Columbia River Estuary Regional Policies

CREST

COLUMBIA RIVER ESTUARY STUDY TASKFORCE

CREST

REGIONAL POLICIES

Errata Sheet

PLEASE MAKE THE FOLLOWING CHANGES IN YOUR COPY OF THE POLICIES:

Policy II.C.1. (p. 18) Subpara (4) - delete: "... its successor, the Estuary Resource Center..."
- replace with: "...or its implementing agency(s)..."

Policy III.B. (p.40) delete last paragraph

add: As part of its planning, CREST will evaluate several alternatives for ensuring intergovernmental communication and coordination in the future.* One concept proposed for evaluation is the establishment of a local Estuary Resource Center, which could serve as a focal point for coordination of CREST program implementation, estuary research and educational activities.

*Evaluation of this and other alternatives will be a function of CREST's to-be-established Implementation Committee, whose recommendations will be made available as CREST program nears completion.

Policy III.C.1. (p.41) Subpara (1) - delete: "...or, the Estuary Resource Center..."
- replace with: "...or its implementing agency(s)..."

Policy III.C.2. (p.42) Subpara (3) - change: "form" to "forum"
- delete: "...through the Estuary Resource Center."

Policy III.C.3. (p.43) - delete: "...(or the Estuary Resource Center)..."
- replace with: "... or its implementing agency(s)..."

Policy III.C.4. (p.44) Subpara (1) - delete: "or the Estuary Resource Center..."
- replace with: "...or its implementing agency(s)..."

Subpara (2) - In first and last sentences,
- delete: "...or the Estuary Resource Center..."
- replace with "...or its implementing agency(s)..."

Subpara (3) - delete existing first sentence--add new first sentence: Some mechanism will be developed at the local level to ensure state and federal consistency with the estuary plan.

Policy IV.B. (p. 45) Subpara (1) - delete: "Encourage establishment..."
add: "Evaluate the concept..."

THE

COLUMBIA RIVER ESTUARY STUDY TASKFORCE (CREST)

REGIONAL POLICIES

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CREST REGIONAL POLICIES

INTRODUCTION

The Columbia River Estuary Study Taskforce (CREST) is a bi-state organization of local governments developing an estuary management plan for the Lower Columbia River area (Figure 1). CREST is made up of ten local governments in Clatsop County, Oregon, and Pacific and Wahkiakum Counties, Washington. For Washington portions of the study area, the CREST planning program represents the first revision to Shoreline Management Master Programs, and can be implemented as such. In Oregon, the plan will, when adopted by local governments, provide components for each jurisdiction's local comprehensive plan. The jurisdictions will then be in compliance with state planning goals and guidelines for both Estuarine Resources (No. 16) and for Coastal Shorelands (No. 17).

CREST Regional Policies

CREST Regional Policies are defined as "specific courses or methods of action to guide present and future decisions toward established CREST goals". These goals (listed following this introduction) were developed at the beginning of the CREST program and were used to organize the policy subjects that relate to economic development, land and water use, intergovernmental cooperation and public education. The relationship of the CREST Regional Policies to other elements of the overall CREST program is shown in Figure 2.

The Regional Policies and Their Uses

The CREST Council is scheduled to adopt the Regional Policies in June, 1977, and each member government will be asked to adopt them as well. Until completion of the overall CREST program in June, 1978, the Regional Policies fill two needs. First, they serve as a guide for developing the CREST Land and Water Use Plan; this plan is being developed by local committees from the seven Planning Areas or Management Units of the estuary (Figure 1).

Second, the policies provide guidelines for use during the period between the adoption of the policies and adoption of the final CREST Plan. During this interim period, the actions of local government and state and federal agencies (when appropriate) should be in accord with the Regional Policies.

The role the policies play as part of the completed CREST program will be determined during the next year, but they are expected to serve as the basic policy statements for local government on development and other actions related to the estuary. As such, they will form parts of revised local comprehensive plans or shoreline management plans, as appropriate. Some of the Regional Policies apply only to the CREST Planning Area (Figure 1); others are of wider scope and apply to the estuary and its tributary watersheds (the Columbia River Estuary Area; Figure 1), or to the entire Northwest.

Development of the Regional Policies

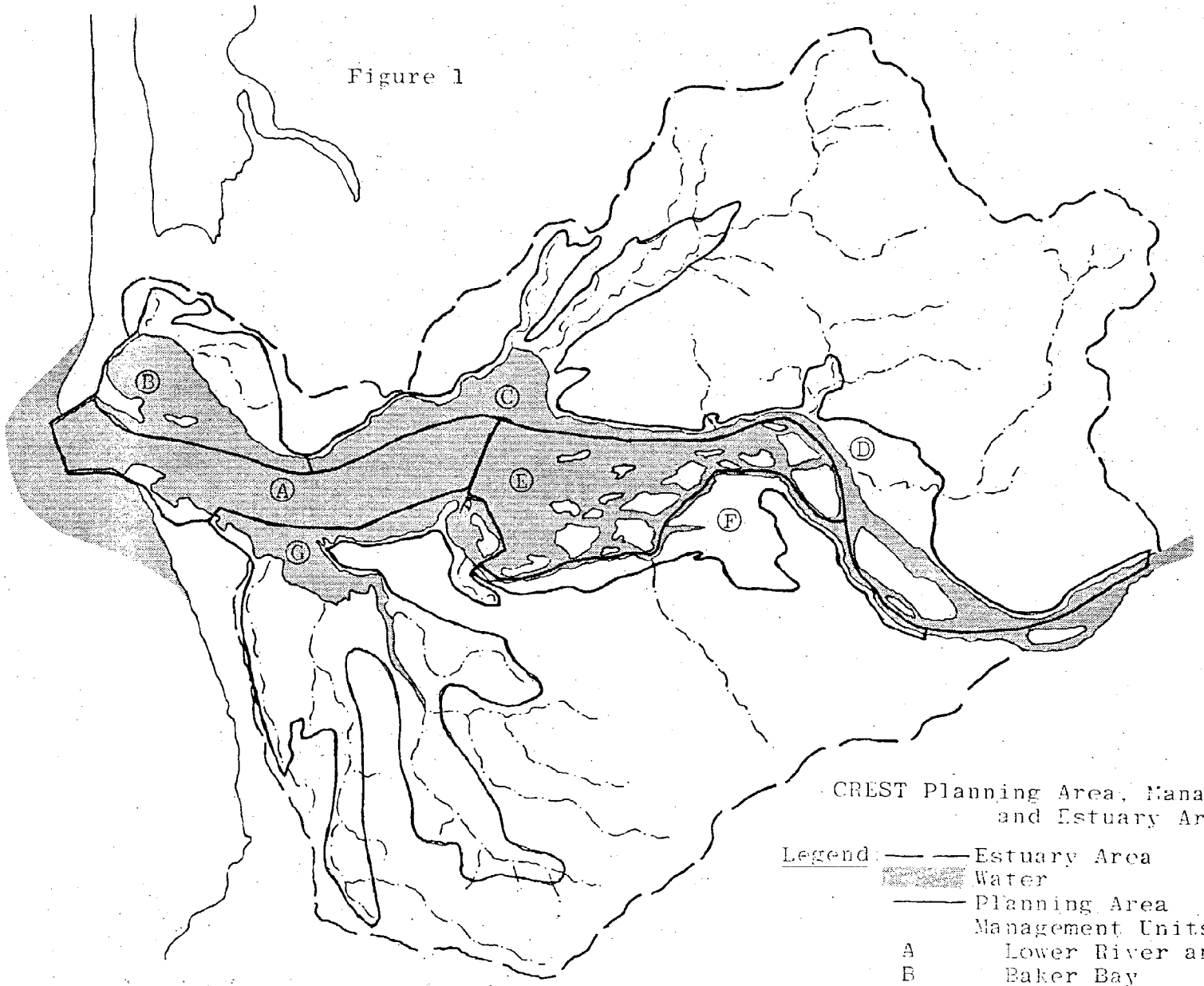
In September, 1976, the CREST Council selected a 10-person committee to develop Regional Policies. Previously selected policy subjects were reviewed by the committee, and draft policies were developed. The draft policies were released March 16, 1977, for a 45-day review by the public and local, state and federal agencies. Public meetings were scheduled, widely publicized and conducted in Pacific County (March 24th), Wahkiakum County (March 31st) and Clatsop County (April 6th). A state/federal agency review meeting was held April 7th. As a result of the review period, oral and written comments were received from many agencies, groups and individuals. Attempting to strike a balance, the Regional Policy Committee revised the policies to reflect the many concerns stated. The revised policies were then recommended to the CREST Council for adoption. Copies of comments are available upon request.

The CREST Land and Water Use Classification System

Many of the CREST Regional Policies refer to "permitted", "conditional" or "not allowed" uses or activities in NATURAL, CONSERVATION, RURAL and water-dependent/related or non-water-dependent DEVELOPMENT areas. These designations are part of the CREST Land and Water Use Classification System being used by Management Unit planning committees to classify estuary waters, wetlands and shorelands. This classification system is included as an appendix to the Regional Policies so that the terms may be more clearly understood. The classification system is not part of the Regional Policies, and it has been reviewed through a separate interagency process.

There are cross-references at the end of each policy to other related policies. A glossary is included at the end of the document.

Figure 1



CREST Planning Area, Management Units, and Estuary Area

Legend
- Estuary Area
- Water
- Planning Area

Management Units

A Lower River and the Mouth
B Baker Bay
C Gray's Bay
D Eastern Wahkiakum
[illegible] Columbia River Islands
F [illegible] Clatsop
G [illegible]g's Bay/Astoria

The CREST Land and Water Use Classification System

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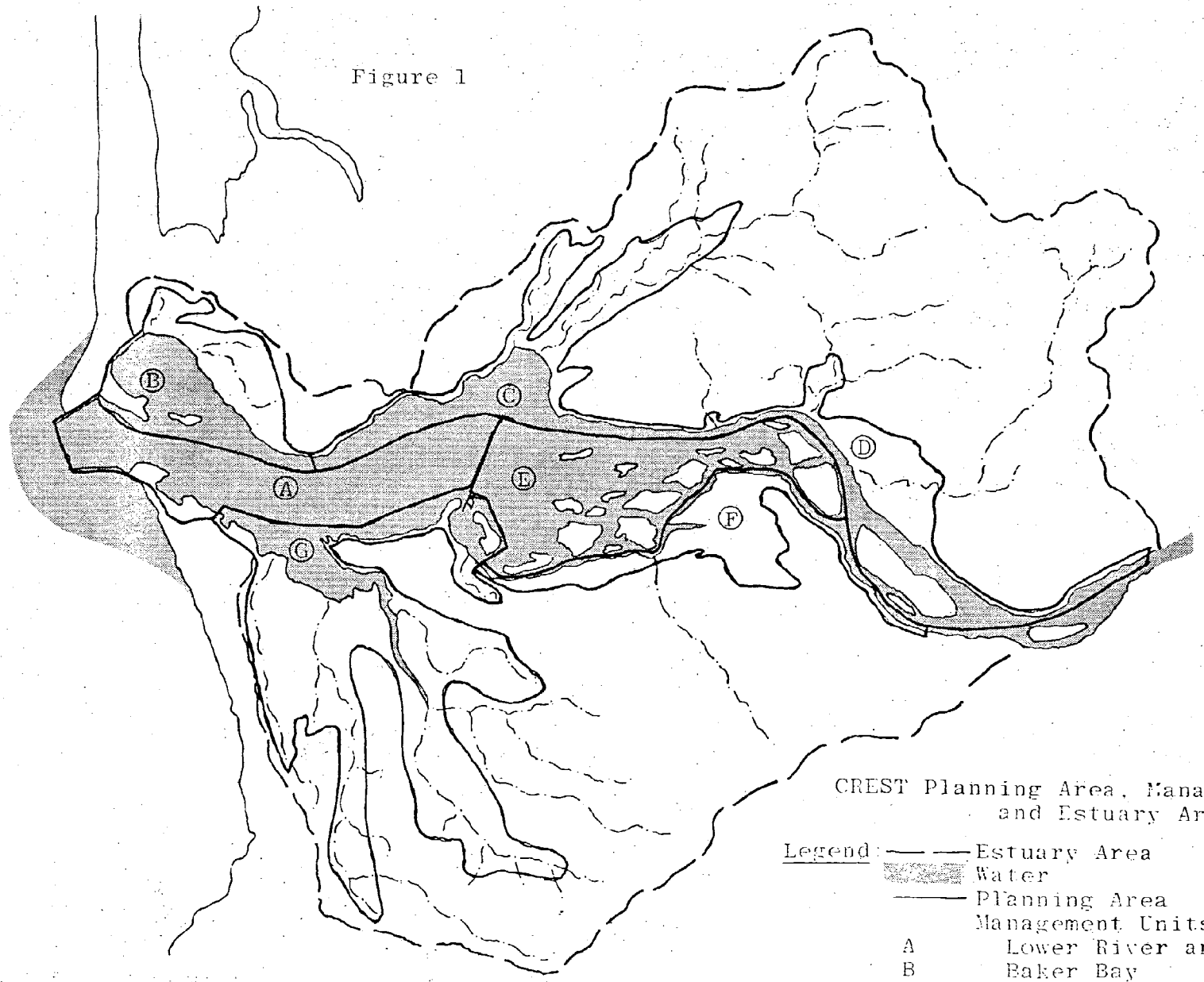

