Oregon Coastal and Ocean Resources Planning

Strategies For Program Enhancement

Prepared by the Department of Land Conservation and Development

for the

Office of Ocean & Coastal Resources Management
National Oceanic & Atmospheric Administration
U.S. Department of Commerce

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Introduction

This 309 Strategies document must be read in conjunction with Oregon's 309 Assessment document to gain a proper understanding of the management issues being addressed by the respective strategies.

This report discusses specific strategies for each of Oregon's priority "309" improvement areas:

- Cumulative and secondary adverse effects of development;
- Coastal natural hazards;
- Wetlands; and
- Ocean resources.

Cost and funding figures refer to two separate categories of "309" funds; that is, "weighted formula" funds and "project of special merit" funds. "Other" funding sources are also identified. This is because the total amount of "309" funding available to Oregon is not large enough to pay for all of the proposed projects.

The following chart provides a fiscal year summary of the "309 funds" and "other" finding represented by the projects in this report:

Fiscal Year	309 Weighted Formula	309 Special Merit	**Sub-Total 309**	Other Funds	Total Cost
FY92	$126,000	$600,000	**$726,000**	$691,446	$1,417,446
FY93	126,000	522,002	**678,002**	798,250	1,476,252
FY94	126,000	149,000	**275,000**	703,350	978,350
FY95	126,000	324,000	**450,000**	372,750	822,750
FY96	53,750	0	**53,750**	0	53,750
TOTALS	$557,750	$1,625,002	**$2,182,752**	$2,565,796	$4,748,548

Three appendices are also provided in this document. The first describes Oregon's revised "periodic review" process. This is the principal mechanism within the Statewide Land Use Planning Process for keeping local comprehensive plans up to date and responsive to changing conditions. The second appendix briefly discusses the potential effects on the Coastal Resources Management Program of proposed reductions in state government funding and work force. The third contains a fiscal year cost summary chart for all of the proposed strategies.

Cumulative & Secondary Adverse Effects

Priority Program Enhancements

The Oregon 309 Assessment identified six categories of program enhancements to address cumulative and secondary effects of development:

- Improved protection and management of coastal shoreland resources;
- Improved management of urban growth within urban growth boundaries;
- Minimize the impact of new public facilities on the coastal environment;
- Revision of comprehensive plans to reflect changing economic and demographic conditions;
- Improved protection for habitat of threatened and endangered species; and
- Watershed-based water quality protection program.

Strategy A: Improved Protection and Management of Coastal Shoreland Resources

Proposed Program Changes

The department will assist local governments to amend their comprehensive plans during the periodic review process (see Appendix A). The revised local comprehensive plans and ordinances will incorporate natural resource protection policies and standards. The policies and standards will provide better protection of sensitive shoreline resources including riparian vegetation, wetlands, stream corridors, and significant wildlife habitat.

This strategy addresses federal 309 Cumulative and Secondary Impacts Programmatic Sub-Objective I.a regarding improvements to coastal land use planning processes to protect valuable coastal resources.

Justification

The best opportunities for protection of sensitive coastal resources is through identification and protection of such resources in plans. Inventories, plans and ordinances which clearly require protection of specific areas send clear signals to the development community about development potential. Clear plan language provides increased predictability, both for resource protection and about appropriate locations for new coastal development.

Work Plan Summary

This strategy has two principal components: (1) inventorying the sensitive resources at risk and (2) developing and adopting protective policies and standards. A combined effort of several state agencies and local governments will be needed to define riparian vegetation and scenic views along the ocean shore, as well as significant wetland and biological habitat. The inventory will be prepared on a coastwide basis to assure consistency in identifying

important resource areas. Local governments will also need examples of ordinance standards and procedures to use in siting development along the ocean shore.

The first year of the program would develop inventory methodology and standards and test the standards. This would include a coordinated review by state agencies, local governments and interested groups and individuals. Depending on resources available, the second year and third year would prepare the inventories. Priority would go to areas with high growth pressures and which are scheduled for periodic review in the near future. Year two would also include preparation of model ordinances for protection of sensitive resources. Coincident with preparation of the inventory would be development of periodic review standards addressing coastal shoreline resources. Third and subsequent years will use periodic review to incorporate inventories and standards into comprehensive plans.

Major work products include: a draft and final inventory methodology and standards, a survey of current ordinance standards for protection of sensitive shoreline resources, completed inventory maps, model ordinances, periodic review standards related to coastal shoreline resources, and revised local plan policies and ordinances for protection of costal shoreline resources.

Costs Summary, Strategy A

Fiscal Year	309 Weighted Formula	309 Special Merit	**Sub Total 309**	Other Funds	Total Costs
FY92	$40,000	$40,000	**$80,000**	$5,000	$85,000
FY93	40,000	30,000	**70,000**	210,000	280,000
FY94	37,000		**37,000**	109,000	146,000
TOTALS	$117,000	$70,000	**$187,000**	$324,000	$511,000

Preparation of inventory standards will require approximately $45,000. Preparation of detailed coastwide inventories of shoreline resources will cost between $100,000 and $225,000 depending upon the level of detail, the area covered and the amount of new information generated as part of the inventory process. To minimize costs the state will: (1) use existing base maps (the beach zone aerial photos); (2) focus inventory effort on areas most subject to development pressure; (3) coordination with other inventory efforts, such as the Highway 101 corridor plan; and (4) development of clear and objective inventory techniques. Development of model ordinances will cost $30,000 to $40,000. Assistance to local governments to adopt revised ordinances will cost $75,000-$100,000.

Likelihood of Success

Goals 17 and 18 already include clear standards for protection of coastal shoreline resources. However, implementation of these standards has been hampered by inadequate inventories of sensitive resources and by local ordinances which lack sufficient precision to either fully identify or protect sensitive resources. The new periodic review process gives DLCD sufficient authority to assure that plans are revised to both respond to new information and to correct clear inadequacies in local ordinances.

Fiscal Year 1992 Work Program

§ *Task A.1-92: Inventory Standards for Sensitive Coastal Resources*

Type: 309 "weighted formula" funding and non-309 funding.

Description: The assessment shows that new and more detailed inventories of sensitive shoreline resources are needed. This task is a necessary first step to obtaining the needed inventories. The state will prepare inventory standards for identification and mapping of sensitive coastal shoreline resources. Key subtasks under this task include:

- Identification of types of sensitive shoreline resources which have not been adequately inventoried or addressed in local comprehensive plans. This would include an evaluation of existing plans to determine the extent of inventories in existing local plans.

- Develop inventory standards with assistance of affected state agencies, local governments, and interested groups and individuals.

- Surveying existing local plans and other sources of information to identify both inventory standards and ordinance techniques for protection of sensitive coastal shoreline resources.

This project will include inventory standards for wetlands to assist in implementing the strategy for wetlands protection.

Benchmarks: By September 30, 1992, develop detailed work program, hire contractor or staff, establish advisory group. By December 31, 1992, identify categories of sensitive shoreline resources which have not been adequately inventoried or protected through existing local comprehensive plans. By March 31, 1993, complete draft inventory standards and methodology. By June 30, 1993, complete inventory standards.

Costs: $45,000 (personal service contract or DLCD staff).

Funding sources:

309 funding ("weighted formula")	$40,000
Other funding	5,000
	$45,000

§ Task A.2-92: Pilot Project Inventory of Sensitive Coastal Resources

Type: 309 "project of special merit" funding.

Description: This will be a demonstration project to identify sensitive coastal resources in an urban area or subarea of a county. The area selected will be an area which is undergoing growth pressure and which is either scheduled for periodic review in the near future or has made a commitment to amend its plan to protect sensitive coastal resources. The project will involve assembling available inventory information and maps, preparing a draft inventory, reviewing the inventory with affected agencies, the local planning commission and elected officials and the general public.

Wetlands mapping and mapping of geologic hazards done as part of this project will also help implement the strategies for improved wetland protection and improved management of development in geological hazard areas.

The product will be a completed inventory of sensitive coastal resources for use by the affected local government. The inventory would map the location of key shoreline resources on the Parks and Recreation Department's beach zone aerial photos (scale of 1"= 200 feet). Inventoried resources would include:

- Riparian vegetation;

- Wetlands and significant biological habitat;

- Small coastal streams, including riparian vegetation and wetlands along such streams; and

- Other areas along the ocean shore which provide exceptional aesthetic experience.

Agencies which would need to be involved include: Division of State Lands (for wetlands, riparian vegetation), Department of Fish and Wildlife (wetlands, habitat, riparian vegetation), Department of Forestry (Riparian Vegetation), Department of Geology & Mineral Industries (geologic hazards), State Parks and Recreation (scenic views), Federal Emergency Management Agency (geologic hazards).

Although this pilot project is not essential to completing the strategy it will provide a workable, on the ground demonstration of the effectiveness of new inventories. Previous experience with dune management plans and other demonstration projects shows that such projects, by providing an example and a model greatly simplify planning by other local governments, increase public

understanding and acceptance and provide more effective resource protection than separate efforts by each local government.

The results of such efforts are readily transferable to other local government. This approach is usually very successful because it establishes procedures and standards which match the administrative capabilities of smaller local governments. The pilot project will illustrate the issues involved in inventorying sensitive coastal resources and help test the adequacy of inventory techniques and standards for the rest of the coast. The project will demonstrate simple cost effective inventory techniques and provide a basis for testing inventory standards developed in task 1.

Benchmarks: By September 30, 1992, selection of a target area; preparation of a detailed work program for the inventory; selection of a contractor to conduct the inventory. By December 31, 1992, preparation of base maps (beach zone photos) and initial inventories of sensitive coastal resources. By March 31, 1993, meetings with local governments, agencies, and interested groups and individuals to review draft maps; revised draft maps; identification of methodological issues or problems in resource identification or mapping. By June 30, 1993, completed inventory including maps and written report for the subject area.

Costs: $40,000 for contract services.

Fiscal Year 1993 Work Program

§ *Task A.1-93: Coastwide Mapping of Sensitive Shoreline Resources*

Type: 309 "weighted formula" funding and non-309 funding.

Description: This project would map sensitive shoreline resources on a coastwide basis using the inventory standards developed in FY 92-93. The inventory would map the location of key shoreline resources on the Parks and Recreation Department's beach zone aerial photos (scale of 1"= 200 feet). Inventoried resources would include:

- Riparian vegetation;
- Wetlands and significant biological habitat;
- Small coastal streams, including riparian vegetation and wetlands along such streams; and
- Other areas along the ocean shore which provide exceptional aesthetic experience.

The inventory would trigger periodic review requirements for protection of sensitive resources.

Benchmarks: By September 30, 1993, preparation of a detailed work program for the inventory; selection of a contractor to conduct the inventory. By December 31, 1993, preparation of base maps (beach zone photos) and initial inventories of sensitive coastal resources. By March 31, 1994, meetings with local governments, agencies, and interested groups and individuals to review draft maps; revised draft maps. By June 30, 1994, completed inventory including maps and written report for the inventoried area.

Costs: Costs are estimated at $100,000 to 250,000 for contractual services.

Actual costs will depend on the area covered and the specifications in the inventory methodology. Priority areas for mapping are those subject to development pressure, with a high likelihood of sensitive resources and which are scheduled for periodic review in the near future.

Funding sources:

309 funding ("weighted formula")	$40,000
Other funding	210,000
	$250,000

§ Task A.3-93: Model Ordinance

Type: 309 "project of special merit" funding.

Description: This project will develop model ordinance procedures and standards for protection of shoreline resources.

This would involve reviewing existing local ordinances and other similar ordinances in use in the state and elsewhere. Examples of other ordinances include Willamette River Greenway ordinances, state scenic waterway requirements and shoreline overlay requirements in use in other states. Preparation of the model ordinance would be coordinated with local governments and affected state agencies and interest groups.

Benchmarks: By September 30, 1993, establishment of an advisory committee, preparation of a detailed work program for the ordinance and contractor selection. By December 31, 1993, preparation of a draft ordinance. By March 31, 1994, meetings with local governments, agencies, and interested groups and individuals to review draft ordinance. By June 30, 1994, a completed draft ordinance and recommendations for ordinance implementation, possibly including rulemaking by LCDC.

Costs: $30,000 (contract, consultant)

Fiscal Year 1994 Work Program

§ Task A.1-94: Coastwide Mapping of Sensitive Shoreline Resources

Type: 309 "weighted formula" funding and non-309 funding.

Description: This project would map sensitive shoreline resources on a coastwide basis using the inventory standards developed in FY 92-93. The inventory would map the location of key shoreline resources on the Parks and Recreation Department's beach zone aerial photos (scale of 1"= 200 feet). (See detailed description in Task A.1-93.)

This would be a continuation of the Tasks A.1-93 and A.2-92 described above with mapping scheduled for lower priority areas.

Costs: $75,000 (personal services).

(The actual amount will depend on the inventory methodology and the amount of work deferred from the previous year.)

Funding sources:

309 funding ("weighted formula")	$37,000
Other funding	38,000
	$75,000

§ Task A.4-94: Assistance to Local Governments to Adopt Plans and Ordinances

Type: Non-309 funding.

This task would provide financial assistance for local governments to incorporate the inventories into their comprehensive plans and adopt revised ordinances for protection of sensitive coastal resources.

Total costs will be $60,000. Up to ten grants would be made in FY 1994 at an average cost of $5,000 to $7,500. This would support local staff to adopt the mapping and provide training for application of the model ordinance to development proposals.

Task A.5-94: Development of Periodic Review Standards

Type: Non-309 funding.

This task would develop evaluation questions to be used by local governments during periodic review to assess the adequacy of their existing inventories and ordinances for protection of sensitive shoreline resources. Application of the standards through the periodic review process would trigger requirements to adopt the revised inventory information and to adopt appropriate ordinance changes.

Total costs would be $11,000 (personal services, 3 pm, DLCD staff).

Strategy B: Improved Management of Urban Growth Within Urban Growth Boundaries

Proposed Program Changes

Revised state rules and amendments to local comprehensive plans for managing urban growth to assure compact, efficient growth within urban growth boundaries. This will include requirements for reconsideration of land use patterns, detailed plans for coordinated provision of needed public facilities provision.

This strategy addresses federal 309 Cumulative and Secondary Impacts Programmatic Sub-Objective I.a regarding improvements to coastal land use planning processes to protect valuable coastal resources.

Justification

The 309 Assessment shows that the major reasons for rural development and underbuilding in urban areas are inadequate implementation of the plans for development within urban areas. By improving state policies for planning within urban growth boundaries and through amendments to local comprehensive plans the state will reduce pressure on rural and resource lands.

Changes to local comprehensive plans are the most appropriate way implement this strategy for several reasons. The basic structure for accommodating growth is in place through local comprehensive plans. The proposed changes consolidate and improve local governments ability to accommodate growth. Building upon local capabilities is critical because ggod planning begins at the local level.

Work Plan Summary

This strategy involves the development and adoption of revised state land use policies under Statewide Planning Goal 14 and implementation of revised policies by local governments. This strategy will include state and local policies which:

- Sequence growth to achieve land use plan density objectives, focus public infrastructure investments, and encourage the provision of parks and other public facilities;
- Systematize the division of functions between cities and special districts and lower barriers to annexation;
- Centralize local lead responsibility for growth management to improve its effectiveness;
- Facilitate infill and redevelopment in urbanized areas;
- Foster improved community design; and
- Encourage local governments to revisit their comprehensive plans and amend them to incorporate the mixed-use, neo-traditional neighborhood design development model.

The project would also involve provision of financial and technical assistance to a coastal urban area to develop and adopt policies implementing several or all of the policies outlined above.

Costs Summary, Strategy B

Fiscal Year	309 Weighted Formula	309 Special Merit	**Sub Total 309**	Other Funds	Total Costs
FY92				$75,000	$75,000
FY93				25,000	25,000
FY94				85,000	85,000
TOTALS	$0	$0	**$0**	$185,000	$185,000

Likelihood of Success

The state has demonstrated a continuing commitment to the use of urban growth boundaries to manage development pressure. The policy and plan changes identified in this project respond to identified problems in managing urban growth. Promoting livable communities is a priority for Governor despite state budget problems. Meeting state benchmarks for livable communities will require tools to better manage urban growth. The 1991 Governor's Conference on Urban Growth Management and the results of DLCD's Urban Growth Management Study, confirm and reinforce the importance of urban growth management as a political issue. Also, to the extent that the urban growth management project helps address how new public facilities needed to support growth will be funded it helps address the state's leading political issue of reforming the state's system of governmental finance.

Taken together, these factors demonstrate a strong state commitment to better urban growth management.

