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NEW YORK STATE
Coastal Management Program

# LAND & WATER USES: COASTAL ISSUES

## TECHNICAL REPORT
PRELIMINARY

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# PREFACE

Eleven individual papers, prepared by four state agencies, are presented in this preliminary report on land and water uses. These papers address specific topics of concern that are of particular interest to the coastal areas of New York State. These topics include:

- Water and air quality management
- Beach erosion and flood plain management
- Fish and wildlife and their habitats
- Agricultural resources
- Recreational resources
- Public access to the coast
- Coastal aesthetics
- Economic development
- Impacts of Outer Continental Shelf activities
- Energy facilities

Each paper identifies the significant issues that are currently confronting the State with respect to the use of the lands and waters within the coastal areas. State governmental policies are identified and evaluated as to how they may affect or resolve the significant issues. Finally, preliminary policy directions are advanced for each of the above topic areas. Whenever possible, these directions attempt to provide some guidance for the ensuing work to be conducted under the State's Coastal Management Program. In other instances, recommendations are advanced as to how the Coastal Management Program can be integrated with ongoing national and state programs.

These papers will be more fully developed during the course of the present program year. Specific policies in each of the topic areas will be recommended for inclusion into the State's Coastal Management Program. The policies will assist in identifying the types of land and water uses that require management, or they will indicate the levels of performance that permissable activities must achieve.

At this time, however, these "issue" papers have been prepared in an abbreviated form for distribution to various agencies and groups in order to obtain their initial reactions. Upon receipt of these first round comments, the recommended policy directions will be re-evaluated both in terms of the guidance provided and the conflicts that may arise from their application, if followed. This will then enable the Department of State, State Energy Office, Office of Parks and Recreation and Department of Environmental Conservation to continue their efforts in completing the "issue" papers.

# WATER QUALITY MANAGEMENT

Task 2.1

# WATER QUALITY MANAGEMENT

## Introduction

Water quality has been a matter of nationwide concern for many years. As a consequence, Congress has passed a number of laws aimed at water quality improvements. The latest of these are the Federal Water Pollution Control Act (FWPCA) Amendments of 1972 (PL92-500) which provide the authority for the nation's water pollution control program.

The significance of this program to the coastal area is borne out by Section 307 (G) of the Coastal Zone Management Act of 1972 in which Congress specified that water quality management requirements developed under PL 92-500 "shall be incorporated in any program developed pursuant to this title and shall be the water pollution control ... requirements applicable to such program."

Conversely, it is also clear from language in Section 510 of PL 92-500 that the development of a water quality program must consider recommendations made by other agencies and levels of government. Hence, a state or local Coastal Zone Management program has an opportunity to influence water quality planning and management activities.

One specific area of program relationship is the setting and revision of water quality standards, including stream classifications, under FWPCA requirements, consistant with coastal management objectives. These standards must henceforth be met in the administration of a state's coastal management program.

Another area of interrelationship involves the manner in which particular land and water uses recommended in the coastal management plan may affect water quality. The water quality and coastal management plans must be mutually consistant with respect to such uses. Careful management and control of land and water uses can be very supportive to the achievement of improved coastal water quality.

All water quality related permits should be certified as to their consistancy with the state coastal management program, and conversely, coastal management permits should be found consistant with water quality standards.

The are two major elements of water quality planning in New York State to which the CM program must relate:

1. Basin Planning required by Section 303 (e) of PL 92-500
2. Water Quality Management Planning (formerly called Areawide Waste Treatment Management Planning), required by Section 208

Section 303 (e) Basin Plans will be complete for all basins in New York State by the fall of 1977. They are designed to provide a baseline of current information on the water quality problems, programs, projects, and needs in each basin. These plans, prepared by the Water Management Bureau of the Department of Environmental Conservation, are a source of detailed information available to be utilized by the CM program in its consideration of water quality related issues in specific geographic locations.