CREST Planning Area, Management Units, and Estuary Area

Legend:
- Estuary Area
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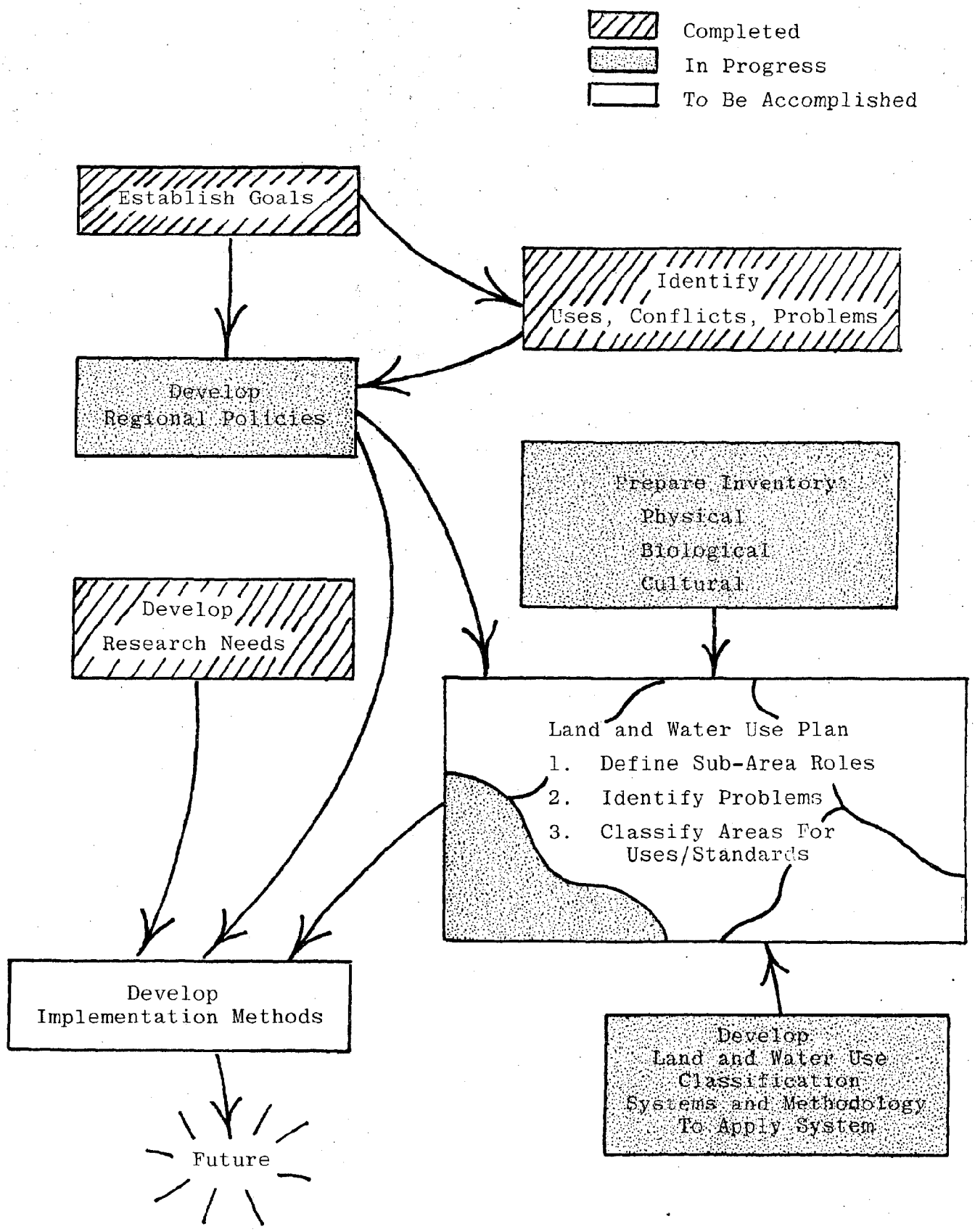
Management Units

A	Lower River and the Mouth
B	Baker Bay
C	Gray's Bay
D	Eastern Wahkiakum
E	Columbia River Islands
F	Western Clatsop
G	Young's Bay/Astoria

Figure 2

CREST PLANNING PROCESS
(CONCEPTUAL FLOW DIAGRAM)



CREST'S GOALS

GOAL 1: To improve and diversify the economy of the area;

GOAL 2: To reconcile conflicting uses of estuarine resources;

GOAL 3: To protect and enhance natural resource values of the estuary;

GOAL 4: To improve estuarine resource management through intergovernmental communication and coordination at local, state and federal levels; and

GOAL 5: To increase public understanding of the natural value of the estuary and its usefulness to man.

I. ESTUARY ECONOMIC DEVELOPMENT POLICIES

A. RELATED CREST GOAL

Goal 1: To improve and diversify the economy of the area.

B. OVERALL POLICY

The estuary is the single most important economic resource in the local area. Industries based on utilization and maintenance of estuary-area renewable natural resources, including fisheries, agriculture and forestry shall be preferred and encouraged. Diverse marine-related activities such as expanded port development, shipbuilding, recreation and tourism are also encouraged. Economic activities and uses which conflict when located in close proximity are to be separated. Adequate transportation networks and public services should be provided.

Desirable non-water-dependent or non-water-related industries are encouraged to locate at sites away from the estuary. This will reserve shoreline space for future preferred uses and minimize impact on estuarine resource values.

Paramount in decision-making related to economic development shall be the maintenance and enhancement of the natural and economic values of the estuary.

I. ESTUARY ECONOMIC DEVELOPMENT POLICIES

C. SPECIFIC POLICY 1: Fisheries

Fisheries have historically been major employers in the Lower Columbia region. They are still one of the top industries. The advent of the 200 mile extended jurisdiction and increased programs for anadromous fish enhancement will continue to promote growth of this industry. To maintain and improve opportunities for this industry in the estuary area:

(1) Areas should be reserved that will provide for adequate dock and moorage space for present and anticipated future commercial and sports vessels;[1]

(2) Fish processing facilities and support activities such as cold storage and repair shop facilities should have adequate shoreline area identified and reserved for their use in water-dependent Development Areas;[2]

(3) Navigational access in the estuary and its tributaries should be maintained in light of expected future demand of both sports and commercial fleets. Waterways should not be closed to navigation. Provision should be made for dredging areas traditionally used by fishermen for access to fishing-grounds and moorage;[3]

(4) Consideration must be given to protection of traditional fishing areas before dredging, filling, pile driving, constructing pile dikes or rock jetties, or other disruptive, instream activities are permitted;[4]

(5) Fish enhancement programs of federal and state agencies, as well as local groups, are strongly supported;[5] and

(6) Wise management of fishery resources and maintenance of reproductive stocks is strongly supported. Available anadromous fish should be equitably distributed between the various user groups.

Cross References for I.C.1.

[1] See I.C.3.(1), (2)
[2] See II.C.10., II.C.7.(4)
[3] See II.C.1.
[4] See II.C.1., II.C.2.
[5] See II.C.6., II.C.7.

I. ESTUARY ECONOMIC DEVELOPMENT POLICIES

C. SPECIFIC POLICY 2: Deep-Water Port Development

As the gateway to the Columbia and Snake River system of ports, the Columbia River estuary is uniquely located, favoring significantly increased port development in future years. The potential for a deepened channel in the estuary, the difficulty associated with the disposal of dredged material upriver from Astoria, the energy-efficiency of water transport and the need for upriver ports to remain competitive with Puget Sound ports all lead to the conclusion that the estuary area will eventually serve as a major transshipment point for the Columbia-Snake River System. Such port development is encouraged through timely expansion and improvement of existing port facilities. Furthermore;

(1) Development and improvement of existing port sites is encouraged prior to development of new port sites;

(2) Port improvement, expansion and modernization will require some filling and/or dredging of presently undeveloped areas. Such activities are allowed only in designated Development Areas. In designation of such Development Areas, biological productivity and habitat values must be given due consideration;[1]

(3) Shorelands with combined characteristics of adjacent deep-water access, adequate rail and road access and sufficient backup land are to be designated Water-Dependent Development and reserved for future deep-water port development, giving due consideration to existing uses;[2] and

(4) Port development needs are to be evaluated and plans developed in light of possible long-term national and Pacific Northwest needs.

Cross References for I.C.2.

[1] See II.C.1., II.C.2., II.C.4.
[2] See II.C.10.

I. ESTUARY ECONOMIC DEVELOPMENT POLICIES

C. SPECIFIC POLICY 3: Shallow-Water Ports, Marinas, and Piers

Shallow-water ports or marinas play a significant economic role in the Columbia River estuary by providing berths and support facilities for commercial boats, charter boats and private pleasure craft. As such they are an extremely important use of local shorelines. At the same time, since marina construction usually involves major transformations of estuary shorelines, it is imperative that marinas be sited, designed, constructed and/or expanded with care for the estuarine environment and for other shoreline uses.

In order to avoid piecemeal development and destruction of natural estuary values:

(1) When new marinas are considered, sufficient evidence should be presented to show that existing marinas are inadequate or cannot be expanded to meet the demand;

(2) Port improvement, expansion and modernization will require some filling and/or dredging of presently undeveloped areas. Such activities are encouraged only in designated Development Areas. In designation of such Development Areas biological productivity and habitat values must be given due consideration;[1]

(3) Proliferation of individual, single-purpose piers and mooring facilities shall be discouraged in favor of public or private community port facilities. The feasibility of dry boat moorage should be considered in the design of new, expanded or remodeled marina facilities;[2] and

(4) Provision must be made for adequate flushing/water circulation to ensure maintenance of water quality in design of marina facilities.[3]

Cross References for I.C.3.

[1]See II.C.1., II.C.2., II.C.4., II.C.10.(5)
[2]See II.C.12.(4)
[3]See II.C.7.(9)

I. ESTUARY ECONOMIC DEVELOPMENT POLICIES

C. SPECIFIC POLICY 4: Recreation and Tourism

Boating, fishing, hunting, camping, hiking, nature enjoyment and rich local history make estuary-related recreation and tourism an important part of the local economy. Many of these activities also are essential to the lifestyle of Lower Columbia area residents.

To maintain and enhance estuary area recreational values:

(1) The natural resources on which these activities are based shall be conserved and enhanced;[1]

(2) Local, state and federal agencies are encouraged to use their authority and resources to provide recreational facilities and maximum opportunity for public access to the estuary, consistent with demand, natural resource values, private property rights and the need for other, more intensive development;[2]

(3) Expansion and new development of motels, restaurants, shopping facilities, campgrounds, marinas and other facilities to support the recreation/tourism industry shall be encouraged, consistent with demand;[3] and

(4) Diversification of recreation and tourism that is not based on consumption of natural resources is to be encouraged, when consistent with preservation of natural resources and overall community development.

Cross References for I.C.4.

[1]See II.C.4., II.C.6., II.C.7., II.C.12., II.C.13.
[2]See II.C.11.
[3]See I.C.3.1.

I. ESTUARY ECONOMIC DEVELOPMENT POLICIES

C. SPECIFIC POLICY 5: Forest Products Industry

The forest lands in southwest Washington and northwest Oregon are among the most productive commercial forest lands in the world. The forest products industry based on these lands has historically been a major contributor to the economy of the Estuary Area. Continued management of these forest lands for the production of forest products is strongly encouraged. Continuation and expansion of related forest product industries are also supported, consistent with the maintenance of air and water quality. Local governments support:

(1) Processing of locally-grown forest products in the estuary area. Many forest products processing facilities are water-dependent or water-related. Appropriate shoreland areas should be reserved for siting these facilities;

(2) Continued water transport and storage of logs. While log storage and transport must be carefully regulated to minimize water quality deterioration and bottom habitat destruction, water transport is energy-efficient, preserves air quality and minimizes truck traffic through urban areas. Channels and booming areas should be maintained, consistent with other uses of estuarine waters;[2] and

(3) Preservation of water quality, spawning areas and riparian habitat through use of sound forest management practices and multiple-use concepts, as provided by the Forest Practices Acts of both states.[3]

Cross References for I.C.5.

[1]
[2] See II.C.7., II.C.10.
[3] See II.C.1., II.C.6., and II.C.7., II.C.9.
See II.C.6., II.C.7., II.C.9.

I. ESTUARY ECONOMIC DEVELOPMENT POLICIES

C. SPECIFIC POLICY 6: Agriculture

Agriculture has been an important part of the estuary area culture and economy for more than a century. Although it is not the largest local industry and although the acreage available is limited, agriculture is the dominant use of the estuary shorelands. Some of this agricultural land is highly fertile. Most of it is diked tideland which is subject to the 100 year flood. These diked tidelands also have compressible soils, poor drainage and high water tables. All these factors are limitations on development. The following policies apply to agricultural use of estuary shorelands:

(1) Continued agricultural use of prime agricultural lands shall be encouraged, and conversion to more intensive, non-agricultural use strongly discouraged. Exceptions to this include development within established urban growth boundaries in Oregon and non-intensive uses of general public benefit, such as public access and recreation. In such areas, adequate public facilities and site preparation shall be required to eliminate hazards;[1]

(2) Development of new crops to increase productivity of agricultural shorelands is encouraged;

(3) Damage to the estuarine ecosystem resulting from agricultural use of these shorelands must be prevented; examples of such damage include sedimentation, streambed alteration, nutrient enrichment and toxicity caused by tillage and drainage practices, and fertilizers, animal wastes, herbicides and pesticides carried into surface waters by runoff;[2]

(4) In undiked areas, the maintenance of sufficiently wide natural vegetative buffer strips along streambanks is strongly encouraged to serve as bank stabilization and a natural filter for runoff;[3] and

I. C. SPECIFIC POLICY 6: Agriculture (Cont.)

(5) Laws requiring adequate maintenance of existing dikes and tidegates to prevent flooding and erosion of agricultural lands should be observed and enforced. These laws should be periodically reviewed and updated to remove obsolete provisions.[4]

Cross References for I.C.6.

[1]See II.C.8., II.C.10., II.C.11., II.C.13.
[2]See II.C.6., II.C.7.
[3]See II.C.14 (4)
[4]See II.C.3.