Fiscal Year 1992 Work Program

§ *Task B.1-92: Adopt Additional State Policies to Assure Compact and Efficient Development Within Urban Growth Boundaries*

Type: Non-309 funding.

The assessment shows that new and more detailed policies are needed to assure that land within urban growth boundaries is efficiently developed. This project will fund the development and adoption of such policies. Total costs will be $25,000 (personal services).

§ *Task B.2-92: Pilot Project Local Streets/Circulation Plan*

Type: Non-309 funding.

This project will result in the preparation of revised transportation system plan including plan policies and ordinances for a specific urban area. The plan, prepared in coordination with the Department of Transportation will identify a system of local street and transportation improvements which reduces reliance on the automobile and dependence on Highway 101 to meet local travel needs. The plan will include:

- Designation of a local street network to provide alternative routes for local travel, including pedestrian and bicyclists.
- Changes to land use patterns and designations which reduce orientation of development to Highway 101. This will include land use designations which provide for pedestrian oriented development centers for retail and tourist oriented businesses as an alternative to strip commercial development.
- Identification of sensitive coastal resources which may be affected by proposed transportation improvements and identification of alternatives or mitigation measures.
- Local street design standards which incorporate identified local issues, needs of pedestrians and cyclists, and impacts on sensitive coastal resources.

- Coordinate planning of the local and regional transportation system with ODOT's planning for the Highway 101 corridor.

Total cost will be $50,000.

Fiscal Year 1993 Work Program

§ *Task B.1-93: Demonstration Project for Urban Growth Management*

Type: Non-309 funding.

This project is a continuation of Task B.2-92 and will result in the adoption of revised plan policies and ordinances for a specific urban area on the coast to assure compact and efficient development within the jurisdiction's urban growth boundary. The work program will include the development of policies and implementing measures addressing the items listed above in Task B.2-92. Total costs will be $25,000.

Fiscal Year 1994 Work Program

§ *Task B.1-94: Development and Adoption of Local Growth Management Plans and Programs*

Type: Non-309 funding.

This project will extend the detailed growth management planning identified and developed in Task B.1-92 and B.1-93 to five other high growth coastal communities. It will result in the development of revised plan policies and ordinances for a specific urban area on the coast to assure compact and efficient development within the jurisdiction's urban growth boundary. Specifically, the selected local government will address the following:

- A revised urban growth management agreement to centralize lead responsibility in a single entity.
- Adopt a new or revised agreement with affected special districts to guide efficient provision of urban facilities and services within the urbanizable area and establish ultimate responsibility for public facility provision.
- Include policies to facilitate infill and redevelopment of existing urbanized areas.
- Revised public facility plans to provide for sequenced growth to achieve land use plan density objectives; to focus infrastructure investments, and encourage the provision of parks and other public facilities.

Benchmarks: By September 30, 1993, development of a detailed work program and selection and award to a coastal urban area. By December 31, 1993, development of draft plan and ordinance changes and draft interagency agreements for efficient urban growth management. By March 31, 1994, revised plan provisions, ordinances, and agreements based on public review and comment. By June 30, 1994, adoption of amended plan provisions, ordinances and agreements.

Costs: $85,000:

Contract, grant to local govt, personal services	$75,000
Technical assistance from DLCD	10,000
Total	$85,000

Strategy C: Watershed-Based Water Quality Protection Program

Proposed Program Changes

The Watershed Protection Strategy will result in a blueprint and basic structure for Oregon's Coastal Nonpoint Pollution Control Program (CNPCP) required by Section 6217 of the 1990 Coastal Zone Act Reauthorization Amendments. The strategy addresses an environmental concern of national scope and importance. Depending on the nature and extent of the final CNPCP guidance, the Watershed Protection Strategy may fully meet those federal requirements.

The Watershed Protection Strategy will result, first, in state agency adoption and implementation of a coastal watershed protection policy; and second, in local comprehensive plan provisions designed to reduce nonpoint source pollution in coastal watersheds. The purposes of the strategy are to identify local land use decisions that provide an opportunity to reduce the water quality effects of land use activities, and to develop methods to reduce such impacts.

The exact content of local plan revisions will not be entirely clear until initial stages of the strategy are completed. At the outset, activities that result in nonpoint source pollution -- and the state and local planning decisions that support, approve, or otherwise encourage such activities -- will be identified. Only when the activities are identified will methods to control their water quality impacts through comprehensive plan revisions be developed.

The strategy addresses Section 309 Cumulative and Secondary Impacts programmatic sub-objective I.a regarding improved coastal land use planning processes to protect valuable coastal resources.

The watershed protection policy will require that sensitive coastal watersheds be protected by local comprehensive plans. Sensitive watersheds will be identified through a community-based Watershed Assessment project. Ultimately, planning guidance and model ordinances will address specific nonpoint source pollutants and specific land use activities. Local jurisdictions will adopt provisions applicable to identified problems and specific watersheds during Periodic Review.

Other results of Strategy C include the following:

- Updated inventory of nonpoint source pollution problems and sensitive watersheds in coastal basins.
- Local plan policies to assist in watershed protection and the control of nonpoint source pollution.
- Local ordinance provisions that require consideration of water quality impacts of land use activities in certain coastal watersheds.
- Technical support and guidance on watershed protection for citizens and local governments.

Ultimately, this strategy will result in cleaner water and improved habitat in Oregon's coastal watersheds.

The Watershed Protection Strategy will renew both the intent in Statewide Planning Goal 6 to reduce cumulative water quality effects of coastal land and resource uses, and the intent in the federal Clean Water Act and the federal Coastal Zone Act Reauthorization Amendments to control nonpoint source pollution.

Justification

The Watershed Protection Strategy will address and meet most of the priority program enhancements concerning water quality identified in the 309 Assessment. Enhancements to be satisfied include the following:

- Verify the existence of nonpoint source problems. ... identified problems must be validated by communities before pollution control programs can anticipate success.
- Increase the water quality monitoring network in coastal basins. ... identify water quality problems that can be solved through a variety of individual and community efforts.

- Review, supplement, and substantiate the data on nonpoint source pollution problems in coastal basins.
- Increase emphasis on an integrated, comprehensive approach -- a watershed approach -- to protecting water quality in coastal basins.
- Target problem watersheds and water quality problems in coastal basins.
- Increase community perception and recognition of nonpoint problems in coastal watersheds.
- Increase coordination and integration of water quality programs and land use planning programs at the local level. ...
- Help local planning and development authorities become more vigilant for opportunities to prevent nonpoint source pollution.
- Provide integrated state-level support for a citizen-based watershed approach to protecting water quality.
- Increase public awareness of water pollution that results from a variety of individual activities.
- Integrate various state and federal water quality control resources -- expertise, grants, data, programs, and project contacts -- into a comprehensive watershed approach to solving persistent coastal water quality problems.

These program enhancements share three themes, which the strategy will address. First, the information base for planning and for the proposed program changes must be updated. The strategy is based on an inventory project that will integrate information on both water and watershed quality.

Second, the success of a coastal water quality program will substantially rely upon informed and involved communities. Consequently, the strategy includes a substantial community involvement component.

And third, Oregon's several water quality programs must present a watershed approach that can in turn be integrated into local plans. The strategy will result in materials that place water quality issues in the context of watershed uses and integrity. Ultimately, the documents will focus on local planning and permit processes. Local projects and programs -- things that can most consistently affect activities on the ground -- provide the most appropriate foundation for a watershed protection strategy.

Work Plan Summary

The Watershed Protection Strategy will be developed through the results of three interrelated multi-year projects, of which two are to be funded by section 309 funds.

The first project -- developing a Coastal Watershed Assessment -- will build from the 1988 Nonpoint Source Pollution Assessment completed by the Oregon Department of Environmental Quality. It will be a three-year project. The purpose of the project will be to complete an inventory that goes beyond water quality data to assess watershed quality. As such, the inventory will identify coastal resource use limitations in coastal watersheds. In FY92, data in the nonpoint source assessment will be updated for coastal basins. In FY93, the 1988 Nonpoint Source Assessment for coastal basins will become a Watershed Assessment. Coastal land uses will be digitally mapped, and basins and sub-basins that need increased watershed protection will be identified. Expertise and information in the Oregon Department of Forestry and other agencies will be used to develop criteria for identifying and ranking sensitive watersheds. Model policies and local ordinances will also be developed during FY93. In FY94, the Watershed Assessment will be completed.

The second project is to develop a Coastal Watershed Protection Manual. The Manual will provide guidance on watershed protection for use in local planning decisions. This project will continue the work of the Coquille Near Coastal Water Quality Project as a demonstration project to develop and implement local watershed protection activities. In FY 92, the project will support the work of a Community Advisory Committee to identify nonpoint source problems in the Coquille basin. Local comprehensive plans' effects and potential effects on water quality will be identified. In FY 93, with the help of draft watershed assessment information and, again, the information and expertise in state resource agencies, the project will help the CCAC develop a nonpoint source control plan. Model ordinance provisions will be identified or developed, and reviewed by the Community Advisory Committee. Finally, in FY 94, the Coquille work will be generalized for application in other basins. The final Watershed Protection Manual will identify actions that can be taken at the local level to control or prevent NPS pollution.

The third project will institute a community involvement and information program. This project is critical to the success of the strategy. Starting in January 1993, 309 funds will be used to develop informational materials and to publish a quarterly newsletter on watershed issues. A series of public meetings will be scheduled in which the updated NPS database will be reviewed in order to validate the basis for the Coastal Watershed Assessment. In the process, the project will try to increase the public's knowledge of -- and concern for -- nonpoint source pollution and watershed management issues. In the following three years, the project will begin a citizen-based "Watershed Watch" program in coastal communities. Ultimately, "Watershed Watch" will provide resource managers with water quality and watershed monitoring data that are not now available for making local planning decisions.

Costs Summary, Strategy C

Fiscal Year	309 Weighted Formula	309 Special Merit	**Sub Total 309**	Other Funds	Total Costs
FY92	$14,000	$86,000	**$100,000**	$13,500	$113,500
FY93	14,000	31,000	**45,000**	109,150	154,150
FY94	14,000	40,000	**54,000**	70,250	124,250
FY95	36,000		**36,000**	17,750	53,750
FY96	53,750		**53,750**		53,750
TOTALS	$131,750	$157,000	**$288,750**	$210,650	$499,400

Likelihood of Success

Success in implementing a Coastal Watershed Protection Strategy depends largely on successful citizen education and involvement. Recent water quality work on Oregon's South Coast revealed that citizen support for government programs depends entirely on local community awareness and validation of water quality problems. Thus this strategy relies on a full public information, participation, and watershed monitoring program.

Existing support for coastal watershed protection is scattered, but it is highly committed to stewardship values. Support is evident in such programs as Salmon and Trout Enhancement Projects (STEP), the Governor's Watershed Enhancement Board (GWEB), Shellfish Growers Advisory Groups, and various groups interested in protecting habitat for recreational fisheries. These groups will be key players in developing a more comprehensive coastal watershed protection strategy.

However, the present level of support is insufficient to guarantee its universal acceptance. Naturally, many groups and interests may resist imposed changes. Recreational vehicle owners, logging road builders, road maintenance crews, farmers, loggers, and homebuilders -- the cornerstones of Oregon's coastal communities -- will appropriately resist changes imposed on the way they have acted for thirty years, if they have not been involved in identifying, validating, or otherwise defining the problems that compel the change and potential alternatives. In the end, nonpoint source pollution cannot be effectively controlled by regulation alone; Oregon's success will build on broad public discussion, education, and involvement.

Updated information is also important to the success of the strategy. The Coastal Watershed Assessment will more than meet the need for an updated nonpoint source database.

Finally, adoption of model plan provisions, and their use in local planning and development decisions, will rely on the support of local planners and public officials. The Strategy will establish an advisory group of local planners for ongoing discussions about all aspects of the strategy.

Fiscal Year 1992 Work Program

§ *Task C.1-92: Nonpoint Source Assessment Update*

Type: 309 "project of special merit" funding.

Description: This is the first year of a three-year project. The objective of this task is to update the 1988 Oregon Statewide Assessment of Nonpoint Source Pollution Problems for coastal basins.

An updated 1988 Assessment of Nonpoint Source Pollution Problems will be the first element of a two-year water quality assessment. It will provide a foundation, in the third year, for a comprehensive and more usable watershed assessment.

Most of the coastal comprehensive plans refer to a nonpoint source pollution assessment that is now nearly fifteen years old. By the time coastal jurisdictions enter into Periodic Review, the more recent 1988 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution will also be out of date. Water quality authorities in Oregon insist that water quality data must be verified and validated by communities before they can become the basis for community water quality planning. We agree.

A comprehensive Watershed Assessment will provide citizens and local planners with a focus for total watershed management, rather than simply water quality control efforts. An updated 1988 Nonpoint Source Assessment will provide a foundation for the watershed assessment.

A Watershed Assessment for coastal basins will result in a vastly improved inventory over what is now available for water quality elements in local plans. Development of the Watershed Assessment will provide the basis for a comprehensive citizen involvement program.

This update is essential to the development of a watershed assessment and subsequent measures to improve water quality. A comprehensive Watershed Assessment will provide a national model for watershed protection.

Benchmarks: 2nd quarter: Digitized land use maps in coastal basins

Final: Updated 1988 Nonpoint Source Pollution Assessment, to include data collected since 1988. Plan for sampling and analysis program in late summer and fall 1993 (year 2 of the update).

Costs: $86,000:

Personnel, 12 PM, in DEQ:	$60,000
Contractual, GIS service:	25,000
Travel:	1,000
Total	$86,000

§ Task C.2-92: Coquille Near Coastal Water Quality Demonstration Project

Type: Non-309 funding.

This task is the first year of a thirty-month project to develop a Watershed Protection Manual. The project will add a nonpoint source element to an ongoing near coastal water quality demonstration project. It will provide a proving ground for the results of the related projects in this strategy.

Total cost will be $13,500.

§ Task C.3-92: Community Involvement Program

Type: 309 "weighted formula" funding.

Description: This is the first of a multi-year task which will turn into a citizen-based watershed and water quality monitoring program in the third year. The project is to begin in the second half of the first year (FY92) of the strategy, after initial work has been completed on updating the nonpoint source data.

The nonpoint source assessment (see Task C.1-92) update requires extensive meetings in coastal communities to validate existing data. The Community Involvement Program will draw upon experience from the Coquille Near Coastal Water Quality Demonstration Project (Task C.2-92) for use in other communities and basins. The community involvement program is crucial to the timely and successful development of the federally-required CNPCP as soon as final federal guidance is released.

Since all nonpoint source control efforts rely on changing the way people do things, they must be based on a strong program of community participation. This project will provide that foundation for all nonpoint source control and watershed management efforts in the coastal zone.

Benchmarks: First quarter: List of community groups and contacts with interests that coincide with nonpoint source control. Summary of Watershed Protection Strategy and Coastal Nonpoint Pollution Control Program requirements for distribution and discussion with the groups: "Citizen's Guide to Review of the Nonpoint Source Pollution Assessment".

Second quarter: Newsletter. Summary of meetings. Plan for FY93 meetings. Preliminary list of basins in which the updated 1988 Nonpoint Source Assessment will be reviewed.

Costs: $14,000:

Personnel	$12,000
Travel	1,000
Publications	1,000
Total	$14,000

This amount of funding will allow the department to devote one full position to coastal nonpoint pollution control management.

Fiscal Year 1993 Work Program

§ *Task C.1-93: Coastal Watershed Assessment*

Type: 309 "project of special merit" funding.

Description: This is the second year of a three-year project. See Task C.1-92 discussion.

Benchmarks:

- First Quarter: Local planners advisory group.
- Second Quarter: Criteria for identifying and ranking sensitive watersheds.
- Third Quarter: Updated NPS assessment.
- Final: Model policies and ordinances and report on sensitive watersheds.

Costs: $31,000:

Personnel (pass-through to DEQ)	$30,000
Travel	1,000
Total	$31,000

§*Task C.2-93: Watershed Protection Manual*

Type: Non-309 funding.

This is the second year of a multi-year project. With the Community Advisory Committee, use draft Coastal Watershed Assessment materials to identify nonpoint source problems and develop a plan to address them in the Coquille watershed.

Total cost will be $69,400, of which $35,000 will come from an EPA grant.

§ *Task C.3-93: Community Involvement Program*

Type: 309 "weighted formula" funding and non-309 funding.

Description: This task will have been underway for six months at the beginning of FY93.

Organize local community interest groups in coastal basins. Identify common concerns and strategies for watershed management. Produce quarterly newsletter. Coordinate presentations on watershed management efforts. Continue to consult with local planners.