Planning under Section 208 proceeds from the baseline established by 303 (e), to plan for some of the major issues previously unaddressed and now emerging as important factors in water quality management. Section 208 planning will provide the framework for water quality improvement factors in water quality management. Section 208 planning will provide the framework for water quality improvement efforts for the next 20 years. Major topics being addressed include residual wastes, urban stormwater and combined sewer overflows, groundwater, and rural non-point sources. The implications of Section 208 planning for land use are substantial and are being given major attention in the program.

Section 208 planning is currently underway in six "designated" areas in the State, five of which have coastal frontage, and on a statewide basis for the non-designated areas.

## Water Quality Issues

In New York State, major efforts at water quality improvement have been underway for well over a decade. Since 1962, the State has invested over ten million dollars in comprehensive sewerage need studies. Under the State Pure Waters Program in 1965, and subsequent bond issues, voters have authorized nearly 1.7 billion dollars for sewage treatment facilities. Coupled with federal funding made available through the Federal Water Pollution Control Act and its amendments, nearly nine billion dollars may be spent on such facilities by the time these authorizations are exhausted. In addition, as a result of stricter regulation of discharges from commercial, industrial and residential sources, a significant private investment has also been made for control facilities.

Currently, the water quality management program is reaching a new phase. Under the State and National Pollutant Discharge Elimination Systems (SPDES and NPDES), municipal and industrial controls are becoming better established. Although substantial construction of waste treatment facilities is still needed, projects to control pollution from point sources are largely identified and scheduled. Yet there are other types of sources which continue to threaten water quality, and these must be given special attention in new water quality programming. They include control of storm water runoff and overflow from combined sewers in urban areas, the control of runoff in rural areas which contribute to eutrophication, the disposal of various residual wastes, and the identification and control of toxic waste materials.

Examples of specific issues related to these problems are:

- Major shellfishing areas off Long Island are currently closed due to coliform violations from such causes as insufficiently treated sewage effluent, urban storm run-off, combined sewer overflow and vessel waste discharges, much of which emanates from the New York City area.

- The New York Bight, once an abundant near shore fishing ground of some 3000 square miles, has been described as a "dead sea" as a result of ocean dumping and pollution carried into it from New York harbor and other tributary waters.

- Many of the waters in the vicinity of New York City are presently useful for little except harbor traffic and to carry wastes, while the large population in the area presents major demands for recreational uses.

- During 1976, beaches on the south shore of Long Island were closed for a week due to an influx of floating solids and related public health problems.

- Problems with toxics (PCB's) in the Hudson have restricted both commercial and sport fishing.

- Problems with toxics (Mirex) in Lake Ontario have restricted fishing and caused substantial modifications in the development of major salmonid fisheries program for the Great Lakes.

- Beaches near Rochester are closed permanantly or following storms due to high coliform levels, primarily due to combined sewer overflow and urban storm runoff.

- Several bays on Lake Ontario (Irondequoit, Sodus, Chaumont, for example) experience eutrophic conditions due to high nutrient inputs from sources such as combined sewer overflows, peripheral unsewered cottage developments, and agricultural runoff.

- Oil spills occur regularly in the coastal area, and may have harmful effects upon wildlife, fisheries, and shellfisheries.

Development of programs for these problems are in their infancy, and the State's coastal management program could play a major role in helping to shape them.

While many million of dollars have been and will continue to be spent on the control of point sources of water pollution, the costs of controlling these other remaining types of water pollution sources and solving related problems such as the disposal of residual wastes, may be even higher. The overriding issue must therefore be the extent to which society wishes

to protect the specific resources of the coastal area -- fish and shellfish, water supplies, recreational areas, which may be impacted by poor water quality.

Within the broad issue of costs to protect the extremely valuable water resources of the coastal area, there are major water quality issues specific to each of five major coastal areas of the State. These issues all are tied to one or more of the following general types of water quality problems.