I. ESTUARY ECONOMIC DEVELOPMENT POLICIES

C. SPECIFIC POLICY 7: Energy Facilities

There is growing national and regional concern about shortages of energy and energy products, including oil, natural gas, refined petroleum products, petrochemicals and electric power. The Columbia River estuary area, because of its proximity to the ocean and the oil and gas resources being developed there, and because of its deep-water access, has potential for major development of petroleum support and processing industries. There are serious limitations to development and operation of energy-related facilities in the estuary area, due to its dynamic physical character, its valuable natural resources, and the resource-based industries it supports. Therefore, the following are policies for energy facilities development:

(1) Petroleum product storage, transport and processing industries proposed for an estuary location will be evaluated on a case-by-case basis for: overall compatibility with the area, alternate locations within or away from the estuary, economic, fiscal and growth impacts, safety and hazard risk including explosion, fire and spillage, potential air and water pollution, and other land and water environmental impacts;[1]

(2) Local support for or opposition to development of upriver energy facilities that require transport of petroleum or its products through the estuary is also to be considered on a case-by-case basis;

(3) Industries which support the exploration and development of outer continental shelf oil and gas resources (shipbuilding, oil rig fabrication, etc.) are encouraged, consistent with the policy of minimizing destruction of valuable estuarine habitat;

(4) Development of fossil fuel or nuclear power plants in the estuary area is to be carefully evaluated, because of the potential for direct environmental impacts on air and water quality, and because of potential indirect impacts on local facilities by industrial expansion and urban growth; and

I. C. SPECIFIC POLICY 7: Energy Facilities (Cont.)

(5) CREST supports energy conservation, and the development of environmentally-sound alternate energy sources. Possible energy sources such as solar power, wind power and wood by-products should be investigated.[2]

Cross References for I.C.7.

[1]See II.C.7.
[2]See I.C.5.

II. LAND AND WATER USE POLICIES

A. RELATED CREST GOALS

Goal 2: To reconcile conflicting uses of estuarine resources.

Goal 3: To protect and enhance the natural resource values of the estuary.

B. OVERALL POLICY

Land and water uses in the estuary area are to be consistent with maintenance of a healthy, productive estuarine ecosystem which will provide continued long-term social, economic and environmental benefits. Water-dependent and water-related activities and uses of shorelands are encouraged in areas suitable for development and non-water-related uses discouraged. Significant natural, scientific and cultural areas are to be preserved. Multiple use of forest lands for forestry, fish and wildlife conservation and recreation is encouraged. Productive farmlands outside urban growth boundaries should be reserved for agricultural use. Review of development project site design is encouraged to ensure that negative impacts on land and water resources are minimized. Mitigation of the adverse environmental effects of dredging and filling projects in intertidal and tidal marsh areas is required; mitigation of the adverse effects of development in other estuarine areas is encouraged.

II. LAND AND WATER USE POLICIES

C. SPECIFIC POLICY 1: Dredging in Estuarine Waters and Wetlands

The Columbia River Estuary is the navigational gateway to a vast inland empire and, therefore, maintenance and improvement of its channels, jetties, and other engineering structures is a necessity. The estuary and its wetlands are vital to the maintenance of an economically and culturally valuable fishing industry, and so, dredging activities must be carefully evaluated and controlled. Therefore:

(1) Dredging shall be conducted to ensure that:

(a) Access to port and marina facilities is preserved and improved;[1]

(b) Adverse short-term effects such as pollutant release, dissolved oxygen depletion and disturbance of important localized biological communities are minimized;[2]

(c) Adverse long-term effects such as a loss of fish habitat and tidelands, loss of flushing capacity, destabilization of bottom sediments, overchannelization, and biologically harmful changes in circulation patterns are avoided;[3] and

(d) Dredging in wetland and productive shallow submerged lands is minimized to the degree possible.

(2) Dredging in Natural Areas is prohibited;

(3) New and maintenance dredging are both Conditional Uses of Rural and Conservation Areas. They should be allowed only when consistent with existing uses. Unfavorable impacts on fish habitat, riparian vegetation and wetlands should be minimized;[4]

(4) Dredging in Development Areas is appropriate in support of water-dependent uses. The site design should serve to minimize unfavorable impacts on fish habitat, wetlands, and circulation of the estuary. Site design review is the responsibility of CREST or its successor, the Estuary Resource Center;[5] and

II. C. SPECIFIC POLICY 1: Dredging in Estuarine Waters and Wetlands (Cont.)

(5) Mitigation of adverse impacts of dredging on inter-tidal and tidal marsh areas shall be carried out for Oregon projects in accordance with the Land Conservation and Development Commission's Estuarine Resources Goal. Similar mitigation of estuarine impacts will be carried out for Washington projects in accordance with policies to be established in the Restoration Plan.[6]

Cross References for II.C.1.

[1]See I.C.2., I.C.3.
[2]See II.C.6., II.C.7.
[3]See I.C.1.(4).
[4]See I.C.5., I.C.6., II.C.6., II.C.14.
[5]See III.C.4.
[6]See II.C.4.

II. LAND AND WATER USE POLICIES

C. SPECIFIC POLICY 2: Filling of, and Pile Driving in Estuary Waters, Wetlands and Shorelands

Clean dredged material from the estuary is a valuable resource. Used properly, its disposal can result in public as well as private gain. Used unwisely, its disposal can result in irretrievable loss of estuarine natural resources. Therefore, dry land disposal to improve development sites shall be the preferred use of clean dredged material. Deep-water (ocean or estuarine) disposal shall be the next preferred alternative for clean dredged material, with sites chosen to minimize resuspension. Disposal of polluted dredged material must be on dry land protected by adequate dikes, to avoid damage to aquatic resources. Sites adequate to meet demands for dredge material disposal over the next twenty years must be identified in a Dredge Material Disposal Plan. The choice of sites must be consistent with the protection of estuarine and riparian habitat, aesthetic values and rare and endangered species, and the development of recreational resources.[1]

Driving of piling is generally less destructive than estuarine disposal of dredged material in that a much smaller area is removed from the estuary. When facilities must be placed in wetland and/or estuarine areas, construction of the facility on piling is preferred over construction on fill, whenever feasible. Furthermore, facilities to be contructed on piling shall be sited and designed so as to minimize driving of pile in shallow submerged lands and wetlands.

Therefore:

(1) Circulation, flushing capacity and volume of the estuary shall be maintained to the greatest degree possible in dredged material disposal and pile driving projects;[2]

(2) Polluted dredged material or fill may not be deposited in the estuary;

(3) Dredged material disposal, filling, and pile driving in wetlands and productive shallow submerged lands are generally discouraged. They may be allowed if the project:

II. C. SPECIFIC POLICY 2: Filling of, and Pile Driving in Estuary Waters, Wetlands and Shorelands (Cont.)

(a) cannot feasibly be constructed elsewhere, is a water-dependent or water-related project in a designated Development Area, or is part of the Dredged Material Disposal Plan; and

(b) has a site design chosen to minimize unfavorable impacts on fish habitat, wetlands and circulation of the estuary;[3]

(4) Dredged Material Disposal, filling and pile driving are: forbidden in Natural Areas; Conditional Uses, in Conservation and Rural Areas; and permitted in Development Areas in support of water-dependent and water-related uses, subject to the restrictions elsewhere in these policies; and

(5) Mitigation will be required when dredging or filling takes place in intertidal and tidal marsh areas.[4]

Cross References for II.C.2.

[1]See II.C.2., II.C.3.(2)., II.C.3.(3)., II.C.6., II.C.7., II.C.12.
[2]See II.C.6.
[3]See II.C.4.(5)., II.C.6., II.C.7.(8).
[4]See II.C.4.(5).

II. LAND AND WATER USE POLICIES

C. SPECIFIC POLICY 3: Diking of Estuarine Wetlands and Shorelands

In order to provide continued flood protection for urban and agricultural lands in the estuary area, dikes must be maintained and improved. However, construction of new dikes, particularly in tideland and wetland areas must be carefully evaluated to avoid increasing flood and erosion potential downstream, and to avoid destructive effects on the estuarine ecosystem. Therefore:

(1) Existing dikes and flood gates should be maintained in working order, except in those instances where breaching of dikes is part of a Restoration Plan;[1]

(2) Dredge material disposal sites on upland areas subject to flooding shall be protected by dikes or other appropriate erosion control methods; and

(3) New diking of tidelands and wetlands will be allowed only:

(a) as part of an approved fill project,[2] and

(b) if a diked area of at least comparable habitat value is returned to the estuary, or if some other form of mitigation is undertaken,[3] or

(c) as temporary flood protection in the interest of safety and welfare of the public.[4]

Cross Reference for II.C.3.

[1]See I.C.6., II.C.4.(1)., II.C.4.(2).,
[2]See II.C.2.
[3]See II.C.4.
[4]See II.C.8.

II. LAND AND WATER USE POLICIES

C. SPECIFIC POLICY 4: Restoration and/or Enhancement of Estuarine and Wetland Areas

Restoration and/or enhancement of wetlands and submerged lands is a tool used to mitigate the effects of past, present, and future estuary area development, dredging and filling. Restoration and/or enhancement of these lands may be accomplished by breaching of dikes, dredging and/or filling, marsh planting, and other means. Therefore:

(1) Restoration of marginal and unused low-lying diked areas to estuarine wetland or tideland is encouraged. This may require purchase by federal, state or local government;[1]

(2) Breaching of dikes should be discouraged, if it results in the loss of productive farmland or significant wildlife habitat;[2]

(3) Stabilization of low-lying dredged material islands by marsh planting shall be encouraged. Mitigation may also be carried out by lowering the level of upland dredged material islands, if this does not destroy significant wildlife habitat;

(4) The adverse impacts of estuarine development projects involving destruction of intertidal and tidal marsh areas by dredging, filling and diking must be mitigated by creation or restoration of habitat with a biological potential similar to that destroyed. Oregon development projects must comply with the Land Conservation and Development Commission's Estuarine Resources Goal. Similar requirements will be set out for Washington development projects in the Restoration Plan;[3]

(5) Together with the Dredge Material Disposal Plan, CREST must develop a Restoration Plan, showing areas requiring restoration or suitable for enhancement, adequate to meet needs over the next twenty years.

Cross References for II.C.4.

[1]See II.C.3.
[2]See I.C.6.
[3]See II.C.1., II.C.2., II.C.3.

II. LAND AND WATER USE POLICIES

C. SPECIFIC POLICY 5: Mining and Mineral Extraction

Sand, gravel and minerals are valuable resources. In some instances, the only locally available source of these materials is from wetlands and submerged lands. However, their removal can result in erosion of adjacent land and the shifting of sediments in the removal area, causing negative economic and environmental effects. Therefore:

(1) Mineral, sand and gravel extraction is a Conditional Use in Development Areas. However:

(a) an assessment of environmental impacts must preceed the project, and

(b) on the basis of this impact assessment, adequate protection must be provided for adjacent shoreline property and fishery and other living resources, and

(c) appropriate mitigation must be undertaken for any dredging and filling in intertidal and tidal marsh area;[1]

(2) Mining and mineral extraction are forbidden in Natural Areas, in Conservation Wetland Areas and upstream from such areas, if an environmental impact assessment shows significant adverse effects on the Natural or Conservation Areas;[2]

(3) Approved projects must specify and use mining methodology which minimizes the potential damage to estuarine resources;

(4) Because sufficient sand is usually available from present maintenance dredging and disposal to meet foreseeable future needs, sand extraction for fill from estuary tributary stream beds should not be allowed;

(5) Extraction of gravel, minerals and construction sand from estuary tributaries should be permitted only when these resources are not otherwise locally available. When these activities are permitted, the site must be surrounded by an impermeable dike, loss of anadromous fish spawning areas must be minimized, and transit through the area by adult and juvenile salmonids must not be adversely affected;[3] and

II. C. SPECIFIC POLICY 5: Mining and Mineral Extraction (Cont.)

(6) Areas known to contain important mineral, sand and gravel deposits shall be identified in the Columbia River Estuary Plan.

Cross References for II.C.5.

[1] See II.C.1., II.C.6., II.C.7.
[2] See II.C.6.
[3] See I.C.1.(5), I.C.1.(6), II.C.7.

II. LAND AND WATER USE POLICIES

C. SPECIFIC POLICY 6: Habitat Maintenance and Improvement, and Estuary Tributary Fish Production

Columbia River Basin anadromous salmon and steelhead resources have played a major role in the cultural development of the estuary area. Estuary tributaries once supported large runs of chum, other salmon, and steelhead. The dramatic decrease in natural runs of these fish is the result of habitat destruction or degradation caused by man. Widespread interest in improving habitat and fish production exists, and the benefit to cost ratio of fish enhancement programs is very high in the estuary area:

(1) Minimum tributary stream flows necessary to maintain aquatic life should be set. In those streams where private water rights preclude maintenance of minimum flows, and where low flows interfere with fish migrations, state water quality management programs should include provisions for both the purchase of private water rights and construction of small impoundments on tributaries to maintain minimum flows. Other impoundments on tributary streams are discouraged, unless provision is made for protecting the fishery resource before construction. The use of Columbia River water or ground water resources for municipal or industrial purposes is encouraged over use of tributary stream waters.[1]

(2) Maintenance of existing favorable anadromous fish habitat through establishment of protective stream corridors and rigid control of potentially harmful watershed activities is strongly supported. Present laws regulating forest management should be fully enforced, however, before any new regulations are added.[2]

(3) Tributary streams in the estuary should be surveyed and evaluated to determine the potential for future artificial and natural fish production. Where feasible, hatchery production should be increased and damaged stream habitat should be restored. Local participation and interstate coordination of such programs is encouraged, as is the use of mitigation funds from damaging estuary development projects.

II. C. SPECIFIC POLICY 6: Habitat Maintenance and Improvement, and Estuary Tributary Fish Production (Cont.)

The feasibility of tax incentives or other remuneration for landowners who maintain or enhance salmon or steelhead streams on their own property should be investigated.[3]

(4) Estuary fish-food-production and resting areas, such as shallow submerged lands, wetlands and marshes should be preserved. The use of adjacent shorelands should be controlled to protect these vital links in anadromous fish life cycles. Migration routes should not be obstructed.[4]

(5) Special attention should be given to restoring the chum salmon runs in streams tributary to the estuary.