Benchmarks: Quarterly newsletters: start 9/93

Costs: $53,750:

Personnel (on contract)	$52,000
Travel/Supplies	750
Other: Newsletters & info materials	1,000
Total	$53,750
Funding sources:	
309 funding ("weighted formula")	$14,000
Other funding	39,750
	$53,750

Fiscal Year 1994 Work Program

§ *Task C.1-94: Coastal Watershed Assessment*

Type: 309 "project of special merit" funding.

Description: This is the final year of a three-year project. This task will develop a draft Coastal Watershed Assessment, and bring together the results of the previous tasks to produce a draft Coastal Watershed Assessment for coastal basins.

Benchmarks:

- Second Quarter: Criteria for identifying sensitive watersheds.
- Third Quarter: Priority list of watersheds requiring protection and/or rehabilitation. Model comprehensive plan and ordinance provisions for watershed protection.
- Final: Coastal Watershed Assessment

Costs: $40,000:

Personnel (pass-through to DEQ)	$30,000
Publication/Distribution	10,000
Total	$40,000

§ *Task C.2-94: Watershed Protection Manual*

Type: Non-309 funding.

This is the final year of a three-year project to develop a Watershed Protection Manual to use as a local planning tool.

Work in this project will identify coastal land uses with water quality and aquatic habitat impacts; the most suitable means to integrate watershed protection policies into local permit reviews; and the information required to effectively implement those policies.

Total costs will be $30,500 for personnel, travel, and publications

§ Task C.3-94: Community Involvement Program

Type: 309 "weighted formula" funding and non-309 funding.

Description This is the third year of an ongoing project. The task will:

- Develop and implement a citizen-based "Watershed Watch" volunteer monitoring program in north coast, middle coast, and south coast watersheds.
- With the assistance of state and federal agencies and local schools, develop training materials and reporting instructions and protocols for citizen water quality monitoring.
- Help develop basin-specific plans to address high priority watershed problems identified in the Coastal Watershed Assessment.
- Develop incentives to continue volunteer interest.

Benchmarks:

- Second Quarter, instructional materials, reporting instructions, etc., Watershed Watch program guidance.
- Quarterly: newsletters
- Annual Watershed Watch reports starting in June 1995.
- Citizen monitoring program for coastal watersheds, annually starting in July 1995.

Costs: $53,750:

Personnel (on contract)	$52,000
Travel/Supplies	750
Other: Newsletters & info materials	1,000
Total	$53,750
Funding sources:	
309 funding ("weighted formula")	$14,000
Other funding	39,750
	$53,750

Fiscal Year 1995 Work Program

§ Task C.3-95: Community Involvement Program

Type: 309 "weighted formula" funding and non-309 funding

This is a continuation of an ongoing project.

Description

- Develop and implement a citizen-based "Watershed Watch" volunteer monitoring program in north coast, middle coast, and south coast watersheds.
- With the assistance of state and federal agencies and local schools, develop training materials and reporting instructions and protocols for citizen water quality monitoring.
- Help develop basin-specific plans to address high priority watershed problems identified in the Coastal Watershed Assessment.
- Develop incentives to continue volunteer interest.

Benchmarks:
- Quarterly: newsletters
- Annual Watershed Watch reports starting in June 1995.
- Citizen monitoring program for coastal watersheds, annually starting in July 1995.

Costs: $53,750:

Personnel (on contract)	$52,000
Travel/Supplies	750
Other: Newsletters & info materials	1,000
Total	$53,750

Funding sources:

309 funding ("weighted formula")	$36,000
Other funding	17,750
	$53,750

Fiscal Year 1996 Work Program

§ *Task C.3-96: Community Involvement Program*

Type: 309 "weighted formula" funding.

This is a continuation of an ongoing project.

Description: See Task C.3-95 description above.

Benchmarks: See Task C.3-95 description above.

Costs: $53,750:

Personnel (on contract)	$52,000
Travel/Supplies	750
Other: Newsletters & info materials	1,000
Total	$53,750

"Non-309" Strategies

Due to funding limitations in the 309 Program, three of Oregon's cumulative effects strategies are proposed for funding from non-309 sources. These strategies are briefly described below to better provide a complete context of the overall package of proposed enhancements to the Oregon coastal program.

Strategy D: Minimize the Impact of New Public Facilities On the Coastal Environment

This strategy will result in amendments to comprehensive plans and/or state agency rules, plans and programs for siting of public facilities in the coastal zone. Comprehensive plan changes will include changes to land use designations and public facility plans. Changes to state agency rules, plans and programs will change requirements for siting and approval of new public facilities. The result of these changes will be to locate public facilities to either avoid or minimize impacts on sensitive shoreline resources.

Approximately $40,000 in contractual services would be needed.

Strategy E: Revision of Comprehensive Plans To Reflect Changing Economic and Demographic Conditions

This strategy will amend local comprehensive plans to plan and zone appropriate and adequate amounts of land to meet identified needs for likely industrial, commercial and residential uses. Amendments will be based on updated economic and demographic forecasts. This will cost $40,000 to $60,000. Population forecasts will be based largely on analysis of 1990 census data. Economic forecasts will review and update 1980's studies based on recent trends and expected developments in each of the affected sectors.

Strategy F: Improved Protection For Habitat of Threatened and Endangered Species

This strategy will adopt "habitat protection and enhancement plans" for threatened and endangered species by local governments and the affected agencies. Candidate species of specific interest include: the Pink Sand Verbena, the Snowy Plover, and the Silverspot Butterfly. These species are each of specific significance because threatened habitats are on or adjacent to the ocean shore. Development of plans will cost approximately $35,000 to $50,000 per species. Some savings may be possible if inventory and review processes can be consolidated since similar expertise and many of the same agencies will be involved for each species.

Cost Summary For Cumulative & Secondary Effects Program Enhancements

Strategy	309 Weighted Formula	309 Special Merit	**Sub Total 309**	Other Funds	Total Costs
Strategy A	$117,000	$70,000	**187,000**	$324,000	$511,000
Strategy B				185,000	185,000
Strategy C	131,750	157,000	**288,750**	210,650	499,400
Strategy D				40,000	40,000
Strategy E				60,000	60,000
Strategy F				150,000	150,000
TOTALS	$248,750	$227,000	**$475,750**	$969,650	$1,445,400

Coastal Natural Hazards

Priority Program Enhancements

Coastal natural hazard program improvement needs can be grouped into three general categories: 1) Hazard Policy; 2) Hazard Assessment; and 3) Hazard Awareness. The paramount need is to make progress in policy development and implementation. However, success cannot be achieved in this area without progress in the other two areas: Effective policies require a sound technical base and broad public acceptance.

Strategy For Improved Management

Proposed Program Changes

The proposed program changes address all three of the federal 309 Coastal Hazards Programmatic Grant Objectives (i.e. to direct development away from hazardous areas, to preserve and restore protective functions of the natural shoreline, and to prevent or minimize threats to existing populations and property from coastal natural hazards). Over the short term (1-2 years), the emphasis will be on program changes that enhance the effectiveness of existing coastal natural hazards policies. Specifically, program changes will be carried out in the areas of site-specific geotechnical reporting, hazard mitigation, and foredune management. Over the longer term (3-5 years), the emphasis will be on program changes which expand the existing coastal zone management framework so as to address the entire spectrum of natural hazards that affect the Oregon coast. Program changes will consist of amendments to local comprehensive plans, implementing ordinances and inventories; state rule - goal - statute revisions; and consolidation of agency functions (see also Appendix B).

Justification

Because local government is the level at which most decisions are made, the strategy is directed at developing program changes which can be implemented at this level. Because state agencies also play an important role in decision making, the strategy also includes program changes which can be implemented at this level. Program changes at the state level are most likely to take the form of rule and/or goal revisions as opposed to statutory revisions, since statutes generally lack necessary specificity. However, if new enabling legislation is found to be necessary, it will be proposed.

Work Plan Summary

Oregon's coastal natural hazards strategy accomplishes program changes in a multi-year work plan by simultaneously moving forward on work tasks in each of the three improvement categories identified in the Assessment (Figure CNH 1). In each improvement category the following tasks have been identified:

§ Hazard Policy (A1):

- A1.1: Policy Working Group Support
- A1.2: Quality Control of Site-specific Geotechnical Reports
- A1.3: Foredune Grading Enforcement
- A1.4: Hazard Mitigation Requirements

- A1.5: Littoral Cell Management Plan Pilot Project

The Department of Land Conservation and Development will work together with the Parks and Recreation Department and the Division of State Lands in the area of hazard policy. Participation in and support of a 'Policy Working Group' will be a major focus of work in this area. Major work products in fiscal year 1992 include model site-specific geotechnical report content standards and a model foredune grading enforcement ordinance.

§ *Hazard Assessment (A2):*

- A2.1 All Hazards Mapping Pilot Project - Chronic.
- A2.2 All Hazards Mapping Pilot Project - Catastrophic.

The Department of Geology and Mineral Industries will take the lead in the area of hazard assessment. Major work products in fiscal year 1992 include a shoreline stability data base and an all chronic hazards map.

§ *Hazard Awareness (A3):*

- A3.1 Hazard Communication and Education

Oregon State University Extension Sea Grant will take the lead in the area of hazard awareness. Major work products in fiscal year 1992 include local hazards workshops.

Costs Summary, Strategy For Improved Management

Fiscal Year	309 Weighted Formula	309 Special Merit	**Sub Total 309**	Other Funds	Total Costs
FY92	$47,000	$113,000	**$160,000**	$151,446	$311,446
FY93	47,000	213,002	**260,002**	70,000	330,002
FY94	50,000	22,000	**72,000**	60,000	132,000
FY95	50,000	82,000	**132,000**	0	132,000
Totals	$194,000	$430,002	**$624,002**	$281,446	$905,448

Likelihood of Success

Focus groups at a recent conference on coastal natural hazards in Newport identified the following as needed improvements "that might have a real chance of being adopted and carried out in today's fiscal and political climate": 1) establish an independent peer review process of geotechnical reports; 2) establish site-specific construction setbacks and other hazard mitigation procedures for siting development on all unbuilt lots; and 3) establish 'littoral cell management plans' for each littoral cell along the Oregon coast. Each of these recommended improvements is included in Oregon's coastal natural hazards strategy. This indicates not only a high degree of existing support for Oregon's strategy among individuals with a wide range of interests, but also a sentiment among these individuals that the likelihood of success of the proposed program changes is high. Representatives from other stake-holding agencies (i.e. Parks and Recreation Department, Division of State Lands, Department of Geology and Mineral Industries and Oregon State University Extension Sea Grant) have actively participated in the development of the 309 strategy and have committed to its future implementation. This is also an indication of the high degree of support that exists for Oregon's coastal natural hazards strategy and proposed program changes.

Actions to maintain and build support are an integral part of Oregon's coastal natural hazards management strategy. The Policy Working Group was convened to address needs identified at the coastal natural hazards conference in Newport. The Policy Working Group will serve as a forum for those who have a stake in the policies that guide beach protection, shoreline development, and hazard mitigation. It will systematically consider relevant information, define issues, and develop and evaluate alternatives. The Policy Working Group will ensure that Oregon's coastal natural hazards strategy program changes are developed and implemented from a broad base of support. Support for this effort is included as a specific task in Oregon's coastal natural hazards strategy. Further, hazard awareness and hazard assessment are distinct elements of Oregon's coastal natural hazards strategy. The work to be accomplished in these two areas will ensure that program changes in the area of hazard policy are politically acceptable and technically sound, and thus have a high likelihood of success.

Finally, Oregon's past 306 performance has been excellent. The pilot foredune management study that the department conducted at Nedonna Beach is a good example. In this effort, management of the foredune enhanced the protective functions of the natural foredune and minimized threats to existing property from sand inundation.

Thus, the high degree of existing support and the strong actions being taken to maintain and build upon this support, together with past 306 performance, indicates that there is a high likelihood of success in achieving the objectives of Oregon's coastal natural hazards strategy.

Fiscal Year 1992 Work Program

§ *Task A1.1-92: Support of Policy Working Group*

Type: 309 "weighted formula" funding and non-309 funding.

Description: The Policy Working Group consists of 21 people who represent different perspectives and interests - oceanfront property owners, developers and their consultants, local officials and planners, coastal resource managers, educators, the beach-using public, and others. Because of its role in policy development, the Policy Working Group is an essential part of Oregon's coastal natural hazards strategy.

Using consensus-building and other innovative group processes, the Policy Working Group will define the issues and problems that need to be addressed, formulate and evaluate alternative solutions, and recommend preferred alternatives to solve identified problems. The principal focus of this unique group is on policies related to beach erosion, ocean flooding, and related upland development. The Policy Working Group will also consider possible policy responses to earthquakes and related hazards such as ground shaking, liquefaction of soils, major landslides, and tsunami inundation. Local comprehensive plan implementing ordinance amendments, and state rule - goal - statute revisions will be the mechanisms used to implement Policy Working Group recommendations.

Policy Working Group efforts will be supplemented by those of a Technical Advisory and an Educational Advisory Committee. These two bodies will be comprised of members of the larger Policy Working Group and other individuals as needed. The role of the Technical Advisory Committee will be to provide guidance to the Policy Working Group on technical aspects of policy development as well as to evaluate the technical merits of the hazard assessment tasks. Similarly, the role of the Educational Advisory Committee will be to provide guidance to the Policy Working Group on communication and education aspects of policy development as well as to evaluate the educational merits of the hazard awareness tasks.

Benchmarks: Monthly meetings and quarterly progress reports.

Costs: $57,000:

Personnel		$47,000
1/2 time research assistant at OSU	$12,000	
1PM at DLCD, DSL, Parks and DOGAMI	20,000	
3PM at at OSU	15,000	
Services and Supplies		4,000
Printing and Mailing		6,000
Total		$57,000
Funding sources:		
309 funding ("weighted formula")		$17,000
Other funding		40,000
		$57,000

§ *Task A1.2-92: Quality Control of Site-specific Geotechnical Reports*

Type: 309 "weighted formula" funding and non-309 funding.

Description: The objective of this task is to develop and implement quality control criteria and procedures for site-specific geotechnical reports. DLCD efforts already under way will be combined with Policy Working Group recommendations to develop model geotechnical report content standards and peer review procedures. Model ordinances will be prepared for implementation at the local level through plan amendments or during periodic review, and/or at the state level through rule or statutory revisions.

The Assessment found that there are insufficient standards for the content of site-specific geotechnical reports and there is no independent or other peer review of geotechnical reports. Yet in most instances, site-specific geotechnical reports are the sole basis for decisions on whether development should occur in a hazardous location or if structural solutions to shoreline erosion are necessary. The development and use of site-specific geotechnical report content standards and peer review procedures will address these findings. These program changes will result in an improved ability to direct development away from hazardous areas and to prevent or minimize threats to existing populations and property from coastal natural hazards along the entire Oregon coast.

Benchmarks: Development of quality control criteria and procedures will commence immediately. A review of geotechnical report content standards and peer review procedures used elsewhere in the nation will be carried out in the first quarter of the grant period. The results of this review will be summarized in a document. During the second and third quarters of the grant period drafts of model geotechnical report content standards and peer review procedures documents will be prepared and reviewed. Final drafts of model geotechnical report content standards and peer review procedures will be prepared in the fourth quarter of the grant period. Implementation will commence in fiscal year 1993. This work will be carried out on contract and supplemented by Policy Working Group and DLCD staff efforts.

Costs: $35,000:

Personnel		$35,000
Contract	$30,000	
1PM at DLCD	5,000	
Total		$35,000
Funding sources:		
309 funding ("weighted formula")		$30,000
Other funding		5,000
		$35,000

§ Task A1.3-92: Foredune Grading Enforcement

Type: 309 "project of special merit" funding and non-309 funding.

Description: The objective of this task is to develop model foredune grading enforcement ordinances. Such ordinances will be implemented at the local level through the plan amendment process or during periodic review. In the larger context of foredune management planning, goal revisions and/or rule writing may result from this task.

The Assessment found that the inadequacy of local enforcement ordinances, among other factors, has left communities facing sand inundation problems with little incentive to carry out foredune management plans. As a result, ad-hoc alterations of the natural foredune by individual property owners continues on a regular basis. The development and use of foredune grading enforcement ordinances will address these findings. These program changes will result in an improved ability to preserve and restore protective functions of the natural shoreline and to prevent or minimize threats to existing populations and property from coastal natural hazards along the entire Oregon coast.

