the OCC&DC Beaches and Dunes Inventory) and shall designate for each type of sand area uses that do not exceed the biological limitations peculiar to each type of sand area."

(b) "The State of Oregon, in cooperation with local units of government and with the requested assistance of the U.S. Soil Conservation Service, shall develop planning criteria for sand areas and shall require that these criteria be used in the local comprehensive planning process as well as in state agency programs."

A. ANALYSIS AND GENERAL REACTION: Aside from the possible economic consequences implied by the questions I raised in the analysis of POLICY 1, these two necessary actions will tend to increase the administrative costs of application, compliance and enforcement. The magnitude of these costs depends on how these and other policies are implemented.

IV. POLICY 1, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "State and local governments should approve proposed recreational uses of those sand landforms identified as having high value for recreation use (as identified in the OCC&DC Beaches and Dunes Inventory) unless it is demonstrated that the net social benefits of approving an alternative proposed use exceed the net social benefits of disapproving it."

A. ANALYSIS: Before one could estimate rigorously the economic consequences of this recommended action, one would need answers to the following questions:

1. Questions: What sand landforms have been (or are likely to be) identified as having high value for recreational use? Where are they (or are they likely to be) located? How many acres out of the total sand areas are these identified sand landforms likely to cover?

   Answers: I and an assistant could provide rough answers to these questions within two days.

2. Questions: What activities (other than recreation) are likely to compete for use of the identified landforms? For those activities that directly generate employment and earnings, what is their relative magnitude in the coastal economy measured in employment or earnings? What is their relative magnitude in the local economy of which they are likely to be a part? For those activities that do not generate employment and earnings directly (e.g., wildlife habitats), what is their relative importance in the system of which they are a part (e.g., the ecological system)?

Answer: It would take, me and an assistant, at least a couple of months to provide answers to most of these questions.

B. GENERAL REACTION: Assuming (as the OCC&DC Inventory of Beaches and Dunes suggests) that relatively few sand landforms will be identified as having high value for recreation use, then recreation will compete with very few other economic activities for use of the areas. If those sand landforms identified as having high value for recreational use also have, say, high ecological value, then there may result some conflict among alternative uses. If the criterion of net social benefits does not provide an adequate resolution of the conflict, then Zaklan's approach to establishing a system of preferences, if it is adopted, should provide the resolution.

V. POLICY 1, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "State and local government should designate certain sand areas for preservation in their natural state in order to allow for continuance of natural dune processes for the purposes of scientific study and protection of scenic, recreation and wildlife habitat values."

A. ANALYSIS: Before one can proceed with a rigorous analysis, one would need to know answers to the following questions:

1. Questions: Where are the "designated sand areas" or where are they likely to be? How many acres out of the total sand areas are these designated sand areas likely to cover? What economic activities (other than recreation) are likely to compete for use of these designated areas? What is the relative magnitude of these activities in the coastal economy measured in employment and earnings? What is their relative magnitude in the local economy of which they are likely to be a part?

   Answers: The OCC&DC Inventory of Beaches and Dunes does not indicate any "designated sand areas" nor does it provide criteria for designating the areas. A rigorous analysis cannot begin until this information is available.

2. Question: What increases in scenic, recreation and wildlife habitat values are likely to occur as a result of preserving certain designated sand areas in their natural state?

   Answer: Within five days, I and an assistant could estimate these increases for a given sand area, but until the areas are designated, the analysis cannot begin.

B. GENERAL REACTION: Given (1) my view that few sand areas will be designated for preservation in their natural state and (2) the low probability that uses other than scenic, recreation or wildlife habitat will be competing for the designated sand areas, this recommended action, if it were implemented, would generate few economic consequences.

VI. POLICY 1, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "Local government should require that dune stabilization be conducted in conformance with use designations included in comprehensive plans."

A. ANALYSIS AND GENERAL REACTION: Before one could proceed with a rigorous, or even a casual, estimate of the most likely consequences of this recommended action, one would need an answer to the following question:

1. Question: Is this likely to effect a net increase in outlays on dune stabilization or is it merely going to change the nature of dune stabilization without a change in the costs?

Answer: I and an assistant could answer this question within two days.

VII. POLICY 1, RECOMMENDED ACTIONS 4 and 5

Statement of Recommended Action 4: "The State, in cooperation with the Soil Conservation Service, should encourage and support additional studies of sand area carrying capacity, including the impact of motor vehicles, pedestrians and livestock."

Statement of Recommended Action 5: "The State should develop and implement, with the cooperation of concerned agencies, an education program to explain beaches and dune processes to the general public and to schools.

A. ANALYSIS AND GENERAL REACTION: A rigorous analysis of these recommended actions is not necessary. My general reaction is that while increased information is beneficial, it is also costly, and, therefore, the same cost-benefit analysis that lurks behind most of the policies in the program should be applied here as well.

VIII. POLICY 1, (prospective) RECOMMENDED ACTION 6

Apparently, the following recommended action will be considered by the Commission although it has not yet been approved.

Statement of (prospective) Recommended Action 6: "State and local government should designate only the sand landforms older stabilized dunes and older foredunes (as identified in the OCC&DC inventory) as suitable for development or intensive use without need of further evaluation through a site investigation."

A. ANALYSIS: Before one can proceed with a rigorous analysis, one would need to know answers to the following questions:

1. Question: How many acres out of the total sand areas do "older stabilized dunes and older foredunes" cover?

Answer: According to the OCC&DC "Beaches and Dunes Inventory", about 45% to 50% of the 165,000 acres of sand areas are "older stabilized dunes and older foredunes", or about 80,000 acres.

2. Questions: How much development or intensive use (measured in employment or earnings) occurs on sand landforms? (For example, most of the residential development on the coast occurs on older stabilized dunes.) Of this total, how much occurs on "older stabilized dunes and older foredunes"? Is this aggregate spatial distribution between the two categories uniform among sand areas, or does it vary substantially? If the latter, in which localities is the economic activity in sand areas concentrated on sand landforms other than "older stabilized dunes and older foredunes"?

   Answers: Within five to ten days, I and an assistant could provide at least rough answers to these questions.

3. Question: Would the implementation of this recommended action result in a reduction of noneconomic values in the older stabilized dunes and older foredunes? If so, what is the magnitude of this reduction?

   Answers: Within two or three days, I and an assistant could provide rough answers to these questions. Reasonably complete answers would take much longer.

B. GENERAL REACTION: Since most development in sand areas appears to be concentrated in the older stabilized dunes and older foredunes, a case against this recommended action would have to be based on marked underpricing of the social benefits generated by undeveloped older stabilized dunes and older foredunes. To my knowledge, this is not the case.

C. SUGGESTED REWORDING: The present wording is awkward. The following slight change should eliminate this awkwardness.

   State and local governments should designate only older stabilized dunes and older foredunes (as identified in the OCC&DC inventory) as suitable sand landforms for development or intensive use without need of further evaluation through a site investigation.

IX. POLICY 2

Statement of Policy 2:

a. "In sand areas other than older stabilized dunes and older foredunes (as identified in the OCC&DC inventory), state and local government shall base approval or disapproval of uses, in part, on a site investigation report which has been prepared by a qualified sand specialist and provided to the applicable unit of government by the

developer. The report shall evaluate the capability of the site to support the proposed development without endangering life, property or environment and shall describe:

(1) the type of development (use) proposed;

(2) the temporary and permanent stabilization programs and the planned maintenance of this vegetation once it is established; and

(3) the methods for protecting the surrounding area from adverse effects of the development and stabilization."

b. "State and local government shall not approve any proposed use of a sand area that is likely to cause any of the following conditions unless it is demonstrated that the net social benefits of approving the use in the sand area exceed the net social benefits of disapproving the use:

(1) excessive damage to existing vegetation including moisture loss and plant root damage;

(2) exposure of stable and conditionally stable areas to erosion;

(3) slope instability;

(4) pollution or excessive drawdown of groundwater; and

(5) interference with significant wildlife habitats."

A. ANALYSIS: Before one could estimate rigorously the most likely consequences of this policy, one would need answers to the following questions:

1. Questions: What activities currently violate any or all of these conditions? What increases in costs of construction and operation would be incurred by these activities in order for them to avoid violating all of the conditions? What effect are these increased costs likely to have on employment and earnings?

   Answers: I and an assistant could provide rough answers to these questions within five days, but it would take considerably longer to provide accurate answers.

2. Question: What are the benefits generated by imposing the six constraints on uses of sand areas?

   Answer: The direction of the benefits is toward prolonging the existence and usefulness of various sand landforms, thus increasing the magnitude of the benefits for future generations. I and an assistant could provide rough estimates of the nature and magnitude of the benefits within five days. It would take much longer, of course, to provide complete answers.

B. GENERAL REACTION: Because all the benefits of prolonging the existence and usefulness of many sand landforms are not appropriable in the present land market, the five constraints are likely to increase the efficiency of allocation of sand areas and thus increase net social benefits. One might prefer special user charges instead of direct regulation, but estimating and administering the charges may be prohibitively difficult.

X. POLICY 2, RECOMMENDED ACTIONS 1 and 2

Statement of Recommended Action 1: "The state, after consultation with local governments and the Soil Conservation Service, should specify those data that must be included in the site investigation reports used in evaluating development proposals in sand areas."

Statement of Recommended Action 2: "The state, in cooperation with local governments and the Soil Conservation Service, should develop a statement of qualifications for sand specialists to assist local government and the public in selecting individuals to conduct evaluations of projects in sand areas."

A. ANALYSIS AND GENERAL REACTION: These both seem reasonable, and no discussion is necessary.

XI. POLICY 2, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "State and local governments should control or design access into or through sand dune areas, particularly conditionally stable dunes and dune complexes, so that the stability of the areas is maintained, scenic values are protected and fire hazards avoided.

A. ANALYSIS: Before one could estimate rigorously the most likely consequences of this recommendation, one would need answers to the following questions:

1. Questions: What access into or through sand dune areas currently violates these conditions? What access is likely to violate them in the future? What increases in costs of construction and operation would implementation of this recommended action impose on uses of sand dune areas? What would be the effect on employment and earnings of these increases in costs?

   Answer: I and an assistant could provide rough answers to these questions within five days. Complete answers, of course, would take much longer.

2. Question: What benefits are likely to be generated by maintaining stability, protecting scenic values and avoiding fire hazards in sand dune areas?

   Answer: I and an assistant could provide rough answers to this question within two days.

B. GENERAL REACTION: My general or, more descriptively, gut reaction is the implementation of this recommended action would increase the costs of construction and operation of activities in sand dune areas, but this increase would not be sufficient to have a perceptible impact on employment or earnings in these activities. The benefits, therefore, are likely to outweigh the costs of this recommended action.

XII. POLICY 2, RECOMMENDED ACTION 4

Statement of Recommended Action 4: Local governments should allow cutting and removal of timber and understory vegetation or ground cover in sand areas only if the planned method for removal will not threaten the survival of the adjacent plant communities due to subsequent moisture loss or root damage.

A. ANALYSIS: Before one could estimate rigorously the most likely consequences of this recommended action, one would need answers to the following questions.

1. Questions: How much cutting and removal of timber and understory vegetation or ground cover in sand areas occurs now? What portion of such activities threatens the survival of adjacent plant communities due to moisture loss?

   Answer: Although neither the OCC&DC Economic Study nor the OCC&DC Inventory of Beaches and Dunes provides answers to these questions, I and an assistant probably could provide rough answers to them within five days.

XIII. POLICY 2, RECOMMENDED ACTION 5

Statement of Recommended Action 5: State and local governments should permit removal of sand from sand areas only when it is necessary to protect private or public property from sand damage or when such removal will not adversely affect the environment or the stability of adjacent areas as determined by a site investigation.

A. ANALYSIS: I interpret the phrase "determined by a site investigation" to mean that the Commission intends for the report on the site investigation to describe the alternative consequences of removing sand and of not removing sand. Estimating the consequences of this recommended action now (i.e., prior to any reports on site investigations) is hampered by the lack of criteria by which sand removal is judged (a) to be necessary to protect private or public property and (b) to affect adversely the environment or the stability of adjacent areas.

XIV. POLICY 2, RECOMMENDED ACTION 6

Statement of Recommended Action 6: State and local governments should regulate removal of driftwood from sand areas for commerical purposes so that scenic values and the dune-building process are not adversely affected.

A. ANALYSIS: Before one could estimate rigorously the most likely consequences of this recommended action, one would need answers to the following questions:

1. Question: What is the magnitude of employment or earnings originating in the removal of driftwood from sand areas for commercial purposes?

   Answer: I and an assistant could provide an adequate answer to this question within a day.

2. Question: How sensitive are scenic values and the dune-building process to the amount of driftwood in sand areas?

   Answer: I and an assistant could provide a rough answer to this question within five days. A precise answer, however, may be impossible to provide.

B. GENERAL REACTION: Since I think employment or earnings originating in the removal of driftwood from sand areas for commercial purposes is insignificant relative to other economic activities on the coast, and since the Commission in this particular recommended action appears to be placing a relatively large value on scenic and ecological values, the net social benefits of this recommended action are likely to be large and positive.

XV. POLICY 2, RECOMMENDED ACTION 7: "Local government should regulate grazing of domestic animals on stabilized dune areas and only on an assigned density basis as determined by site investigations."

A. ANALYSIS: Analysis of this recommended action is hampered by the term "regulate", because it is not clear how rigorously the Commission would like grazing on stabilized dune areas to be regulated. I much prefer the precision of the original wording, which I suggest be reconsidered below.

I interpret the phrase "determined by site investigations" to mean that the Commission intends for the report on the site investigation to describe the alternative consequences of permitting the grazing of domestic animals in stabilized dune areas according to alternative densities. I will limit the analysis here, therefore, to the consequences of permitting grazing only on stabilized dune areas.

Before one could estimate rigorously the most likely consequences of this recommended action, one would need answers to the following questions:

1. Question: What proportion of the coast's employment or earnings originates in grazing of domestic animals? What proportion of grazing of domestic animals on the coast occurs in areas other than stabilized dune areas? What proportion in areas other than stabilized dune areas vary markedly among sections of the coast? In those areas in which the proportion is relatively large, at what coast would the stabilized dune areas absorb the displaced grazing?

   Answer: I and an assistant could answer these questions within three days.

2. Question: What increase in benefits (e.g., esthetic, cultural, historic, ecological and economic) would result from restricting grazing of domestic animals to stabilized dune areas?

   Answer: I and an assistant could provide a rough answer to this question within two days.

XVI. POLICY 2, RECOMMENDED ACTION 8

Statement of Recommended Action 8: In developing structures that might cause excessive diminishment of sand supply or interruption of the longshore transport of littoral drift, the developer should investigate possible methods of sand by-pass.

ANALYSIS AND GENERAL REACTION: Until the developer is required to demonstrate that he or she has investigated possible methods of sand by-pass and until the developer is required to do something once the investigation has been finished, this recommended action will have no impact on the economy.

XVII. POLICY 3

Statement of Policy 3:

a. State and local government shall permit development on active foredunes and on conditionally stable foredunes which are subject to serious ocean undercutting only when it is demonstrated that the social benefits of development on these sand areas exceed the social costs.

b. State and local government shall allow breaching of foredunes only on a temporary basis for emergency purposes (e.g., fire control, cleaning up oil spills) and shall require that these foredunes be restored once the emergency passes, unless it is demonstrated that the social benefits of permanent breaching of the foredune exceed the social costs.

A. SUGGESTED REWORDING:

a. State and local government shall prohibit development on active foredunes and on conditionally stable foredunes which are subject to serious ocean undercutting unless it is demonstrated that the net social benefits of development on these sand areas exceed the net social benefits of prohibiting such development.

b. State and local government shall allow breaching of foredunes only on a temporary basis for emergency purposes (e.g., fire control, cleaning up oil spills) and shall require that these foredunes be restored once the emergency passes, unless it is demonstrated that the net social benefits of permanent breaching of the foredunes exceed the net social benefits of prohibiting permanent breaching.

XVIII. POLICY 3, NECESSARY ACTION 1

Statement of Necessary Action 1: The state in cooperation with local governments and state and federal agencies shall establish criteria and procedures for breaching of foredunes and restoration of breached foredunes.

A. ANALYSIS AND GENERAL REACTION: This seems reasonable and does not require discussion.

XIX. POLICY 3, RECOMMENDED ACTIONS 1 and 2

Statement of Recommended Action 1: State and local government should investigate all known methods of inducing foredunes artificially on the continental shelf, for federal imlementation, wherever pre-existing developments are threatened by undercutting erosion of present foredunes.

Statement of Recommended Action 2: State and local governments in cooperation with federal agencies should develop criteria for construction of beach front protective structures, and one of the criteria should be an evaluation of the net social benefits and costs.

A. ANALYSIS AND GENERAL REACTION: Both of these recommended actions seem reasonable and do not require discussion.

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OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

WILBUR TERNYIK, CHAIRMAN
JEFF BRENNAN, VICE CHAIRMAN
ROBERT YOUNKER, SECRETARY-TREASURER
JAMES F. ROSS, EXECUTIVE DIRECTOR

P.O. Box N
Florence, Oregon 97439

Phone (503) 997-8248

February 19, 1975

TO: Oregon Coastal Conservation and Development Commission

FROM: Ed Whitelaw, Staff Economist

SUBJECT: Economic Analysis of the Phase II Approved Policies for "Agriculture, Forest, Urban and Recreation Resources of the Oregon Coastal Zone."