Cross References for II.C.6.

[1]
[2]See II.C.7.(6)
[3]See II.C.7., II.C.9., II.C.14.(4)
[4]See I.C.1.(5), II.C.9.(3), III.C.2.
See II.C.1., II.C.2., II.C.4.

II. LAND AND WATER USE POLICIES

C. SPECIFIC POLICY 7: Water Quality Maintenance

The estuary is an important food production area for many of the fish species that are the basis of the fishing industry. High water quality in the estuary is necessary for the continued existence of these stocks. The tourist industry, including such activities as sport fishing, hunting, boating, beachcombing, clamming, etc., is also dependent on the maintenance of estuarine water quality. Estuarine water quality is a result of activities taking place upstream, as well as in the estuary itself. To maintain high water quality in the estuary:

(1) Adequate municipal waste treatment of those domestic and industrial wastes that enter municipal sewer systems must be provided. Municipal wastes are not now a water quality problem in the estuary, but continued updating of existing facilities and, in some instances, construction of new facilities is required to allow for future population growth and economic development.

(2) Treatment of industrial wastes released directly into the river and estuary must be improved. Of particular concern are lumber and pulp mills, chemical plants, and thermal effluents. Industrial wastes should be more adequately characterized and effluent standards upgraded in accordance with the Federal Water Pollution Control Act. In particular, provision must be made for cooling of thermal effluents before they are returned to the river. Reclamation and re-use of waste water should be considered in the design and construction of new industrial facilites.

(3) Waste discharges to tributary streams, enclosed bays and sloughs should be eliminated, where possible.

(4) Fish processing wastes are a special category of industrial wastes. The environmental and economic advantages and disadvantages of releasing these wastes to the estuary require investigation, to determine if legislative changes should be sought to allow such disposal.

II. C. SPECIFIC POLICY 7: Water Quality Maintenance (Cont.)

(5) Wastes from such non-point sources as forest lands, road building, agricultural lands, natural stream bank erosion and urban runoff must be identified and a program developed for their control. This is the most important estuarine water quality problem, the one least understood and most difficult to control.[1]

(6) A minimum streamflow should be established for each season for the Columbia River. Consumptive uses should not be allowed to decrease Columbia River flow below the set levels. The late-summer low flow period is particularly critical for fishery resources. The effects of decreasing the spring and winter flow maximums on sedimentation processes and on fishery resources require further research and appropriate action.[2]

(7) Log storage is an economically necessary use of estuarine and tributary waters. Log storage sites must be situated in areas where the adverse affects on water quality will be minimized, where navigation will not be impaired, and where estuarine productivity and wildlife habitat will not be unduly disrupted. No log storage should be allowed where logs and booms would rest on the bottom at low water. Easy let-down facilities and bonding are strongly encouraged at all log dump sites. The compatibility of log storage sites with other estuarine uses needs to be examined on a case-by-case basis. Alternative land and water log storage sites should be found in cases where conflicts cannot be resolved.[3]

(8) All dredging and filling projects and structures built in the estuary shall be constructed so that flushing capacity and surface area of all parts of the estuary are maintained or improved to the greatest degree possible, and so that changes in circulation patterns will not result in water quality problems.[4]

II. C. SPECIFIC POLICY 7: Water Quality Maintenance (Cont.)

(9) Facilities for the public dumping of oil and emptying of holding tanks by all vessels should be provided in convenient places, so that these wastes will not be dumped in the river.[5]

Cross References for II.C.7.

[1]
[2]See I.C.6., II.C.9.
[3]See II.C.6.(1)
[4]See I.C.5., II.C.9.
[5]See I.C.3.(4)
See I.C.2., I.C.3.

II. LAND AND WATER USE POLICIES

C. SPECIFIC POLICY 8: Shoreland Hazard Areas

Natural hazards affecting the shorelands of the estuary include flooding (by abnormally high tides, river discharge or combination), wind, wave action, erosion, storm surges, tsunamis, earth and rock slides, and earthquakes. Intensive development in hazard areas subjects people and property to needless dangers, and costs taxpayers money in relief, after damage occurs. Therefore:

(1) Development in areas subject to the above hazards is generally discouraged and when proposed, shall be accompanied by an engineering report and site plan which shows how the proposed development will be protected from the hazard and how negative impacts (particularly off-site effects) will be prevented. In this regard, the regulations under the National Flood Insurance Program apply;[1]

(2) Shoreland, wetland and in-water development not in hazard areas shall be evaluated prior to construction, to ensure that it does not create or worsen hazards elsewhere;[2] and

(3) Measures will be taken to discourage reconstruction of structures in hazard areas, which have been damaged or destroyed.

Cross Reference for II.C.8.

[1] See II.C.3.
[2] See II.C.10.

II. LAND AND WATER USE POLICIES

C. SPECIFIC POLICY 9: Forestry Land and Water Uses

Much of the steep shoreland adjacent to the estuary and approximately 90% of the estuary tributary watersheds are and should continue to be managed for timber harvest. It is, therefore, extremely important that sound management practices be used.

Continued water transport and storage of logs is supported. However, steps must be taken to control the drift and snag material that causes significant damage to small boats, fishing nets and pilings. Proper siting of storage and booming areas is required to minimize bottom habitat destruction and estuarine water quality degradation. Specifically, local governments support:[1]

(1) Continued strong enforcement of the existing state Forest Practices Acts and other relevant state and federal regulations;

(2) Appropriate measures in all road building, site preparation, timber harvest, slash burning, fertilization and pest control to minimize runoff of pollutants, solar heating of stream waters, mass soil movement, surface erosion and extreme fluctuations in stream flow;[2]

(3) Tax and other incentives for restoration of stream habitat that has been damaged;[3]

(4) Minimization of the drift and snag material problem, through:

(a) The establishment of time limits on water storage of log rafts and the bundling of logs to minimize the occurrence of "sinker logs",[4]

(b) Holding the owner of drift or snag material responsible for removal and/or damage costs, and

(c) Land disposal of sinker logs removed from the estuary.[5]

Cross References for II.C.9.

[1] See I.C.5., II.C.7.(8)
[2] See I.C.1., I.C.4., II.C.6., II.C.7., II.C.12., II.C.13.
[3] See II.C.6.(3)
[4] See II.C.7.(8)
[5] See II.C.1., II.C.2.

I. ESTUARY ECONOMIC DEVELOPMENT POLICIES

C. SPECIFIC POLICY 6: Agriculture

Agriculture has been an important part of the estuary area culture and economy for more than a century. Although it is not the largest local industry and although the acreage available is limited, agriculture is the dominant use of the estuary shorelands. Some of this agricultural land is highly fertile. Most of it is diked tideland which is subject to the 100 year flood. These diked tidelands also have compressible soils, poor drainage and high water tables. All these factors are limitations on development. The following policies apply to agricultural use of estuary shorelands:

(1) Continued agricultural use of prime agricultural lands shall be encouraged, and conversion to more intensive, non-agricultural use strongly discouraged. Exceptions to this include development within established urban growth boundaries in Oregon and non-intensive uses of general public benefit, such as public access and recreation. In such areas, adequate public facilities and site preparation shall be required to eliminate hazards;[1]

(2) Development of new crops to increase productivity of agricultural shorelands is encouraged;

(3) Damage to the estuarine ecosystem resulting from agricultural use of these shorelands must be prevented; examples of such damage include sedimentation, streambed alteration, nutrient enrichment and toxicity caused by tillage and drainage practices, and fertilizers, animal wastes, herbicides and pesticides carried into surface waters by runoff;[2]

(4) In undiked areas, the maintenance of sufficiently wide natural vegetative buffer strips along streambanks is strongly encouraged to serve as bank stabilization and a natural filter for runoff;[3] and

I. C. SPECIFIC POLICY 6: Agriculture (Cont.)

(5) Laws requiring adequate maintenance of existing dikes and tidegates to prevent flooding and erosion of agricultural lands should be observed and enforced. These laws should be periodically reviewed and updated to remove obsolete provisions.[4]

Cross References for I.C.6.

[1]See II.C.8., II.C.10., II.C.11., II.C.13.
[2]See II.C.6., II.C.7.
[3]See II.C.14 (4)
[4]See II.C.3.

II. LAND AND WATER USE POLICIES

C. SPECIFIC POLICY 11: Public Access to the Estuary and its Shoreline

Public access to the shoreline and adjacent intertidal areas is sanctioned by law and custom. The Columbia River shoreline is used by the public for fishing, walking, aesthetic appreciation, beachcombing and other uses. The recent trend toward condominiums, tourist facilities, and development of other industrial, residential and commercial structures and government facilities on the waterfront limits public access to the shoreline. Increasing tourism and the probable future population growth and urban development will increase the demand for, while decreasing the availability of, public access, unless appropriate action is taken. Therefore:

(1) The CREST management unit plans and federal, state and local actions in the estuary area shall provide for maintenance and improvement of public access to water for all people, consistent with legitimate shoreland uses and the need for protection of the estuary from overuse. Public purchase of lands or scenic easements may be necessary or desirable in some instances.[1]

(2) Special provision is needed in urban areas to preserve remaining open space and improve the public access to the water. For example, some industrial and commercial facilities such as canneries, ports and marinas have the potential to provide visitor facilities. Restoration of historic waterfront areas also provides an opportunity to improve public access while stimulating the economy. Creation of waterfront parks provides public access and open space, and promotes visual attractiveness.[2]

(3) Where major shoreline developments are allowed, priority shall be given to those that make provision for public access to the shoreline. The new major development, in combination with other developments in the area, shall not exclude the public from shoreline access to areas traditionally used for fishing, hunting or other shoreline activities. Exceptions may be made if, after a public hearing, it is determined that the greater public good would be served by the change in land use.

II. C. SPECIFIC POLICY 11: Public Access to the Estuary and its Shoreline (Cont.)

(4) The private use of privately owned shorelands is legitimate and must be protected against encroachment. Individual property owners cannot be expected to bear the cost of providing public facilities or the cost of preventing or repairing damages occasioned by public access. Compensation of land owners may be necessary in some cases.

(5) The appropriateness of establishing foot and/or bicycle paths along shoreline bluffs, dikes, and other shorelands should be investigated. Such paths should not impair fish and wildlife habitat or interfere unduly with agriculture or other shoreland uses. Purchase of easements from property owners may be necessary.[3]

(6) Publicly-owned shorelands that are declared surplus should in most cases remain in public hands and shall not be sold or traded without a public hearing to determine the advisability of the sale or trade.

(7) Future construction on shorelands owned by federal, state and local governments shall be carried out to maximize public access to shorelines and to avoid closing these lands to public use. Public access to shorelands in present federal, state and local government properties shall be improved whenever possible, consistent with authorized use.

(8) Public access to scenic views and the Significant Areas shall be provided in a manner consistent with nature of the area.[4]

(9) Access onto shoreline public street ends should be enhanced.

(10) Special consideration should be given to making areas of the estuary available to the elderly, handicapped and physically disabled, so that they too may enjoy the natural and cultural features of the Lower Columbia River.

Cross References for II.C.11.

[1]
[2]See I.C.4., II.C.13.
[3]See II.C.10.(4), II.C.12.(5), II.C.13.
[4]See II.C.6.,
See II.C.13.

II. LAND AND WATER USE POLICIES

C. SPECIFIC POLICY 12: Wildlife Habitat

Many species of animals and plants make their homes in the natural environment of the Columbia River estuary area. Each community harbors a distinct group of animals and plants that interacts with its environment or habitat as a complex ecosystem. Some of the types of wildlife habitat in the area are the dune, wetland (including salt and freshwater marshes and associated vegetation), riparian, forest, coastal shrub, and grassland communities. Agricultural lands are also of key importance to wildlife. Wildlife habitat areas within the Columbia River estuary area are utilized by people for food production, fishing and fish-rearing, recreation as varied as birdwatching and hunting, scientific investigation, and education.

Substantial destruction of natural habitat in the Columbia River estuary area has been caused by such factors as dredging, filling, diking, urban development, the pressure of recreational activities, logging and agriculture. Public and private land ownership preserves many habitat areas and some rare and endangered species, but much of the unique natural habitat of the area is still unprotected. There is limited regulatory power to assure that more living communities, and individual plant and animal species, do not become rare and endangered in the future. Therefore:

(1) Significant areas of all types of ecosystems in the Columbia River estuary area shall be designated as Conservation or Natural Areas and protected accordingly;

(2) Priority for development adjacent to Preservation and Natural Shoreland areas shall be given to proposed activities that are complementary to wildlife uses;[2]

(3) Designation of Development Areas shall be carried out so as to minimize adverse impacts to wildlife habitat in adjacent, Non-Development Areas;[3]

II. C. SPECIFIC POLICY 12: Wildlife Habitat (Cont.)

(4) New development, outside of designated Development Areas, shall be regulated to:

(a) maintain a natural vegetation buffer strip along all wetlands and rivers and streams, and

(b) minimize the alteration of land and vegetation. In diked areas, the vegetative buffer shall be maintained according to the diking district regulations;[4] and

(5) To avoid erosion problems and disruption of wildlife habitat, appropriate areas should be established for the use of off-road vehicles. Their use in other areas should be strictly regulated.

Cross References for II.C.12.

[1]See II.C.6., II.C.7., II.C.13.
[2]See I.C.6., II.C.9., II.C.13.
[3]See II.C.10.
[4]See II.C.3., II.C.6.