The Department has supported a successful foredune management plan at Nedonna Beach under the 306 Grant Program. DLCD staff are already providing enhanced technical assistance as a means to encourage foredune management planning in areas suffering from sand inundation. The development and use of foredune grading enforcement ordinances is a continuation of these innovative efforts and will contribute significantly to them. Since natural ocean flood and storm

protective features will be enhanced at the same time as threats to existing property from sand inundation are limited, the benefits of this effort are multiple. Similarly, since sand inundation/illegal dune grading is a problem in several areas along the Oregon coast, the results of this effort will be transferable to multiple jurisdictions in Oregon. Results will also be applicable elsewhere in the nation where development exists on dune-fronted beaches.

Benchmarks: Development of foredune grading enforcement ordinances will commence immediately. Implementation will commence in approximately twelve months. Research of foredune grading enforcement procedures used elsewhere in the nation will be carried out in the first quarter of the grant period. Research on past legal and illegal foredune grading activities will also be carried out in the first quarter. This latter information will be used to determine which areas an enforcement ordinance is most needed. During the second and third quarters of the grant period, drafts of a model foredune grading enforcement ordinance will be prepared and reviewed. The final draft of a model foredune grading enforcement ordinance will be prepared in the fourth quarter of the grant period. Implementation will commence in fiscal year 1993. This work will be carried out on contract and supplemented by Policy Working Group and DLCD staff efforts.

Costs: $27,500

Personnel		$27,500
Contract	$12,500	
3PM at DLCD	15,000	
Total		$27,500
309 funding ("project of special merit")		$12,500
Other funding		15,000
		$27,500

§ *Task A2.1-92 All Hazards Mapping Pilot Project - Chronic*

Type: 309 "project of special merit" funding and non-309 funding.

Description: The objective of this task is to develop a standardized methodology for determining the magnitude of shoreline instability resulting from the individual and combined effects of the suite of chronic hazards that affect the Oregon coast (e.g. ocean flooding, wave-induced erosion, landsliding). The standardized methodology developed under this task will be applied to a 50 km section of the central Oregon coast to generate an all chronic hazards shoreline stability database and an all chronic hazards shoreline stability map for the study area. The pilot database and map will be incorporated into local comprehensive plan inventories through the plan amendment process or during periodic review. The methodology, database, and map will lead to the development and implementation of appropriate oceanfront construction setbacks for the study area and eventually the entire Oregon coast.

The Assessment found that oceanfront construction setbacks are not prescribed everywhere along the Oregon coast. In areas where setbacks are prescribed, they are often waived on a case-by-case basis upon a determination by the developer-hired registered geologist/certified engineer. Even in instances where prescribed setbacks have been observed, they have not been completely successful. This is because the episodic, highly localized, multiple-sourced nature of erosion along the Oregon coast does not render itself applicable to a gradual-retreat type of setback methodology. The development of a standardized 'all hazards' methodology to be applied in the determination of oceanfront construction setbacks will addresses these findings. It directly responds to the technical needs of Oregon. It will result in an improved ability to direct development away from hazardous areas and to prevent or minimize threats to existing populations and property from coastal natural hazards along the entire Oregon coast.

Completion of this work will contribute substantially to Oregon's coastal natural hazards strategy. It will not only complement the work being carried out on geologic report quality control under Task A1.2 in fiscal year 1992, but will dramatically enhance the effectiveness of the hazard mitigation requirements to be developed under Task A1.4 in fiscal year 1993. The results of this innovative effort will be transferable to other areas in the nation and in particular the Pacific Northwest.

Work on this pilot project has already commenced in the form of a FEMA funded project to calculate historical erosion rates from aerial photography. The proposed work is a significant expansion of this effort. Prior to the beginning of fiscal year 1992 the Technical Advisory Committee, to be composed of recognized experts from the Pacific Northwest and elsewhere in the nation, will convene to discuss development of a standardized methodology for determining the magnitude of shoreline instability. This methodology will be applied to a section of the central Oregon coast extending from Cascade Head to Seal Rocks. Data collection and analysis associated with this task will be carried out during the first three quarters of fiscal year 1992. This work will involve: additional, more detailed, analysis of historical flood elevation and shoreline change from aerial photography (e.g. point rates); the compilation of anecdotal erosion rate data from historical photographs; the mapping of areas of significant mass movement, such as landslides and slump blocks, from aerial photography; and field reconnaissance. This work will be used to generate a shoreline stability database and determine a shoreline stability factor as a function of shoreline type. A preliminary report on methodology and results will be prepared at the end of this period. The Technical Advisory Committee will be reconvened at this time to discuss results and make recommendations on presentation of the information. A final report will be prepared in the last quarter of fiscal year 1992. The preparation of an all chronic hazards map in a standardized format that can be used for planning purposes will also occur at this time. A team of technical experts in the areas of coastal hazards, headed by scientists at DOGAMI, will carry out this work. Interim and final results of this work will be disseminated to the public through the hazard workshop format organized by Oregon State University Extension Sea Grant.

Benchmarks: Two technical review meetings, preliminary report to technical advisory committee, shoreline stability data base, all chronic hazards map, final standardized methodology report.

Costs: $181,021

Personnel (21 PM, DOGAMI)		$111,560
Services and supplies		38,915
Subtotal	$150,475	
Indirect costs (for federal grants = 20.3 percent)		30,546
Total		$181,021
Funding sources:		
309 funding ("project of special merit")		$100,500
Other funding (FEMA)		80,521
		$181,021

§ *Task A3.1-92: Communication and Education*

Type: Non-309 funding.

The objective of this task is to build support for policy initiatives by increasing public awareness of the entire spectrum of natural hazards that affect the Oregon Coast. This will be done through the use of workshops with local officials, planning commissioners, emergency services personnel, and interested public. Total cost will be $10,925, which will include the services of Oregon State University staff.

Fiscal Year 1993 Work Program

§ *Task A1.1-93: Support of Policy Working Group*

Type: 309 "weighted formula" funding and non-309 funding.

Description: Policy Working Group efforts, described under Task A1.1-92, will continue through fiscal year 1993.

Benchmarks: Monthly meetings and quarterly progress reports.

Costs: $57,000:

Personnel		$47,000
1/2 time research assistant at OSU	$12,000	
1PM at DLCD, DSL, Parks and DOGAMI	20,000	
3PM at OSU	15,000	
Services and Supplies		4,000
Printing and Mailing		6,000
Total		$57,000
Funding sources:		
309 funding ("weighted formula")		$17,000
Other funding		40,000
		$57,000

§ *Task A1.4-93: Hazard Mitigation Requirements*

Type: 309 "weighted formula" funding and non-309 funding.

Description: The objective of this task is to develop and implement hazard mitigation requirements and procedures. Policy Working Group recommendations will form the basis for the development of explicit hazard mitigation requirements and procedures. These efforts are likely to focus on existing policies in two areas of decision making - the location of new development in hazardous areas and the protection of development already established in hazardous areas. In the former, and following from efforts in the area of hazard assessment, oceanfront construction setbacks will be proposed for implementation at the local level through plan amendments or during periodic review, and/or at the state level through goal, rule, or statutory revisions. In the latter, the development of a detailed 'alternatives and impacts checklist' is envisioned. Language will be prepared to implement such a procedure at the local and/or state level. The consolidation of shoreline alteration permit review into a single process under a single authority will also be considered.

The Assessment found that Oregon's land use policies as currently implemented, may have actually encouraged the proliferation of 'hard' shore protection structures. The development and implementation of hazard mitigation requirements and procedures will address these findings. These proposed program changes will ensure that our existing policies are effectively implemented (i.e. avoidance is the preferred method of hazard mitigation in the location of new development; nonstructural solutions to shoreline erosion are the preferred method of mitigation for existing development; adverse impacts and cumulative effects are adequately evaluated in the consideration of mitigation alternatives). These changes will result in an improved ability to direct development away from hazardous areas, preserve and restore protective functions of the natural shoreline, and prevent or minimize threats to existing populations and property from natural hazards along the entire Oregon coast.

Benchmarks: This task is scheduled to occur over a two year period. Development of quality control criteria and procedures will commence in the first quarter of fiscal year 1993. Initial focusing efforts of the Policy Working Group in this area will have been completed by this time. During fiscal year 1993 task efforts will concentrate on the development and implementation of hazard mitigation requirements and procedures pertaining to the location of new development in hazardous areas. During the first quarter of fiscal year 1993 Policy Working Group and DLCD staff efforts in this area will be summarized into a preferred alternatives document. Following review and consultation of preferred alternatives with stakeholders, draft mitigation requirements and procedures, including an oceanfront construction setback formula, will be prepared during the second and third quarters of fiscal year 1993. Again following review and comment, final mitigation requirements and procedures will be prepared for implementation and the local (i.e. plan amendments, periodic review) and/or state level (i.e. rule, goal, statue revisions). Implementation will commence at the end of fiscal year 1993. Much the same procedure will occur during fiscal year 1994. However, in this instance the emphasis will be on the development and implementation of hazard mitigation requirements and procedures associated with the protection of development already established in hazardous areas (i.e. 'alternatives and impacts checklist'). This work will be carried out by DLCD staff or on contract and supplemented by Policy Working Group's efforts.

Costs: $60,000 (personal services, 12PM at DLCD or contract)

Funding sources:

309 funding ("weighted formula")	$30,000
Other funding	30,000
	$60,000

§ Task A2.2-93: All Hazards Mapping Pilot Project - Catastrophic

Type: 309 "project of special merit" funding.

Description: The objective of this task is to extend the all hazards mapping developed for chronic hazards to include the suite of catastrophic hazards that affect the Oregon coast (e.g. earthquakes, co-seismic subsidence, tsunamis, and sea level rise). The standardized methodology developed under this task will be applied to the same 50 km section of the central Oregon coast to generate an all hazards shoreline stability database and all hazards shoreline stability map for the study area. The pilot database and map will be incorporated into local comprehensive plan inventories through the plan amendment process or during periodic review.

The Assessment found that the possible occurrence of a catastrophic subduction zone earthquake event in the Pacific Northwest has only recently been recognized. As a result, there is little knowledge about the areas along the coast that are susceptible to a major earthquake and related hazards, and the nature of this susceptibility. The development of a standardized 'all hazards' map will address these findings. It will be used to determine oceanfront construction setbacks and to identify high hazards areas for facilities siting and emergency response planning. It will result in an improved ability to direct development away from hazardous areas and to prevent or minimize threats to existing populations and property from coastal natural hazards along the entire Oregon coast. Completion of this work responds to the technical needs of Oregon and will contribute substantially to Oregon's coastal natural hazards strategy. The results of this innovative effort will be transferable to other areas in the nation and in particular the Pacific Northwest.

Benchmarks: Work on this pilot project will proceed in much the same manner as the all hazards mapping pilot project carried out the previous year for chronic hazards . Prior to the beginning of fiscal year 1993 the Technical Advisory Committee will convene to discuss the exact nature of the work to be completed under this task. This work is likely to involve: computer modeling of earthquake force levels, co-seismic subsidence, and tsunami run up elevation; field and aerial photographic mapping of prehistoric subsidence and tsunami run up, field and aerial photographic mapping of areas likely to be susceptible to liquefaction and massive landsliding. This work will be used to add to the shoreline stability database and be factored into the determination of a shoreline stability factor. It is envisioned that identification and mapping of 'red', 'yellow', and 'green' risk zones along the shoreline will be completed in conjunction with this work. Such data collection and analysis will be carried out during the first three quarters of fiscal year 1993. A preliminary report on methodology and results will be prepared at the end of this period. The Technical Advisory Committee will be reconvened at this time to discuss results and make recommendations on presentation of the information. Final report and map preparation will be carried out in the last quarter of fiscal year 1993. A team of technical experts in the areas of coastal hazards, headed by scientists at DOGAMI, will carry out this work. Interim and final results of this work will be disseminated to the public through the hazard workshop format organized by Oregon State University Extension Sea Grant.

Costs: $166,002:

Personnel		$75,490
Services and supplies		62,500
Subtotal	$137,990	
Indirect costs (for federal grants = 20.3 percent)		28,012
Total		$166,002

§ Task A3.1-93: Communication and Education

Type: 309 "project of special merit" funding.

Description: The objective of this task is to build support for coastal natural hazards policy initiatives and expedite the implementation of newly developed policy initiatives through communication and education.

The Assessment found that many people are unaware of the risk they face from coastal natural hazards. Yet, development and implementation of significant policy initiatives will require awareness and support form stakeholders. Further, the assessment found that there is an increasing demand on local officials to have some level of technical expertise if they are expected to adequately implement coastal natural hazards policies. The inclusion of the subtasks described below in Oregon's coastal natural hazards strategy addresses these findings.

A video presentation of the hazards workshops, described under Task A3.1-92, will be developed. This video presentation, "Coastal Hazards and Oregon", will be designed to directly support the policy-making process. It will feature the range of chronic and catastrophic hazards facing residents and visitors to the coast, the public policy implications of recent research findings, and options for Oregonians.

The first sections of a beach management and hazards guidebook will also developed during fiscal year 1993. This guidebook will be a multipurpose set of management tools and private development guidelines, with sections aimed at appropriate audiences: the state resource manager and local official or planner; the prospective land/home buyer and existing land/home owner; the individual needing to hire a geologist, engineer, or contractor; the coastal architect, designer, or landscaper; and the lender or insurer of coastal property. The development of particular guidebook sections will coincide with the implementation of new policy initiatives (i.e. geologic report quality control standards, foredune grading enforcement ordinances in fiscal year 1993). One or two day short courses will be scheduled to coincide with the publication of guidebook sections. This work will be carried out by a combination of contractual, OSU Extension Sea Grant, and DLCD efforts.

The completion of these tasks will ensure that the support needed to achieve program changes is maintained or enhanced. It will also contribute significantly to the achievement of program changes by ensuring their efficient and effective implementation.

Benchmarks: "Coastal Hazards and Oregon" video, geotechnical report standards guidebook and short course, foredune grading enforcement guidebook and short course.

Costs: $47,000:

Personnel	$10,000
Contract - Oregon coastal hazards video	30,000
Supplies and Services	7,000
TOTAL	$47,000

Fiscal Years 1994 Work Program

§ *Task A1.4-94: Hazard Mitigation Requirements*

Type: 309 "weighted formula" funding and non-309 funding.

Description: Policy initiatives in the area of hazard mitigation, described under the same heading for fiscal year 1993, will continue through fiscal year 1994.

Benchmarks: Preferred Alternatives Document, Draft Mitigation Requirements and Procedures, Final Mitigation Requirements and Procedures

Costs: $60,000 (personal services, 12PM at DLCD or contract)

Funding sources:	
309 funding ("weighted formula")	$20,000
Other funding	40,000
	$60,000

§ Task A2.1-94 All Hazards Mapping
Task A2.2-94 All Hazards Mapping

Type: 309 "weighted formula" funding and non-309 funding.

Description: The objective of these tasks is to carry out for the entire coast the tasks described under Task A2.1-92 and Task A2.2-93 described above.

Costs: $50,000:

Personnel (DOGAMI)	$35,000
Services and supplies	15,000
Total	$50,000

Funding sources:	
309 funding ("weighted formula")	$30,000
Other funding	20,000
	$50,000

§ Task A3.1-94 Communication and Education

Type: 309 "project of special merit" funding.

Description: This task is a continuation of the efforts described under Task 3.1-93. Additional sections of the beach management and hazards guidebook will also developed during fiscal years 1994-1995. Particular guidebook sections will be developed to coincide with the implementation of new policy initiatives in the area of hazard mitigation. One or two day short courses will be again be scheduled to coincide with the publication of guidebook sections.

The completion of these tasks will ensure that the support needed to achieve program changes is maintained or enhanced. It will also contribute significantly to the achievement of program changes by ensuring their efficient and effective implementation.

Benchmarks: Hazards mitigation guidebooks and short courses.

Costs: $22,000:

Personnel	$15,000
Supplies and Services	14,000
Total	$22,000

Fiscal Years 1995 Work Program

§ Task A1.5-95: Littoral Cell Management Plan Pilot Project

Type: 309 "project of special merit" funding.

Description: The objective of this task is to develop and implement a special area management plan. Modeled after existing estuary and wetland conservation plans, it is envisioned that 'development',

'conservation', and 'natural' shorelines will be identified for a given littoral cell. Standards and criteria will be developed for uses and activities in each type of shoreline area. Initially, uses and activities to be regulated under this scheme will relate primarily to natural hazards management . Improvements to existing policy being developed under Oregon's hazards strategy will be incorporated into this unified management framework (e.g. hazard identification standards, foredune management standards, hazard mitigation standards). As developed, new policies that enhance and expand the existing coastal zone management framework will be incorporated into the littoral cell management planning framework. Eventually other shoreland management needs will also be incorporated into this unified management framework (e.g. sensitive shorelands standards being developed under the cumulative effects strategy). The shoreline type identification procedure, as well as the standards and criteria for uses and activities in each type of shoreline area, will initially be implemented in affected local plans through the plan amendment process. At a later date the littoral cell management planning process will be implemented on a statewide basis through rule and/or goal revisions.