I. INTRODUCTION

The discussion that follows applies to the Phase II Policies for "Agriculture, Forest, Urban and Recreation Resources of the Oregon Coastal Zone" that were approved for public review by OCC&DC. My analysis has benefited from written and oral comments from members of the OCC&DC Economic Steering Committee as well as from S. Lance Zaklan. My comments, of course, do not necessarily reflects the view of any of these individuals.

For each of the policies, necessary actions and recommended actions, I have provided at least one of the following three types of comments:

A. ANALYSIS: I raise those questions that need to be answered before a rigorous estimate of the economic consequences of the policy can be made. When I have a ready answer (from my own knowledge or from the inventories), I record it. When I cannot answer the question immediately, I try to place it in one of the following three categories:

1. a question I (and an assistant) could answer with a little more time (e.g., two or three days) using ONLY the inventories;

2. a question I (and an assistant) could answer with a little more time (e.g., five to ten days) using the inventories plus other EXISTING data and expertise; or

3. a question I (and an assistant) could answer ONLY with as yet nonexisting data or with a considerable amount of research (e.g., two or three months or more) or with both

B. GENERAL REACTIONS: I present my general or gut reaction to the policy, and I do so (somewhat hesitantly) at the request of a couple of members of the Economic Steering Committee.

C. SUGGESTED REWORDING: I present an alternative statement of the policy or action so that criticisms implied by my analysis might be eliminated or at least blunted.

II. POLICY 1 and NECESSARY ACTIONS 1 and 2

Statement of Policy 1: "State and local governments shall conserve for forest uses all lands in the first three classes of forest land defined by the OCC&DC Uplands Inventory and shall conserve those forest lands in class four, defined by the OCC&DC Uplands Inventory, that are capable of growing at least 20 cubic feet of usable wood fiber per acre per year."

Statement of Necessary Action 1: "Local governments shall identify forest lands within comprehensive land-use plans in a manner consistent with the classes of forest land defined by the OCC&DC Uplands Inventory and shall designate for forest uses all lands in at least the first three classes defined by the OCC&DC Uplands Inventory."

Statement of Necessary Action 2: "Lands conserved or designated for forest uses shall not be converted to other than forest uses unless it is demonstrated that the net social benefits of conversion exceed the net social benefits of retaining them in forest use."

A. ANALYSIS: POLICY 1 requires that the first three classes of forest lands identified in the OCC&DC Uplands Inventory be devoted wisely to forest uses without deterioration or destruction of the resources. (This interpretation is based on the definition of the term "conserve" in the glossary.) NECESSARY ACTION 1, from the perspective of economic consequences, is similar to POLICY 1.

POLICY 1 alone is difficult to analyze for three reasons that are treated in part by NECESSARY ACTION 2. First, the policy does not indicate what is wise and what is unwise use of the forest land. Second, the policy does not indicate the length (i.e., the costs) to which the state and local governments should go to conserve the selected forest lands for forest uses. Third, there are no criteria by which conversion of forest land to uses other than forest uses is to be allowed.

NECESSARY ACTION 2 provides guidance for dealing with the second and third problems I raised in the previous paragraph. The first problem, namely what is wise and unwise use of forest land, apparently will remain unresolved.

Before one could estimate rigorously the consequences of POLICY 1 and its accompanying NECESSARY ACTIONS 1 & 2, one would need answers to the following questions:

1. Question: What proportion of the land in the coastal zone is in each of the five classes of forest land that are identified in in the OCC&DC Uplands Inventory?

   Answer: On the basis of the inventories, my guess is that about 85% of the land is in the first three classes. I and an assistant could provide an accurate answer within five days.

2. Question: What has been the rate of conversion of each of these classes to uses other than forest uses? What are these rates likely to be in the future without implementation of POLICY 1 and the two NECESSARY ACTIONS?

   Answers: I and an assistant could answer these questions within ten days.

3. Question: What effect (both direction and magnitude) would the implementation of POLICY 1 and NECESSARY ACTIONS 1 and 2 have on these rates of conversion?

   Answer: To answer this question rigorously would take me and an assistant about six weeks research.

B. GENERAL REACTION: As I have stated before with similar policies and necessary actions, POLICY 1 and NECESSARY ACTIONS 1 and 2 will tend to increase the administrative costs of application, compliance and enforcement. The magnitude of these costs depends, of course, on how this and other policies are implemented.

   The likely impact of POLICY 1 and NECESSARY ACTIONS 1 and 2 will be to reduce the rate at which forest lands are converted to uses other than forest uses. The amount of this reduction will depend on the relative weights assigned to the alternative values in the comparison of net social benefits.

III. POLICY 1, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "The state should support intensive management practices that allow realization of the mutiple use of forest lands with a minimum of undesirable ecological impact."

A. ANALYSIS: Given the definitions in the "Glossary", Recommended Action 1 says: "The state should support methods of increasing the production of land (such as thinning, soil improvement, irrigation, and genetic improvement) that allow realization of coordination or integration of diverse uses or activities within one development or resource area in a manner that will conserve the basic land resource itself with a minimum of undesirable ecological impact."

   Furthermore, the term "conserve" means the land should be used wisely consistent with long-range goals to prevent deterioration or destruction of the land.

   If this recommended action were implemented, then whenever there were alternative methods of realizing multiple use, the method that yielded the least deterioration or destruction of the land that yeilded the least decreases in ecological values would be supported by the state. If there were only one method of realizing multiple use, the it would be supported by the state. How rigorously the state should support these methods, of course, is not indicated in the recommended action, and this vagueness hampers rigorous analysis of the recommended action.

B. SUGGESTED REWORDING: The suggested rewording allows the Commission to indicate how rigorously the state should support intensive management practices.

The state should assure that whenever there are alternative intensive management practices that allow realization of the mutiple use of forest land and that yield the least deterioration or destruction of the land and that yield the least decrease in ecological values would be used unless it is demonstrated that the net social benefits of requiring such practices are less than the net social benefits of allowing alternative practices.

IV. POLICY 1, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "In order to improve timber production of forest lands, the state should: (a) encourage rehabilitation of old cutover, burned or brush-covered forest lands; and (b) support reasearch and development of new methods of management."

A. ANALYSIS: Before one could estimate rigorously the economic consequences of this recommended action, one would need answers to the following questions:

1. Questions: What proportion of old cutover, burned or brushcovered forest lands is rehabilitated under present practices? What is the least cost at which the remaining proportion could be rehabilitated? What increment to social benefits would result from rehabilitating the remaining proportion, where such benefits would be generated by an increase in forest uses as defined in the GLOSSARY?

   Answers: I and an assistant could provide answers to the first and second questions within five days. Answering the third question is not as difficult as it might first appear. The increment to social benefits(generated by rehabilitation (or the total payoff from rehabilitation) occurs in about 10 years from the time the replanting phase of rehabilitation occurs, because it takes about that long for the land to be able to support multiple uses. Without rehabilitation, the time it takes for the land to be able to support multiple uses is so long that the social value is negligible. I and an assistant could provide an answer to the third question within five days.

2. Question: What rate of return could be expected from the funds devoted to research and development of new methods of forest management?

   Answer: I and an assistant could provide a partial answer within five days, but a complete and accurate answer might not be possible.

V. POLICY, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "In order to make maximum use of forest lands for wood production while at the same time avoiding erosion and

sidimentation problems, forest land owners and managers should manage their lands in accordance with the Oregon Forest Practice Rules and the state should provide sufficient staff to adequately enforce these Rules."

A. ANALYSIS: I assume that the term "maximum" was intended to mean "optimal", because otherwise the meaning isn't clear. Given the GOAL adopted by the Commission on 9 August 1974, the phrase "make optimal use of forest lands for wood production" means "generate the maxium benefits for Oregonians indefinitely from wood production on forest lands".

Given my interpretation of the phrase "make maximum use", the recommended action asserts (1) that if forest landowners and managers manage their land in accordance with the Oregon Forest Practice Rules, then they will make optimal use of forest lands for wood production and (2) that if the state provides enough staff, the rules will be enforced. For one to estimate rigorously, therefore, the consequences of this recommended action, one would need answers to the following questions:

1. Question: Would enforcement of the Oregon Forest Practice Rules make optimal use of forest lands for wood production, where this is interpreted to mean the maximum benefits for Oregonians from wood production on forest lands in perpetuity? What effect would such enforcement have on other forest uses?

   Answers: I and an assistant could provide rough (and I mean ROUGH) answers to these questions within two weeks using the inventories plus other existing data and expertise.

2. Question: What resources would the state need to provide that would be necessary and sufficient to enforce the Oregon Forest Practice Rules?

   Answer: I and an assistant could provide an answer to this question within three days. With that little time, the answer, of course, won't be complete, but it isn't clear that spending any more time on it would improve the answer noticeably.

B. SUGGESTED REWORDING: "In order to maximize the benefits accruing to Oregonians from the use of forest lands for wood production while at the same time avoiding erosion and sedimentation problems, forest land owners and managers should manage their lands in accordance with the Oregon Forest Practice Rules and the state should provide sufficient staff to adequately enforce these Rules.

VI. POLICY 1, RECOMMENDED ACTION 4

Statement of Recommended Action 4: "The state should broaden the Forest Practice Act Rules to include management guidelines for protecting recreation, visual and other quality-of-life values of forest lands."

A. ANALYSIS AND GENERAL REACTION: This is entirely consistent with past actions of the Commission including the adoption of the definitions of social benefits and of the "system of preferences".

VII. POLICY 1, RECOMMENDED ACTION 5

Statement of Recommended Action 5: "The state forester should conduct or support a study of the feasibility of coordinating timber harvesting by drainage basins, or by other means, in order to protect all forest uses and watershed values."

A. ANALYSIS AND GENERAL REACTION: This seems reasonable, and there is no need for me to discuss it.

VIII. POLICY 1, RECOMMENDED ACTION 6

Statement of Recommended Action 6: "The state should encourage the development of land use plans for both public and private forest lands which would:

a. designate high productive site timberland to be reserved for timber reproduction, unless it is demonstrated that the net social benefits of conversion to other uses exceed the net social benefits of preservation.

b. identify possible incentives to be used in the conservation of forest lands for forest uses; and

c. provide a means for coordination of timber harvesting to protect watershed values.

A. ANAYSIS: Before one could estimate rigorously the consequences of this recommended action, one would need answers to the following questions:

1. Question: At what rate does timberland of various levels of productivity get converted to uses other than the production of timber?

   Answer: For all levels of productivity, the rate is 1.5% over 25 years. (Source: OCC&DC Economic Survey and Analysis, pp.E74-75) I and an assistant could estimate the rates for various levels of productivity within five days.

2. Questions: What externalities exist in the market for timberland of various levels of productivity? What proportion of timberland at the highest levels of productivity is owned by the public sector?

   Answers: I and an assistant could provide rough answers to these questions within five days.

B. GENERAL REACTION: Since I feel that most if not all the social benefits and costs of the timber production are appropriated by the market for timberland, I conclude that the argument for the market invervention urged by Part (a) must rest on externalities generated by other considerations than the physical productivity of timberland. Thus, cost-benefit analysis of conversion is necessary to prevent costly ambiguities in the interpretation of the statement.

Regarding Part (b), the action urged is innocuous.

Finally, regarding Part (c), since drainage basins are such interrelated ecological systems, it seems terribly reasonable to coordinate such a significant activity as timber harvesting.

IX. POLICY 1, RECOMMENDED ACTION 7

Statement of Recommended Action 7: "The state should conduct or support a study of the log exporting industry to determine the long and short-term effects on forest reserves, reforestation and log costs."

A. ANAYSIS AND GENERAL REACTION: This seems reasonable, and there is no need for me to discuss it.

X. POLICY 2

Statement of Policy 2: "State and local governments shall preserve productive agricultural lands in the coastal zone, identified in the OCC&DC Uplands Inventory and in local comprehensive plans, for agricultural uses, unless it is demonstrated that the net social benefits of conversion to other uses exceed the net social benefits of preservation."

A. ANALYSIS AND GENERAL REACTION: Since I feel that most if not all the social benefits and costs of agricultural uses are appropriated by the market for agricultural land, I conclude that the argument for the market intervention urged by POLICY 2 must rest on externalities generated by other factors than the physical productivity of agricultural land. Thus, cost-benefit analysis of conversion is necessary to prevent costly ambiguities in the interpretation of the statement. My gut reaction is that it should not be very difficult to demonstrate that conversion to uses other than agricultural would increase net social benefits.

XI. POLICY 2, NECESSARY ACTION 1

Statement of Necessary Action 1: "Local governments shall identify productive agricultural lands within comprehensive land use plans and shall designate these lands for agricultural uses."

A. ANALYSIS AND GENERAL REACTION: This is an obviously necessary action for implementation of POLICY 2. As I have stated before with similar policies, necessary action and recommended action, this will tend to increase the administrative costs of application, compliance and enforcement. The magnitude of these costs depends on how this and other policies are implemented.

XII. POLICY 2, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "The state should develop incentives to encourage the retention of existing agricultural lands in agricultural use."

A. ANALYSIS: For one to estimate the consequences of this recommended action, one would need (in addition to a precise term to replace "encourage") answers to the following questions:

1. Question: At what rate does agricultural land get converted to other uses?

   Answer: Over the period 1959-1969, 28.7% was converted. Source: OCC&DC Economic Survey and Analysis.

2. Question: What eternalities exist in the market for agricultural land?

   Answer: I (and an assistant) could answer this question within two days.

B. GENERAL REACTION: I think this recommended action is a can of worms. The main problem I have with it is what appears to be a confusion of the values of open space and the values of agricultural products. The policy instruments one should mobilize of generating greater values for each (i.e., open space and agricultural products) over what the market generates, differ substantially.

XIII. POLICY 2, RECOMMENDED ACITON 2

Statement of Recommended Action 2: "Local governments should protect agrucultural lands by limiting uses of adjacent land to those which are compatible with agricultural activities."

A. ANALYSIS; The term of "compatible" is vague, but I'm not sure how to deal with it. Before one could estimate rigorously the consequences of this recommended action, one would need to know the answer to the following question:

1. Question: What uses are incompatible with agricultural uses on adjacent land?

   Answer: I and an assistant could identify the various possible incompatible uses with one day.

B. GENERAL REACTION: The most likely impact of this recommended action, should it be implemented, is negligible, but I can see possible interpretations that could reduce markedly the efficiency of the land markets in the coastal zone.

XIV. POLICY 3 and NECESSARY ACTION 1

Statement of Necessary Action 3: "Local governments shall designate urban growth areas in comprehensive plans based on a process that evaluates the following factors according to the criterion of maximum social benefits:

a. Social and economic factors including but not limited to projected increases in population and demand for developable land.

b. Physical factor including but not limited to topography, soils, drainage and physical obstacles.

c. Natural resource factors including but not limited to the protection of fish and wildlife habitats, prime agricultural or forest land, air and water quality and aesthetics.

d. Governmental service factors including but not limited to the availability of water and sewerage services and transportation facilities.

e. Use factors including but not limited to existing land use and ownership.

f. The locally adopted growth policy which expresses the desired rate and direction of urban growth.

A. ANAYSIS AND GENRAL REACTION: The effect of POLICY 3 and its accompanying NECESSARY ACTION is (1) to impose on local governments an explicit process of urban planning; (2) to specify what factors shall be considered in that process; and (3) to specify the criterion according to which the six factors shall be evaluated. The two together are consistent with Objective 3 adopted by the Commission on 9 August 1974 and with the "system of Preferences" adopted by the Commission on 14 February 1975.

XV. POLICY 3, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "Local governments should identify lands suitable and environmentally acceptable for industrial and commercial uses, including economically viable mineral, rock and petroleum resources, and should conserve sufficient quantities of this land to allow for location of new or expansion of existing industrial and commercial uses."

A. ANALYSIS: The analysis of this recommended action is hampered by the vagueness of the terms "suitable", "acceptable, "viable" and "sufficient". What is lurking in them it appears, is some notion of social costs and social benefits, but the problem caused is not so easily solved as it has been in some previous cases.

The first part of the recommended action in which "local governments should identify ..." is likely to cause an enormous increase in the administrative costs of local governments. The analysis of the second part of the recommended action in which "local governments should conserve ..." is complicated because it in effect prohibits conversion in the short-run as well as in the long-run to uses that would prevent the location of new or expansion of existing industrial and commercial uses.

B. GENERAL REACTION: I think this is another can of worms. The problems that this recommended action is meant to solve would be solved with much less distortion if the market were allowed to bear the costs of search in land use once the land areas for urban expansion have been designated.

XVI. POLICY 3, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "Local governments should disapprove residential developments proposed for areas identified as best suited for other than residential use unless the developer demonstrate that the net social benefits justify the residential development."

A. ANALYSIS AND GENERAL REACITON: This appears consistent with other policies and actions dealing with land use, but it isn't clear why residential use was selected as a special case.

XVII. POLICY 3, RECOMMENDED ACITON 3

Statement of Recommended Action 3: "Local government should control the development of commercial, recreational and industrial uses along primary highways to the extent necessary to allow for efficient provision of transportation, water and sewer services and to retain visually attractive roadside scenery."

A. ANALYSIS AND GENERAL REACTION: Before one could estimate rigorously the consequences of this recommended action, one would need to know the extent to which commercial, recreational and industrial uses currently violate only of the conditions. In general, the action is consistent with past actions of the Commission, and its impact is likely to increase employment and per capita income.