II. LAND AND WATER USE POLICIES

C. SPECIFIC POLICY 13: Open Space and Significant Areas; Natural, Scientific, Scenic, Historical, Cultural and Archaeological

Recognizing that the estuary has certain unique natural features which in turn have influenced archaeological, historical and cultural development, and recognizing that these features, once destroyed, can never be replaced, the preservation of open space and significant areas for wildlife habitat and human study, interpretation and enjoyment is strongly urged. Therefore:

(1) Known, significant archaeological sites in areas where construction is intended shall be formally excavated or preserved intact in accordance with state and federal laws;

(2) Historical buildings and cultural landmarks under threat of demolition should be examined to see if they can be moved or restored to useful life, or preserved in some way, either by public or private means;

(3) Significant natural and scientific areas and scenic views should be set aside for preservation and managed so as to protect the unique characteristics of the area;[1]

(4) The potential for restoration and re-creation of historical waterfront areas should be investigated;[2]

(5) Open space, including agricultural and forest lands, shall be managed so as to preserve the existing uses, except in those instances where such use is found to be inconsistent with other elements of the CREST Regional Policies or Plan.[3]

Cross References for II.C.13.

[1] See II.C.12.
[2] See II.C.10.
[3] See I.C.6., II.C.9., II.C.10.

III. INTERGOVERNMENTAL COORDINATION AND MANAGEMENT POLICIES

A. RELATED CREST GOAL

Goal 4: To improve estuarine resource management through intergovernmental communication and coordination at local, state and federal levels.

B. OVERALL POLICY

The key to sound planning and management of Columbia River estuary water and land resources is communication among all private and public local, state and federal interests. Such communication about research, planning and development activities is strongly supported and is necessary to minimize conflicts, ensure sound development, and protect natural resources. All interests are therefore encouraged to be open, clear and timely in voicing their position and rationale on estuary-related matters.

CREST supports the establishment of a local Estuary Resource Center, to implement the CREST plan, serve as a focal point for coordination of permits, research and planning and to advance public understanding of estuarine values. Specific activities of such a center are described in the policies that follow.

III. INTERGOVERNMENTAL COORDINATION AND MANAGEMENT POLICIES

C. SPECIFIC POLICY 1: Scientific Research and Planning in Estuarine Areas

Scientific research, much of it with potential value to local decision-makers, is constantly being pursued in different areas of the estuary and its watershed by a variety of investigators, including state and federal agencies, universities, consultants, private companies and individuals. Likewise, state and federal agencies periodically develop special-purpose plans for the area which need to be evaluated in terms of their effect on local planning and decision-making. In order to ensure local coordination of research and planning, and to extract from it information of value in making local estuary management decisions, all agencies, consultants, university personnel and private individuals conducting research or developing plans shall:

(1) Contact CREST or the Estuary Resource Center and the local jurisdictions concerned prior to commencement, and preferably in the project-planning stage, to outline the research or planning objectives and scope, the time frame in which the proposed project is to be carried out, and the means of reporting project results;[1]

(2) Ensure that the results are conveyed as expeditiously as possible to local government agencies. Researchers are requested to provide a report of results readable by the layman, particularly as they relate to land and water uses or activities; and

(3) CREST, and its successor, the Estuary Resource Center, will keep an up-to-date file of completed, on-going and proposed research or planning programs that are important or useful to local governments in the estuary area.

Cross Reference for III.C.1.

[1]See III.C.3.

III. INTERGOVERNMENTAL COORDINATION AND MANAGEMENT POLICIES

C. SPECIFIC POLICY 2: Local Intergovernmental Coordination

CREST has provided local estuary area governments in Washington and Oregon with a forum for improved communication and cooperation in planning and development activities of regional scope and importance. Local government, recognizing the value and mutual benefits of such coordination, and the larger local role and voice it provides to local government in estuary decision-making, resolve to:

(1) Continue coordinated planning for estuary natural and cultural resources;

(2) Involve all concerned area governments in the evaluation of impacts associated with public and private development projects of regional importance;[1] and

(3) Ensure that a continued form for communication and cooperation is maintained in the future through the Estuary Resource Center.

Cross Reference for III.C.2.

[1] See III.C.4.

III. INTERGOVERNMENTAL COORDINATION AND MANAGEMENT POLICIES

C. SPECIFIC POLICY 3: State and Federal Consistency in the Columbia River Estuary Area

The Columbia River Estuary Plan, when completed, will be part of Washington's and Oregon's Coastal Zone Management Programs, implemented primarily through Shoreline Management Master Plans and local comprehensive plans respectively. As such, state and federal activities in the estuary area should be consistent with land and water use designations and policies in the plan. Furthermore, when conducting planning, research or development activities in the estuary area, state and federal agencies are strongly encouraged to consult CREST (or the Estuary Resource Center) so that local governments, once aware, are able to properly evaluate the proposed project through their staffs and their citizen involvement mechanisms. Further details for consistency of local, state and federal agency activities in the estuary will be developed during the implementation of the CREST Plan.[1]

Cross Reference for III.C.3.

[1] See III.C.4.

III. INTERGOVERNMENTAL COORDINATION AND MANAGEMENT POLICIES

C. SPECIFIC POLICY 4: Development Evaluation, Permit Information and Permit Review

Development occurring in the estuary or on its shorelands produces impacts of varying type and degree. Permits for developments are required at the local level for construction and/or other activities affecting the estuarine environment. State and federal permits are required for in-water construction, dredging, filling, waste discharge and numerous other activities. These permits are mandated by law and allow each particular government agency to carry out its responsibility to control or limit negative economic and environmental effects. However, the proliferation of permits and other requirements and the lack of knowledge about them adds substantial cost and time delays to development projects. Consolidated information about the many local, state and federal permit requirements and agency policy for acting on them are not readily available locally. With regard to estuary-related development:

(1) CREST or the Estuary Resource Center shall not establish any new required permit processes without public hearings and consensus of its members;

(2) CREST or the Estuary Resource Center shall serve as an available contact point to provide information and assistance about development project permit requirements at the local, state and federal level. Also provided will be: an initial evaluation of environmental and legal constraints; suggestions for modification of project design if applicable, and general policies of agencies that will review the project. Such assistance should save substantial time and money for those who are proposing development in or adjacent to the estuary. The intent of this policy is to facilitate understanding and use of existing permit processes. Review by CREST or the Estuary Resource Center is not mandatory; and

(3) CREST or the Estuary Management Center shall serve as the Coastal Zone Management Agency to ensure state and federal consistency with the local estuary plan. Consistency shall apply to direct state and federal development, state and federally funded projects and state and federal permits.[1]

Cross Reference for III.C.4.

[1] See III.C.3.

IV. PUBLIC EDUCATION POLICY

A. RELATED CREST GOAL

Goal 5: To increase public understanding of the natural value of the estuary and its usefulness to man.

B. OVERALL POLICY

Public knowledge of the value of estuarine resources and their linkage to the local economy could be dramatically improved through a coordinated program of education and public information. Therefore, local government, in cooperation with state and federal agencies, educational institutions and private groups shall:

(1) Encourage establishment of an Estuary Resource Center to coordinate and stimulate activities which promote a greater understanding of the Columbia River Estuary and its value;[1]

(2) Encourage development of practical educational courses, science fairs and displays relating to the Columbia River estuary, the marine sciences in general as well as important local industries;

(3) Encourage the establishment of major oceanographic research and educational facilities in the area;

(4) Through CREST, develop a library of estuary information and data resources for local agency and public use;

(5) Work with public libraries, museums and other public service facilities to develop special displays of information for the general public;

(6) Encourage expansion of extension education programs relating to all aspects of estuary natural and economic resources;

(7) Encourage state and federal agencies to develop educational and informational programs relating to the estuary, such as the 'Stewards of the River' program which is sponsored by the Pacific Northwest River Basins Commission and intended to encourage the development of the full recreational and educational potential of the Columbia River; and

(8) Encourage the Corps of Engineers to locate its hydraulic model of the Columbia River estuary in the local area.

Cross Reference IV. B.

[1]See III.B.

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GLOSSARY

anadromous--fish that hatch in fresh water, migrate to ocean waters to grow and mature and return to fresh water to spawn.

buffer strip--limited area between a developed area and protected area

chum salmon--Oncorhynchus keta, a variety of game and food fish of the genus Salmo, also called Keta or Dog salmon

clean dredge material--materials collected from a dredging process that are uncontaminated according to Environmental Protection Agency standards. Clean dredge materials may include such resources as sand and gravel.

cluster development--a type of development that allows the reduction of lot sizes below the zoning ordinance's minimum requirements if the land thereby gained is preserved as permanent open space for the community.

Coastal Zone Management Agency--the state agency implementing the Coastal Zone Management Program; the Land Conservation and Development Commission in Oregon, the Department of Ecology in Washington.

comprehensive plan--a legal document often in the form of a map and accompanying text adopted by the local legislative body. The plan is a compendium of its general policies regarding the long-term development of its jurisdiction.

condominium--A multi-unit structure in which the units are individually owned by different owners.

conservation area--an area of the estuary or its shorelands designated for long-term uses of renewable resources that do not require major alteration of the estuary, except for the purpose of restoration.

continental shelf--the zone bordering a continent and extending from the low water line to the depth (usually about 100 fathoms) where there is a marked, steeper descent towards a greater depth.

Corps hydraulic model of estuary--the physical model of the Columbia River Estuary maintained by the Corps of Engineers in Vicksburg, Mississippi.

CREST Management Unit Plan--The Columbia River Estuary Plan is being prepared by citizen committees in the seven management units or planning areas shown in figure 1.

Glossary--continued

CREST Planning Area--the water and submerged lands of the Columbia River estuary and its tributary streams to tidewater, the associated tidelands, wetlands, and shorelands within Pacific and Wahkiakum County in Washington and within Clatsop County in Oregon.

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deep-water port--a port area with a draft of more than 22 feet.

dike--a wall or mound built around a low-lying area to prevent flooding or to contain dredged material.

dredged material--material removed from submerged land or wetlands by any of several kinds of dredges.

Dredged Material Disposal Plan--CREST will develop a plan that designates sites for Dredged Material Disposal adequate to meet foreseeable needs over the next 20 years and provide a mechanism for allocating those sites. A Mitigation Plan will also be developed to coordinate the mitigation of the adverse effects of dredging and filling.

dredging--removal of earth from the bottom of a body of water usually for the purpose of deepening a navigational channel or obtaining bottom materials.

dry land disposal--dumping of dredged material on upland areas or on shorelands behind existing dikes.

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easements--an interest in land owned by another that entitles its holder to a specific limited use or enjoyment.

ecosystem--the plant and animal community and the nonliving environment functioning together as a system.

energy facility--any equipment or facility which is or will be used primarily (A) in the exploration for, or development, production, conversion, storage, transfer, processing or transportation of any energy resource or (B) for the manufacture, production or assembly of equipment machinery, products, or devices which are involved in any activity described in (A).

estuary--a body of water semi-enclosed by land, connecting with the open ocean, and within which salt water is diluted by freshwater derived from the land.

Estuary Area--the estuary area is defined as the water and submerged lands of the Columbia River estuary and its tributary streams, the associated tidelands, wetlands, shorelands and tributary watersheds within Pacific and Wahkiakum Counties in Washington and within Clatsop County in Oregon.

Glossary--continued

Estuary Management Center--a center to serve as an implementing agency for the CREST Program, to provide information, assistance, coordination of permits, research and planning, and serve as a focal point for public education.

Federal Water Pollution Control Act--the legislation (PL92-500) passed in 1972 establishing the nation's program to prevent and eliminate water pollution.

fill--material used for the creation or maintenance of a beach or creation of dry upland area by the deposition of sand, soil, gravel or other materials into shoreline area.

fish processing wastes--the water and dissolved and suspended solids produced as a result of the treatment necessary to prepare fish for the consumer.

flow regulation--the control of fresh water flow by changes in water storage behind Columbia River and tributary dams.

flushing capacity--the ability of a body of water to assimilate, dilute, and/or disperse pollutants.

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habitat--the place where an organism or a community of organisms live.

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indigenous--living naturally in an area, native.

intertidal area--The area between Mean Lower Low Water and Mean Higher High Water.

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major development--a development of sufficient size and intensity of land or water use to significantly alter the aesthetic character, potential uses, and/or value of other nearby land or water areas. A major development also has secondary effects such as generating traffic or creating the need for more public utilities. Examples of major developments include: plan unit developments and subdivisions of 25 or more units (residential), marinas (commercial), and log sorting yards (industrial).

major shoreline development--a major development that abuts the shoreline.

Management Unit--One of the seven planning areas into which the Columbia River Estuary has been divided for planning purposes. A citizen committee will do the planning in each management unit.

Glossary--continued

marina--a facility providing for the rental or public use of moorage for pleasure craft and which may include accessory facilities such as sales, rentals and servicing of these crafts.

Mean High Water--the average height of the high waters over a 19-year period.

Mean Higher High Water--the average height of the higher high waters over a 19-year period.

Mean Low Water--the average height of the low waters over a 19-year period.

Mean Lower Low Water--The average height of the lower low waters over a 19-year period.

minimum monthly flow--the monthly averaged Columbia River freshwater flow.

mitigation--the alleviation or lessening of the impacts of dredge and/or fill operations by restoring or creating an area of similar biological potential to the one disturbed. The purpose of mitigation is to prevent the incremental loss of estuarine habitat and surface area.

National Flood Insurance Program--through the federal government monies are available to jurisdictions which have lands within flood plains providing the jurisdiction has an appropriate flood plain ordinance.

Natural Area--an area of the estuary or its shorelands designated to assure the protection of significant fish and wildlife habitats, of continued biological productivity within the estuary, and of scientific research, and educational needs.

non-point source--a source of pollution other than a pipe, ditch, channel, or floating vessel. The four major types of non-point source pollution in the estuary area are: agriculture, urban, forestry and streambank.

non-water-dependent--uses which are not dependent upon access to a water body for the quality of the goods or services provided.

non-water-dependent/related development area--an area designated for intensive alteration or use of a non-water related or non-water-dependent nature.