The Assessment found that there is a need for a more precise, coordinated, and comprehensive management framework for coastal natural hazards in Oregon. Many of the oceanfront requirements of the Statewide Planning Goals are vague. Development in coastal shorelands seems to be treated essentially the same as development elsewhere in the state. As a result, development has not been prevented from occurring in some hazardous coastal areas and little regard has been given to the unique values of coastal shorelands. Further, the scientific understanding and appreciation of the diversity of coastal natural hazards has greatly improved in the ten to twenty years since Oregon's land use policies were adopted. As a result, policy gaps exists in Oregon's coastal zone management framework. The development and implementation of a littoral cell management plan will address these findings. This program change will result in an improved ability to direct development away from hazardous areas, to preserve and restore protective functions of the natural shoreline, and to prevent or minimize threats to existing populations and property from coastal natural hazards.

As noted above, such special area management plans have already been applied to estuaries and wetlands in Oregon. This innovative systemic, 'all hazards', approach to management will contribute significantly to achieving Oregon's coastal natural hazards strategy objectives. Results will be transferable not only to the entire Oregon and Pacific Northwest Coast but elsewhere across the nation.

The baseline data and policy framework needed to develop and implement a littoral cell management plan does not exist to date. However, the short-term program changes described in Oregon's coastal natural hazards strategy are designed to work toward this long-term objective. The basis for identification of shoreline types, and the standards and criteria for uses and activities in each type of shoreline area, will be developed during fiscal year 1995. A pilot littoral cell will also be chosen at this time and a littoral cell management plan will be prepared.

Benchmarks: Draft shoreline type identification procedure, draft standards and criteria for shoreland uses and activities.

Costs: $60,000 (personal services, 12PM at DLCD or contract)

Task A2.2-95 All Hazards Mapping

Type: 309 "weighted formula" funding.

Description: See Task A2.1-94 description above.

Costs: $50,000:

Personnel (DOGAMI)	$35,000
Services and supplies	15,000
Total	$50,000

Task A3.1-95 Communication and Education

Type: 309 "project of special merit" funding.

Description: See Task A3.1-94 description above.

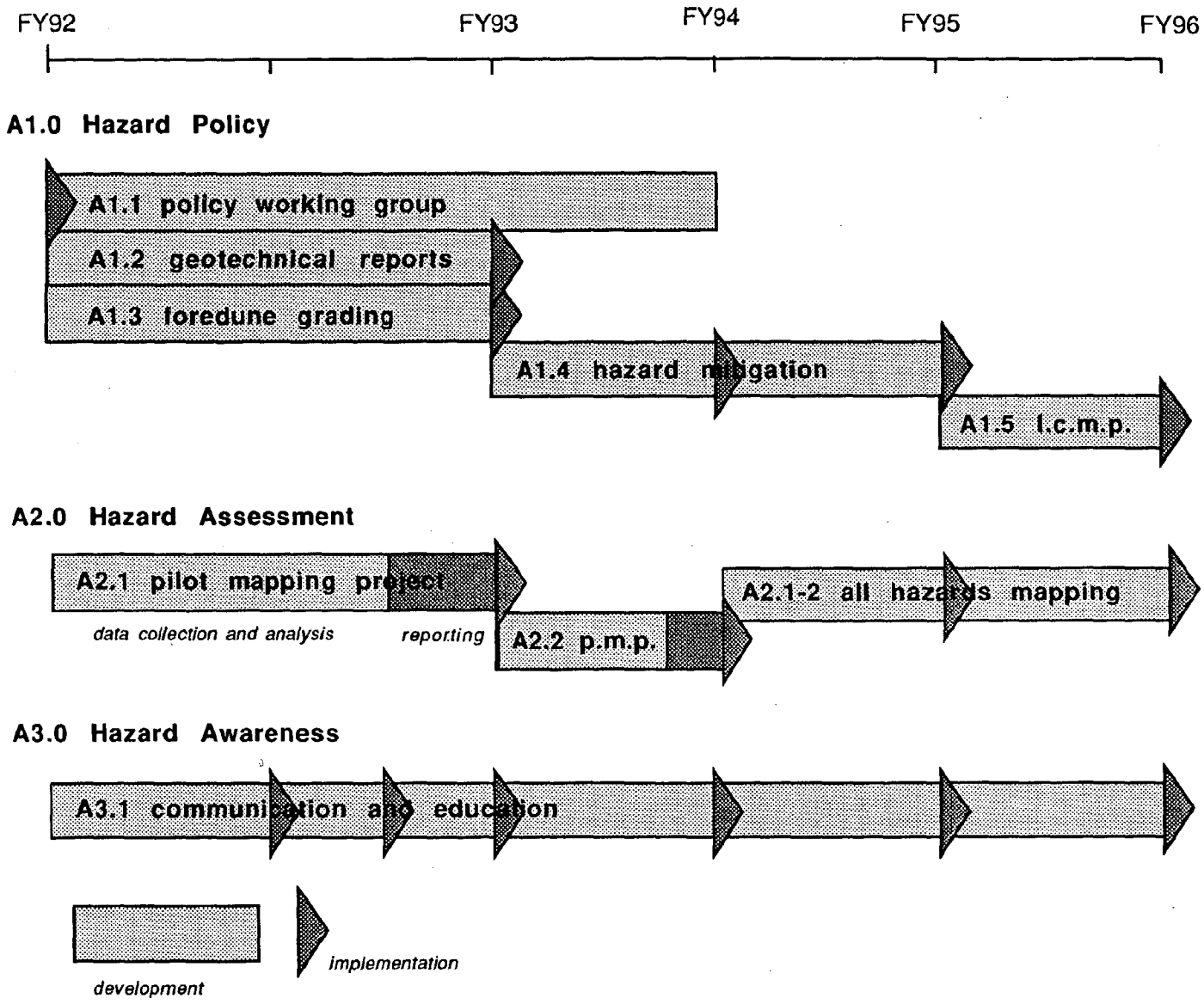
Benchmarks: See Task A3.1-94 description above.

Costs: $22,000 (see Task A3.1-94 description above).

Costs Summary For Coastal Natural Hazards Program Enhancements

Strategy	309 Weighted Formula	309 Special Merit	**Sub Total 309**	Other Funds	Total Costs
Strategy A	$194,000	$430,002	**$624,002**	$281,446	$905,448

Coastal Natural Hazards 309 STRATEGY : Figure CNH1 - Multiyear Work Plan



Wetlands

Priority Programs Enhancements

The 309 Assessment identified two categories of strategies for addressing wetland management problems:

- Develop an estuarine wetlands restoration program; and
- Adopt a methodology for assessing wetlands functions and values.

Strategy A: Develop Estuarine Wetlands Restoration Program

Proposed Program Changes

Strategy A will develop these specific program changes:

- Amend the administrative rules implementing Goal 16 of the LCDC's Statewide Goals and Guidelines.
- Amend DSL's administrative rules for conducting estuarine mitigation.
- Develop related administrative rules for other state agencies.
- Result in local adoption of estuarine mitigation standards. (Assisted by development of a model ordinance and educational materials concerning estuarine restoration.)

Restoration of estuaries is a priority of the coastal program. A large percentage of Oregon's estuaries have been altered, primarily through diking of tidelands. A program to restore tidal flooding will replace some of the estuarine areas lost earlier this century. It will also restore estuarine areas that have been degraded by human activity.

State agencies involved in wetlands management should provide leadership in developing standards for estuarine restoration. Coordinated development of these statewide standards is the first step in this strategy. Once drafted, the standards can then be used to develop the specific program changes listed above.

Once statewide priorities and standards for estuarine restoration are developed, local governments can use these standards to implement program changes at the local level. Ordinances will be developed and offered as models to local governments which choose to restore estuarine areas. These ordinances will incorporate and reflect statewide priorities and standards and can then be adopted by local governments.

This strategy addresses federal 309 Wetlands Programmatic Sub-Objectives II.a-II.d regarding the restoration of wetland acres and functions within degraded wetlands.

Justification

Restoration of estuaries was identified as a need in the wetlands assessment section. To address this need, program changes will include state administrative rules which outline techniques and standards for restoring estuarine wetland habitats and local implementation of these standards.

Rules implementing LCDC Statewide Planning Goal 16 need to be amended because the goal requires the identification of potential restoration sites. Goal 16 also states that state and federal agencies shall assist local government in identifying areas for restoration. However, given a lack of guidance as to how to identify such areas, agencies have not assisted local governments as required and few local estuary plans contain this information. DLCD will use both the prioritization information as well as information on restoration techniques to write specific rule language to implement these requirements of Goal 16.

Once the rule implementing Goal 16 is amended, DLCD's periodic review process will also be amended to incorporate estuarine restoration standards. Local governments will then be required to ensure that their comprehensive plans comply with these changes.

Administrative rules are also needed to implement the mitigation policy of the Division of State Lands (DSL). DSL is the state agency with permitting authority over activities within the state's wetlands. Although the agency does have authority to allow restoration and mitigation of coastal wetlands, there are no standards set forth by which an applicant can develop such a project or by which DSL can regulate these projects. DSL needs standards developed that could be used to implement the mitigation policy and would be enforceable at the local level.

The Oregon Department of Fish and Wildlife (ODFW) needs a prioritization system which addresses the habitat needs of fish and wildlife. The agency serves in an advisory role and routinely comments on the effects of different proposed projects on fish and wildlife. Habitat restoration is a priority for this agency but, to date, they do not have a system which enables them to evaluate the restoration potential of different sites and determine which would be the most suitable for restoration projects. Administrative rules would be drafted concerning habitat restoration. The department also acquires property and conducts wetland restoration and enhancement as part of its management function.

The Oregon Department of Agriculture (ODA) issues grant money to local soil and water conservation districts as well as to local governments for restoration of former wetlands from agricultural land. This agency needs a formalized prioritization system that enables them to rank the different proposals and make a decision based on merit and need.

A model ordinance will be developed because local jurisdictions with an interest in restoring wetlands don't have guidelines for conducting the restoration. It is important for local governments to have standards for conducting restoration because many restoration projects are initiated at the local rather than the state level. Also, all restoration projects will need local approval as activities affecting local land use.

Local governments need standards for projects that require mitigation in estuaries. At this time, local developers have no guidance for how to design and develop such projects. CREST, the Columbia River Estuary Task Force, both plans for and conducts research of estuaries and shorelands along the lower Columbia River. CREST believes it crucial to develop restoration standards for estuaries in order to protect the resource. Likewise, the staff for the South Slough National Estuarine Research Reserve shares this opinion and is beginning a research project analyzing restoration techniques with the goal of developing general standards for conducting such restoration work. (The South Slough National Estuarine Research Reserve is funded by OCRM.)

Work Plan Summary

This program will be developed with involvement from Oregon's coastal communities, state and federal resource agencies, and the general public. This strategy is comprised of several discreet projects.

The initial project, conducted within FY 92, will identify and prioritize estuaries needing restoration. Estuaries will be prioritized on a watershed basis. In FY 93, while developing state restoration standards, sites will be prioritized on a site-specific basis within the watersheds.

The second major element is the development of state standards for conducting estuarine restoration. These standards will be formulated in FY 93 and FY 94. The standards will be used to write specific rule and goal language which will be incorporated into the wetlands programs of the different state agencies. A related project is a demonstration project conducted in FY 92 and FY 93. This project will use existing information concerning estuarine restoration and will provide on-the-ground background for drafting the state policies.

The third component is the local adoption of the state standards. State agencies can assist in local adoption by creating a model ordinance which incorporates the state standards for restoring estuaries. This model ordinance will be developed in FY 94. In FY 95, we intend to develop materials for the public which explain the new statewide process and policies governing estuarine restoration.

Costs Summary, Strategy A

Fiscal Year	309 Weighted Formula	309 Special Merit	**Sub Total 309**	Other Funds	Total Costs
FY92		$48,000	**$48,000**		$48,000
FY93				75,000	75,000
FY94				37,600	37,600
FY95	$40,000		**40,000**		40,000
Totals	$40,000	$48,000	**$88,000**	$112,600	$200,600

Likelihood of Success

The likelihood of success for this strategy is high, given that local governments have stated that they need standards for prioritizing and restoring wetlands and would enforce these standards if the state developed them. Local governments and estuarine protection and planning groups have stated that landowners must have guidelines for conducting estuarine mitigation projects.

The need to regulate these local projects will ensure active and constructive participation by local governments and local adoption of state standards. Once completed, these standards will be incorporated into state law, namely DSL's Removal-Fill Law and DLCD's Goal 16. Incorporation into state law will ensure that these standards are used by local governments in regulating mitigation activities.

Fiscal Year 1992 Work Program

§ *Task A.1-92: Prioritize Estuaries for Restoration*

Type: 309 "project of special merit" funding.

Description: The Environmental Protection Agency has recently developed "A Synoptic Approach to the Assessment of Cumulative Effects of Wetland Loss on Landscape Function." This innovative method was designed to enable states to evaluate the environmental needs and risks of large regions relatively quickly and inexpensively. We propose to modify this approach to fit Oregon's situation and then use the method to evaluate and prioritize the potential benefits for estuarine restoration on a watershed basis along the Oregon coast. This prioritization will achieve a program change by identifying estuaries for restoration, as required by Statewide Goal 16. Although required by the goal, identification of restoration sites still needs to be conducted in order to implement the goal.

Although this approach has been tested by the EPA in the states of Louisiana and Washington, it has not been used by a state to evaluate estuarine restoration potential. After Oregon modifies and tailors the method for estuarine assessments, this modification should be transferable to other regions and states to conduct similar assessments.

When completed, this synoptic approach will provide a prioritization of watersheds with a high potential to benefit and need for restoration. This prioritization would be very helpful in developing state standards for restoration (Project A.3-93). However, it is not essential to complete this special merit project before drafting the standards.

DLCD would contract with an outside researcher to develop and test the method.

Benchmarks:

- By December 31, 1992, collection of necessary data and information. Measures or compilations of synoptic (broad-scale) spatial data from existing maps and data sources will be gathered. Data will include at least information concerning wetland acreage, hydric soil coverage, watershed acreage, annual precipitation, land cover, slope, number of threatened/endangered species, and agricultural and population growth rates. No site visits will be required;

- By March 31, 1993, preparation of maps showing rankings of watersheds or other landscape units. These maps portray indicators of wetland capacity, cumulative loss, and landscape input to wetlands. The indicators are then combined into assessments of hydrologic, water quality, and life support functions, as well as wetland loss;

  Because existing data seldom have been compiled by watershed, the user will employ map-sampling procedures and county data to obtain estimates at a watershed scale. The output maps, prepared for major watersheds, will show conditions of all landscape units with regard to each indicator;

- By June 30, 1993, prioritization of watersheds according to the need for estuarine restoration. The maps developed under the EPA synoptic approach will be used to determine and document this prioritization

Costs: $48,000:

Personnel (on contract)	$41,600
Computer time (100 hours @ $15/hr)	1,500
Digitization/scanning (240 hours @ $10/hr)	2,400
Supplies & services	500
Digital data acquisition	1,500
Report printing	500
Total	48,000

§ *Task A.2-92 : Estuarine Restoration Demonstration Project*

Type: Non-309 funding.

This task would develop a demonstration project to restore an estuary on the Oregon coast using available information and techniques. We would incorporate current restoration techniques as well as the new Oregon Wetlands Methodology. Both the South Slough National Estuarine Research Reserve and CREST are proposing to begin estuarine mitigation projects. A few local governments have also expressed an interest in mitigating for historical estuarine losses.

The cost of conducting these mitigation projects can vary greatly and will depend on available funds. At this time, the South Slough Reserve staff has applied for funding from the U.S. Fish and Wildlife Service.

Fiscal Year 1993 Work Program

§ *Task A.2-93: Estuarine Restoration Demonstration Project*

Type: Non-309 funding.

Year Two of the demonstration project will continue and complete the restoration work begun in FY 92. In addition to the actual restoration work, a report will also be written concerning each restoration project. These reports will explain the results of the projects and recommend estuarine restoration guidelines applicable to the entire Oregon coast.

This task will cost approximately $50,000 of non-309 funds.

§ *Task A.3-93: Development of State Standards For Conducting Estuarine Restoration*

Type: Non-309 funding.