XVIII. POLICY 3, RECOMMENDED ACTION 4

Statement of Recommended Action 4: "Local governments should prohibit strip or dispersed development unless it is demonstrated that the net social benefits associated with clustering of structures, separated by preserved open space, are less than the net social benefits generated by continuation of scattered development practices."

A. ANALYSIS AND GENERAL REACTION: The impact of this recommended action would have to be estimated on the basis of case-by-case demonstrations. A rigorous implementation of this recommended action should increase the efficiency with which residential developments use land.

XIX. POLICY 4

Statement of Policy 4: "State and local governments shall plan for adequate opportunities for outdoor recreation to satisfy present and future demand for recreation to the coastal zone."

A. ANALYSIS: Any rigorous estimate of the consequences of this policy is hampered by the term "adequate", because it isn't clear what would be inadequate opportunities. Apparently, the opportunities would be inadequate if present and future demand for recreation

in the coastal zone were not satisfies, in which case the analysis must wait until NECESSARY ACTION (a) is implemented, that is, until the present and future demand for recreation in the coastal zone is estimated.

B. GENERAL REACTION: If the price charged users of publicly provided recreational facilities were zero, then the costs to state and local governments would be enormous. Alternatively, if the users of the recreational facilities cover the costs (including the opportunity costs) of the resources used, then the proportion of of the costs borne by general taxes would be small.

C. SUGGESTED REWORDING: "State and local governments shall provide or cause to be provided diverse opportunities for outdoor recreation to satisfy present and future demand for recreation in the coastal economy."

XX. POLICY 4, NECESSARY ACTIONS (a) and (b)

Statement of Necessary Action (a): "The state, in cooperation with local governments, shall estimate the present and future demand for recreation in the coastal zone."

Statement of Necessary Action (b): "The state shall establish criteria to be taken into account by local governments in identifying areas having exceptional potential for recreational opportunities."

A. ANALYSIS AND GENERAL REACTION: NECESSARY ACTION (a) is an obviously necessary step to be taken before POLICY 4 can be implemented. As I have stated before with similar policies, necessary actions and recommended actions, these two necessary actions will tend to increase the administrative costs of application, compliance and enforcement. The magnitude of these costs depends on how these and other policies are implemented.

XXI. POLICY 4, NECESSARY ACTION (c)

Statement of Necessary Action (c): "Local governments shall identify those areas that have exceptional potential for recreational opportunities taking into account state criteria including the physical capabilities and limitations of the areas and the identified recreational development to those areas so identified in comprehensive plans."

A. ANALYSIS AND GENERAL REACTION: My first reaction to the last part of the necessary action (i.e., "shall restrict public or private recreational development to those areas...") was that it could be opportunities. My mistake, however, was taking this phrase out of the context of POLICY 4 and the other necessary actions. As long as they are all taken as a package, then the phase is a logical part of the package and does not have the potential of becomming a costly, restrictive interference with the development of recreational opportunities on the coast.

XXII. POLICY 4 , NECESSARY ACTION (d)

Statement of Necessary Action (d): "State and local government shall encourage the private sector to develop recreational opportunities which satisfy the need for multi-service facilities in preference to public facilities where economically feasible."

A. ANALYSIS: Analysis of the economic consequences of this necessary action is hampered, in fact prevented, by the vagueness and ambiguities associated with the terms "encourage", "need", "in preference to" and "economically feasible".

Before state and local governments try to encourage private firms to change from single-service recreational facilities to multi-service recreational facilities, they should understand the reason private firms behave as they do. Before I could estimate rigorously the economic consequences of this recommended action, I would need (in addition to more precise versions of the vague terms I listed above) answers to the following questions:

1. Question: Why do private firms typically provide single-service recreational facilities instead of multi-service ones?

Answer: The answer probably involves economies of scale, but I'm not sure just how. I and an assistant could provide an answer within five days.

2. Questions: What are the benefits derived from inducing private firms to provide multi-service recreational facilities? What are the policy instruments available to state and local governments that could induce private firms to provide multi-service recreational facilities?

Answer: If we had the answer to Question 1, I and an assistant could answer the next two questions within four days.

B. GENERAL REACTION: I think the action is premature, because I doubt anyone knows precisely why private firms choose to provide single-service recreational facilities. Furthermore, it isn't clear to me that satisfying the demand for recreation is accomplished most efficiently by the provision of multi-service recreational facilities, whether in the public or private sectors. I suggest either deleting NECESSARY ACTION (d) or substituting the alternative I suggest below.

C. SUGGESTED REWORDING: The state shall determine if the demand for recreation is most efficiently satisfied by multi-service, as opposed to single-service, recreational facilities, and if it is, state and local governments shall encourage both the private sector and the public sector to satisfy the demand for recreation through the provision of multi-service recreational facilities.

XXIII. POLICY 4, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "In the planning, acquisition and development of areas for outdoor recreation, state and local governments should recognize the high recreational value of shorelands."

A. ANALYSIS AND GENERAL REACTION: This is merely a gentle reminder to state and local governments that shorelands have high recreational value.

XXIV. POLICY 4, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "State and local governments and the private sector should coordinate planning and development of recreational opportunities."

A. ANALYSIS AND GENERAL REACTION: Since there are both internal and external economies of scale in the provision of recreational opportunities, implementation of this recommended action should increase efficiency.

XXV. POLICY 4, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "State and local governments and the private sector should include opportunities for education and interpretation of the unique natural and cultural resources of the coastal zone in the development of recreational sites."

A. ANALYSIS AND GENERAL REACTION: The costs are usually small and the benefits great.

XXVI. POLICY 5

Statement of Policy 5: "State and local governments shall require that public and private recreational development and the expected maximum use of recreation areas does not exceed the capability of the natural recreational resource to continue to support that development and use."

A. ANALYSIS: Before I could estimate rigorously the consequences of this policy, I would need answers to the following questions:

1. Questions: Has "support capability" been estimated for any existing recreational areas in the coastal zone. If so, to what extent does public and private recreational development today and expected maximum use of these recreational areas in the future exceed the "support capability"?

   Answers: The implication on p. 20 in the OCC&DC Uplands Inventory is that the answer to the first question is no. As a result, there is no way to estimate rigorously what the economic consequences of this policy might be.

2. Question: What are the social costs and social benefits generated by allowing recreational development to exceed the "support capability" of recreational uses?

   Answer: I and an assistant could provide a rough answer to this question within three days.

B. GENERAL REACTION: Assuming that the so-called carrying capacity of the resource is estimated accurately, then this policy should increase the chances that there will be recreational resources available for future generations of Oregonians.

XXVII. POLICY 5, NECESSARY ACTION 1

Statement of Necessary Action 1: "State and local governments shall develop criteria and procedures to be used by both state and local governments in evaluating support capability (carrying capacity) of existing and potential recreational areas."

A. ANALYSIS AND GENERAL REACTION: Given that such criteria and procedures do not exist, this is an obviously necessary action to implement POLICY 5. The development and updating of them will increase the costs borne by state and local governments.

XXVIII. POLICY 5, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "State and local governments should reduce the adverse environmental effects of excessive seasonal use of recreation facilities through management, education and public information programs."

A. ANALYSIS: Before one could estimate rigorously the consequences of this recommended action, one would need to know answers to the following questions:

1. Question: What are the environmental effects - both positive and negative - of seasonal use of recreation facilities on the coast?

   Answer: The inefficiencies resulting from seasonal activities usually are reflected in a divergence between social costs and social benefits during the season of peak-load. I could provide a more specific (albeit incomplete) answer within five days.

2. Question: What instruments are available to state and local governments for distributing recreational activities more uniformly over the seasons?

   Answer: I (and an assistant) could provide an answer to this question within one or two days.

B. GENERAL REACTION: I doubt that anyone knows the magnitude of the "adverse environmental effects" generated by the seasonality of recreational activities in the coastal zone. I also doubt that state and local governments have any instruments that would alter this seasonality significantly. If they do, these instruments are likely to occur only in management programs, not in education or public information programs. Resources used on these last two programs, therefore, would be wasted.

C. SUGGESTED REWORDING: State and local governments should reduce the adverse environmental effects of excessive seasonal use of recreation facilities through management programs.

XXIX. POLICY 6 and NECESSARY ACTIONS (a) and (b) and RECOMMENDED ACTION 1

Statement of Policy 6: "State and local government shall provide or cause to be provided access to public lands and waters to satisfy present and future demand for such access, and they shall assure that the access provided is consistent with the physical and biological capabilities of the site to support access."

Statement of Necessary Action (a): "State and local government shall estimate the present and future demand for public access to public lands and waters in the coastal zone."

Statement of Necessary Action (b): "State and local government shall estimate the physical and biological capabilities of public lands and waters to support access."

Statement of Recommended Action 1: "Local government should require new shoreland development to dedicate easements for public access to lakes and streams if the local governments determine the easements are necessary."

A. ANALYSIS AND GENERAL REACTION: These seem consistent with past action taken by the Commission, and they seem terribly reasonable. As I have stated before with similar policies, necessary actions and recommended actions, these will tend to increase the administrative costs of application, compliance and enforcement. The magnitude of these costs depends on how these and other policies are implemented.

XXX. POLICY 7

Statement of Policy 7: "In order to limit damage to land, water, wildlife and vegetation and avoid conflicts with other activities, state and local governments shall restrict recreational, off the road use of vehicles (including ORV's as defined) on public lands to designated seasonal roads and off-road areas."

A. ANALYSIS: Before I could estimate rigorously the consequences of this policy, I would need answers to the following questions:

1. Question: What damage to land, water, wildlife and vegetation is caused by vehicles traveling off-the-road in the coastal zone?

   Answer: I and an assistant could provide a rough answer to this question within one day. A complete answer would take several months.

2. Question: How much damage by recreational, off-the-road use of vehicles is caused in off-road areas other than in designated off-road areas and on designated seasonal roads?

   Answer: This cannot be answered until the off-road areas and seasonal roads are designated.

3. Question: What is the demand for recreational, off-the-road use of vehicles? What are the benefits that are generated by recreational, off-the-road use of vehicles?

   Answer: I and an assistant could provide rough answers to these question within two days.

B. GENERAL REACTION: For many of the same reasons that I presented in the discussion of the economic consequences of POLICY 2 of "Estuaries and Wetlands Resources", stiff regulations or special user-charges on the use of off-road vehicles in the coastal zone will increase the net social benefits to this and succeeding generations of Oregonians, which is the goal of the Oregon Coastal Zone Management Program.

XXXI. POLICY 7, NECESSARY ACTION 1

Statement of Necessary Action 1: "State and local governments shall identify and designate seasonal roads and off-road areas where vehicles may be used for recreation."

A. ANALYSIS AND GENERAL REACTION: Given that these areas are not yet designated, this is an obviously necessary action to implement POLICY 7. The designation and updating of them will increase the costs of state and local governments.

XXXII. POLICY 7, RECOMMENDED ACTION 1 (P. 20 of Agriculture, Forest, Urban and Recreation Resources Phase II Policy, Staff Report Agenda Item 5.3)

Statement of Recommended Action 1: "State and local government should regulate off-road vehicles by a permit system or special licensing program which applies the fees to applicable educational programs, impact studies and maintenance of use areas."

A. ANALYSIS AND GENERAL REACTION: My comments under GENERAL REACTION to POLICY 7 above apply here as well.

WEW:sa:st
2-25-75

OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

WILBUR TERNYIK, CHAIRMAN
JEFF BRENNAN, VICE CHAIRMAN
ROBERT YOUNKER, SECRETARY-TREASURER
JAMES F. ROSS, EXECUTIVE DIRECTOR

P.O. Box N
Florence, Oregon 97439

Phone (503) 997-8248

February 19, 1975

TO: Oregon Coastal Conservation and Development Commission

FROM: Ed Whitelaw, Staff Economist

SUBJECT: Economic Analysis of the Phase II Approved Policies for "Historical and Archaeological Resources of the Oregon Coastal Zone."

I. INTRODUCTION

The discussion that follows applies to the Phase II Policies for "Historical and Archaeological Resources of the Oregon Coastal Zone" that were approved for public review by OCC&DC. My analysis has benefited from written and oral comments from members of the OCC&DC Economic Steering Committee as well as from S. Lance Zaklan. My comments, of course, do not necessarily reflect the views of any of these individuals.

For the policies, necessary actions and recommended actions, I have provided at least one of the following three types of comments:

A. ANALYSIS: I raise those questions that need to be answered before a rigorous estimate of the economic consequences of the policy can be made. When I have a ready answer (from my own knowledge or from the inventories), I record it. When I cannot answer the question immediately, I try to place it in one of the following three categories:

1. a question I (and an assistant) could answer with a little more time (e.g., two or three days) using ONLY the inventories;

2. a question I (and an assistant) could answer with substantially more time (e.g., five to ten days) using the inventories plus other EXISTING data and expertise; or

3. a question I (and an assistant) could answer ONLY with as yet nonexisting data or with a considerable amount of research (e.g., two or three months or more) or with both.

B. GENERAL REACTION: I present an alternative statement of the policy or action so that criticisms implied by my analysis might be eliminated or at least blunted.

II. POLICY 1

Statement of Policy 1: "State and local government shall protect historical and archaeological resources through the following process:

a. review of the OCC&DC historical and archaeological resources inventory and incorporation of National Register and other appropriate sites and areas into comprehensive plans; and

b. for those resource areas adopted in comprehensive plans, assurance that development is avoided, or where development is allowed, that special restrictions (appropriate to the extent, characteristics, and relative importance of the site) are established to retain cultural heritage values.

A. ANALYSIS AND GENERAL REACTION: Before one could estimate rigorously the economic consequences of this policy, one would need to know answers to the following questions:

1. Questions: Where are the historical and archaeological resources located in the coastal zone? What area do they cover?

   Answers: The OCC&DC historical and archaeological resources inventory identifies the location and characteristics of 304 sites in the coastal zone. I and an assistant could answer these two questions for each of the sites within 10 days of work. The information acquired from such, however, warrants that expense. Within a day, I and an assistant could answer two questions for the five classes of sites the inventory identifies.

2. Questions: How aggressively are the historical and archaeological resources going to be protected?

   Answer: Providing an answer to this question is hampered by the lack of criteria for determining when development is to be allowed on or near historical and archaeological sites and by the fact that the "special restrictions" on such development are not yet specified.

The economic consequences of this policy can be divided into two general categories: those consequences associated with the regulatory process itself (e.g., the increased time it takes to get a permit): and those consequences resulting from the impact of the regulations on economic activity in general (e.g., the benefits derived from increased historical and archaeological vales and the increased costs of construction incurred in protecting historical sites). My general reaction is that if efficiency can be retained in the permit system and other regulatory activities, then the real costs to society are likely to be negligible compared to the benefits society appears to attach to its historical and archaeological heritage.

The rewording below is suggested merely to increase the precision of what I interpret to be the intent of the policy.

B. SUGGESTED REWORDING: State and local government shall protect historical and archaeological resources through the following process:

a. National Register and other appropriate sites and areas, identified in the OCC&DC historical and archaeological resource inventory, shall be incorporated into comprehensive plans; and

b. State and local government shall assure that development within or near those historical and archaeological sites and areas that are incorporated into comprehensive plans is avoided, or that where development is allowed, special restrictions (appropriate to the extent, characteristics, and relative importance of the site) are established to maintain or enhance the historical and archaeological values of the sites and areas.

III. POLICY 1, RECOMMENDED ACTIONS 1 thru 9

Statements of Recommended Actions 1 - 9 :

(1) The state of Oregon should establish a system for the protection of historical and archaeological resources through the coordination of planning and management activities conducted by State agencies, local units of government, and private citizens and organizations. (State Historical Plan)

(2) The State of Oregon should continue to maintain and develop a historical and archaeological inventory of the Oregon coastal zone, with particular attention to initiating a comprehensive archaeological survey. Local government, historical and archaeological societies, colleges and private efforts should be informed of the inventory and encouraged to expand the State files.

(3) State and local government should review the laws and enforcement policies for restrictions on disturbance of historical and archaeological Resources Inventory to protect the sites and property owner from harassment, vandalism, and theft.

(4) State and local government should review the laws and enforcement policies for restrictions on disturbance of historical and archaeological resources, building codes and taxing policies, and propose reasonable adjustments to provide additional protection to historical and archaeological sites.

(5) State and local government should allow excavation or removal of materials of an historical or archaeological nature only by qualified persons or groups with professional guidance.

(6) State and local government and private efforts should seek and use all funds potentially available (from state, federal and private sources) for surveys, planning, management, acquisition and development of historical and archaeological resources.

(7) Where possible, the descendants of Indian tribes should be contacted for permission prior to proceeding with archaeological diggings.

(8) State and local government and private efforts should be coordinated to identify, prioritize, and preserve historical and archaeological sites which are particularly suited for anthropological, historical, or scientific study, especially those which are easily accessible to educational or recreational facilities or already in public ownership. Appropriate use alternatives should be recommended for those sites which are not considered a high priority for preservation.

(9) State and local government and private efforts should formulate a priority for historical and archaeological resources which are threatened by development and determine whether preservation is practicable for these areas.

(10) State and local government and private efforts should be coordinated to develop educational and interpretative programs to foster public recognition, understanding and appreciation of historical and archaeological resources.

A. ANALYSIS AND GENERAL REACTION: Rigorous estimation of the economic consequences of these recommended actions is not warranted for two reasons. First, they all seem terribly reasonable, and second, they all seem rather innocuous as far as their economic consequences are concerned.