Glossary--Continued

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open space--consists of land used for agricultural or forestry uses, and any other land area that would, if preserved in its present use: (A) conserve and enhance natural or scenic resources; (B) protect air or stream or water supply; (C) promote conservation of soils, wetlands, beaches or tidal marshes; and (D) accomplish other ends as set out in Oregon state-wide planning goal #5.

outer continental shelf--area beyond the state's jurisdictional limit of 3 miles.

Pacific Regional Fisheries Management Council--A council made up of representatives from the federal government, the states of California, Oregon, Washington and Idaho, and the public. The council has the duty of managing the fisheries within the Fishery Conservation Zone between 3 and 200 miles offshore.

petrochemical--a chemical isolated or derived from petroleum or natural gas.

pile driving--driving of pile into submerged lands or wetlands.

Planned Unit Development--a self-contained development, often with a mixture of housing types and densities, in which zoning controls are applied to the project as a whole.

proliferation--a rapid increase in number.

public access--a means of physical approach to and along the shoreline available to the general public. Public access may also include visual approach.

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restoration--the act of bringing an area of land back to a previous, more natural condition.

Restoration Plan--CREST will develop a plan, to accompany the Dredged Material Disposal Plan, that will (A) indicate areas suitable for return to the estuary through such measures as breaching of dikes or removal of fill (B) establish a mechanism to determine what mitigation is appropriate for a given project.

riparian habitat--the ecosystem pertaining to or situated on the bank of a river or other body of water (excluding the ocean).

rural area--a buffer area between urban areas where agricultural land is protected from urban expansion and intensive development is restricted. Rural areas serve to maintain open spaces and opportunities for recreational uses compatible with agricultural activities.

Glossary--continued

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salmonid--any of a family (salmonidae) of elongated soft-finned fishes, such as salmon or trout.

shallow-submerged land--lands between Extreme Low Water and 6 feet below Mean Low Water.

shallow water port--a port area with less than 22 feet.

shorelands--the area adjacent to the estuary and its tributary streams and wetlands. The lower boundary of the shoreland is the line of non-aquatic vegetation, or in cases where this cannot be defined, Mean Higher High Water. The upper boundary is 200 feet inland of the landward extent of tidally influenced soils (those deposited by Columbia River water), or in the absence of tidally influenced soils, 200 feet inland from Mean High Water or the line of non-aquatic vegetation. Shorelands extend upstream in estuary tributaries to tidewater. Exceptions to this definition may be defined during the planning process.

shoreline--the boundary between shorelands and water or wetland areas.

Shoreline Management Master Plan--the Coastal Zone Management Program for a county in Washington.

significant areas--an area of more than local significance; so designated because it possesses important natural, scientific, historical, cultural and/or archaeological resources.

single-purpose piers--a pier designed for use by a single owner or user, generally for the moorage of one or a small number of boats.

storm surge--an unusually high tide caused by wind and pressure changes accompanying a storm.

submerged lands--lands below Mean Low Water; those normally covered by water (Oregon definition). Lands below Extreme Low Water (Washington definition). Extreme Low Water is the lowest tide or water level likely to be observed.

submersible lands--lands between Mean Low Water and Mean High Water (Oregon) or between Extreme Low Water, and Mean High Water (Washington).

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tidegate--a structure designed to allow drainage of diked areas while preventing their inundation by the tides.

tidelands--see submersible lands.

Glossary--continued

toxicity--a poisonous quality or state.

tsunami--a long-period wave caused by a disturbance such as a volcanic eruption or earthquake.

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urban area--area of high intensity land-use including residential, commercial and industrial development.

urban growth boundary--a boundary separating urbanizable land from rural land, determined according to criteria established in Oregon state-wide planning goal #14.

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visual attractiveness--the property of being aesthetically pleasing to the eye.

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water dependent--a use or activity which can be carried out only on, in or adjacent to water areas because the use requires access to the water body for water-born transportation, recreation, energy production or source of water.

Water-Dependent/Related Development Area--area designated for intensive alteration or use to provide for navigation and other identified needs for public, commercial and industrial water-dependent uses.

water-related--uses which are not directly dependent upon access to a water body, but which provide goods and services that are directly associated with water-dependent land or waterway use, and which, if not located adjacent to water, would result in public loss of quality in the goods or services offered.

waters--the submerged lands located below Extreme Low Water in a tidally-influenced body and below -6 feet relative to Ordinary Low Water in non-tidal bodies, and the overlying water.

wetlands--land areas (including the overlying water) where excess water is the dominant factor determining the nature of soil development and the types of plant and animal communities living at the soil surface. Wetland soils retain sufficient moisture to support aquatic or semi-aquatic plant life. In marine and estuarine areas, wetlands are bounded at the lower extreme by extreme low water, in fresh-water areas, by depth of six feet. The area below wetlands are submerged lands. The shoreward boundary of wetlands is the line of non-aquatic vegetation, or in areas where this line cannot be defined, Mean Higher High Water.

200-mile extended jurisdiction--the Fishery Conservation Zone extending 200 miles from the American Coast. The inner boundary is the 3 mile limit.

A P P E N D I X

C R E S T

Land and Water Use Classification System

APPENDIX

CREST
Land and Water Use Classification System

I. INTRODUCTION

Washington and Oregon use somewhat different terminology, definitions and approaches in setting out state policies and guidelines for developing local coastal plans. The CREST program includes areas in both states. Because communication is the key to coordinated planning and management of the estuary, and because similar terminology, definitions and planning methods are essential to such communication, the approach that CREST uses for the Columbia River estuary must be a combination of the approaches of the two states.

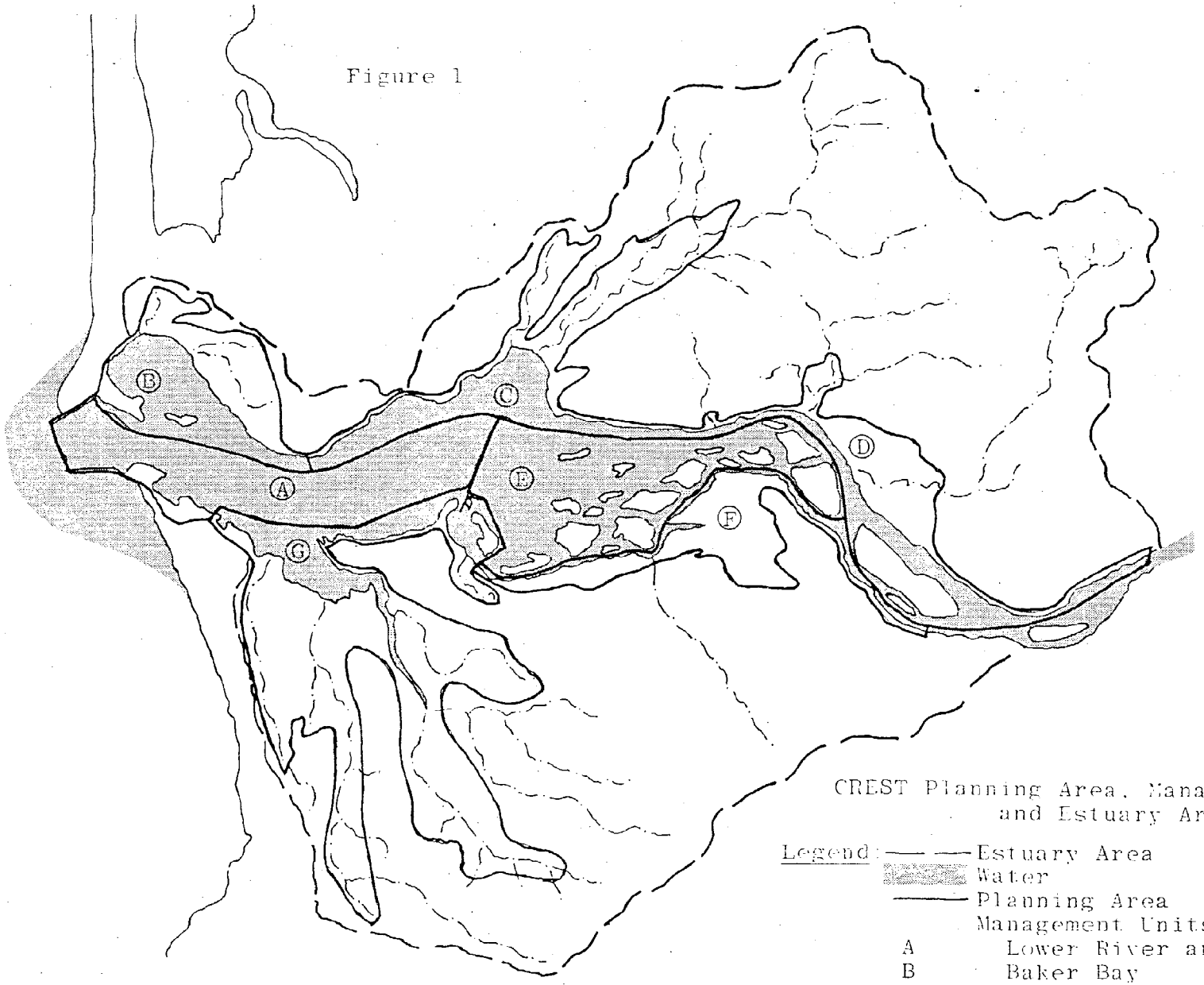
The CREST Management Program includes three major elements: (1) a set of regional policies to guide estuary-related decisions, (2) a site-specific plan for use of estuary waters, wetlands and shorelands and (3) methods to carry out the plan in the future at all government levels. To develop the second of these elements, CREST established, in January 1977, seven estuary Management Units (planning areas) as shown in Figure 1. Also set forth were a general process to develop the plan, a time schedule for sequential plan development and a means for ensuring citizen and agency involvement.

This report amplifies the general planning process established earlier and provides the "planning kit" or methodology that each of the seven planning committees are to use in developing the plan for their area. Included are a classification system to be used in designating estuary waters, wetlands and shorelands for different intensities of use, and a means of applying the system during the planning process.

II. THE CLASSIFICATION SYSTEM

The classification system for estuary waters, wetlands and shorelands is a blend of Washington's shoreline "environment" designations and Oregon's Estuarine Resource Goal "management unit" designations and Coastal Shorelands Goal "uses".

Figure 1



CREST Planning Area, Management Units, and Estuary Area

Legend:
- Estuary Area
- Water
- Planning Area

Management Units

A	Lower River and the Mouth
B	Baker Bay
C	Gray's Bay
D	Eastern Wahkiakum
E	Columbia River Islands
F	Eastern Clatsop
G	Young's Bay/Astoria

The result is the classification system described below. The planning base map over which the area designations are applied is described first.

A. PLANNING BASE MAP

A base map of each planning area will show the physical boundaries of waters, wetlands and shorelands. These areas correspond in a very general way to the physical environment present and provide the citizen-planner with a frame of reference for considering the many physical, biological and cultural attributes of an area. The terms as used for this application are defined and illustrated below.

1. Waters. Submerged land areas below the lower limit of wetlands and the waters above these submerged lands.

2. Wetlands. Wetlands extend from the line of non-aquatic vegetation [or Mean Higher High Water (MHHW) where such a line cannot be determined] down to three feet below Mean Lower Low Water (MLLW) in tidally influenced areas (-3' MLLW) or to a water depth of six feet relative to Ordinary Low Water in non-tidal lakes or sloughs. Wetlands also include the overlying waters, when present.

3. Shorelands. Shorelands extend from the wetland boundary landward to the established CREST shoreland boundary (generally 200 ft. landward of all tideland soil areas or 200 ft. landward of MHHW, whichever is greatest).

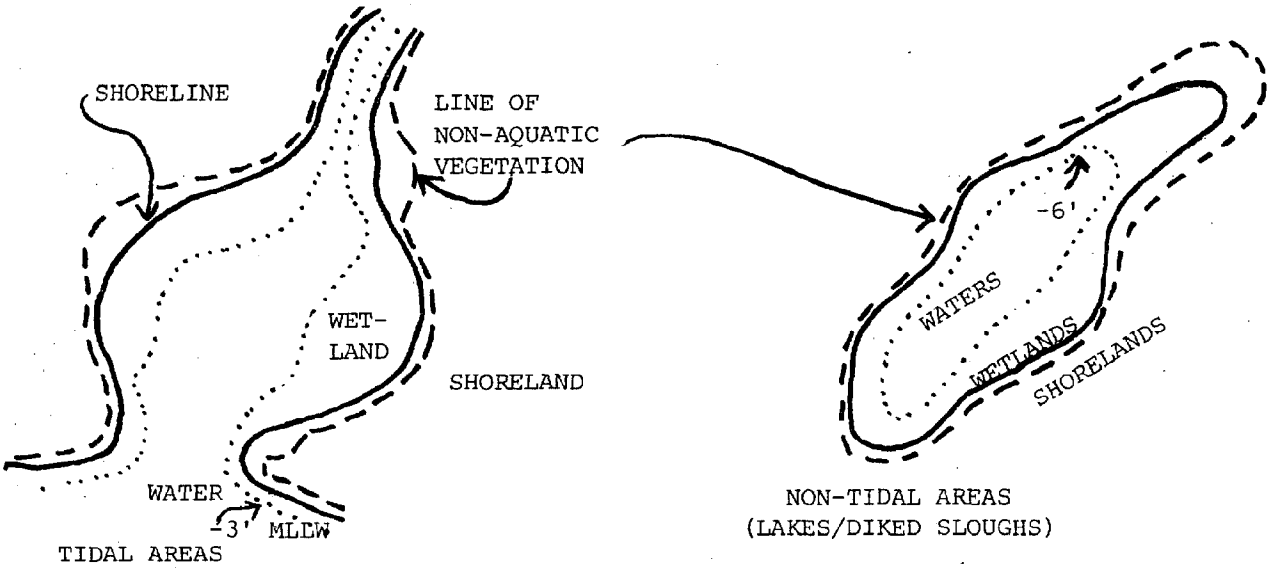


Figure 2. Graphic Representation of Waters, Wetlands and Shorelands as defined for CREST Planning.