This task will develop guidelines for prioritizing areas which need estuarine restoration as well as standards for conducting such restoration. These guidelines will include: alternative restoration scenarios by habitat type; identification of potential restoration sites; and a prioritized list of sites for restoration. It will cost approximately $25,000 to complete the first year of this project.

Fiscal Year 1994 Work Program

§ Task A.3-94: Develop State Standards for Conducting Estuarine Restoration

Type: Non-309 funding.

This is a continuation of Task A.3-93 described above. This task will complete the development of state standards for restoring estuaries. These standards will then be incorporated into the policies and administrative rules of the different state agencies which regulate wetlands. This task will cost approximately $25,000.

§ Task A.4-94: Develop Model Ordinance For Conducting Estuarine Restoration

Type: Non-309 funding.

This task will develop a model ordinance for use by local governments to develop local regulations for conducting estuarine restoration. The model ordinance will incorporate the standards developed by the state. Therefore, local governments which use this model to develop their own wetlands regulations will be in compliance with state wetlands law. The total cost for this strategy is $12,600.

Fiscal Year 1995 Work Program

§ Task A.5-95: Develop an "Estuary Kit" For Local Communities

Type: 309 "weighted formula" funding.

Description: The state will develop an "estuary kit" for communities to use in restoring estuaries. This kit will include information on restoring estuaries that is pertinent to local communities and the general public. An outside contractor will be hired to develop the specific materials, with guidance and review by state agency staff.

Benchmarks:

- By September 30, 1995, a contractor will be hired to develop the "estuary kit."
- By June 30, 1996, the kit will be completed. This "estuary kit" will include: a brochure describing the newly developed state standards; a copy of the model ordinance with information on how to tailor it to unique conditions; visual aides for public meetings explaining the restoration process (overheads and handouts); and fact sheets on the different state regulatory programs.

Costs: $40,000 (contractual)

Strategy B: Adopt Methodology For Assessing Wetlands Functions and Values

Proposed Program Changes

The state of Oregon proposes to incorporate into state law a methodology for assessing the functions and values of wetlands. The several state agencies involved in regulating wetlands would draft administrative rules and policy incorporating this methodology into their separate programs. State agencies, local governments, and private landowners will use this common methodology to evaluate wetlands.

This will result in a quantitative improvement in the state's wetland program, since more wetlands can be identified if an accurate methodology is developed. Also, a qualitative improvement will occur because wetlands can be evaluated and protected according to the benefits they provide. Strategy B will lead to these specific program changes:

- Amend the administrative rules implementing Goal 5 of the LCDC's Statewide Goals and Guidelines.
- Amend DSL's administrative rules for evaluating permit applications under the state Removal-Fill Law.
- Develop related administrative rules for other state agencies.
- Develop a functional methodology that can be used by local governments in designing a local wetland conservation plan.
- Result in local adoption of the functional methodology. (Assisted by development of a model ordinance and educational materials concerning the methodology.)

The first step in accomplishing all of the program changes listed above is the completion of the "Oregon Wetlands Methodology." Development of this methodology was funded by an EPA grant; the methodology is scheduled to be completed by July 1992. Once completed, however, there is currently no funding which enables the state to test the methodology and incorporate it into state policy and administrative law. These steps are needed if the methodology is to become an enforceable part of Oregon's wetland program.

This strategy addresses federal 309 Wetlands Programmatic Sub-Objectives I.a and I.b regarding the protection of existing wetlands through improved regulatory programs.

Justification

A serious obstacle to managing wetland resources is the fact that little data have been gathered to determine exact wetlands acreage across the state, the degree of wetland loss, and the impacts of development on wetlands functions and values. As information is gathered, it must be evaluated in a consistent manner so that accurate assessments and comparisons of the state's wetland resources can be made.

The "Oregon Wetlands Methodology" currently being developed is designed to provide a "common wetlands language" that can be used by all levels of government as well as the private sector. This will be different from existing methodologies for several reasons. First, it is meant to assess the biological as well as the social costs of destroying and creating wetlands. Also, it is designed to be used by laypersons as well as wetlands experts.

Right now, most local planners do not have the information or expertise to evaluate wetland values and impacts. However, the reality is that many decisions affecting wetlands occur at the local level, given Oregon's locally implemented land use program and the shortage of funds at the state and federal levels. This methodology is designed to provide the local planners with the tools the make at least initial functions and values assessments on their own.

Also, several local jurisdictions are currently developing wetland conservation plans and many others have expressed a desire to develop such plans in the future, should money be made available. Although the communities developing wetland conservation plans are analyzing the functions and values of wetlands in similar ways, there is a need for single method to be used statewide, to ensure consistency.

This methodology is intended to be used throughout the state and to possibly serve as a model to other states. However, there is currently no funding available to test the methodology and incorporate it into state law. We propose a project that would allow the state, federal, and local agencies an opportunity to test this assessment methodology. After testing it and correcting any inaccuracies or vagueness, we propose incorporating the methodology into state standards and enforceable policies.

The coastal zone is an appropriate place for a pilot project because this is where most wetlands losses have occurred and the coast continues to experience great pressure to develop. Many coastal communities have expressed a need for a method to analyze the values of wetlands that will help them plan which areas to protect and which to develop.

Work Plan Summary

Several specific projects make up the whole work plan implementing this strategy. Development of a wetland conservation plan using this methodology could be extremely important as it would allow actual, hands on, testing of the classification system. This initial project is scheduled for FY 92.

Several state agencies wish to develop policies and administrative rules which would incorporate the classification methodology and make it an enforceable state policy. Although it would obviously be very useful to complete the wetland conservation plan as a test of the methodology, this step is not be essential to development of state standards.

Development of state standards incorporating the wetlands methodology would be done in FY 92 and FY 93. Also in FY 93, we propose to develop a model ordinance incorporating the newly developed standards. In FY 94, we intend to develop educational materials which explain the policy and standards for assessing the functions and values of wetlands.

Costs Summary

Fiscal Year	309 Weighted Formula	309 Special Merit	**Sub Total 309**	Other Funds	Total Costs
FY92	$25,000	$80,000	**$105,000**		$105,000
FY93	25,000		**25,000**	$12,600	37,600
FY94	25,000		**25,000**	$15,000	40,000
Totals	$75,000	$80,000	**$155,000**	$27,600	$182,600

Likelihood of Success

The likelihood of success for this strategy is high, given that several state agencies need policies for assessing the functions and values of wetlands. Their need for developing this strategy will ensure active and constructive participation. Also, these agencies frequently work together to manage common elements of the state's wetlands program and maintain a good working relationship with each other.

In addition, the wetland conservation planning process is proving a successful mechanism for local governments to work with state and federal agencies in addressing local development needs as well as wetland resource protection. Since several local governments are developing wetland conservation plans and many more want to, we believe this step will be very successful. Also, confusion concerning the wetland conservation plan process is generally due to the lack of consistent guidelines for determining the benefits of the wetlands within the plan area. This methodology will provide that information and result in consistency among the plans and greater protection of more beneficial wetlands.

Current state law requires that local governments notify the state of activities proposed within wetlands and attain a "no net loss" of wetlands. As wetlands become an increasingly more important land use issue, more local jurisdictions are drafting ordinances for regulating the use of wetlands. The most common complaint DLCD receives from these jurisdictions is that they don't know how to evaluate the functions and values of wetlands and therefore have difficulty in regulating wetlands effectively. Since the local governments have this interest in and need for a wetlands methodology, the likelihood of success for local adoption and implementation of a statewide methodology is very high.

Fiscal Year 1992 Work Program

§ *Task B.1-92: Wetland Conservation Plan*

Type: 309 "project of special merit" funding.

Description: The wetland conservation planning process will be used to test the new Oregon Wetlands Methodology. Wetland conservation plans are a unique and innovative mechanism by which local governments plan for protection of wetland resources while also allowing some development. They are developed by local governments and reviewed and approved by DSL, with assistance from other state and federal agencies.

Given the great cost of developing wetland plans, and a state system of local land use planning, the state is not the appropriate governmental body to plan for wetlands. For these reasons, the

locally developed wetland conservation plans are the best mechanism the state has for evaluating and protecting wetlands and the state strongly encourages their development. However, the local governments do not have the technical expertise to evaluate the functions and values of wetlands. Therefore, incorporating the "Oregon Wetlands Methodology" into the development of wetland conservation plans is a high priority for the state wetlands program.

We propose hiring a contractor to develop a wetland conservation plan. This contractor will assess the wetland functions and values using the newly developed "Oregon Wetlands Methodology."

This will serve two purposes. First, we will test and refine the methodology to develop a "common wetlands language" to be used throughout the state. Second, another local jurisdiction will be able to develop a wetland conservation plans. Given limited funds in the state, and a land use program which emphasizes locally developed plans, completion of wetland conservation plans are a high priority for the coastal program.

Benchmarks:

- By September 30, 1992, we will have selected an area for developing a wetland conservation plan and hired a consultant.
- By March 31, 1993, the consultant will have applied the Oregon Wetlands Methodology and produced a detailed wetlands inventory and an assessment of the relative functions and values of the wetlands in the study area. The technical advisory committee (comprised of state and federal agency staff) will then review and refine the assessment.
- By June 30, 1993, the contractor will have drafted a plan that protects the functions and values identified. This includes identification of potential mitigation sites. During FY 93, the local jurisdiction will complete and adopt the plan according to state statute. Once completed, the plan is adopted as part of the local comprehensive plan as is therefore enforceable through DLCD's land use process.

Costs: $80,000:

Contractual:		$60,000
Delineation & inventory	$30,000	
Apply methodology & evaluation	20,000	
Report preparation	10,000	
Grant (local govt) - educ. material & cit. involvement		20,000
Total		$80,000

§ *Task B.2-92: Develop State Standards For Assessing Wetlands Functions and Values*

Type: 309 "weighted formula" funding.

Description: Administrative rules and policies will be written that provide consistent standards to be used throughout the state in assessing wetland functions and values. The state agencies with responsibility for regulating wetlands will work jointly to write these rules and policies.

It is not essential to complete either the proposed special merit project or the demonstration project before drafting these standards. However, it would obviously be helpful to develop these other projects and use the results in developing state policies and administrative rules.

Benchmarks:

- By September 30, 1992, a technical committee comprised of state agency staff, wetlands experts, and local planners will be selected. This staff will then begin to review and perhaps revise the "Oregon Wetlands Methodology."
- By June 30, 1993, this committee will have drafted methodology language specific to each agency program. This will include the following: administrative rules clarifying Statewide Goal 5; periodic review standards for local jurisdictions to apply when assessing their wetland resources; administrative rules to be used by DSL in evaluating removal-fill permits; administrative rules to be used by local governments in developing wetland conservation plans.

Costs: $25,000 (personal services)

Fiscal Year 1993 Work Program

§ *Task B.2-93: Develop State Standards For Assessing Wetlands Functions and Values*

Type: 309 "weighted formula" funding.

Description: See Task B.2-92 discussion.

Benchmarks:

- By September 30, 1993, the committee formed in FY 92 will have circulated the draft language developed under Task B.2-92 to other state agencies, federal agencies and local governments for review and comment.
- By March 31, 1994, the committee will have finalized the language. This final methodology will incorporate appropriate comments and incorporate the results of the wetland conservation plan developed in FY 92.
- By June 30, 1994, the language, as written into administrative rules, will be adopted by the respective agencies.

Costs: $25,000 (personal services)

§ *Task B.3-93: Develop Model Ordinance For Local Governments*

Type: Non-309 funding.

This task will develop a model ordinance for use by local governments for protecting wetlands. Many of these local jurisdictions have requested a model ordinance that they can use to develop local regulations. The model ordinance will incorporate the standards developed by the state. It will cost approximately $12,600.

Fiscal Year 1994 Work Program

§ *Task B.4-94: Develop "Wetlands Kit" For Local Governments*

Type: 309 "weighted formula" funds and non-309 funds.

Description: The state will develop a "wetlands kit" to assist communities in assessing the functions and values of the wetlands in their jurisdiction. This kit will include information on evaluating wetlands that is pertinent to local communities and the general public. An outside contractor will be hired to develop the specific materials, with guidance and review by state agency staff.

Benchmarks:

- By September 30, 1994, a contractor will be hired to develop the "wetlands kit."
- By June 30, 1995, the kit will be completed. This "wetlands kit" will include: a brochure describing the newly developed state standards; a copy of the model ordinance with information on how to tailor it to unique conditions; visual aides for public meetings explaining the restoration process (overheads and handouts); and fact sheets on the different state regulatory programs.

Costs: $40,000 (contractual)

Funding sources:

309 funding ("weighted formula")	$25,000
Other funding	15,000
	$40,000

Costs Summary For Wetlands Program Enhancements

Strategy	309 Weighted Formula	309 Special Merit	**Sub Total 309**	Other Funds	Total Costs
Strategy A	$40,000	$48,000	**$88,000**	$112,600	$200,600
Strategy B	75,000	80,000	**155,000**	27,600	182,600
Totals	$115,000	128,000	**243,000**	$140,200	$383,200

Ocean Resources

Priority Program Enhancements

Oregon's ocean resources are of national importance. It is essential that a coordinated program to plan for and manage ocean resources on a comprehensive basis be carried out to conserve these resources for future generations.

Federal agencies will be invited by the Governor to participate in preparation of the territorial sea plan.

Strategy: Adopt Territorial Sea Plan

Proposed Program Change

Completion of Oregon's 309 ocean planning strategy will result in adoption of a territorial sea plan. Preparation and adoption of this plan as part of Oregon's Coastal Management Plan is required by 1991 Oregon law. When the plan is approved by NOAA/OCRM under the Coastal Zone Management Act of 1972, federal agencies will be required to act consistent with the territorial sea plan.

The proposed changes will have the following effects:

- Permits issued by state and federal agencies and local governments for activities effecting ocean resources will be based on consistent and coordinated policies and standards;
- State and federal programs for managing marine resources will be consistent, coordinated and compatible;
- The public will have enforceable plan policies and standards by which to monitor agency actions, prepare public information materials and promote personal resource stewardship;
- Approximately 1,000 square miles of ocean will be managed to:
    - protect critical habitat areas of marine mammals, including the threatened Steller sea lion; breeding seabirds, and rocky intertidal plants and animals;
    - resolve conflicts between ocean activities and wildlife resources;
    - permit increased utilization of seabed and aquatic areas while maintaining environmental quality;
    - increase visitor appreciation and enjoyment of the ocean environment while protecting fragile or overused resources; and
    - preserve environmental values and economic benefits for future generations.
- Coastal communities and the people of Oregon will be able to continue to rely on the beauty and biological richness of Oregon's ocean for economic and social well-being; and
- Management of resources protected under federal law will be enhanced.

The broad outlines of a plan for Oregon's territorial sea plan are known and it is possible to describe what the plan will do within the limits of existing law. However, it is not possible to accurately describe the exact form and

content of all program changes and subplan elements which will be triggered by the plan preparation and adoption process. Congress intended just such a process and did not indicate specific ocean program enhancement measures precisely because no federal agency or state government has yet developed an ocean resources management plan within the framework of the reauthorized Coastal Management Act.

Justification

Oregon's 309 Assessment identified six Priority Program Enhancements for ocean resources. A territorial sea plan, prepared through a coordinated policy forum and supported by adequate scientific information, is the best strategy to meet these needs because:

- the Oregon legislature has required that such a plan be prepared and adopted as part of the Oregon Coastal Management Plan;
- existing ocean management is fragmented and uncoordinated among many state and federal agencies; and
- the ocean is a public resource with many users whose interests and activities would not otherwise be coordinated.

Work Plan Summary

Oregon's ocean resources strategy has three major elements:

1. An Ocean Policy Advisory Council, established by the Legislature, which will continue over the four year period to coordinate policy, oversee projects and involve citizens;
2. A variety of studies and resultant subplan elements necessary to build a policy framework and information necessary for the territorial sea plan; and
3. A territorial sea plan reviewed by the public and adopted as an enforceable element of Oregon's coastal management program.

Costs Summary, Ocean Resources Strategy

Oregon's ocean resources planning will be funded from several sources, including state funds, CZMA 306 funds, and others. 309 funds are sought to carry out Projects of Special Merit.

Fiscal Year	309 Weighted Formula	309 Special Merit	**Sub-Total 309**	Other Funds	Total Costs
FY 92:		$233,000	**$233,000**	$196,500	$429,500
FY 93:		278,000	**278,000**	296,500	574,500
FY 94:		87,000	**87,000**	326,500	413,500
FY 95:		242,000	**242,000**	355,000	597,000
Totals	$0	$840,000	**$840,000**	$1,174,500	$2,014,500

Likelihood of Success

Nature and Degree of Existing Support. The Ocean Resources Planning strategy has a broad base of public, political, legal and institutional support.