B. SUGGESTED REWORDING of Recommended Action 2: The State of Oregon periodically should update the inventory of historical and archaeological resources of the Oregon coastal zone, with particular attention to initiating a comprehensive archaeological survey. Local government, historical and archaeological societies, colleges and private efforts should be informed of the inventory and encouraged to expand the State files.

WEW:sa

OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

WILBUR TERNYIK, CHAIRMAN
JEFF BRENNAN, VICE CHAIRMAN
ROBERT YOUNKER, SECRETARY-TREASURER
JAMES F. ROSS, EXECUTIVE DIRECTOR

P.O. Box N
Florence, Oregon 97439

Phone (503) 997-8248

March 5, 1975

TO: Oregon Coastal Conservation and Development Commission

FROM: Ed Whitelaw, Staff Economist

RE: Economic Analysis of the Phase II Approved Policies for "Continental Shelf Resources in the Oregon Coastal Zone"

I. INTRODUCTION

The discussion that follows applies to the Phase II Policies for "Continental Shelf Resources in the Oregon Coastal Zone" that were approved for public review by OCC&DC. My analysis has benefited from comments by S. Lance Zaklan, but my comments, of course, do not necessarily reflect his views.

For each of the policies, necessary actions and recommended actions, I have provided at least one of the following three types of comments:

A. ANALYSIS: In each case I have raised those questions that need to be answered before a rigorous estimate of the economic consequences of the policy can be made. When I have a ready answer (from my own knowledge or from the inventories), I record it. When I cannot answer the question immediately, I try to place it in one of the following three catagories:

1. a question I (and an assistant) could answer with a little more time (e.g., two or three days) using ONLY the inventories;

2. a question I (and an assistant) could answer with substantially more time (e.g., five to ten days) using the inventories plus other EXISTING data and expertise; or

3. a question I (and an assistant) could answer ONLY with as yet nonexisting data or with a considerable amount of research (e.g., two or three months or more) or with both.

B. GENERAL REACTION: I present my general or gut reaction to the policy, and I do so (somewhat hesitantly) at the request of a couple of members of the Economic Steering Committee.

C. SUGGESTED REWORDING: I present an alternative statement of the policy or action so that criticisms implied by my analysis might be eliminated or at least blunted.

II. POLICY 1

Statement of Policy 1: "The appropriate state agency shall coordinate with state agencies, other states and federal agencies to manage continental shelf resources so food production, water quality, recreation and navigation values are conserved and enhanced".

A. ANALYSIS AND GENERAL REACTION: Coordination of efforts to manage the continental shelf resources is neither necessary nor sufficient to conserve and enhance food production, water quality, recreation and navigation values. Given specific goals to conserve and enhance, however, coordination in the management of the resources is likely to reduce cost and therefore to increase the net social benefits accruing to Oregonians.

III. POLICY 1, NECESSARY ACTION 1

Statement of Necessary Action 1: " Oregon shall support:

a. National efforts to extend the contiguous fishing zone to 200 miles offshore to protect coastal and anadromous species from over exploitation; (OCC&DC Resolution, April 19, 1974)

b. National efforts to establish effective international fisheries management agreements; and (CS B-1,2)

c. Completion of continental shelf resource inventories by the appropriate state and federal agencies".

A. ANALYSIS AND GENERAL REACTION: I assume that the support called for by the necessary action is limited to(a) lobbying for the extension of the fishing zone and (b) for the international fishing management agreement by Oregon representatives. It is beyond the scope of this analysis (1) to evaluate the benefits and costs of such lobbying and (2) to speculate on the benefits and costs generated should the lobbying prove successful. Since there exist so few data on the continental shelf resources and since there might be substantial quantities of valuable resouces that warrant exploitation, it seems very reasonable for them to be inventoried. It is not clear to me, however, that public sector should pay for the inventories.

IV. POLICY 1, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "The appropriate state agency should not permit the introduction of new plant or animal species to the continental shelf if the probable ecological impact of the new species is likely to be substantially harmful to valuable native species.

A. ANALYSIS: Analysis of the recommended action is hampered by the vagueness of the terms "probable", "likely", "substantially harmful" and "valuable". (furthermore, the terms "probable" and "likely" are redundant to one another.) Because of the vagueness in these terms, the intent of the recommended action is not clear. Specifically, it isn't clear to me whether the criteria for permitting the introduction of new species are intended to be only the effects on native species, all ecological values or other values in social benefits as well as ecological values. To provide an opportunity for the Commission to decide which interpretation it prefers, I present three alternative suggested rewordings.

B. SUGGESTED REWORDINGS:

1. The appropriate state agency should not permit the introduction of new plant or animal species to the continental shelf unless it is demonstrated that introduction of the new species will not harm native species.

2. The appropriate state agency should not permit the introduction of new plant or animal species to the continental shelf unless it is demonstrated that introduction of the new species will not reduce the ecological values of the continental shelf.

3. The appropriate state agency should not permit the introduction of new plant or animal species to the continental shelf unless it is demonstrated that introducing the new species will increase net social benefits accruing to Oregonians.

V. POLICY 1, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "The state, in cooperation with local governments, should determine the need for fish habitat enhancement and should develop enhancement projects for appropriate locations."

A. ANALYSIS AND GENERAL REACTION: Below in the SUGGESTED REWORDING, I state explicitly what I interpret to be the intent of the recommended action. If the Commission wants some fish habitats enhanced, this seems to be a very reasonable way to go about it.

B. SUGGESTED REWORDING: The state in cooperation with local governments

1. should develop explicit criteria by which fish habitats can be identified as appropriate for enhancement;

2. should identify those fish habitats on the continental shelf that should be enhanced according to the criteria the state has developed; and

3. should develop and implement techniques whereby fish habitats can be enhanced.

VI. POLICY 1, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "The state should require an assessment of the biological resources of a proposed development area before development which could damage or destroy biological resources is allowed."

A. ANALYSIS AND GENERAL REACTION: The recommended action, as stated, is useless, because the state would have to have assessed already the biological resources of an area before it could determine if a proposed development might damage the biological resources. The wording suggested below avoids this.

B. SUGGESTED REWORDING: The state should require ecological and economic impact statements, including an inventory of the biological resources in the area proposed for development, for all developments proposed for the continental shelf.

VII. POLICY 1, RECOMMENDED ACTION 4

Statement of Recommended Action 4: "The state should cooperate with the Coast Guard to assure that adequate state contingency plans are developed and resources are available to contain and clean up spills of oil and other harmful substances in the ocean."

A. ANALYSIS AND GENERAL REACTION: This seems very reasonable, although until the share of costs borne by the state is specified, one cannot estimate the economic consequences of implementing this recommended action.

VIII. POLICY 1, RECOMMENDED ACTION 5:

Statement of Recommended Action 5: "The state should encourage and review federal regulations that require vessels carrying hazardous substances in Oregon waters to meet strict design, operation and maintenance standards which would reduce the risk of damage to the natural resources."

A. ANALYSIS AND GENERAL REACTION: Any analysis of this recommended action is hampered by the vagueness of the terms "encourage" and "review". Until one knows how strongly the regulations are to be encouraged and until one knows the criteria by which the regulations are to be reviewed, it is impossible to estimate the economic consequences of implementing this recommended action.

IX. POLICY 1, RECOMMENDED ACTION 6

Statement of Recommended Action 6: "The state should require that disposal of materials offshore will meet Environmental Protection Agency ocean dumping regulations ."

A. ANALYSIS: Before one could estimate regorously the consequences of this recommended action, one would need to know the answers to the following questions:

1. Questions: What activities presently violate the Environmental Protection Agency's ocean-dumping regulations? What are the earnings and employment generated by these activities? What changes in the costs of operation would these activities face if they were to meet the EPA regulations?

   Answers: I and an assistant could provide rough answers to these questions within 10 days.

B. GENERAL REACTION: Without answers to the questions I raised in the ANALYSIS above, I don't even have a gut reaction to this recommended action.

X. POLICY 1, RECOMMENDED ACTION 7

Statement of Recommended Action 7: "A joint local-state-federal technical committee with members from agencies, industries and interest groups should be established to advise continental shelf management decisions."

A. ANALYSIS AND GENERAL REACTION: I assumed this would follow necessarily from the implementation of POLICY 1. By including it as a recommended action, the Commission apparently feels that this action is not automatically a part of the policy. I recommend, therefore, that the statement below be included as NECESSARY ACTION 2 following POLICY 1.

B. SUGGESTED ADDITIONAL NECESSARY ACTION:

The appropriate state agency shall appoint a technical advisory committee with members from private industry, from local, state and federal agencies, and from other interested groups including the public in general to advise on the management of the resources of the continental shelf.

XI. POLICY 2

Statement of Policy 2: "The state shall allow exploration for, extraction of, and transfer stations for mineral resources on the continental shelf only if the developer demonstrates that the natural and cultural values and uses of the ocean and its shorelands will be adequately protected."

A. ANALYSIS AND GENERAL REACTION: I interpret the intent of the policy to allow exploitation of mineral resources of the continental shelf only if the impact on ecological, cultural (and esthetic) values (as perceived by Oregonians) of the ocean and its shorelands are minimized. There are, however, some loose ends remaining in the statement. For example, it is possible that such activities may generate short-run windfalls for the developers but without long-run positive impacts on the earnings and employment of Oregonians (Appalachia provides several startling examples). Similar costly errors have been committed elsewhere in the United States and in the world. The wording I suggest below makes it more likely that any development proposals will be considered carefully according to economic values as well, and it retains the original intent of the policy to select the methods that will minimize adverse impacts on ecological, cultural and esthetic values.

B. SUGGESTED REWORDING: The state shall allow exploration for, extraction of, and transfer stations for mineral resources on the continental shelf only if the developer demonstrates that such activities will increase the net social benefits of Oregonians and that the methods employed minimize the adverse impacts of the ecological, cultural and esthetic values of the ocean and its shorelands.

XII. POLICY 2, NECESSARY ACTION 1

Statement of Necessary Action 1: "The state shall require a permit from the appropriate state or federal agency for exploration for, extraction of, or transfer stations for mineral resources on the continental shelf. Before approval is granted, appropriate state and federal agencies and the public shall review the permit application to determine if the proposed development is within the public interest. The permit application shall:

a. designate areas which will be off limits to exploration and extraction;

b. specify methods and equipment to be used;

c. require that the developer will finance monitoring and inspection of the exploration, extraction or transfer operations by the appropriate state and federal agency;

d. require that pollution abatement methods to be used utilize the best economically available and proven technology;

e. require that the developer is liable for individual or public damage caused by the mining operations and will post necessary bonding to cover damages;

f. specify the extent of restoration that will be required when the mining operations are finished; and

g. specify that the state or federal government may revoke or modify a permit to prevent or halt damage to the environment.

A. ANALYSIS: Before one could estimate rigorously the economic consequences of the conditions in this necessary action, one would need answers to the following questions:

1. Questions: What would be the magnitude (measured in employment amd earnings) of those activities that are likely to seek to explore for, extract and construct transfer stations for mineral resources on the continental shelf? If similar regulations have been applied elsewhere, what has been their impact on the cost of the activities to which they were applied? What has been the impact on external cost of unregulated mining activities in other areas?

Answers: I and an assistant could provide rough but informative answers to these questions within five days.

B. GENERAL REACTION: On the one hand, if experience elsewhere is any guide, unregulated mining activities on Oregon's continental shelf would generate large and perhaps prohibitive external costs (e.g., pollution) borne largely by Oregonians. On the other hand, the regulations in the necessary action above would increase the internal costs of prospective mining activities thus reducing their incentive to exploit the resources of the continental shelf. My general reaction is that the regulations listed are mild and reasonable.

OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

P.O. Box N
Florence, Oregon 97439
Phone (503) 997-8248

March 5, 1975

TO: Oregon Coastal Conservation and Development Commission

FROM: Ed Whitelaw, Staff Economist

SUBJECT: Economic Analysis of the Phase II Approved Policies for "Estuary and Wetland Resources of the Oregon Coastal Zone"

I. INTRODUCTION

The discussion that follows applies to the Phase II Policies for "Estuary and Wetland Resources of the Oregon Coastal Zone" that were approved for public review by OCC&DC. My analysis has benefited from written and oral comments from several members of the Economic Steering Committee, from S. Lance Zaklan, and from several others (including G. Anthony Kuhn, Anne Squier, and R. Michael Martin). My comments, of course, do not necessarily reflect the views of any of these individuals.

For the policies, necessary actions and recommended actions, I have provided at lease one of the following three types of comments:

A. ANALYSIS: I raise those questions that need to be answered before a rigorous estimate of the economic consequences of the policy can be made. When I have a ready answer (from my own knowledge or from the inventories), I record it. When I cannot answer the question immediately, I try to place it in one of the following three categories:

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2. a question I (and an assistant) could answer with substantially more time (e.g., five to ten days) using the inventories plus other EXISTING data and expertise; or

3. a question I (and an assistant) could answer ONLY with as yet nonexisting data or with a considerable amount of research (e.g., two or three months or more) or with both.

B. GENERAL REACTION: I present my general or gut reaction to the policy and I do so (somewhat hesitantly) at the request of a couple of members of the Economic Study Steering Committee.

C. SUGGESTED REWORDING: I present an alternative statement of the policy or action so that criticisms implied by my analysis might be eliminated or at least blunted.

II. POLICY 1

Statement of Policy 1: "State and local government shall maintain (and where appropriate enhance) the values and uses of Oregon's estuarine areas by guiding public and private uses of these areas to assure:

a. a balancing and an equitable allocation of present and future uses of estuarine areas;

b. a reasonable level of protection for all estuarine areas, based on the impact of human uses on the physical and biological system;

c. consideration of the interests of the diverse groups of people who depend on or use estuarine areas.

A. ANALYSIS AND GENERAL REACTION: The policy seems reasonable and it is consistent with past actions of the Commission, but the statement is sufficiently general that it is virtually impossible to predict -- either rigorously or casually -- the economic consequences. I have turned, therefore, to a discussion of the necessary actions accompanying the policy.

III. POLICY 1, NECESSARY ACTION 1

Statement of Necessary Action 1: State and local government shall establish a permanent management center on or near each major estuarine area or group of estuaries to provide for planning, regulation, data storage, interpretation, research, and education activities and meeting and hearing procedures.

A. ANALYSIS AND GENERAL REACTION: Since there exists so little knowledge of estuarine resources and the management thereof, and since there do not appear to be major economics of scale associated with the activities listed in NECESSARY ACTION 1, this action seems necessary if POLICY 1 is going to be implemented. Depending on how the centers are financed will determine the relative costs borned by the public and private sectors and by state and local governments.

IV. POLICY 1, NECESSARY ACTION 2

Statement of Necessary Action 2: State and local government shall assure that developments proposed for estuarine areas conform to the following criteria:

a. uses shall be water-related, essential to the support of water-related uses, or interim uses which will not substantially interfere with the future development of water-related uses, unless it can be demonstrated clearly that the social costs generated by application of this criterion exceed the social benefits.

b. development on piling shall be required unless it is demonstrated that the net social benefits of locating the development on fill exceed the net social benefits of locating the development on piling.

c. appropriate agencies shall consider the net social benefits of land storage vs. water storage prior to the approval of water storage of any material; and, that alternative with the highest net social benefits shall be authorized.

A: ANALYSIS of Criterion (a): Before one could estimate rigorously the consequences of applying this criterion, one would need to know answers to the following questions:

1. Question: What activities are likely to compete for estuarine shorelands and wetlands?

   Answer: The OCC&DC Estuary Inventory (Estuarine Resources of the Oregon Coast) identifies the following activities as being located on fill in estuarine areas: roads and railways, port facilities, industry facilities associated with wood products and fish processing, residential development, marinas and associated boat ramps and parking, aquaculture, educational institutions, spoils disposal, and breakwater.

2. Question: Of the activities likely to compete for estuarine areas, which ones would be excluded by this criterion, either because they are not water-related or because they would decrease the potential of such property for water-related use?

   Answer: Residential development is the activity most likely to be excluded.

3. Questions: In which localities is residential development concentrated in estuarine areas? What is the degree of that concentration? Given those locations in which residential development is concentrated in estuarine areas, in which ones is future residential development likely to try to locate on estuarine areas? In this final set of localities, how costly would it be for the residential development to locate outside estuarine areas?

   Answer: I and an assistant could answer these questions (at least roughly) within ten days.

4. Question: What are the benefits that are likely to be generated by application of this criterion?

   Answer: I could not provide an estimate of the magnitude of the benefits, but below in my GENERAL REACTION to Policy 2, I provide an estimate of the likely direction of such benefits, and that discussion applies to all three policies on estuaries. If I spent two or three days on this question, I could provide a more detailed discussion of the benefits most likely generated by Criterion (a) and the other criteria in this Necessary Action.

B: GENERAL REACTION to Criterion (a): For the coast as a whole, this criterion should contribute to more efficient use of estuarine resources, and in the long-run, it should generate a positive net social benefit (i.e., social benefits will exceed social costs). The distribution of the benefits, however, may not be uniform among coastal communities, because there may be some communities for which any future residential development (given the present municipal and topographical boundaries) must be in estuarine areas or not at all.

C: SUGGESTED REWORDING of Criterion (a): The following rewording is more precise and consistent with past use of the terms "social costs" and "social benefits" by the Commission:

"uses shall be water-related, essential to the support of water-related uses, or interim uses which will not substantially interfere with the future development of water-related uses, unless it is demonstrated that the net social benefits generated by applying this criterion exceed the net social benefits of not applying it."