B. AREA CLASSIFICATIONS

The classification system includes NATURAL, CONSERVATION, RURAL and DEVELOPMENT area designations, similar to those used in Oregon and Washington's coastal zone management programs. However, the classifications are broken down according to physical environment present (water, wetland, shoreland); DEVELOPMENT Shorelands are further divided into water dependent/related areas and non-water-related areas. This area classification-physical environment combination provides a system that is sufficiently detailed to allow sound resource management for the future; it is, however, simple and functional for planning.

The area classifications are defined below in terms of the general attributes and/or characteristics of geographic areas falling into each category/sub-category combination. The management objective for each type of category is also stated.

1. Natural Areas. Natural areas are those which have not been significantly altered by man and which, in their natural state, perform resource support functions vital to estuarine or riparian ecosystems. Management Objective: preserve and protect these areas for the resource and ecosystem support values and functions they provide.

a. Natural Water Areas - those water/submerged land areas such as sub-tidal spawning, nursery or feeding areas, or unique deep water habitat which are not directly disturbed by man's activities.

b. Natural Wetland Areas - wetlands with extensive marshes and/or flats which support wide diversity of fish and wildlife, provide unique or limited habitat, have high productivity and/or ecosystem storage value, and are outside direct influence of man's activities.

c. Natural Shoreland Areas - areas with unique or valuable vegetative habitat or species composition such as those with endangered or threatened plants, old growth forest, animal migration areas, eagle nesting areas, etc.

2. Conservation Areas. Conservation areas also provide important resource or ecosystem support functions, but because of their value for various degrees of recreation or sustained-yield resource use, or because of their unsuitability for development (hazard areas), are designated for non-consumptive uses. Management Objective: to conserve and protect natural and cultural resources; to manage for low intensity uses which do not interrupt or substantially degrade the flow of natural resource or recreational benefits; to protect life and property in hazardous areas.

a. Conservation Water Areas - those waters/submerged lands not otherwise classified which are used intensively for renewable resource harvesting, recreation and aesthetic uses and aquaculture, including periodically disturbed (i.e. maintenance dredged) submerged lands which have high resource support values.

b. Conservation Wetland Areas - wetlands that are small and/or of lesser biological significance than natural wetlands but which still provide important ecosystem habitat and functions such as productivity, storage and nutrient supply.

c. Conservation Shoreland Areas - shorelands of high recreational/scenic value, good habitat or resource support value, areas of geological instability, and areas where timber harvesting is practiced on a sustained-yield basis in accordance with state forest practice regulations.

3. Rural Areas. Rural areas are those outside urban or urbanizable areas which due to their value for agriculture (Class I-IV soil types), timber harvesting, aquaculture, or water dependent/related recreational developments should be protected from conversion to more intensive uses.

a. Rural Water Areas - those tidal or non-tidal waters/submerged lands not otherwise classified which are outside areas of urban influence and strongly associated with rural shoreland activities such as agriculture.

b. Rural Wetlands - those tidal or non-tidal wetlands not otherwise classified which are outside areas of urban influence and are strongly associated with rural shoreland activities such as agriculture.

c. Rural Shoreland Areas - rural shorelands include agriculture or timber harvest areas where rural low-density residential, commercial or recreational development may exist, given adequate land suitability and public services/facilities.

4. Development Areas. Those areas with a combination of physical, biological and cultural characteristics which make them especially suited for residential, commercial or industrial development.

a. Water - those areas suitable for navigation improvement projects or industrial use including deep (greater than 22') and shallow (less than 22') channels, turning basins, slips and mooring basins, rock or pile jetties, log or ship storage areas, in-water dredge material disposal areas, mineral or aggregate mining areas, and water diversion or impoundment areas.

b. Wetland - those areas which have relatively low biological value and are adjacent to development shoreland and/or water areas; this combination of characteristics gives rise to suitability for limited dredge/fill/construction activities so as to create access to deep water and/or additional dry land or surface area for port, marine industrial, commercial support facilities, intensive recreational areas or other water dependent/related development.

c. Water-Dependent/Related Development Shoreland Areas - areas which due to their unique characteristics of deep or shallow-draft water access and adequate back-up space and landside public services are suitable for water-dependent or related development. Water-related uses and activities in these areas will generally be conditional on public need, ensuring that higher priority uses are not preempted.

d. Non-Water-Related Development Shoreland Areas - those shoreland areas which have excellent development potential but, due to the high natural value of the adjacent wetlands and waters or other factors, are best suited for development which is not oriented toward the water.

C. PERMISSABLE USES AND ACTIVITIES

The area classifications defined above need to be more explicitly defined in terms of permitted uses and activities. This enables the citizen-planner and public to understand the meaning and importance of classifying geographic areas as natural, conservation, rural or development. It is also a basic tool which can be used to help implement the resulting plan. The attached matrix (Figure 3) presents such information in terms of permitted, conditional and not allowed uses. The symbols used in the matrix are explained below.

1. Permitted (P). permitted as consistent with the area's management objective, CREST Regional Policies, and local, state and federal permit regulations. Permitted uses are not "outright" uses in the traditional sense and are subject to standards in local ordinances and federal regulations. Site design changes may be required to minimize specific adverse effects.

2. Conditional (C). permitted only after a case-by-case examination of the merits of the proposed activity. The specific examination would generally occur as part of the local, state or federal permit process. Conditional uses would be permitted only if they are compatible with the area's management objective, conform with CREST Regional Policies, and do not preempt higher-priority permitted uses. For example, water-dependent commercial and industrial uses would have clear priority in water-dependent/related shoreland areas. Although such uses should protect natural resources to the maximum extent feasible, they should not be preempted by them.

3. Not Allowed (N). not permitted except under special conditions where a waiver is granted. In such cases, the use or activity must be in accordance with CREST Regional Policies, state and federal policies, not preempt other higher priority uses, and not substantially degrade natural resources.

III. APPLYING THE CLASSIFICATION SYSTEM THROUGH THE PLANNING PROCESS

In the report identifying the seven planning areas for the Columbia River estuary (Final Report: CREST Management Unit [Planning Area] Identification, January 14, 1977), CREST outlined its step-by-step planning process.

This process is explained and expanded here to include methodology for applying the land and water area classification system (Figure 4).

Step 1. Information Review. Designed to provide the citizen planning committee with background information about the estuary and related issues, with particular emphasis on the planning area in question. Physical characteristics such as tidal effects, sedimentation, water quality, flushing, physical alterations and soils are discussed. The biology of the estuary including ecology, fish and wildlife and invertebrates are reviewed. Cultural attributes such as land use and ownership, transportation, recreation values and development potential round out presentations dealing with estuary characteristics. Local, state and federal plans and policies are also reviewed, with particular emphasis on the CREST Regional Policies, which serve as a guide for planning decisions.

Step 2. Boundary Verification. To ensure earlier adopted boundaries fit local needs and are accurately depicted on the base map. Changes are made as necessary.

Step 3. Problems/Solutions/Development Scenarios. Involves identification of significant social, economic and environmental issues and problems in the planning area and the formulation of alternative solutions. Development scenarios based on the issues and alternative solutions are proposed. An optional public attitude survey provides the committee with additional information about conservation and development issues. Depending on the size of the planning area, and the scope and interrelatedness of problems and issues, Steps 3 and 4 may be carried out by subcommittees which can focus their attention on specific geographic areas.

Step 4. Area Classification Alternatives. The first step in construction of a detailed plan map. First a base map is provided, showing the physical boundaries of waters, wetlands and shorelands. Based on the different development scenarios proposed in Step 3, and consideration of the physical, biological and cultural characteristics for a given subdivision of the planning area (presented on detailed "fact sheets"), alternative classifications (Natural, Conservation, Rural, and Development water-dependent/related or non-water related) are proposed.