The Public. There is a very high level of public support for ocean resources protection through sound planning. This support is the most important factor in ensuring success during plan preparation and implementation. Oregon state government, unlike many federal agencies, is very accustomed to working with the public at the local level to ensure that programs have a high level of real world participation and support.

The Legislature. The 1991 Oregon Legislature overwhelmingly passed legislation establishing an Ocean Policy Advisory Council and territorial sea planning process which will be the vehicle by which the 309 Ocean Resources

Planning strategy is carried out. The 1991 Legislature also appropriated state general funds specifically for ocean resources planning work. Legislative support increases the likelihood of success.

The Governor. The Governor has appointed an Ocean Policy Advisory Council and the Governor's senior policy assistant will chair the Council. The Governor's office will rely on the Council to provide coordinated policy advice on ocean issues. The Governor's support increases the likelihood of success.

State Agencies. Seven state agencies will directly participate in work of the Council in carrying out the 309 strategy. Several of these agencies will be involved in carrying out projects proposed in the ocean strategy and will eventually adopting enforceable measures to protect ocean resources. The participation of all affected state agencies increases the likelihood of success.

Local Governments. Coastal counties and cities are represented on the Ocean Policy Advisory Council and will participate in preparing the territorial sea plan and carrying out certain plan elements related to shoreline areas. This official participation by cities and counties in a state level program will help ensure that Oregon's ocean planning will be a success.

Federal Agencies. Several federal agencies, including the U.S. Fish and Wildlife Service, US Army Corps of Engineers, Environmental Protection Agency, and National Marine Fisheries Service will participate in carrying out the 309 strategy because of resource management or protection responsibilities within Oregon's territorial sea. The support and involvement of these federal agencies will increase the likelihood of success.

Fiscal Year 1992 Work Program

§ Task A.1-92: Ocean Policy Advisory Council

Type: Non-309 funding (state funding)

The Ocean Policy Advisory Council, established by the Oregon Legislature within the Governor's Office, will oversee the work associated with the territorial sea plan, including 309 projects. The Council will use the work products of 309 and other funded projects to develop management policies and recommendations for the territorial sea plan. Total costs will be approximately $196,500. Funding will come from state general funds and federal 306 funds to carry out this element of the strategy.

§ Task A.2-92: Cooperative Reef Ecosystem Study

Type: 309 "project of special merit" funding.

Description: The Cooperative Reef Ecosystem Study will coordinate the goals, objectives and tasks of several ODFW marine programs with those of the Oregon Urchin Commission, Oregon State University College of Oceanography, U.S. Fish and Wildlife Service and National Marine Fisheries Service. The study will be managed by the Oregon Department of Fish and Wildlife and will focus on important rocky reef habitat areas on the southern Oregon coast.

Information gained by this study is essential to preparing a plan and various management measures for resources and activities in Oregon's territorial sea. This project meets a Priority Program Enhancement need to conduct coordinated ocean research to acquire needed information.

This project of special merit will be proposed on a yearly basis for each of four years. A high degree of variability in ocean conditions, resource abundance and other environmental factors makes it essential that the database from this study be developed from at least four years of field work.

Objectives for the study have been developed in a multi-disciplinary team approach to make sure that studies are geared to management needs anticipated by several agencies. Objectives include:

- integrating existing studies to describe kelp/reef habitat relationships;
- identifying what invertebrates, fish, plants, birds, and mammals live among the kelp/reef habitats;

- determining the effects of commercial and recreational fishing on fish and shellfish in a particular reef area;
- determining species interaction between habitat types; and
- collecting data on wildlife disturbance and resource use conflicts.

Specific study objectives have been developed for 18 program areas and work tasks, such as SCUBA surveys, fish tagging, aerial and satellite surveys, and fishing vessel logbook analysis have been identified for actually conducting work. Field work will be carried out by ODFW and other agencies as funds are available.

The 309 funds will be used primarily to provide overall project management within ODFW and to support limited field work to supplement work funded from other sources. Other 309 projects proposed as Projects of Special Merit, below, will be coordinated with the Cooperative Reef Ecosystem Study. This 309 project is central to Oregon's ocean planning and management. Without the site-specific information to be gained, Oregon and federal agencies will be unable implement meaningful management measures.

Subtasks:
- Coordinate existing and proposed research programs among state and federal agencies and universities;
- Acquire data on reef communities, species distribution, abundance, habitat interactions, etc.;
- Establish monitoring network on specific reef sites;
- Obtain water quality samples.

Products:
- environmental inventory data in GIS format;
- baseline monitoring network to support annual and seasonal monitoring;
- water samples.

Costs: $87,000 (309 "project of special merit"):

Personnel:		$72,000
project management, 12 PM	$60,000	
research biologist, 6 PM	12,000	
Travel, field work		10,000
GIS database		5,000
Total		$87,000

§ Task A.3-92: Rocky Shores Characterization

Type: 309 "project of special merit" funding.

Description: The 1990 Ocean Plan and the 309 Assessment clearly showed that Oregon's rocky intertidal areas are threatened with degradation and depletion from overuse and that there is no detailed, systematic, historical inventory of intertidal plants and animals on which to prepare management programs for these areas.

This project of special merit will provide the basis for a significant advancement in Oregon's programs to protect these critical resources. The information about rocky shore sites and resources will allow the Ocean Policy Advisory Council to designate a system of marine gardens and to prepare other measures to regulate harvest of marine plants and animals from rocky shoreline areas. The state lacks financial resources to support the work proposed in this 309 project of special merit.

This project will support development of an inventory of plant and animals resources as well human impact or management problems at each of 12 rocky intertidal sites as a first step toward

preparing plan policies and enforceable implementing measures. This project will be lead by the Oregon Department of Fish and Wildlife in cooperation with the Oregon Department of Parks and Recreation and Oregon State University. The project will be coordinated with, but additional to, the Cooperative Reef Ecosystem Study, proposed above, and with coastal local governments along whose shorelines lie the various rocky intertidal areas.

Subtasks:

- Inventory and characterize plant and animal resources of rocky shoreline sites;
- Identify use conflicts, detrimental activities and other threats;
- Build GIS data base for each identified site.

Products:

- Inventory of biotic resources at specific rocky intertidal sites;
- Characterization of management problems at each site;
- Enhanced GIS data base for each site.

Costs: $78,000 (309 "project of special merit"):

Personnel		$63,000
project biologist, 12 PM	$48,000	
biologist asst., 6 PM	2,500	
Travel, field work		5,000
GIS data base		10,000
Total		$78,000

§ Task A.4-92: Threatened and Endangered Species Protection

Type: 309 "project of special merit" funding.

Description: Several species of marine mammals and birds listed as Threatened or Endangered utilize marine habitat in Oregon's territorial sea. Protection of these species under both federal and state law will be strengthened by coordinating federal protection responsibilities and management programs with those of the State of Oregon. The 1990 Ocean Plan and 309 Assessment identified the need for improved protection of Threatened and Endangered species off Oregon.

This project will focus primarily on the Steller Sea Lion and will use an interagency working group to coordinate among the U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S. Coast Guard, Oregon Department of Fish and Wildlife, Department of Parks and Recreation, Oregon Urchin Commission, State Marine Board and others. This project will be coordinated with the Cooperative Reef Ecosystem Study (above). Other species to be considered include the marbled murrelet, Aleutian Canada goose, snowy plover, and gray whale.

The project will result in management plans and other protection measures for critical habitat to complement or contribute to federal recovery plans for these species.

This project is an innovative initiative by a coastal state to work cooperatively with federal agencies to address habitat protection of threatened or endangered species within the state's territorial sea. The project will enable both state and federal agencies to build habitat protection and management of threatened and endangered species into a broader ocean management framework and will serve as a model process for other coastal states.

Subtasks:

- Survey habitat use, foraging range, and feeding habits of Steller sea lions;
- Characterize use of territorial sea by other threatened or endangered bird and mammal species;
- Assess resource and use conflicts, other threats at each habitat site;

- Determine management needs and alternatives.

Products:
- Draft inventory report of species occurrence, seasonality, threats and use conflicts;
- Preliminary management assessment for each site and overall territorial sea.

Costs: $68,000 (309 "project of special merit"):

Personnel		$55,500
project biologist, 12 PM	$48,000	
biologist asst., 3 PM	7,500	
Travel, field work		7,500
GIS data base		10,000
Total		$68,000

Fiscal Year 1993 Work Program

§ Task A.1-93: Ocean Policy Advisory Council

Type: Non-309 funding (state and other sources).

See Task A.1-92 discussion for a description of this task. Total costs will be approximately $196,500 in state general funds and federal 306 funds.

§ Task A.2-93: Cooperative Reef Ecosystem Study

Type: 309 "project of special merit" funding.

Description: The Cooperative Reef Ecosystem Study will build on work accomplished in the first year of Task A.2-92 and will refine research techniques, extend data records, improve protocols, and add new studies as funding becomes available. The information from this study will be used to formulate plan policies and enforceable implementation measures.

This project will continue to be Oregon's top Priority Program Enhancement.

Costs: $87,000 (309 "project of special merit")

§ Task A.3-93: Rocky Shores Characterization and Inventory

Type: 309 "project of special merit" funding.

Description: The Rocky Shores Characterization project will continue to build a database of information about rocky shore sites and resources. Because Oregon's rocky intertidal areas are relatively unstudied, it will be essential to gather inventory information over several years to understand the variability of these areas.

This data, in digital format, will enable the Ocean Policy Advisory Council to delineate a system of Marine Gardens at rocky intertidal sites and spell out management measures appropriate to each site.

Costs: $78,000 (309 "project of special merit")

§ Task A.4-93: Threatened and Endangered Species Subplan

Type: 309 "project of special merit" funding.

Description: This project of special merit will result in an interagency habitat protection plan for Steller sea lion habitat on the Oregon coast. The goal of this subplan will be to prevent or reduce human

disturbance to habitat during critical seasons. This subplan will be incorporated into the overall territorial sea plan and will significantly advance the state's protection of ocean resources. This will provide a cost effective alternative to federal measures to close portions of the territorial sea to certain uses. Extensive interagency coordination and public involvement will be required to prepare this subplan.

This project is an innovative initiative by a state to address threatened and endangered species within a coordinated coastal management context. The operating principles and techniques of this process, as well as specific management results, will be transferable to other states.

Products:
- Draft management subplan for Steller sea lions;
- Interagency agreements on protection measures.

Costs: $68,000 (309 "project of special merit")

§ Task A.5-93: Territorial Sea Bathymetric Survey

Type: 309 "project of special merit" funding.

Description: This project of special merit will be a cooperative survey cosponsored by Oregon State University, NOAA, and USGS, to acquire detailed seafloor bathymetric and shallow seafloor geophysical data within Oregon's territorial sea. SEABEAM side-scan sonar will be used to generate bathymetric data which will be processed into bathymetric charts with approximately 1 meter contour intervals. This detailed bathymetry will accurately characterize the habitat information acquired as part of the Cooperative Reef Ecosystem Study, above, and will improve preparation of nearshore management measures to implement the territorial sea plan.

The bathymetric survey will be cooperatively financed among participating agencies. 309 funds will support ship time , data acquisition and processing. Other cooperative funds will support ship time, crew costs, and other scientific data gathering. This cooperative survey is the preferred model by all effected agencies and represents an opportunity to meet a variety of information needs in one survey.

Subtasks:
- Coordinate with Oregon State University and U.S. Geological Survey to prepare cooperative survey plan;
- Conduct geophysical survey of Oregon territorial sea;
- Acquire and process digital bathymetric and geophysical data.

Products: Detailed bathymetric and seafloor data.

Costs: $45,000 (309 "project of special merit"); cooperative with other agencies.

§ Task A.6-93: Coastal Ports Recreation Survey

Type: Non-309 funding.

This study will obtain information on marine recreational boating activity associated with various coastal ports and the economic and environmental impacts of this use. Total costs will be $25,000, funded with a grant from the National Coastal Resources Institute.

§ Task A.7-93: Ocean Dredged Material Disposal

Type: Non-309 funding.

This task will develop a coastal program element for dredged material disposal, criteria for site designation, and draft amendments to Army Corps of Engineer plans. The U.S. Army Corps of Engineers and the Environmental Protection Agency have responsibility for locating and approving ocean disposal sites. However, location and

operation of these sites must be approved by the state under federal consistency requirements. These ocean sites have previously received only cursory review for environmental impacts from dredged materials disposal. Coordinated management of Oregon's ocean waters and seabed requires a more thorough review of dredged material disposal criteria, practices, and impacts. Total costs will be $75,000. This will be a cooperative project with US Army Corps of Engineers, using a National Coastal Resources Institute grant.

Fiscal Year 1994 Work Program

§ Task A.1-94: Ocean Policy Advisory Council

Type: Non-309 funding (state and other sources).

See Task A.1-92 discussion for a description of this task. Total costs will be approximately $196,500 in state general funds and federal 306 funds. The product will be a draft territorial sea plan.

§ Task A.2-94: Cooperative Reef Ecosystem Study, Year 3

Type: 309 "project of special merit" funding.

Description: Data collection will be continued in the study area; information will be developed to support territorial sea plan elements.

Products: Data and information to support preparation of draft territorial sea plan and implementing measures

Costs: $87,000 (309 "project of special merit")

§ Task A.9-94: Ocean Recreation Subplan

Type: Non-309 funding.

This task will survey recreational uses and trends in nearshore areas, characterize existing and future conflicts between recreational uses, natural resources or other uses; prepare draft management subplan. The product will be a draft plan for managing nearshore recreational uses. Total cost will be $35,000 (National Coastal Resources Institute).

§ Task A.10-94: Mariculture Opportunities

Type: Non-309 funding.

This task will survey existing and emerging mariculture industry on Pacific coast and world wide and assess mariculture opportunities on Oregon coast. It will identify regulatory requirements for mariculture and prepare draft mariculture policies and programs. The product will be a draft subplan for mariculture in territorial sea. Total costs will be $65,000 (National Coastal Resources Institute).

§ Task A.11-94: Draft Territorial Sea Plan

Type: Non-309 funding.

This task will develop draft plan policies and recommendations, integrate subplan information and recommended policies and management measures. It will also provide extensive public review of plan provisions. The product will be a draft plan for Oregon's territorial sea. Total costs will be $30,000 from federal "306" coastal program management funds.

Fiscal Year 1995 Work Program

§ Task A.1-95: Ocean Policy Advisory Council

Type: Non-309 funding (state and other sources).

See Task A.1-92 discussion for a description of this task. Products will include the following: coordinated planning and program implementation among all levels of government. Total costs will be $135,000 ("306" coastal management funds and state funds).

Task A.2-95: Cooperative Reef Ecosystem Study, Year 4

Type: 309 "project of special merit" funding.

Description: Continue to acquire data to refine management measures incorporated in territorial sea plan.

Products: Environmental inventory data and information to support territorial sea plan and implementing measures.

Costs: $87,000 (309 "project of special merit").

§ Task A.11-95: Final Draft Territorial Sea Plan

Type: Non-309 funding (state general funding and federal "306" coastal program funding).

This task will revise the draft territorial sea plan (Task A.11-94) to reflect public comments and integrate new policy elements. It will publish a plan document and distribute it widely. There will be public hearings and public review and comment opportunities. The final product will be the final Territorial Sea Plan. Total costs will be $45,000.

§ Task A.12-95: Marine Habitat Classification System

Type: 309 "project of special merit" funding.

Description: Use data from Cooperative Reef Ecosystem Study, Territorial Sea Seafloor Survey, and other sources to identify seafloor and water column habitats and related community structure. Prepare a classification of marine habitats and identify candidate areas for habitat reserve designation. Prepare management criteria for marine habitats; incorporate into territorial sea plan final draft.

Products:

- marine habitat classification system;
- proposed marine reserve sites;
- draft management proposals for habitat areas.

Costs: $155,000 (309 "project of special merit").

§ Task A.13-95: Marine Water Quality Standards

Type: Non-309 funding (EPA).

This task will analyze marine water quality samples obtained through the Cooperative Reef Ecosystem Study and other opportunities. It will characterize existing marine water quality, and prepare draft marine water quality standards. Products will include standards for marine water quality. Total costs will be $175,000 (EPA).