D: ANALYSIS of Criterion (b): Before one could estimate rigorously the consequesnces of applying this criterion, one would need to know answers to the following questions:

1. Question: Given the activities most likely to locate on fill (listed above in the ANALYSIS of Criterion (a)), what are the comparative costs for each of these activities between locating on piling and locating on fill?

   Answer: I could answer this question for each of the activities only with as yet nonexisting data or with a considerable amount of research or with both.

2. Question: What are the benefits from estuarine resources when development is located on piling that are foregone when development is located on fill?

   Answer: I could answer this question for each of the activities only with as yet nonexisting data or with a considerable amount of research or with both.

E. GENERAL REACTION to Criterion (b): The questions raised above in the ANALYSIS of Criterion (b) will be raised (or at least should be raised) whenever an applicant for a permit to fill an estuary seeks to demonstrate that the net social benefits of the proposed development on fill exceed the net social benefits of placing the development on piling. The criterion, therefore, allows for exceptions to the general rule of prohibiting development on fill.

F. ANALYSIS of and GENERAL REACTION to Criterion (c): Since it is unlikely that the kind of systematic analysis that this criterion calls for has been conducted by the "appropriate agencies" in the past, the application of this criterion will increase administrative costs. Because there appears to be significant external (or social) costs associated with each of the alternative methods of storage (depending on the conditions peculiar to the material being stored and to the estuary), the application of this criterion should increase net social benefits associated with the storage of materials on or near estuaries.

V. POLICY 1, RECOMMENDED ACTION 1

Statement of Recommended Action 1: State and local government should maintain the character of historic, unique and scenic waterfront communities.

A. ANALYSIS: A rigorous economic analysis of the likely consequences of this recommended action would focus on the meaning of the following terms: "maintain", "historic", "unique", and "scenic". Until these terms are defined more precisely, such an analysis would have to make heroic assumptions about the definitions.

B. GENERAL REACTION: Although there may remain some disquieting issues of equity should this recommendation ever be followed (because owners of waterfront communities are likely to receive substantial transfers or subsidies from the public sector), the general economic impact on the coast is likely to be positive and significant.

The statement of the recommended action is vague, but the purpose is probably best served by allowing the undefined terms to acquire more precise meanings as the coastal management program evolves.

VI. POLICY 1, RECOMMENDED ACTION 2

Statement of Recommended Action 2: State and local government should prohibit transit corridor, roadbeds, and other transportation facilities in estuarine areas, unless the net social benefits associated with using reasonable alternative routes (including those benefits associated with preserving the estuarine area) are less than the net social benefits of locating the transportation facilities in the estuarine area.

A. ANALYSIS AND GENERAL REACTION: Although I suggested this wording, I now favor deleting the term "reasonable" because there are no criteria by which to select reasonable alternatives and to ignore unreasonable ones.

B. SUGGESTED REWORDING: Delete "reasonable".

VII. POLICY 1, RECOMMENDED ACTION 3

Statement of Recommended Action 3: Where dredging is necessary in estuarine areas, state and local governments should permit disposal of dredged material in a proposed disposal area only if it is demonstrated that the net social benefits generated by the total dredging operation (including disposal of dredged materials), in the proposed estuarine site exceed the net social benefits generated by disposing of the dredged material in alternative non-estuarine sites.

A. ANALYSIS AND GENERAL REACTION: This recommended action is consistent with past actions taken by the Commission.

B. SUGGESTED REWORDING: Delete the comma!

VIII. POLICY 1, RECOMMENDED ACTION 4

Statement of Recommended Action 4: State and local government shall include in estuarine plans (including sites), for dredged material disposal.

A. ANALYSIS AND GENERAL REACTION: I don't understand this one. Perhaps I stepped out of the room when the Commission adopted it.

IX. POLICY 2

Statement of Policy 2: State and local government shall prohibit alterations of estuarine areas unless all the following conditions are found to exist:

a. the proposed alteration satisfies existing statutes, administrative rules and permit criteria of the Oregon Division of State Lands;

b. the alteration will be the minimum amount required for the proposed use;

c. the proposed use of the alteration is in conformance with adopted estuary plans, unless such a plan does not exist at the time of application in which case this condition does not apply.

A. ANALYSIS of Condition (a): Before one could estimate rigorously the economic consequences that application of this condition would cause, one would need to know answers to the following questions:

1. Question: What are the activities most likely to alter estuarine areas?

   Answer: The list of activities identified by the OCC&DC Estuary Inventory as being located on fills in estuarine areas is presented above in my ANALYSIS of Criterion (a) under POLICY 1, NECESSARY ACTION 2. It is not clear, however, that the composition of these activities will remain constant in the future. With several days work using the inventories (including the Economic Study), I and an assistant could estimate changes in the composition.

2. Question: How restrictive are the existing permit criteria?

   Answer: One indication is ORS 541.625 (1967), which defines the permit criteria are presented in Footnote 18 on page 11 of the staff report item on "estuary and Wetland Resources", and they appear to be sufficiently general to leave much flexibility in their interpretation. An alternative indication of how restrictive the present permit criteria are would be an analysis of the permits actually granted and rejected by the Division of State Lands. I and an assistant could do this in a couple of days.

B. GENERAL REACTION to Condition (a): I see no evidence that the application of this condition alone would effect any change in the granting of permits for altering estuaries from what is practiced now.

C. ANALYSIS of Condition (b): Before one could estimate rigorously the economic consequences that application of this condition would cause, one would need to know answers to the following questions:

1. Question: To what extent have developers in the past filled or altered estuaries not only for proposed uses but also for future undetermined uses?

   Answer: A rough answer to this question for all the activities that have located on filled or altered estuarine areas would probably take five or six days. To give a precise answer might not be possible unless accurate records exist of past alterations and associated uses.

2. Question: If developers in the past have altered estuarine areas not only proposed uses but also for further undetermined uses, then to what extent would this condition reduce the incentive to alter because of the reduced expected return from such alterations?

   Answer: Given a good answer to the first question above, answering this second question would take only a couple of days.

3. Question: What benefits would be generated from the reduction in altered estuarine lands that this condition is designed to effect?

   Answer: Give good estimates of the amount of estuarine areas that this condition most likely would preserve, then one could estimate the benefits (although perhpas only roughly) in several days.

D. GENERAL REACTION to Condition (b): Aside from the various regulatory costs of application, compliance and enforcement, this condition would reduce the incentive to alter estuarine lands for speculation.

E. ANALYSIS of and GENERAL REACTION to Condition (c): This seems very reasonable.

F. GENERAL REACTION to Policy 2: Below I present a point-by-point disucssion of the economic consequences of Policy 2.

1. First Point: Policy 2 will cause reduction in the rate at which estuaries are filled.

If the only condition that a proposed fill must satisfy (to receive approval) were adherence to "existing statutes, administrative rules and permit criteria of the Oregon Division of State Lands", then the rate at which estuaries and wetlands were filled would likely remain unaffected. (Since the total supply of estuaries and wetlands is fixed, however, a constant rate of fill would mean a diminishing amount of fill over time.) There are, however, other conditions that this policy imposes, and, therefore, the policy is likely to decrease the rate at which estuaries and wetlands are filled.

2. Second Point: The reduction in economic activity that normally would locate on fills will be less than the reduction in the rate of filling of estuaries and wetlands.

   Since a constant rate of fill would mean a diminishing amount of fill over time (because the total supply of estuaries and wetlands is fixed), then a decrease in the rate of fill will further reduce the amount of fill over time.

   Assuming that location on fill represents a least-cost solution for those activities most likely to locate on fill (thus implying that revenues are locationally constant), then a decrease in the amount of fill over time will increase the costs of some factors of production, e.g., land, transportation services, water and waste disposal.

   In order to establish that the decrease in amount of fill would decrease by the same amount the output of those economic activities that normally locate on fill, the following conditions have to hold:

a. the supplies of at least some factors of production are found only on fill in estuaries and wetlands; and

b. there is no possibility for factor substitution.

Neither of these conditions holds, and, therefore, the Second Point is established.

Regarding each of the conditions listed above, my guess is that:

a. the price elasticity of supply of each of the various factors is rather high, or, alternatively, is largely independent of location on fill; and

b. there is significant opportunity for factor substitution.

3. Third Point: The present economic system systematically and greatly underprices estuaries and their associated resources.

Private markets in general and the private land market (including the market for estuaries and wetlands) in particular rely on prices to signal or reflect the costs of acquiring goods and services. If, for whatever reasons, the price of a good is lower than the costs of resources used in the provision of that good, then an inefficient allocation of resources occurs.

There are several characteristics of land in general and of estuaries and wetlands in particular that disturb allocative efficiency, and these characteristics are:[1]

a. irreversibility of development decisions;

b. the nonexcludability of the value of public goods;

c. the omission of adjustments for externalities;

d. the lack of consideration of the option demand value; and

e. zero pricing for the use of public antural resources.

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[1]Examples of the large amount of professional literature dealing with these characteristics and their impact on private markets are: Jae H. Cho, "Externalities and Land Economics", Land Economics, 47(1), February 1971, pp. 65-72; Marion Clawson, "Methods of Measuring the Demand for and Value of Outdoor Recreation", Reprint No. 101, Washington, D.C., Resources for the Future, February 1959; Conference on Conservation Easements and Open Space, Madison, Wisconsin, University of Wisconsin, 1962; J.H. Dales, Pollution, Property and Prices, Toronto, University of Toronto, 1968; Anthony C. Fisher and John V. Krutilla, "Determination of Optimal Capacity of Resource-Based Recreation Facilities", Natural Resource Journal, 12(3), July 1972, pp. 417-444; Anthony C. Fisher et al, "The Economics of Environmental Preservation: A Theoretical and Empirical Analysis", American Economic Review, 62(4), September 1972, pp. 777-786; Joseph James Shomon, Open Land for Urban America: Acquisition, Safekeeping and Use, Baltimore, John Hopkins Press, 1971.

4. Fourth Point: Stiff regulations or special user-charges on filling of estuaries and wetlands will increase the net social benefits to this and succeeding generations of Oregonians.

The argument outlined in Points 1-3 above is representative of arguments in many economic publications dealing with ownership, conversion and pricing of private lands. Although each of the characteristics listed above in Point 3 biases the land market toward retaining too few lands with so-called natural properties, they are not proof that there are in fact too few, because government ownership of a portion of such lands may more than compensate for the various market imperfections. In the case of estuaries and wetlands on the Oregon coast, however, the amount of such lands in public hands is so small relative to the present supply (let alone the supply available 50 years ago), and the measurable (but not privately appropriable) benefits are apparently so large that the losses (discussed in Point 2 above) from forcing the private market prices to reflect accurately the opportunity costs of filling estuaries do not rationalize continuing the inefficiency of our present practices.

X. POLICY 3 and its associated NECESSARY ACTION

Statement of Policy 3: State and local government shall designate certain estuarine areas for different levels of management within the comprehensive planning process ranging from intensive development to preservation. The designations shall be in conformance with the state's classification system of estuarine areas and shall be reviewed by the state coastal zone management agency.

Statement of Necessary Action 1: State and local government shall designate within the comprehensive planning process:

a. those estuarine areas which are to be managed in a high state of development;

b. those estuarine areas which are to be managed for a moderate level of development;

c. those estuarine areas which are to be managed for preservation in as close to natural conditions (undeveloped) as possible, while providing for certain appropriate, beneficial uses; and

d. those estuarine areas which are to be managed for restoration, to provide greater benefits from resources which have been destroyed, damaged or degraded by some natural or man-made process.

A. ANALYSIS AND GENERAL REACTION: I cannot see any way to analyze or evaluate this POLICY and its associate NECESSARY ACTION except by taking each of the categories of development (e.g., "high state of development") estuary by estuary. The approach embodied in the policy is sound and consistent with Objective 3 (that the Commission adopted on 9 August) in which the management program is viewed as an evolving process.

XI. POLICY 3, RECOMMENDED ACTION 1

Statement of Recommended Action 1: The State of Oregon should establish within the state coastal zone management program, a process for coordination of planning for estuarine areas by local government and federal and state agencies.

A. ANALYSIS AND GENERAL REACTION: This seems very reasonable.

XII. POLICY 3, RECOMMENDED ACTION 2

Statement of Recommended Action 2: State and local government should provide special consideration in planning for significant salt (tidal) marsh areas within the estuarine system, such as protective zoning for these areas and upland areas immediately adjacent to them.

A. ANALYSIS AND GENERAL REACTION: Although my general reaction is that this seems reasonable, any rigorous analysis could not proceed until one knew the meaning of "special consideration in planning".

WEW:wk
3/5/75

OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

WILBUR TERNYIK, CHAIRMAN
JEFF BRENNAN, VICE CHAIRMAN
ROBERT YOUNKER, SECRETARY-TREASURER
JAMES F. ROSS, EXECUTIVE DIRECTOR

P.O. Box N
Florence, Oregon 97439

Phone (503) 997-8248

March 6, 1975

TO: Oregon Coastal Conservation and Development Commission

FROM: Ed Whitelaw, Staff Economist

SUBJECT: Economic Analysis of the Phase II Approved Policies for "Visual Values of the Oregon Coastal Zone"

I. INTRODUCTION

The discussion that follows applies to the Phase II Policies for "Visual Values of the Oregon Coastal Zone" that were approved for public review by OCC&DC. My analysis has benefited from the comments of Lance Zaklan, but my recommendations, of course, do not necessarily reflect his views.

For each of the policies, necessary actions and recommended actions, I have provided at least one of the following three types of comments:

A. ANALYSIS: I raise those questions that need to be answered before a rigorous estimate of the economic consequences of the policy can be made. When I have a ready answer (from my own knowledge or from the inventories), I record it. When I cannot answer the question immediately, I try to place it in one of the following three categories:

1. a question I (and an assistant) could answer with a little more time (e.g., two or three days) using ONLY the inventories;

2. a question I (and an assistant) could answer with substantially more time (e.g., five to ten days) using the inventories plus other EXISTING data and expertise; or

3. a question I (and an assistant) could answer ONLY with as yet nonexisting data or with a considerable amount of research (e.g., two or three months or more) or with both.

B. GENERAL REACTION: I present my general or gut reaction to the policy, and I do so (somewhat hesitantly) at the request of a couple of members of the Economic Steering Committee.

C. SUGGESTED REWORDING: I present an alternative statement of the policy or action so that criticisms implied by my analysis might be eliminated or at least blunted.

II. POLICY 1

Statement of Policy 1: "State and local governments shall protect, maintain and enhance the visual attractiveness and character of the Oregon coast in such a way as to maximize the net social benefits accruing to this and succeeding generations of Oregonians."

A. ANALYSIS AND GENERAL REACTION: Although at first glance the statement of POLICY 1 may appear to be so general as to be innocuous, the criterion of net social benefits (coupled with the definition in the Glossary) provides direction and limits to the protection, maintenance and enhancement of the visual resources of the Oregon coastal zone. It is strictly consistent with the Commission's decision to design the management program as a process.

III. POLICY 1, NECESSARY ACTION 1

Statement of Necessary Action 1: "State and local government shall identify, prioritize, and designate open space, scenic vistas and scenic corridors in comprehensive plans within areas which have an exceptional or strong visual association with coastal processes (as identified in the OCC&DC inventory)."

A. ANALYSIS: Substitute "rank" for "prioritize" because (1) "rank" has fewer syllables than "prioritize"; (2) "prioritize" doesn't appear in any of the dictionaries in the reference section of the U. of O. library; and (3) I think "rank" means what the Commission had intended the term "prioritize" to mean.

Before one could estimate rigorously the economic consequences of this necessary action, one would need answers to the following questions:

1. Questions: In which localities does an "exceptional or strong visual association with coastal processes" occur along with other uses? Have "open space, scenic vistas and scenic corridors" been designated yet in any of these localities? To what extent can designation of additional "open space, scenic vistas and scenic corridors" accommodate other uses or to what extent will designation of additional visual uses generate conflicts?

   Answers: This necessary action assigns, by implication, a greater relative weight to the designation of "open space, scenic vistas and scenic corridors" within areas which have an "exceptional or strong visual association with coastal processes" than within areas without such visual associations. The OCC&DC Visual Resource

Analysis identifies the areas of exceptional and strong visual association, but not specific "open space, scenic vistas and scenic corridors" locations, and other uses which would occur in these same areas. Therefore, given this assignment of relative weights, one can provide answers to the first question above only on an area-by-area basis. Conflicts among uses can be resolved by application of the criterion of net social benefits implied in policy 1 or by application of the system of preferences.

The second question is partially answerable only with much research using tax assessment records.

The third question can be answered only on an area-by-area basis.

B. GENERAL REACTION: The visual uses specified in this necessary action can be accommodated in comprehensive plans without significant disruption to the economy or the ecology of the coastal zone.

C. SUGGESTED REWORDING: State and local government shall identify, rank and designate open space, scenic vistas and scenic corridors in comprehensive plans within areas which have an exceptional or strong visual association with coastal processes.

IV. POLICY 1, NECESSARY ACTIONS 2 and 3

Statement of Necessary Action 2: "The State of Oregon, in cooperation with local units of government shall develop planning criteria for areas of exceptional or strong coastal association and shall require that these criteria be used in local comprehensive planning processes as well as in state agency programs."

Statement of Necessary Action 3: "The State of Oregon, in cooperation with local units of government, shall establish criteria for evaluating the impact of development proposals on the visual quality and character in areas of exceptional or strong visual association with coastal processes. An evaluation of the net social benefits should be included as one of the criteria.