FIGURE 3. PERMISSABLE USE MATRIX

P: Permitted *

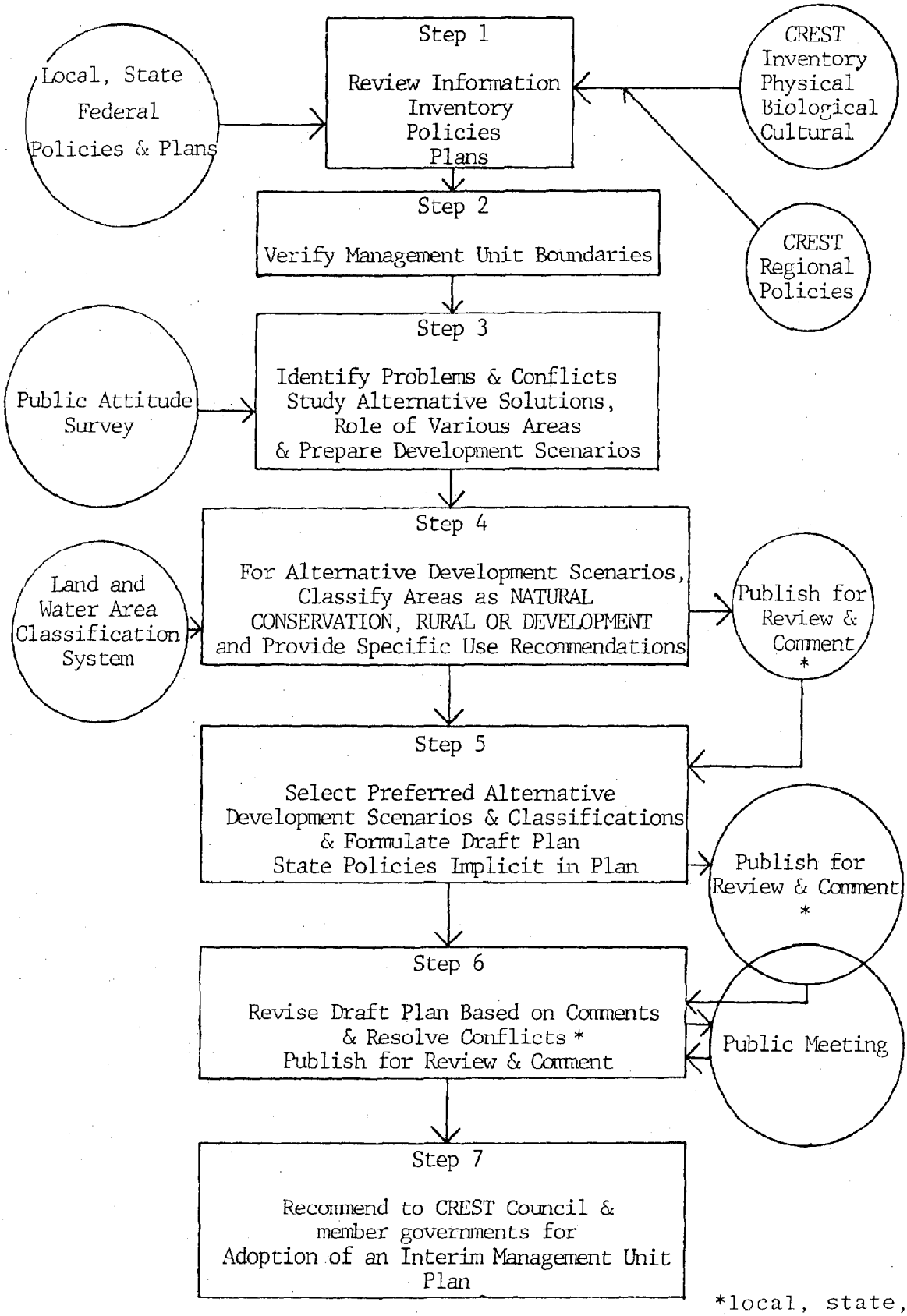
C: Conditional

N: Not Allowed

*See text

	NATURAL			CONSERVATION			RURAL			DEVELOPMENT			
	Water	Wetland	Shore	Water	Wetland	Shore	Water	Wetland	Shore	Water	Wetland	Water Depen/ Related Shore	Non-Water Related Shore
1. NAVIGATION AND TRANSPORTATION													
Deepwater port facilities	N	N	N	N	N	N	N	N	N	P	P	P	N
Shallow water port/marina facilities	N	N	N	N	N	N	C	C	C	P	P	P	N
Private individual docks	N	N	-	C	C	-	C	C	-	C	C	-	-
Navigation aids (buoys,beacons,etc.)	C	C	C	P	P	P	P	P	P	P	P	P	P
Navigation improvements (jetties, pile dikes, etc.)	N	N	N	C	C	C	C	C	C	P	P	P	C
Bridges	N	N	N	C	C	C	C	C	P	P	P	P	P
Highways/Railroads	N	N	N	N	N	N	C	C	P	P	P	P	P
Dredging (new projects)	N	N	N	C	C	N	C	C	C	P	P	P	N
Dredging (maintenance)	N	N	-	C	C	-	C	C	-	P	P	-	-
Fill/Dredge material disposal	N	N	N	C	C	C	C	C	C	C	C	P	P
Airports	N	N	N	N	N	N	N	N	C	C	N	N	P
Construction on piling (over water/wetland)	N	N	-	C	C	-	C	C	-	P	P	-	-
Ship anchorage	N	-	-	P	-	-	C	-	-	P	-	-	-
2. RECREATION/TOURISM													
Sport fishing	C	C	C	P	P	P	P	P	P	C	C	C	C
Pleasure boating	C	-	-	P	-	-	P	-	-	P	-	-	-
Water-contact sports	C	-	-	P	-	-	P	-	-	N	-	-	-
Hunting	C	C	C	P	P	P	P	P	P	N	N	N	N
Nature observation	P	P	P	P	P	P	P	P	P	P	P	P	P
Park/wayside	N	N	C	P	P	P	P	P	P	P	P	P	P
Trails/bikeways	-	N	C	-	C	P	-	C	P	-	P	P	P
Historical restoration	N	N	N	P	P	P	P	P	P	P	P	P	P
Hotel/Motel	N	N	N	N	N	N	N	N	N	C	C	C	P
Tourist commercial (water-related)	N	N	N	N	N	N	N	N	C	C	C	P	C
Water access points	N	C	C	C	C	P	P	P	P	P	P	P	C
3. COMMERCIAL FISHING/SHELLFISHING	C	C	-	P	P	-	P	P	-	P	P	-	-
4. AGRICULTURE	-	N	N	-	N	C	-	C	P	-	N	N	C
5. FOREST MANAGEMENT	-	N	N	-	N	P	-	C	P	-	N	N	C
6. MINING/MINERAL EXTRACTION	N	N	N	C	C	C	C	C	C	C	C	C	C
7. INDUSTRIAL ACTIVITIES													
Power generation plants	N	N	N	N	N	N	C	C	C	C	C	C	C
Petroleum transport/storage	N	N	N	N	N	N	N	N	N	C	C	C	C
Petroleum processing/refining	N	N	N	N	N	N	N	N	N	C	C	C	C
Shipbuilding (heavy)	N	N	N	N	N	N	N	N	N	P	P	P	N
Oil rig fabrication	N	N	N	N	N	N	N	N	N	P	P	P	N
Mineral Processing/refining	N	N	N	N	N	N	N	N	N	N	N	C	C
Wood products processing	N	N	N	N	N	N	C	C	C	P	P	P	P
Log storage	N	N	N	C	N	C	C	C	P	P	P	P	P
Other heavy industry (water dependent)	N	N	N	N	N	N	N	N	N	P	P	P	N
Other heavy industry (non-water dependent)	N	N	N	N	N	N	N	N	N	N	N	N	P
Seafood processing	N	N	N	N	N	N	N	N	N	P	P	P	C
Boat building (light)	N	N	N	N	N	N	C	C	C	P	P	P	C
Other light industry (water dependent)	N	N	N	N	N	N	N	N	N	P	P	P	C
Other light industry (non-water dependent)	N	N	N	N	N	N	N	N	N	N	N	C	P
Industrial/waste disposal	N	N	N	C	N	N	C	N	C	C	C	C	C
8. COMMERCIAL ACTIVITIES													
Restaurants	N	N	N	N	N	N	N	N	C	C	C	C	P
Retail Shops	N	N	N	N	N	N	N	N	C	C	C	C	P
Professional Offices	N	N	N	N	N	N	N	N	C	N	N	N	P
Outdoor advertising	N	N	N	N	N	N	N	N	C	C	C	C	C
Other water-related commercial	N	N	N	N	N	N	C	C	C	C	C	P	C
Other non-water related commercial	N	N	N	N	N	N	C	C	C	N	N	N	P
9. RESIDENTIAL													
Residential-private marina complexes	N	N	N	N	N	N	C	C	C	C	C	C	N
Non-water-related (high-med density)	N	N	N	N	N	N	N	N	C	N	N	N	P
Low density/rural	N	N	N	N	N	N	N	N	P	N	N	N	C
Floathouses	N	N	-	N	N	-	C	N	-	N	N	-	-
10. PUBLIC FACILITIES													
Waste water treatment facilities	N	N	N	N	N	N	C	C	C	C	C	P	P
Solid waste treatment facilities	N	N	N	N	N	N	N	N	C	N	N	N	P
Communication facilities (towers, transmission lines, corridors)	C	C	C	C	C	C	C	C	P	P	P	P	P
Sewer/water/gas lines	N	N	N	N	N	C	C	C	C	C	P	P	P
Storm water outfalls	N	N	-	C	N	-	C	N	-	C	N	-	-
Sanitary waste outfalls	N	N	-	C	N	-	C	N	-	C	N	-	-
11. HAZARD CONTROL													
Dikes (new project)	N	N	N	N	N	C	C	C	C	N	C	P	C
Dike (Maintenance)	N	N	N	C	C	C	C	P	P	P	P	P	P
Erosion control (rip-rap, bulkheading, etc.)	N	N	N	C	C	C	P	P	P	P	P	P	P
12. SCIENTIFIC RESEARCH/EDUCATION	P	P	P	P	P	P	P	P	P	P	P	P	P
13. RESTORATION/RESOURCE ENHANCEMENT													
Active estuary restoration	C	C	C	P	P	P	P	P	P	C	C	C	N
Passive estuary restoration	P	P	P	P	P	P	P	P	-	C	C	-	-
Stream habitat improvement	C	C	-	P	P	-	P	P	-	-	C	C	N
Riparian habitat improvement	-	C	C	-	P	P	-	P	P	-	C	C	N
14. AQUACULTURE	C	C	N	P	P	P	P	P	P	P	P	P	N

FIGURE 4. MANAGEMENT UNIT PLANNING PROCESS



*local, state, federal agencies and organizations

As a guideline for classifying areas, a matrix (Figure 5) has been developed; it suggests what the typical physical, biological and cultural characteristics for each area classification might be. Most areas will possess a combination of characteristics which imply one or more possible designations. After alternative classifications are completed, a workshop for interested state and federal agency representatives is conducted to solicit their opinions and positions on the various alternatives. A similar workshop for planning commissioners, local officials and the public is conducted.

Step 5. Draft Plan Development. Accomplished through evaluation of local, state and federal input, with subsequent selection of the most desirable development scenarios and corresponding area classifications. Specific uses and needs for certain areas (see Figure 6) are also set forth in the draft plan, including recommended dredged material disposal and restoration sites. Policies which supplement the CREST Regional Policies are also stated in the plan, if there are deviations or additions. The draft plan is then published for review and comment, and workshops held with local, state and federal agency representatives and the public.

Step 6. Final Draft Plan. Consists of revising the draft plan to resolve conflicts; special meetings are held with specific individuals, agencies or interest groups and a final draft plan is published. A public meeting is held and appropriate comments incorporated into the plan.

Step 7. Plan Adoption. Recommendation of the plan to the CREST Council for adoption. When adopted by CREST, it will be forwarded to appropriate member governments for their interim adoption. When all seven management units (planning areas) are complete, the resulting plans will be compared, possible conflicts noted and problems resolved. An analysis of the cumulative impacts of the plan will be made. The overall Land and Water Use Plan, together with the CREST Regional Policies and implementation proposals, will then be sent to the CREST Council and member governments for adoption, and forwarded to state and federal agencies for their formal acceptance.

Figure 5. AREA CLASSIFICATION GUIDELINES (this matrix shows what a typical area's characteristics might look like--no areas will fit all criteria and some may not be applicable to certain sites--this is not a standard, only an example to provide assistance to planning committees)

AREA CHARACTERISTICS	NATURAL			CONSERVATION			RURAL			DEVELOPMENT			
	Water	Wetland	Shore	Water	Wetland	Shoreland	Water	Wetland	Shoreland	Water	Wetlands	Water Dependent/Related Shoreland	Non-Water-Dependent Shoreland
PHYSICAL													
Soils	--	Organic/ Silty	Poor	--	Organic/ Silty	Poor-Fair	--	Organic/ Silty	Good (Class I-IV)	--		Poor for Agriculture/ Good for Development	Poor for Agriculture/ Good for Development
Slope	--	Flat	Variable	--	Flat	Variable	--	Variable	Flat-Medium	--	Coarse/Poor Steep-Variable	Flat	Flat
Hazards	--	Erosion, Flooding	Flooding, Erosion Slides, Variable	--	Erosion, Flooding	Flooding, Erosion Slides, Variable	--	Flooding, Erosion	Flooding, erosion Soils, others	--	May Exist/ Protected	May Exist/ Protected	May Exist/ Protected
Physical Alterations	Minimal	Minimal	Minimal	May Exist/ Not Extensive	May Exist/ Not Extensive	May Exist/ Not Extensive	Dikes/Diversions Others May Exist	Dikes/Diversions Others May Exist	Dikes/Diversions Others May Exist	Dredging/Navigation Improvements/Extensive	Rip-rap, Bulkheads/Fill Piledikes	Rip-rap, Bulkheads/Fill Piledikes	Rip-rap, Bulkheads/Fill Piledikes
Water Depth	Variable	Shallow Intertidal	--	Variable	Shallow Intertidal	--	Shallow	Shallow	--	Deep	Shallow	--	--
Water Circulation	Variable	Variable	--	Variable	Variable	--	Little	Little	--	Good	Good	--	--
Salinity Regime	Variable	Variable	--	Variable	Variable	--	None	None	--	Variable	Variable	--	--
Flushing	Variable	Variable	--	Variable	Variable	--	Low	Low	--	Good	Good	--	--
Water Quality/ Assimilation Capacity	Good/low	Good/low	--	Good/low	Good/low	--	Good/poor low	Good/poor low	--	Good/poor high	Good/poor high	--	--
Sediment/Transport	Fine-Coarse Low-High	Fine-Coarse Low	--	Fine-coarse/ low-high	Fine-coarse/ low-high	--	Fine-coarse low	Fine-coarse/ low	--	Coarse/Low-High	Coarse/Low High	--	--
BIOLOGICAL													
Primary Production	High	High	High	High	High	High	Low-high	Low-high	Low-Med.	Low-High	Low	Low	Low
Secondary Production	High	High	High	High	High	High	Low-High	Low-high	Low	Low-High	Low	Low	Low
Marsh Habitat	--	Large/High Value	--	--	Smaller/ High Value	--	--	Small/Medium Value	--	--	Little-no Marsh area	--	--
Flats Habitat	--	Large/High Value	--	--	Smaller/ High Value	--	--	Small/Low Value	--	--	Narrow Flats-Low Value	--	--
Water/Bottom Habitat	Good Quality	Good Quality	--	Good Quality	Good Quality	--	Fair-Good Quality	Fair-Good Quality	--	Low Quality	Low-Med. Quality	--	--
Shore Vegetation Habitat	--	--	High Quality	--	--	Good Quality	--	--	Low Quality (Grass Crops)	--	--	Low Quality	Low Quality
Fish Support Value	High	High Juveniles	--	Medium-High	Medium-High/ Juveniles	--	Low-High	Low-High	--	Low-Medium	Low	--	--
Bird/Wildlife Value	High	High	High	Medium-High	Medium-High	Medium-High	Low-High	Low-High	Low	Low-Medium	Low	Low	Low
Invertebrate Value	High (Aquatic)	High (Aquatic)	High (Land)	Medium-High	Medium-High	Medium-High	Medium-High	Medium-High	Medium	Low-Medium	Low	Low	Low
Agriculture Value	--	Low	Low	--	Low	Low	--	Low	High	--	Low	Low	Low
Timber Value	--	Low	Variable	--	Low	Variable	--	Variable	Variable	--	Low	Low	Low
CULTURAL													
Existing Land/Water Use	Low Intensity	Low Intensity	Low Intensity	Low-Med. Intensity	Low-Med. Intensity	Low-Med. Intensity	Low-Med. Intensity	Low-Med. Intensity	Low-Med. Intensity	Medium-High Intensity	Medium-High Intensity	Medium-High Intensity	Medium-High Intensity
Adjacent Land/Water Use	Low Intensity	Low Intensity	Low Intensity	Low-High Intensity	Low-High Intensity	Low-High Intensity	Low-High Intensity	Low-High Intensity	Low-High Intensity	Medium-High Intensity	Medium-High Intensity	Medium-High Intensity	Medium-High Intensity
Ownership	Public	Public	Public	Public or Private	Public or Private	Public or Private	Private	Private	Private	Public/Private	Public/Private	Private	Private
Comprehensive Plan/ Zoning Designation	Low Intensity Use	Low Intensity Use	Low Intensity Use	Low-Med. Intensity	Low-Med. Intensity	Low-Med. Intensity	Rural/Low Intensity Use	Rural/Low Intensity Use	Rural/Low Intensity Use	Intensive Use	Intensive Use	Intensive Use	Intensive Use
Transportation Access	Poor	Poor	Poor	Poor-Fair	Poor-Fair	Poor-Fair	Fair	Fair	Fair	Good	Good	Good	Good
Public Services/ Facilities	None	None	None	None-Limited	None-Limited	None-Limited	None-Limited	None-Limited	None-Limited	Available/Planned for/Adequate	Available/Planned for/Adequate	Available/Planned for/Adequate	Available/Planned for/Adequate
Recreational Value	Variable	Variable	Variable	High	High	High	Low-High	Low-High	Low-High	Medium-Good	Low	Low	Low
Historical/Archeological Significance	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable
Aesthetics (noise, view, etc.)	Very Good Quality	Very Good Quality	Very Good Quality	Good Quality	Good Quality	Good Quality	Fair-Good Quality	Fair-Good Quality	Fair-Good Quality	Poor-Good Quality	Poor-Good Quality	Poor-Good Quality	Poor-Good Quality
Growth Trends/Forecast	Low Pressure	Low Pressure	Low Pressure	Low-Med. Pressure	Low-Med. Pressure	Low-Med. Pressure	Variable Pressure	Variable Pressure	Variable Pressure	High Pressure	High Pressure	High Pressure	High Pressure

Figure 6. Specific Uses and Activities to be Considered and Recommended for Estuaryand Shoreland NATURAL, CONSERVATION, RURAL and DEVELOPMENT Areas.

1. Location of existing and potential dredged material disposal sites.
2. Location of potential sites for estuary restoration and/or project mitigation.
3. Areas needed for public aquisition.
4. Public parks, water access points and recreational facilities.
5. Recommended urban growth boundaries (Oregon only).
6. Areas for deep and shallow water ports, marinas and marine commercial and industrial use.
7. Areas where water-related historical restoration and/or reconstruction is appropriate.
8. Areas where further estuary or planning issue research is needed to help solve problems.