Costs Summary For Ocean Resources Program Enhancements

Strategy	309 Weighted Formula	309 Special Merit	**Sub Total 309**	Other Funds	Total Costs
Strategy A	$0	$840,000	**$840,000**	$1,174,500	$2,014,500

Appendix A

Revised Periodic Review Process

The New Periodic Review Process

Background

House Bill 2150 makes significant changes in the periodic review process. In early 1992, the department will revise the procedures and rules to carry out the new statute as described below.

Major Elements of the New Law

- **Transition:** The new process applies to jurisdictions who have not submitted a proposed order. Jurisdictions who have submitted a proposed order have a choice between the existing process and the new process. The effective date of the act triggers this provision (September 29, 1991).

- **Procedures:** The new process has two phases.

  The first phase is the "work program" phase. This is where the local government completes an evaluation of how its plan is working based on the statutory standards. The new periodic review rule will describe requirements for the local evaluation.

  The second phase is completion of work program tasks. This is where the local government performs work outlined in the approved work program and submits the final work product for review.

- **Key Steps:**

  (1) The Commission adopts a schedule for reviews. Reviews can not be less than four nor more than ten years from the last review.

  (2) The department starts the process for a local government by sending a letter describing the requirements for review.

  (3) DLCD sets up a state assistance team that coordinates state participation in the review process.

  (4) The local government reviews its citizen involvement program. The program must assure citizen involvement in all phases of the periodic review process.

  (5) Local Government evaluates its plan based on rule requirements. The evaluation must either conclude that no further work is necessary or include a work program to resolve any issues raised in the evaluation.

  (6) Local Government submits its evaluation and work program, to DLCD for review.

  (7) The director reviews the evaluation, citizen involvement, work program and other information. The review is based on the standards in the law. The director has three choices.

- Approve the work program or determination that no further work is necessary.
- Reject the evaluation and work program with suggested modifications.
- Refer the evaluation and work program to the Commission for action.

The Commission reviews appeals.

(8) The Local Government completes work program tasks as required. The local government submits completed work program tasks to the department.

(9) The department reviews the work program task. The work must meet goal requirements.

♦ **Standards for Review:** The new statute contains three "standards." These standards replace the four "factors" of the old law. The stated purpose of periodic review is to assure that plans achieve the statewide planning goals and are coordinated. The new standards are:

(1) "There has been a substantial change in circumstances including but not limited to the conditions, findings or assumptions upon which the comprehensive plan or land use regulations were based, so that the comprehensive plan or land use regulations do not comply with the statewide planning goals."

(2) "That implementation decisions, or the effects of implementation decisions, including the application of acknowledged plan and land use regulation provisions are inconsistent with the goals."

(3) "That there are issues of regional or statewide significance, intergovernmental coordination or state agency plans or programs affecting land use which must be addressed in order to bring comprehensive plans and land use regulations into compliance with the goals."

♦ **Sanctions:** The new process requires the evaluation and work program tasks to be completed on time. The law has sanctions for cases where work is late.

If a Local Government does not submit its evaluation/work program on time, the department schedules a contested case hearing by a hearings officer. If Local Government does not have good cause for the delay, the Commission may require:

- Application of the goals to specific actions identified in the hearings officer's report. Sanctions must be necessary to resolve a specific problem.
- Forfeiting grant money for the review.
- Completing the evaluation/work program by the department. The department may charge the Local Government for the cost of completing the work.

If a Local Government does not submit a work program task on time, the department schedules a contested case hearing by a hearings officer. If Local Government does not have good cause for the delay, the Commission may require:

- Application of the goals to specific actions identified in the hearings officer's report. Sanctions must be necessary to resolve a specific problem.
- Forfeiting grant money for the review.

- Application of interim measures to land use decisions.
- Other sanctions allowed by enforcement order provisions.

The Commission may use sanctions when a submittal is timely, but deficient.

- **Changing a Work Program:** The Commission may change an approved work program in two cases.

  (1) When there are issues of regional or statewide significance from another local government's periodic review that need to be addressed.

  (2) When new goal issues arise from work on another work program task.

- **Compliance with New or Amended Goals, Rules or Statutes:** Local Governments must revise comprehensive plans and land use regulations in response to new or amended goals, rules and statutes when the goal, rule or statute becomes effective. Local Governments submit revisions through the plan amendment review process.

  The department must let cities and counties know of newly adopted goals, rules and statutes.

  If a city or county does not adopt amendments to address the new requirements:

  (1) New or amended goals, rules or statutes apply to land use decisions.

  (2) The department can start enforcement order proceedings.

Implementing Actions

The new periodic review law creates an opportunity for the state to evaluate the effectiveness of comprehensive plans and, where plans are shown to be ineffective, require appropriate plan changes. DLCD proposes to use the periodic review process to accomplish changes to local comprehensive plans in each of the identified issue areas.

The periodic review process will be adapted to address priority issue areas through the following steps:

- Establish of a coastal periodic review assistance team including interested state agencies. The team will help prepare information and studies needed to address cumulative effects issue areas, and assist in development of evaluation forms and model plan and ordinance provisions.
- Develop a coordinated schedule for coastal periodic reviews.
- Develop evaluation forms to be used in periodic review by local governments, state agencies and DLCD to assess the affected resources and evaluate the effectiveness of existing local policies.

Appendix B

Pending State Government Budget Reductions

Pending State Government Budget Restrictions

With a $1 Billion gap in a total 1993-95 budget of $6 Billion, Oregon's fiscal future is as gloomy as its winter weather. State agencies have already been hit with a $550 Million reduction in the current budget and must face an additional $2.5 Billion reduction in 1995-97.

Mandatory state budget reductions of this magnitude are the result of the passage of Ballot Measure #5 by the voters in 1990. Measure 5 is a property tax limitation which adds massive new obligations to state government by shifting local school funding from local property taxes onto the shoulders of state government.

Voter approval will be required for any significant revenue replacement. Voter approval of higher taxes is unlikely in the foreseeable future.

The Governor proposes an immediate cut of 4000 jobs, to downsize state government to a level of 36,000 positions. Agency budget levels for 1993-95 are currently scheduled to be cut by a minimum of 25%.

To achieve cost savings and, presumably, to improve effectiveness and create clear lines of accountability, while maintaining a structure which provides a high level of public access, the Governor is considering a merging and consolidating some 15 natural resource agencies into 7. The seven agency heads would report to a single natural resources director appointed by the Governor.

Clearly Oregon's networked coastal management program is subject to these political, budgetary and organizational dynamics.

Appendix C

Fiscal Year Cost Summary

SECTION 309 PROGRAM ENHANCEMENTS:
FISCAL YEAR 1992 COST SUMMARIES

FY92

FISCAL YEAR	ENHANCEMENT CATEGORIES	WEIGHTED FORMULA	SPECIAL MERIT	309 FUNDED SUBTOTAL	NON-309 FUNDS	TOTAL COSTS
1992	CUMULATIVE EFFECTS					
	A.1 Inv stds for sensitive resources	$40,000		$40,000	$5,000	$45,000
	A.2 Pilot inv sensitive resources		$40,000	$40,000		$40,000
	B.1 State UGB mgt policies			$0	$25,000	$25,000
	B.2 Pilot local traffic circ plan			$0	$50,000	$50,000
	C.1 Nonpoint source assessment update		$86,000	$86,000		$86,000
	C.2 Coquille nonpint source pollution			$0	$13,500	$13,500
	C.3 Community involvement program	$14,000		$14,000		$14,000
	D Reduce env impacts, new public facilities			$0	$40,000	$40,000
	E New demographic data, local plans			$0	$60,000	$60,000
	F Protect threatened & endangered sps hab			$0	$150,000	$150,000
	SUBTOTALS	$54,000	$126,000	$180,000	$343,500	$523,500
	NATURAL HAZARDS					
	A1.1 Support of Policy Working Group	$17,000		$17,000	$40,000	$57,000
	A1.2 Quality control of geotech reports	$30,000		$30,000	$5,000	$35,000
	A1.3 Foredune grading enforcement		$12,500	$12,500	$15,000	$27,500
	A2.1 Pilot all-haz mapping, chronic		$100,500	$100,500	$80,521	$181,021
	A3.1 Communication & education			$0	$10,925	$10,925
	SUBTOTALS	$47,000	$113,000	$160,000	$151,446	$311,446
	WETLANDS					
	A.1 Prioritize estuaries for restoration		$48,000	$48,000		$48,000
	A.2 Estuarine restoration demo project			$0		$0
	B.1 Wetland conservation plan		$80,000	$80,000		$80,000
	B.2 State stds, assess wetland values	$25,000		$25,000		$25,000
	SUBTOTALS	$25,000	$128,000	$153,000	$0	$153,000
	OCEAN RESOURCES					
	A.1 Ocean Policy Advisory Council			$0	$196,500	$196,500
	A.2 Coop reef ecosystem study		$87,000	$87,000		$87,000
	A.3 Rocky shores characterization		$78,000	$78,000		$78,000
	A.4 T & E species protection		$68,000	$68,000		$68,000
	SUBTOTALS	$0	$233,000	$233,000	$196,500	$429,500
	FY 92 SUBTOTALS	$126,000	$600,000	$726,000	$691,446	$1,417,446

SECTION 309 PROGRAM ENHANCEMENTS:
FISCAL YEAR 1993 COST SUMMARIES

FY93

FISCAL YEAR	ENHANCEMENT CATEGORIES	WEIGHTED FORMULA	SPECIAL MERIT	309 FUNDED SUBTOTAL	NON-309 FUNDS	TOTAL COSTS
1993	CUMULATIVE EFFECTS					
	A.1 Coastwide mapping sensitive res	$40,000		$40,000	$210,000	$250,000
	A.3 Model ord, sens res protection		$30,000	$30,000		$30,000
	B.1 Demo UGB mgt project			$0	$25,000	$25,000
	C.1 Coastal watershed assessment		$31,000	$31,000		$31,000
	C.2 Watershed protection manual			$0	$69,400	$69,400
	C.3 Community involvement program	$14,000		$14,000	$39,750	$53,750
	SUBTOTALS	$54,000	$61,000	$115,000	$344,150	$459,150
	NATURAL HAZARDS					
	A1.1 Support of Policy Working Group	$17,000		$17,000	$40,000	$57,000
	A1.4 Hazard mitigation requirements	$30,000		$30,000	$30,000	$60,000
	A2.2 All-hazard mapping, castastrophic		$166,002	$166,002		$166,002
	A3.1 Communication & education		$47,000	$47,000		$47,000
	SUBTOTALS	$47,000	$213,002	$260,002	$70,000	$330,002
	WETLANDS					
	A.2 Estuarine restoration demo project			$0	$50,000	$50,000
	A.3 State estuarine restoration standards			$0	$25,000	$25,000
	B.2 State stds, assess wetland values	$25,000		$25,000		$25,000
	B.3 Model ordinance, wetland protection			$0	$12,600	$12,600
	SUBTOTALS	$25,000	$0	$25,000	$87,600	$112,600
	OCEAN RESOURCES					
	A.1 Ocean Policy Advisory Council			$0	$196,500	$196,500
	A.2 Coop reef ecosystem study		$87,000	$87,000		$87,000
	A.3 Rocky shores characterization study		$78,000	$78,000		$78,000
	A.4 T & E species subplan		$68,000	$68,000		$68,000
	A.5 Terr sea bathymetric survey		$45,000	$45,000		$45,000
	A.6 Coast ports recreation study			$0	$25,000	$25,000
	A.7 Ocean dredged material disposal sites			$0	$75,000	$75,000
	SUBTOTALS	$0	$278,000	$278,000	$296,500	$574,500
	FY 93 SUBTOTALS	$126,000	$552,002	$678,002	$798,250	$1,476,252

SECTION 309 PROGRAM ENHANCEMENTS:
FISCAL YEAR 1994 COST SUMMARIES

FY94

FISCAL YEAR	ENHANCEMENT CATEGORIES	WEIGHTED FORMULA	SPECIAL MERIT	309 FUNDED SUBTOTAL	NON-309 FUNDS	TOTAL COSTS
1994	CUMULATIVE EFFECTS					
	A.1 Coastwide mapping sensitive res	$37,000		$37,000	$38,000	$75,000
	A.4 Assistance for local plan amend			$0	$60,000	$60,000
	A.5 Periodic review standards			$0	$11,000	$11,000
	B.1 Local growth mgt plans, programs			$0	$85,000	$85,000
	C.1 Coastal watershed assessment		$40,000	$40,000		$40,000
	C.2 Watershed protection manual			$0	$30,500	$30,500
	C.3 Community involvement program	$14,000		$14,000	$39,750	$53,750
	SUBTOTALS	$51,000	$40,000	$91,000	$264,250	$355,250
	NATURAL HAZARDS					
	A1.4 Hazard mitigation requirements	$20,000		$20,000	$40,000	$60,000
	A2.1 All-hazard mapping	$15,000		$15,000	$10,000	$25,000
	A2.1 All-hazard mapping	$15,000		$15,000	$10,000	$25,000
	A3.1 Communication & education		$22,000	$22,000		$22,000
	SUBTOTALS	$50,000	$22,000	$72,000	$60,000	$132,000
	WETLANDS					
	A.3 State estuarine restoration standards			$0	$25,000	$25,000
	A.4 Model ord, estuarine restoration			$0	$12,600	$12,600
	B.4 Local "Wetlands Kit"	$25,000		$25,000	$15,000	$40,000
	SUBTOTALS	$25,000	$0	$25,000	$52,600	$77,600
	OCEAN RESOURCES					
	A.1 Ocean Policy Advisory Council			$0	$196,500	$196,500
	A.2 Coop reef ecosystem study		$87,000	$87,000		$87,000
	A.9 Ocean recreation plan			$0	$35,000	$35,000
	A.10 Mariculture opportunities			$0	$65,000	$65,000
	A.11 Draft territorial sea plan			$0	$30,000	$30,000
	SUBTOTALS	$0	$87,000	$87,000	$326,500	$413,500
	FY 94 SUBTOTALS	$126,000	$149,000	$275,000	$703,350	$978,350

SECTION 309 PROGRAM ENHANCEMENTS:
FISCAL YEAR 1995 COST SUMMARIES

FY95

FISCAL YEAR	ENHANCEMENT CATEGORIES	WEIGHTED FORMULA	SPECIAL MERIT	309 FUNDED SUBTOTAL	NON-309 FUNDS	TOTAL COSTS
1995	CUMULATIVE EFFECTS					
	C.3 Community involvement program	$36,000		$36,000	$17,750	$53,750
	SUBTOTALS	$36,000	$0	$36,000	$17,750	$53,750
	NATURAL HAZARDS					
	A1.5 Pilot littoral cell mgt plan		$60,000	$60,000		$60,000
	A2.2 All-hazard mapping	$50,000		$50,000		$50,000
	A3.1 Communication & education		$22,000	$22,000		$22,000
	SUBTOTALS	$50,000	$82,000	$132,000	$0	$132,000
	WETLANDS					
	A.5 Local "Estuary Kit"	$40,000		$40,000		$40,000
	SUBTOTALS	$40,000	$0	$40,000	$0	$40,000
	OCEAN RESOURCES					
	A.1 Ocean Policy Advisory Council			$0	$135,000	$135,000
	A.2 Coop reef ecosystem study		$87,000	$87,000		$87,000
	A.11 Final draft terr sea plan			$0	$45,000	$45,000
	A.12 Marine habitat classification		$155,000	$155,000		$155,000
	A.13 Marine water quality standards			$0	$175,000	$175,000
	SUBTOTALS	$0	$242,000	$242,000	$355,000	$597,000
	FY 95 SUBTOTALS	$126,000	$324,000	$450,000	$372,750	$822,750

SECTION 309 PROGRAM ENHANCEMENTS:
FISCAL YEAR 1996 COST SUMMARIES *FY96*

FISCAL YEAR	ENHANCEMENT CATEGORIES	WEIGHTED FORMULA	SPECIAL MERIT	309 FUNDED SUBTOTAL	NON-309 FUNDS	TOTAL COSTS
1996	CUMULATIVE EFFECTS					
	C.3 Community involvement program	$53,750		$53,750		$53,750
	SUBTOTALS	$53,750	$0	$53,750	$0	$53,750
	NATURAL HAZARDS	$0	$0	$0	$0	$0
	SUBTOTALS	$0	$0	$0	$0	$0
	WETLANDS	$0	$0	$0	$0	$0
	SUBTOTALS	$0	$0	$0	$0	$0
	OCEAN RESOURCES	$0	$0	$0	$0	$0
	SUBTOTALS	$0	$0	$0	$0	$0
	FY 96 SUBTOTALS	$53,750	$0	$53,750	$0	$53,750
FY92-96	TOTALS	$557,750	$1,625,002	$2,182,752	$2,565,796	$4,748,548