A. ANALYSIS AND GENERAL REACTION: Aside from the possible economic consequences implied by the questions I raised in the ANALYSIS of Necessary Action 1, the three necessary actions associated with Policy 1 will tend to increase the administrative costs of application, compliance and enforcement. The magnitude of these costs depends, of course, on how these and other policies are implemented.

V. POLICY 1, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "State and local governments should extend their protection of the visual quality and character by also

designating significant open space, scenic vistas and scenic corridors in areas less directly associated with coastal processes."

A. ANALYSIS: Before one could estimate rigorously the economic consequences of this recommended action, one would need answers to the following questions:

1. Questions: Have "significant open space, scenic vistas and scenic corridors" been designated in any areas other than those with an "exceptional or strong visual association with coastal processes"? Among the "open space, scenic vistas and scenic corridors" in areas less directly associated with coastal processes, what is the magnitude (measured in units of area) and location of those likely to be designated as significant relative to the magnitude (measured in units of area) and location of other uses in the area? To what extent can designation of additional "open space, scenic vistas and scenic corridors" accommodate other uses or to what extent will designation of additional visual uses generate conflicts?

   Answers: The thrust of this recommended action is to assign a relatively greater weight to visual resources than has been assigned in the past. Given this assignment of relative weights, and given the more specific designation of significant visual resources, one could provide answers to the questions above only on an area-by-area basis. Conflicts among uses can be resolved by application of the criterion of net social benefits implied in Policy 1 or by application of the system of preferences.

B. GENERAL REACTION: Additional visual resources on the coast can be designated and protected without disruption to the economy or the ecology of the coastal zone. How many additional visual resources can be accommodated, however, will depend on the specific conditions of the areas in which the designation of these additional visual resources occurs.

VI. POLICY 1, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "County governments should establish a design review process to consider development proposals in areas of exceptional or high visual significance."

A. ANALYSIS AND GENERAL REACTION: This recommended action is strictly consistent with Objectives 3 and 4 adopted by the Commission on 9 August 1974. The institutional arrangement developed during implementation of the entire program should assure that the design review process suggested here is coordinated with, or perhaps incorporated into, the first level of the institutional structure of the system of preferences tentatively approved by the Commission at its 18-20 December 1974 meeting.

VII. POLICY 1, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "Local government should review undeveloped open space areas and scenic vistas and designate certain ones for preservation."

A. ANALYSIS AND GENERAL REACTION: This seems very innocuous.

VIII. POLICY 1, RECOMMENDED ACTION 4

Statement of Recommended Action 4: "State and local government should identify and provide special protection to those historical and archaeological resources which contribute to the visual attractiveness and character of the coast."

A. ANALYSIS AND GENERAL REACTION: Although it isn't stated explicitly, I assume these standards and guidelines refer to visual chacteristics of the various uses. This recommended action will tend to increase the administrative costs of application, compliance and enforcement. The magnitude of these costs depends, of course, on how this and other policies are implemented.

IX. POLICY 1, RECOMMENDED ACTION 5

Statement of Recommended Action 5: "State and local governments should develop programs to encourage private maintenance and enhancement of the visual attractiveness and character of the coast, particularly in open space areas."

A. ANALYSIS: The only way I can see that this differs from the policies on historical and archaeological resources is that the "special protection" must provide not only protection of the resource itself but also its visual environment. In order to estimate the economic consequences of this recommended action, one needs to answer questions similar to those I raised above in the ANALYSIS of Recommended Action 1.

B. GENERAL REACTION: Implementation of this recommended action is unlikely to have a marked impact on the economy and ecology of the coast. Its implementation though will tend to increase the administrative costs of application, compliance and enforcement.

X. POLICY 1, RECOMMENDED ACTION 6

Statement of Recommended Action 6: "State and local governments should remove or cause to be removed abandoned and dilapidated structures when

they are found to detract from the visual and cultural character of the landscape, unless it is demonstrated that the net social benefits of removing the structures are less than the net social benefits of not removing the structures."

A. ANALYSIS AND GENERAL REACTION: Since it is likely that there are or will be abandoned or dilapidated structures for which the costs of removal would be prohibitive no matter how ugly their continued existence is, the "unless it is demonstrated ..." clause allows for special cases to be considered.

XI. POLICY 1, RECOMMENDED ACTION 7

Statement of Recommended Action 7: "Local government should control outdoor advertising signs in non-urban areas and should control all signs to protect the visual attractiveness and character of the Oregon coast."

A. ANALYSIS AND GENERAL REACTION: Rigorous analysis of this recommended action is hampered by the term "control", because it isn't clear how strictly the signs should be controlled. Assuming that implementation of this recommended action actually would reduce the number or magnitude of signs on the coast, then for one to argue that this action would decrease efficiency in the coastal economy, one must demonstrate that it would decrease the information available to consumers and firms. I know of no studies that indicate this would be the case. (I assume that this recommended action would not prohibit signs that merely identify the location of firms.)

XII. POLICY 1, RECOMMENDED ACTION 8

Statement of Recommened Action 8: "State and local government should develop public education programs which interpret the natural environment and cultural heritage of the coastal landscape to encourage greater understanding of its visual character and values."

A. ANALYSIS: Provided the same cost-benefit analysis that lurks behind most of the other policies and actions of the management program applies here as well, the implementation of this recommended action would increase benefits to Oregonians.

XIII. POLICY 1, (prospective) RECOMMENDED ACTION 9

Statement of (prospective) Recommended Action 9: "State and local government should develop guidelines and standards for the following uses or activities: offshore construction (if the need arises),

mineral extraction, utility and communication structures, public facilities, timber harvest and revegetation, roads and parking, mobile homes, and night lighting; because of their impact on the visual amenities of the coast."

A. ANALYSIS AND GENERAL REACTION: This recommended action is similar to Necessary Action 3, and my ANALYSIS and GENERAL REACTION for that action are applicable here.

B. SUGGESTED REWORDING: The State of Oregon, in cooperation with local units of government, should establish criteria by which the impact of the following uses or activities on the visual resources of the coastal zone can be evaluated: offshore construction; mineral extraction; construction of utility, communication and public facilities; timber harvesting and revegetation; the construction and use of roads and parking facilities; mobile homes; and night lighting.

WEW:fw

OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

WILBUR TERNYIK, CHAIRMAN
JEFF BRENNAN, VICE CHAIRMAN
ROBERT YOUNKER, SECRETARY-TREASURER
JAMES F. ROSS, EXECUTIVE DIRECTOR

P.O. Box N
Florence, Oregon 97439

Phone (503) 997-8248

March 10, 1975

TO: Oregon Coastal Conservation and Development Commission

FROM: Ed Whitelaw, Staff Economist

SUBJECT: Economic Analysis of the Phase II Policies for "Freshwater Resources of the Oregon Coastal Zone"

I. INTRODUCTION

The discussion that follows applies to the Phase II Policies for "Freshwater Resources of the Oregon Coastal Zone" that were approved for public review by OCC&DC. My analysis has benefited from the comments of S. Lance Zaklan, but my conclusions and recommendations do not necessarily reflect his views.

For each of the policies, necessary actions and recommended actions, I have provided at least one of the following three types of comments:

A. ANALYSIS: I raise those questions that need to be answered before a rigorous estimate of the economic consequences of the policy can be made. When I have a ready answer (from my own knowledge or from the inventories), I record it. When I cannot answer the question immediately, I try to place it in one of the following three categories:

1. a question I (and an assistant) could answer with a little more time (e.g., two or three days) using ONLY the inventories;

2. a question I (and an assistant) could answer with substantially more time (e.g., five to ten days) using the inventories plus other EXISTING data and expertise; or

3. a question I (and an assistant) could answer ONLY with as yet nonexisting data or with a considerable amount of research (e.g., two or three months or more) or with both.

B. GENERAL REACTION: I present my general or gut reaction to the policy, and I do so (somewhat hesitantly) at the request of a couple of members of the Economic Steering Committee.

C. SUGGESTED REWORDING: I present an alternative statement of the policy or action so that criticisms implied by my analysis might be eliminated or at least blunted.

II. POLICY 1

Statement of Policy 1: "State and local government shall maintain and enhance the uses and values of the water resources of the coastal zone in a manner consistent with the adopted policy of the State of Oregon to:

a. promote, secure, and control the water resource for multiple purposes and maximum beneficial uses;

b. preserve and protect adequate and safe supplies of water for human consumption while conserving supplies for other beneficial uses;

c. improve water quality for public supplies, for the propagation of wildlife, fish and aquatic life and for domestic, industrial, municipal, recreational and other legitimate beneficial uses; and

d. provide that waste discharged into any state waters which requires treatment or other corrective action to protect the other legitimate uses of the water resource conform to Department of Environmental Quality and Environmental Protection Agency standards and policies."

A. ANALYSIS AND GENERAL REACTION: Given that POLICY 1 merely restates existing policy and that POLICY 1 is likely to be enforced as strictly as existing policy is, then there will be no change.

III. POLICY 1, NECESSARY ACTION 1

Statement of Necessary Action 1: "State and local government, in cooperation with federal agencies shall develop and adopt guidelines and criteria which apply to the different levels of management within the comprehensive planning process; and which take into account the different geographic, physical, cultural, historic, aesthetic, recreational, environmental and economic characteristics associated with the development and use of the water resource."

A. ANALYSIS AND GENERAL REACTION: Given that such guidelines and criteria do not exist, this is an obviously necessary action to implement POLICY 1. the development and updating of them will increase the costs of state and local governments.

IV. POLICY 1, NECESSARY ACTION 2

Statement of Necessary Action 2: "The appropriate state agency shall coordinate and expedite the activities of state and federal agencies which administer programs dealing (directly or indirectly) with the management of water resources, in order to:

a. eliminate duplication and conflicting activities; and

b. provide clear and integrated direction to local units of government regarding water resource development and compliance with state and federal management policies."

A. ANALYSIS AND GENERAL REACTION: This necessary action is consistent with a goal of increasing efficiency in governmental activities and is, therefore, consistent with the GOAL and OBJECTIVES of the coastal zone management program.

V. POLICY 1, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "Within the comprehensive planning process, state and local government should provide for:

a. the reduction of contamination of groundwater and surface waters by septic tanks and other sources; and

b. the reduction of adverse of negative effects on the character and use of surface freshwaters caused by groundwater withdrawals

up to that point where net social benefits no longer increase."

A. ANALYSIS: Before one could estimate rigorously the economic consequences of implementation of this recommended action, one would need answers to the following questions:

1. Question: What proportion of sewage treatment on the coast is by septic tanks?

   Answer: I and an assistant could provide a rough answer to this question within one day.

2. Questions: What costs would state and local governments incur if they had to protect groundwater and surface waters from any contamination by septic tanks and other sources? What changes in social benefits and costs are caused by decreasing the contamination of groundwater and surface waters?

   Answers: I and an assistant could provide rough but informative answers to these questions within two days. Complete and accurate answers might take forever. As an example of the type of social costs that can be generated by removal of groundwater, the OCC&DC Beaches and Dunes Inventory states that too much removal of groundwater can destroy dunes.

3. Questions: How sensitive are the character and use of surface freshwaters to groundwater withdrawals? Is the relation linear?

   Answers: I and an assistant could provide rough but informative answers to these questions within three days. Data do not exist, however, that would allow rigorous estimation of the relationships.

4. Questions: What policy instruments are available to state and local governments for influencing the use of septic tanks, other sources of contamination, and groundwater withdrawals? How effective are these instruments?

   Answers: The issuance of permits is the primary instrument, and it is effective in the sense that it can prevent any of these activities as long as the proscribed use can be detected or predicted at the time of the application for a permit.

B. GENERAL REACTION: The importance of the phrase "up to that point where net social benefits no longer increase" is that there is provided to state and local governments a criterion by which to impose rigorously upper and lower bounds on the amount of water pollution and on the amount of groundwater withdrawals. The recommended action urges state and local governments (a) to estimate how much water pollution and groundwater withdrawal exists; (b) to determine how much there should be; and (c) to assure that the two amounts coincide. Nothing could be more reasonable.

VI. POLICY 1, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "The state and federal government should continue to improve control of industrial waste discharges including control over releases and accidental spills."

A. ANALYSIS: The analysis of the consequences of this recommended action is hampered by the vagueness in the phrase "should continue to improve control". First, it isn't clear whether the intent is to increase the efficiency of control at the present levels of pollution or to reduce the present levels of pollution. Second, if the intent is to reduce levels of pollution, it isn't clear how much further the state and federal governments are being urged to reduce pollution.

If the intent is to increase the efficiency of control at the present levels of pollution, and if the recommended action is successful, then the benefits to Oregonians will increase.

If the intent is to reduce pollution, then whether benefits increase or decrease depends on several conditions that I identify with the following questions:

1. Question: What industries discharge wastes in the coastal zone?

   Answer: I (and an assistant) could answer this question in one day.

2. Questions: For which industries that discharge wastes are the rate of profit and the propensity to relocate or to shut down sensitive to the internal costs of pollution abatement? How much more pollution abatement is likely to occur if this recommended action were implemented?

Answer: I could provide precise answers to these questions only with as yet nonexisting data and with a considerable amount of research.

B. SUGGESTED REWORDINGS:

(1) "The state and federal government should maximize the efficiency of control of the discharge of industrial wastes."

(2) "The state and federal government should decrease or cause to be decreased the rates at which industrial wastes are discharged and the frequency with which emergency releases and accidental spills occur."

C. GENERAL REACTION: The first suggested rewording is not an innocuous as it might appear. It asks that the state and federal governments, given a target rate of pollution, select that control or combination of controls that minimizes the costs of achieving the target rate of pollution. Since the technology of pollution and its abatement is changing rapidly and is likely to continue to do so for awhile, this suggested rewording urges constant review and updating of the methods of control at the disposal of state and federal governments.

The second suggested rewording doesn't even appear to be innocuous. It implies that the present level of pollution is too high and urges that it be reduced. My guess is that the rates of industrial wastes in the coastal zone could be reduced significantly without inducing any firms to relocate or to shut down.

VII. POLICY 1, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "The state and federal government should develop or cause to be developed, for the use of local government, practical and satisfactory methods of controlling waste disposal from water craft, and they should control waste disposal from water craft, except in emergencies, by imposition of fees or regulations or both."

A. ANALYSIS AND GENERAL REACTION: I confess to being responsible for the confusing wording of this recommended action, because it was I who frantically wrote this comproxmise statement during the meeting in which it was being considered. The confusion derives from the inconsistency between the first part of the statement (where the state and federal governments are urged to develop methods of controlling waste disposal) and the second part (where the methods of control are specified). This problem can be resolved by deleting the term "controlling" from the statement.

Another, more fundamental, source of confusion derives from the phrase "for the use of local government". The implication is that the local governments will be disposing of the waste from water craft and not the users of the water craft, which is absurd. This problem can be resolved by deleting the phrase "for the use of local government".

B. SUGGESTED REWORDING: "The state and federal governments should develop or cause to be developed practical and satisfactory methods of waste disposal from water craft, and they should control waste disposal from water craft, except in emergencies, by imposition of fees or regulations or both."

VIII. POLICY 1, RECOMMENDED ACTION 4

Statement of Recommended Action 4: "Appropriate agencies should consider the net social benefits of land storage vs. water storage prior to the approval of water storage of any material; and, that alternative with the highest net social benefits shall be authorized. (This necessary action is repeated here, as approved in the Estuaries and Wetlands policy category, because of its general application to water.)"

A. ANALYSIS AND GENERAL REACTION: Since it is unlikely that the kind of systematic analysis that this criterion calls for has been conducted by the "appropriate agencies" in the past, the application of this criterion will increase administrative costs. Because there appears to be significant external (or social) costs associated with each of the alternative methods of storage (depending on the conditions peculiar to the material being stored and to the estuary or other body of water), the application of this criterion should increase net social benefits associated with the storage of materials on or near estuaries.

XI. POLICY 1, RECOMMENDED ACTION 5

Statement of Recommended Action 5: "The state should develop standards, implement programs and finance the regulatory actions to reduce the pollutional effects of storage and handling of materials in public waters."

A. ANALYSIS AND GENERAL REACTION: Implementation of this recommended action will increase the costs to the state unless other programs are reduced, which is true of most of the other policies, necessary actions and recommended actions. Beyond this, one cannot estimate economic consequences until one knows the standards, programs and regulatory actions referred to in the recommended action.

X. POLICY 1, RECOMMENDED ACTION 6

Statement of Recommended Action 6: "The state should investigate and encourage beneficial uses of thermal discharges."

A. ANALYSIS AND GENERAL REACTION: POLICY 1 and NECESSARY ACTION 1, by implication, call for reduction in thermal discharges. This recommended action urges the state to encourage benefical uses of whatever thermal discharges occur, which is reasonable. Unless action stronger than mere encouragement is implemented, however, little is likely to happen.

XI. POLICY 1, RECOMMENDED ACTION 7

Statement of Recommended Action 7: "Proposed uses which may significantly alter water quality, hydraulics, tidal prism, surface area or volume should be studied to determine the probable consequences, and these should be evaluated according to the criterion of maximum net social benefits by state and local governments before approval or disapproval is given for the proposed uses."

A. ANALYSIS AND GENERAL REACTION: This seems very reasonable.

XII. POLICY 1, RECOMMENDED ACTION 8

Statement of Recommended Action 8: "The State of Oregon should determine the impact on water quality of:

a. land runoff from urban, agricultural and forest lands;

b. irrigation return waters; and

c. water impoundment (supply) reservoirs, and develop procedures to control or reduce adverse impacts from these sources."

A. ANALYSIS AND GENERAL REACTION: It seems imperative that the state should determine the impact on water quality of all activities if it is to treat pollution satisfactorily. This particular recommended action, if it were implemented, would increase the costs of state government unless other expenses are reduced. Beyond this, one cannot estimate the economic consequences until one knows what the state will do once the impact is determined.

XIII. POLICY 2

Statement of Policy 2: "State and local governments shall develop or cause to be developed regional water supplies as identified and described in the OCC&DC inventory, to meet present and future demand for water, and furthermore, shall:

a. assure adequate water supplies from the most reliable sources; and

b. establish or cause to be established water storage and groundwater sources of supply rather than develop additional direct diversions from natural stream flows.

The unification of water supply districts, while possibly desirable from an economic viewpoint, is not the thrust of this policy. Rather, the development of regional water supply potentials is intended, in part, to organize the wholesale of water to individual districts which may continue the retail distribution of water in their local areas, and thus retain control of their districts."

A. ANALYSIS: Rigorous analysis of POLICY 2 is hampered by the lack of precision in the terms "adequate" and "most reliable". The Commission apparently is content to allow the state and local governments to use their own judgment as to what is adequate and most reliable.

Before one could estimate rigorously the economic consequences of implementing this policy, one would need (in addition to more precise terms that "adequate" and "most reliable") answers to the following questions:

1. Question: What are the full economic costs per unit of water of water storage and groundwater sources of supply as compared to additional direct diversions from natural stream flows?

   Answer: Even though the OCC&DC Freshwater Resources Inventory addresses the general issue, the specific data necessary to answer this question on comparative costs are not available in the inventory. I and an assistant could provide a rough but informative answer to the question in five days.

B. GENERAL REACTION: In light of the inventory on freshwater resources, my general reaction is that implementing the shift in sources of water supply that the policy requires would reduce the full economic costs per unit of water supplied substantially.

XIV. POLICY 2, NECESSARY ACTION 1

Statement of Necessary Action 1: "The appropriate state agency, in cooperation with local units of government, shall identify, evaluate, and designate suitable water sources for regional supply development (either groundwater or surface storage)."

A. ANALYSIS AND GENERAL REACTION: Any analysis of this necessary action is hampered seriously by the lack of a criterion by which the "suitable" water sources shall be evaluated and designated. Given the action of the Commission in the past, the obvious choice is maximum net social benefits.

B. SUGGESTED REWORDING: "The appropriate state agency, in cooperation with local units of government, shall identify, evaluate, and designate suitable water sources for regional supply development (either groundwater or surface storage), according to the criterion of net social benefits."

XV. POLICY 2, NECESSARY ACTION 2

Statement of Necessary Action 2: "Local governments shall designate, within the comprehensive planning process, those areas in need of service from regional supply systems and the suitable regional water supply sources."

A. ANALYSIS AND GENERAL REACTION: Analysis of this necessary action is hampered by the lack of precision in the terms "need" and "suitable". In almost every other situation in which such lack of precision existed, I have recommended inserting the criterion of net social benefits. In this case, however, since I have already suggested it for NECESSARY ACTION 1, I recommend that the Commission rely on the local governments to have as a goal the maximization of the welfare of the citizens under their jurisdiction and thereby assume that the criterion of maximum net social benefits is contained implicitly in the necessary action.

XVI. POLICY 2, NECESSARY ACTION 3

Statement of Necessary Action 3: "State and local governments shall coordinate and estimate present and future demands for water."

A. ANALYSIS AND GENERAL REACTION: This is an obviously necessary action to implement POLICY 2. The rewording I suggest below merely improves the logic of the necessary action because one must first estimate the demands before one can coordinate them.

B. SUGGESTED REWORDING: "State and local governments shall estimate and coordinate present and future demands for water."

XVII. POLICY 3

Statement of Policy 3: "The state shall provide flow protection including augmentation and restoration where appropriate, in all streams important for aquatic life, recreation, or pollution abatement."

A. ANALYSIS AND GENERAL REACTION: Any rigorous analysis of the policy is hampered seriously by lack of direction and precision in the terms "protection", "augmentation", "restoration" and "important". For example, the only criterion for how much "augmentation" should occur is "where appropriate". The possible economic consequences range from trivial to enormous depending on (1) how much protection, augmentation and restoration is provided the streams, and (2) how many streams are judged important for aquatic life, recreation, or pollution abatement. The rewording suggested below provides upper and lower bounds to the various treatments that might be provided streams and it provides a criterion for ranking and selecting streams for treatment.

B. SUGGESTED REWORDING: "The state shall maintain or cause to be maintained stream flows at levels sufficient to support aquatic life, to enhance recreation, or to abate pollution, or to accomplish all three purposes, up to that point where net social benefits no longer increase."

XVIII. POLICY 3, NECESSARY ACTION 1

Statement of Necessary Action 1: "The appropriate state agency shall coordinate the appropriation of water rights; the development of basin

plans for water quality management; and the classification of unappropriated waters to assure the restoration, establishment and maintenance of minimum stream flows. Minimum stream flow standards and requirements shall be developed cooperatively by the Oregon Fish and Wildlife Commissions, the Department of Environmental Quality and the State Water Resources Board."

A. ANALYSIS AND GENERAL REACTION: As in POLICY 3 (and in many other policies that have come before the Commission), the actions required by NECESSARY ACTION 3 are reasonable, but there is no indication how many resources (i.e., how much effort) should be devoted to each of them. Unless one knows at what point the state agency should stop coordinating, developing and performing the other tasks required by this necessary action, one cannot put an upper limit on the costs incurred by the state in implementing this policy. Again, imposing some specific criterion by which the costs and benefits of the actions are compared is a reasonable solution to this problem.

B. SUGGESTED REWORDING: "The appropriate state agency shall coordinate the appropriation of water rights; the development of basin plans for water quality management; and the classification of unappropriated waters to assure the restoration, establishment and maintenance of minimum stream flows. Minimum stream flow standards and requirements shall be developed cooperatively by the Oregon Fish and Wildlife Commissions, the Department of Environmental Quality and the State Water Resources Board. All these actions shall be directed to maximizing the net social benefits associated with the use of water resources by Oregonians."

XIX. POLICY 3, NECESSARY ACTION 2

Statement of Necessary Action 2: "The local governments in the coastal zone shall designate, within the comprehensive planning process, land and water uses for specific areas in a manner consistent with developing regional water supply potentials, meeting stream flow requirements and maintaining in-stream water quality."

A. ANALYSIS AND GENERAL REACTION: This seems very reasonable.

XX. POLICY 3, NECESSARY ACTION 3

Statement of Necessary Action 3: "The state shall share in capital costs of water storage development projects which provide low flow augmentation for the purposes of maintaining water quality, sustaining aquatic life, and supporting water-based recreation."

A. ANALYSIS AND GENERAL REACTION: Although this seems reasonable, one cannot estimate the consequences until the shares of the costs borne by the various governmental units are determined. It really is innocuous.

XXI. POLICY 3, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "State and local government should identify those sites suitable for reservoir development and protect them from incompatible development."

A. ANALYSIS AND GENERAL REACTION: The analysis of this recommended action is hampered by the vagueness in the term "suitable" and by the lack of guidance in the phrase "protect them for incompatible development". For example, what development is considered incompatible with reservoir development? The economic consequences of implementing this recommended action could vary enormously depending on the answer to this question.

B. SUGGESTED REWORDING: "State and local governments, according to the criterion of maximum net social benefits, should identify sites for reservoir development and should protect them from incompatible development."

XXII. POLICY 3, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "The state should acquire, through adjudication, purchase, or other means of transfer, water rights on streams where flows exist that are insufficient to protect aquatic life."

A. ANALYSIS: Before one could estimate rigorously the economic consequences of implementing this recommended action, one needs to know the answers to the following questions:

1. Question: What is the market value of the water rights on all those streams in the coastal zone where flows exist that are insufficient to protect aquatic life?

   Answer: There is not even an inventory of the streams in which flows exist that are insufficient to protect aquatic life. I and an assistant could provide a rough but informative answer to this question within one month.

2. Question: What are the costs of alternative methods of protecting aquatic life in streams in which the flows are insufficient to protect the aquatic life?

   Answer: Given an answer to the first question above, I and an assistant could answer this question within five days.

B. GENERAL REACTION: I have mixed feelings about this recommended action. One the one hand, I think there must be a better way of accomplishing what appears to be the purpose of this recommended action. On the other hand, I cannot think of any,

WEW:fw

OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

WILBUR TERNYIK, CHAIRMAN
JEFF BRENNAN, VICE CHAIRMAN
ROBERT YOUNKER, SECRETARY-TREASURER
JAMES F. ROSS, EXECUTIVE DIRECTOR

P.O. Box N
Florence, Oregon 97439

Phone (503) 997-8248

March 11, 1975

TO: Oregon Coastal Conservation and Development Commission

FROM: Ed Whitelaw, Staff Economist

SUBJECT: Economic Analysis of the Phase II Policies for "Shoreland Resources in the Oregon Coastal Zone"

I. INTRODUCTION

The discussion that follows applies to the Phase II Policies for "Shoreland Resources in the Oregon Coastal Zone" that were approved for public review by OCC&DC. My analysis has benefited from the comments of S. Lance Zaklan, but my conclusions and recommendations do not necessarily reflect his views.

For each of the policies, necessary actions and recommended actions, I have provided at least one of the following three types of comments:

A. ANALYSIS: I raise those questions that need to be answered before a rigorous estimate of the economic consequences of the policy can be made. When I have a ready answer (from my own knowledge or from the inventories), I record it. When I cannot answer the question immediately, I try to place it in one of the following three categories:

1. a question I (and an assistant) could answer with a little more time (e.g., two or three days) using ONLY the inventories;

2. a question I (and an assistant) could answer with substantially more time (e.g., five to ten days) using the inventories plus other EXISTING data and expertise; or

3. a question I (and an assistant) could answer ONLY with as yet nonexisting data or with a considerable amount of research (e.g., two or three months or more) or with both.

B. GENERAL REACTION: I present my general or gut reaction to the policy, and I do so (somewhat hesitantly) at the request of a couple of members of the Economic Steering Committee.

C. SUGGESTED REWORDING: I present an alternative statement of the policy or action so that criticisms implied by my analysis might be eliminated or at least blunted.

II. POLICY 1

Statement of Policy 1: "State and local government shall establish a process to cooperatively describe and designate on maps the geographic boundaries of the shorelands of the coastal zone. Such designation shall be based on identification of landforms that limit or control the hydraulic action in the water course or in the periodically wetted fringes of the water course, such as wetlands and floodplains."

A. ANALYSIS AND GENERAL REACTION: Aside from the increase in the costs of state and local government (or in the reduction of other public expenditures), this policy does not have any economic consequences.

III. POLICY 1, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "State and local government, in identifying and designating the shoreland areas of the coastal zone, should:

(1) compile a map or series of maps depicting generalized existing land uses, ownership patterns, topography, and similar information which lends itself to presentation in graphic form; and

(2) prepare a series of descriptive analyses of the water characteristics and of the natural features of the shorelands. The descriptive analyses should be done on an area-by-area (e.g., using shore process zones described in the pilot study, or drift sectors) basis and should be keyed to the map element in a clear and direct manner."

A. ANALYSIS AND GENERAL REACTION: The economic consequences of this recommended action are similar to those for POLICY 1. Implementation of this recommended action will result either in an increase in the costs of state and local governments or in a reduction in other public programs for which the activities suggested by this recommended action would be substituted.

IV. POLICY 2

Statement of Policy 2: "State and local government shall identify shorelands within the comprehensive planning process, and shall designate uses for these areas based on:

a. recognition of the critical inter-relationships between shorelands and the freshwater, estuarine and marine resources of the coastal zone;

b. promotion of the concept of shorelands as "environmental corridors" where there is a coincidence of natural resources and land use concerns in which there is a major public interest;

c. consideration of the needs and desires of landowners who maintain or propose uses reasonable and appropriate for shoreland locations; and

d. consideration of shoreland uses related to the public interest in navigation."

A. ANALYSIS AND GENERAL REACTION: It is impossible to provide a rigorous (or even a casual) analysis of the economic consequences of this policy because of the vagueness (whether by intent or by cause) of such terms as "critical inter-relationships", "major public interest", and "reasonable and appropriate". I do not take these terms to be meaningless, but they do not provide any indications of limitations or bounds imposed on each of the actions required by the policy. The economic consequences, therefore, could be trivial or enormous. Since they do have meaning and since each of the actions contributes important concepts and processes to the management program, it is sufficient merely to add the general criterion of maximum net social benefits to the entire policy, but allows the actions required by the policy to acquire more precision as the management program evolves as a process over time.

B. SUGGESTED REWORDING: Add to the present policy statement the following item:

"e. adherence to the objective of maximizing net social benefits accruing to this and succeeding generations of Oregonians."

V. POLICY 2, NECESSARY ACTION 1

Statement of Necessary Action 1: "The State of Oregon shall coordinate shoreland planning and management activities of state and federal agencies to implement shorelands management policies and to provide more specific and unified guidance to local governments."

A. ANALYSIS AND GENERAL REACTION: This is consistent with increasing the efficiency of governmental activities.

VI. POLICY 2, NECESSARY ACTION 2

Statement of Necessary Action 2: "The State of Oregon, in cooperation with local units of government, shall provide criteria for designating reasonable and appropriate uses for shorelands in comprehensive plans prepared by local governments. The criteria shall provide for:

(a) identification and designation of shorelands of regional or statewide concern;

(b) preservation of the natural character and amenities of waterways;

(c) increased public access where needed;

(d) increased public recreational opporutnities;

(e) continuance of agricultural uses without restriction except as otherwise provided by law;

(f) retention of shoreland vegetation (including tree species) in as natural a state as possible and restoration of vegetation without delay after disturbance in order to protect water quality, aquatic life and wildlife habitat; and

(g) regulation of building sites, placement of buildings, and location of septic tank disposal fields to control pollution."

A. ANALYSIS AND GENERAL REACTION: This necessary action suffers from the same failing as POLICY 2 does, namely there is no indication of limitations or bounds imposed on each of the actions required by the statement. For example, the statement fails to indicate how much preservation there should be. The economic consequences, therefore, could be trivial or enormous. It is sufficient merely to add the general criterion of maximum net social benefits to the entire statement.

B. SUGGESTED REWORDING: "The State of Oregon, in cooperation with local units of government, shall provide criteria for designating reasonable and appropriate uses for shorelands in comprehensive plans prepared by local governments. The criteria shall be consistent with maximizing net social benefits accruing to this and succeeding generations of Oregonians and shall provide for:

(a) identification and designation of shorelands of regional or statewide concern;

(b) preservation of the natural character and amenities of waterways;

(c) increased public access where needed;

(d) increased public recreational opportunities;

(e) continuance of agricultural uses without restriction except as otherwise provided by law;

(f) retention of shoreland vegetation (including tree species) in as natural a state as possible and restoration of vegetation without delay after disturbance in order to protect water quality, aquatic life and wildlife habitat; and

(g) regulation of building sites, placement of buildings, and location of septic tank disposal fields to control pollution."

VII. POLICY 2, NECESSARY ACTION 3

Statement of Necessary Action 3: "Cities and counties in the coastal zone shall use state criteria (as described in (2) above) in designating uses for shorelands in comprehensive plans."

A. ANALYSIS AND GENERAL REACTION: This seems very reasonable, and as long as the wording I suggested above for NECESSARY ACTION 2 is used, then the economic consequences are likely to be positive.

VIII. POLICY 2, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "State and local government should prohibit channelization and use of seawall and similar bulkhead methods of bank stabilization unless it is demonstrated that the net social benefits of that type of construction are greater than the net social benefits of alternative actions, including the alternative of leaving the waterway in its natural form."

A. ANALYSIS AND GENERAL REACTION: Although there will be an initial increase in the various costs associated with demonstrating net social benefits, those are fixed costs that need not be incurred indefinitely. The management program is designed to accommodate learning, and the initial cost-benefit analyses will serve as prototypes for subsequent development proposals.

IX. POLICY 2, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "State and local government should manage timber and vegetation zones along streams primarily for water quality, stream protection and wildlife habitat."

A. ANALYSIS AND GENERAL REACTION: The analysis of the consequences of this recommended action is hampered by the alternative interpretations that can be attributed to the term "primarily". If the term is interpreted to mean "exclusively", then the opportunity costs imposed by implementation of this action could be enormous. If it is not interpreted to mean "exclusively" but something less restrictive, then the other uses and purposes are accommodated will determine how the water quality, stream protection and wildlife habitats will be compromised. The ambiguity in the wording can be eliminated by use of the criterion of net social benefits.

B. SUGGESTED REWORDING: "State and local governments should manage timber and vegetation along streams exclusively for water quality, stream protection and aquatic life and wildlife unless it is demonstrated that the net social benefits accruing to Oregonians can be increased by accommodating additional purposes."

X. POLICY 2, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "State and local government should encourage where appropriate developers of residential, commercial and industrial sites on shorelands to allow for water-related public recreational opportunities."

A. ANALYSIS AND GENERAL REACTION: The terms "should encourage" and "where appropriate" are buzz words. At the least, "where appropriate" should be deleted. The recommended action is innocuous even without it.

B. SUGGESTED REWORDING: "State and local government should encourage developers of residential, commercial and industrial sites on shorelands to allow for water-related public recreational opportunities."

XI. POLICY 2, RECOMMENDED ACTION 4

Statement of Recommended Action 4: "State and local government should develop site selection criteria (including landscaping and methods of development) for the location of nuclear and thermal power plans in those areas of the coastal zone designated as "suitable" by the Oregon Nuclear and Thermal Energy Council."

A. ANALYSIS AND GENERAL REACTION: To be consistent, the Commission should add the criterion of net social benefits as one of the criteria for selecting sites for nuclear and thermal power plants.

B. SUGGESTED REWORDING: "State and local government should develop site selection criteria (including landscaping, methods of development and the criterion of maximum net social benefits) for the location of nuclear and thermal power plans (plants?) in those areas of the coastal zone designated as "suitable" by the Oregon Nuclear and Thermal Energy Council."

OREGON COASTAL CONSERVATION AND DEVELOPMENT COMMISSION

WILBUR TERNYIK, CHAIRMAN
JEFF BRENNAN, VICE CHAIRMAN
ROBERT YOUNKER, SECRETARY-TREASURER
JAMES F. ROSS, EXECUTIVE DIRECTOR

P.O. Box N
Florence, Oregon 97439

Phone (503) 997-8248

March 12, 1975

TO: Oregon Coastal Conservation and Development Commission

FROM: Ed Whitelaw, Staff Economist

SUBJECT: Economic Analysis of the Phase II "General Policies"

I. INTRODUCTION

The discussion that follows applies to the Phase II "General Policies" that were approved for public review by OCC&DC. My analysis has benefited from the comments of S. Lance Zaklan, but my conclusions and recommendations do not necessarily reflect his views.

For each of the policies, necessary actions and recommended actions, I have provided at least one of the following three types of comments:

A. ANALYSIS: I raise those questions that need to be answered before a rigorous estimate of the economic consequences of the policy can be made. When I have a ready answer (from my own knowledge or from the inventories), I record it. When I cannot answer the question immediately, I try to place it in one of the following three categories:

1. a question I (and an assistant) could answer with a little more time (e.g., two or three days) using ONLY the inventories;

2. a question I (and an assistant) could answer with substantially more time (e.g., five to ten days) using the inventories plus other EXISTING data and expertise; or

3. a question I (and an assistant) could answer ONLY with as yet nonexisting data or with a considerable amount of research (e.g., two or three months or more) or with both.

B. GENERAL REACTION: I present my general or gut reaction to the policy, and I do so (somewhat hesitantly) at the request of a couple of members of the Economic Steering Committee.

C. SUGGESTED REWORDING: I present an alternative statement of the policy or action so that criticisms implied by my analysis might be eliminated or at least blunted.

II. POLICY 1

Statement of Policy 1: "State and local government shall base modifications, approval or disapproval of proposed developments, plans or programs on the short and long term economic, ecological, cultural, aesthetic, historic and recreational factors."

A. ANALYSIS AND GENERAL REACTION: The policy calls for the gathering and analysis of data relating to the various factors, and it therefore would effect a reallocation of resources — both labor and materials — to these activities. Aside from the specific economic consequence described above, other economic consequences cannot be estimated until the relative weights that will be assigned to the various factors are known.

B. SUGGESTED REWORDING: The wording that I suggest below merely makes the statement more precise and more consistent with past actions by the Commission.

"State and local governments shall base modifications, approval or disapproval of proposed developments, plans or programs on the short- and long-term economic, ecological, cultural, aesthetic, historic and recreational values that are likely to be affected by the proposed developments."

III. POLICY 1, NECESSARY ACTION 1

Statement of Necessary Action 1: "The appropriate state agency shall require a written evaluation of social costs and social benefits for proposed developments, plans and programs that are likely to adversely affect areas of critical state concern."

A. ANALYSIS AND GENERAL REACTION: Besides the costs of the written evaluation that this necessary action would require, there are also the costs incurred by the "appropriate state agency" when it must determine if the proposed developments are likely to affect adversely areas of critical state concern. This additional set of costs are likely to diminish markedly over time as the agency accumulates experience in identifying proposed developments that would affect such areas adversely.

IV. POLICY 2

Statement of Policy 2: "State and local government through planning and management shall provide for multiple uses of natural resources. When several uses are proposed in the same location, state and local governments shall provide for multiple use based on the needs of each uses, the degree of compatibility among various uses, and the effects of each use and combined uses on the natural resources."

A. ANALYSIS AND GENERAL REACTION: This policy, whenever it results in multiple-purpose use (among compatible uses) of scarce resources will increase economic efficiency and thus will tend to increase incomes and decrease unemployment on the coast. Any specific estimates of the economic consequences of this policy, however, must be based on the characteristics of the uses proposed for a given location.

B. SUGGESTED REWORDING: To be consistent with past actions taken, the Commission should substitute the term "demand" for the term "needs".

"State and local government through planning and management shall provide for multiple uses of natural resources. When several uses are proposed in the same location, state and local governments shall provide for multiple use based on the demand of each user, the degree of compatibility among various uses, and the effects of each use and combined uses on the natural resources."

V. POLICY 3

Statement of Policy 3: "The issuance of building permits shall be contingent upon the ability of the builder to provide safe and adequate water supply and approved sewage disposal methods."

A. ANALYSIS AND GENERAL REACTION: The apparent intent of this policy is distorted by the terms "ability" and "adequate". Regarding the term "ability", there is nothing in the statement to require that the builder do anything once the public agency has determined that the builder has the ability. I would not care to rely on the good will of my fellow man in this situation, because there are far too many examples of costly blunders in the past in the provision of sewage and water services.

Regarding the terms "safe" and "adequate", there is no indication in the policy who decides what is safe and adequate.

To resolve these problems with the policy statement, I suggest the Commission adopt the wording below.

B. SUGGESTED REWORDING: "The issuance of the building permits shall be contingent upon a written commitment by the builder to provide safe and adequate water supply and sewage disposal, where the criteria for safety and adequacy are determined by the state."

VI. POLICY 3, appended statement

Appended Statement to Policy 3: "Development which requires the use of distribution and collection systems for the provision of water supply and sewage disposal shall be allowed only in areas where these services are available or will be made available concurrently with construction."

A. ANALYSIS: Before one could estimate rigorously the economic consequences of this policy, one would need answers to the following questions:

1. Question: What proportion of development in the coastal zone occurs where distribution and collection systems for the provision of water and the disposal of sewage are unavailable and are not made available concurrently with construction?

   Answer: A complete answer to this question is possible but would require a tedious investigation of individual building permits in planning departments up and down the coast. I and an assistant could provide a rough but informative answer within two days merely by calling planners who are familiar with the experience of their respective planning departments.

2. Question: What changes in private costs would be incurred by those activities that comprise the proportion referred to in Question 1 above if the policy were implemented? What changes in social costs would be effected by implementation of this policy?

   Answer: I and an assistant could provide rough answers to these questions within four days.

VII. POLICY 3, NECESSARY ACTION 1

Statement of Necessary Action 1: "The state shall develop criteria to determine if a water supply is safe and adequate."

A. ANALYSIS AND GENERAL REACTION: This is an obviously necessary action if POLICY 3 is to be implemented. The wording suggested below includes local government in the development of criteria, and it increases the precision of the statement.

B. SUGGESTED REWORDING: "The state, in cooperation with local government, shall develop criteria for evaluating the safety and adequacy of systems of water supply and sewage disposal."

VIII. POLICY 4

Statement of Policy 4: "The local evaluation of proposed residential, commercial, industrial and recreational development in the coastal zone shall be based in part on the following factors:

a. the compatability of the proposed use with existing and planned uses of the site and the surrounding area;

b. the physical suitability and limitations of the proposed site;

c. the demand for and availability of adequate public services including: water, sewage disposal, schools, police and fire;

d. the demand for parking and commodity storage areas on the development site; and

e. the adequacy of transportation access and linkage to transportation facilities."

A. ANALYSIS AND GENERAL REACTION: The specific economic consequences cannot be estimated until the relative weights that will be assigned to the various factors are known. It is important to remember that POLICY 1 requires that all the factors that the Commission has included in social benefits be considered in the evaluation as well.

IX. POLICY 5

Statement of Policy 5: "The appropriate authority shall require developers to minimize the disturbance of vegetative cover during development and shall require developers to re-establish an acceptable vegetative cover for all exposed earth within a period of time specified by the authority, to reduce erosion and slope instability and to protect the visual attractiveness of the coastal zone."

A. ANALYSIS: Before one could estimate rigorously the economic consequences of this policy, one would need to know answers to the following questions:

1. Question: What proportion of development currently violates the apparent regulations that implementation of this policy would impose?

   Answer: Although the analysis might be primarily anecdotal (because systematic measures of such violations do not exist), I and an assistant could provide a rough but informative answer to this question within three days.

2. Questions: If the policy were implemented, what changes in private costs would be incurred by those activities that comprise the proportion referred to in Question 1 above? What changes in social costs would be effected by implementation of the policy?

   Answers: I and an assistant could provide rough answers to these questions within four days.

X. POLICY 6

Statement of Policy 6: "Utility lines shall be located on or adjacent to existing public or private rights of way, wherever possible, and the design and siting of new facilities shall be consistent with land and water use plans."

A. ANALYSIS AND GENERAL REACTION: Rigorous analysis of this policy is hampered by the vagueness in the phrase "wherever possible". Alternative interpretations of the phrase could generate enormous and trivial

economic consequences. To protect us from our own ignorance, I suggest, once again, the criterion of net social benefits.

B. SUGGESTED REWORDING: "Utility lines shall be located on or adjacent to existing public or private rights of way, unless it is demonstrated that an alternative location would increase net social benefits, and the design and siting of new facilities shall be consistent with land and water use plans."

XI. POLICY 7

Statement of Policy 7: "State and local government shall estimate existing and future demand for highway, rail, trail, pedestrian, air, water, and mass transit facilities in state transportation plans and comprehensive plans for the coastal zone."

A. ANALYSIS AND GENERAL REACTION: I can only hope that the estimation of future demand is done with more sophistication than 99% of such estimation has been done with in the past. In any event, the action called for by the policy is imperative for any reasonable provision of transportation services in the future.

XII. POLICY 7, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "Transportation plans should provide for more than one mode of transportation."

A. ANALYSIS AND GENERAL REACTION: This recommended action is unnecessary, because there has not yet been a transportation plan prepared in the United States that did not provide for more than one mode of transportation. Either the Commission should request that a more elaborate statement involving the intricacies of multi-modal systems of transportation be prepared, or it should delete the statement.

XIII. POLICY 7, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "A compatible system of long range hiking and bicycle trails, urban trails, and trails connecting population centers with recreation attractions should be planned for the coastal zone in cooperation with local, state and federal agencies and interested public groups."

A. ANALYSIS AND GENERAL REACTION: Given what appear to be secular trends in the demand for recreation and for hiking and bicycles, this recommended action seems very reasonable.

XIX. POLICY 7, RECOMMENDED ACTION 3

Statement of Recommended Action 3: "Transportation plans should consider the need for public transit facilities, including: continuous bus

service along the coast, intra-urban transit for the non-driving population and east-west bus and rail connections to recreation areas and key coastal communities."

A. ANALYSIS AND GENERAL REACTION: The apparent intent of this policy is distorted markedly by the term "need". The present wording suggests that there is some fixed amount of public transit facilities necessary for existence. The mistake is emphasizing the need for transit facilities and not the demand for them, and the flaw in examining only "need" is that the entire burden of adjustment is placed on the supply side. The correct policy would be to use both supply and demand to determine the optimal amount of transportation. Obviously, if the price (or cost to government) were higher, less of it would be used.

For example, if the price charged users of the transportation facilities were zero and if the need were determined to be great, then the costs to state and local governments would be enormous. Alternatively, if the users of the transportation facilities cover the costs (including the opportunity costs) of the resources used, then the proportion of the costs born by general taxes would be small.

Aside from the problem with the term "need", the recommended action will remain innocuous until it is determined what the transportation plans will do once they have finished considering the various items listed in the statement.

B. SUGGESTED REWORDING: "Transportation plans should consider the demand for public transit facilities, including: continuous bus service along the coast, intra-urban transit for the non-driving population and east-west bus and rail connections to recreation areas and key coastal communities."

XX. POLICY 8

Statement of Policy 8: "State and local government shall base decisions to construct or improve transportation facilities on the needs and desires of the entire affected region as identified in state transportation plans and local comprehensive plans and on the projected impacts and costs of alternative designs and locations, including the no build alternative."

A. ANALYSIS AND GENERAL REACTION: Except for the terms "needs" and "desires", this policy is reasonable and requires no economic analysis. The problem with the term "needs" is discussed above under POLICY 7, RECOMMENDED ACTION 3. The problem with the term "desires" is that there is no price-constraint on the choice, and, therefore, is similar to requests for Christmas gifts. As long as one need not pay for the gifts, one asks for a great deal more.

B. SUGGESTED REWORDING: "State and local government shall base decisions to construct or improve transportation facilities on the

demands of the entire affected region as identified in state transportation plans and local comprehensive plans and on the projected impacts and costs of alternative designs and locations, including the no build alternative."

XXI. POLICY 9

Statement of Policy 9: "The state through the Department of Economic Development shall make efforts to increase the number of year-round or winter season commercial, industrial and recreational employment opportunities which are compatible with the character of the coastal zone, as long as it is demonstrated that such efforts do not decrease per capita income or increase the rate of unemployment on the coast."

A. ANALYSIS AND GENERAL REACTION: The clause "as long as it is demonstrated that such efforts ...." is necessary, because reducing the seasonality of employment and earnings or increasing the number of year-round jobs on the coast will not necessarily increase per capita income or decrease aggregate unemployment on the coast. For example, if aggregate demand were to remain constant, then increasing the number of year-round jobs must come at the expense of seasonal jobs. The resulting distortion of the market solution will not necessarily increase economic efficiency on the coast, and thus it may cause no change or even a decrease in per capita. Given the opportunity cost of the resources employed in effecting the change from seasonal unemployment and no change in per capita incomes, then economic welfare is reduced.

Precisely because neither the Department of Economic Development nor anyone else knows the probability of the events I described above, the qualifying clause is necessary to protect Oregonians and, in particular, coastal residents. Notice that if the Department of Economic Development manages to increase the aggregate demand for coastal output, then the probabilities of the inefficiencies are greatly reduced.

XXII. POLICY 10

Statement of Policy 10: "The state shall improve the economic conditions for utilization of the fishery resources."

A. ANALYSIS AND GENERAL REACTION: I realize that at a previous meeting, the Commission rejected the rewording I suggest below, but I was not present during the discussion, and I would like to suggest it again merely to make sure that the reasons I support the rewording are understood. Then the Commission may reject or accept as it chooses.

The reasons are identical to the reasons I cited above in the ANALYSIS AND GENERAL REACTION to POLICY 9. In short, I am skeptical that the Department of Economic Development has at its disposal the policy instruments necessary to effect the changes POLICIES 9 and 10 require without affecting the economy adversely.

B. SUGGESTED REWORDING: "The state shall improve the economic conditions for utilization of the fishery resources as long as it is demonstrated that such efforts do not decrease per capita income or increase the rate of unemployment on the coast."

XXIII. POLICY 10, NECESSARY ACTION 1

Statement of Necessary Action 1: "The Fish Commission, in cooperation with the Sea Grant Program and with commerical fisheries, shall study and evaluate alternative programs for limiting entry or by other means improving the economic conditions for commercial fishing."

A. ANALYSIS AND GENERAL REACTION: To most economists, the phrase "limiting entry" means limiting the number of firms that may or are willing to operate in an industry. In other words, limiting entry is the means whereby monopolies or oligopolies are created, and I doubt that the Commission intended to create monopolies with this statement. The wording I suggest below retains the intent of the original statement but avoids the ambiguity I mentioned above.

B. SUGGESTED REWORDING: "The Fish Commission, in cooperation with the Sea Grant Program and with commercial fisheries, shall study and evaluate alternative programs for increasing per capita income and decreasing unemployment on the coast by utilizing fishery resources."

XXIV. POLICY 10, RECOMMENDED ACTION 1

Statement of Recommended Action 1: "The state and federal governments should create programs to improve processing methods, marketing techniques and financing for commercial fisheries."

A. ANALYSIS AND GENERAL REACTION: My interpretation of the phrase "should create programs to improve" suggests that this recommended action is in direct conflict with action taken by the Commission on 9 August 1974. At that time, the Commission adopted the following statement in reference to the phrase "orderly development" in the GOAL which was also adopted that day:

"The term 'orderly' means well-considered, directed change in which the consideration and direction is embodied in comprehensive planning controlled by the public. The term does not rule out encouraged development, but it does not mean stimulated development in which private development is subsidized by the public."

The rewording I've suggested below, then is strictly consistent with the Commission's past actions.

B. SUGGESTED REWORDING: "The state and federal governments should encourage improvements in processing methods, marketing techniques and financing for commercial fisheries."

XXV. POLICY 10, RECOMMENDED ACTION 2

Statement of Recommended Action 2: "The state and federal governments should support private development of aquaculture in coastal waterways suited for such use through:

a. the state's permit granting procedures;

b. educational programs describing methods and types of aquaculture and their public benefits; and

c. incentive funding."

A. ANALYSIS AND GENERAL REACTION: For the same reason I present above in the ANALYSIS AND GENERAL REACTION under RECOMMENDED ACTION 1, I suggest that everything after the term "waterways" in RECOMMENDED ACTION 2 be deleted.

B. SUGGESTED REWORDING: "The state and federal governments should encourage private development of aquaculture in coastal waterways."

Appendices J through V are under separate cover.