- Point discharges (industrial, municipal, institutional, etc.)
- Urban storm water runoff and combined sewer overflow
- Rural nonpoint sources and runoff
- Nutrient concentrations
- Toxic chemicals and compounds
- Residual waste disposal
- Oil and hazardous substance spillage
- Dredging and spoil disposal
- Vessel wastes disposal
- Thermal discharges
- Groundwater loss or contamination

Long Island and Long Island Sound

- Groundwater and wastewater treatment: Groundwater is Long Island's major water supply source. The need for recharge of treated wastewater to maintain groundwater aquifers is presently under study. Quality and quantity of resultant groundwater and the salinity and purity of water in embayments all may be affected.

- Urban area run-off: Continued urbanization of Long Island severely reduces the amount of natural recharge to the groundwater. This has been off-set to some extent by designing recharge holding basins into many developments; however, urban storm water run-off picks up many contaminants. Although it may be purified somewhat as it recharges through the ground, where it runs off as surface water, it can seriously affect the water quality of the many embayments surrounding Long Island.

- Vessel wastes: Commercial and recreation boat discharges of shipboard wastes contribute to surface water quality problems in enclosed embayments and in vicinity of shellfish spawning areas surrounding Long Island. Limiting such discharges is a complex problem involving specific identification of areas where control is needed and provision for disposal or shipboard sanitary wastes elsewhere.

- Closed shellfishing areas: Improvement of water quality in many embayments is necessary to preserve or restore these nationally significant sources of shellfish. Pollution sources are varied coming from such sources as oil spills, shipboard wastes, urban storm run-off,

as well as insufficiently treated sanitary wastes. A very high level of water quality is needed before shellfish are safe for human consumption.

. Closed bathing beaches: Periodic closing of bathing beaches, especially in western Long Island has been necessary due to poor water quality from such sources as inadequately treated sewage effluent, oil spills, shipboard wastes, off-shore dumping and urban storm run-off. To some extent, New York City pollutants contribute to these beach closings. There is also local concern that offshore port and oil extraction activities on the outercontinental shelf (OCS) will exacerbate water quality degradation with respect to both bathing and shellfisheries.

. Dredging and residual waste disposal: Dredging is necessary to maintain harbor and port facilities on Long Island. Disposal of polluted dredge spoil and other residual materials, such as sewage treatment plant sludge, is a serious problem both on land and underwater. Land disposal sites are very limited in in the New York Metropolitan Area, and there are prohibitions on underwater dumping in both the Sound and near shore Atlantic areas.

New York City

. Point source controls and treatment: The Federal State and City government are committed to very large investments in sewage treatment for New York City. Some of these projects are lagging due to the City's tight fiscal situation, but ultimately will be completed. The City also needs continuing support for the operation and maintenance of their existing waste treatment systems.

. Sludge and other residual waste disposal: The City of New York produces great quantities of sewage treatment sludge, and other residual material such as construction rubble and incinerator wastes. Such solid waste disposal problems are most serious in the City, where there is little land area available for disposal. Ocean dumping already is greatly restricted, and will be prohibited entirely by E.P.A. regulation in 1981. Regional and interstate solutions probably will be necessary.

. Stormwater runoff and combined sewer overflows: Old combined sanitary and storm sewers are a major problem. The resultant overflow during storm periods, along with surface storm runoff, substantially contributes to the water degradation of the bays and tributaries surrounding the City. Intercepting this overflow during storm periods is likely to be extremely expensive, as will the retention of surface storm runoff. The basic questions are to what extent such clean-up is necessary and how it will be paid for.

- Port operations: Operation of port facilities contributes much pollution to the waters of the New York harbor area from necessary dredging, cargo handling and accidental spillage. Much is in the form of floating materials and debris, but many toxic wastes also get into the water. Expanded port usage is desired to boost the City economy. Some development may be generated by outer continental shelf (OCS) and other energy-related activities. Greater regulation and monitoring of port operation may be necessary.

- Closed Bathing Beaches: It is hoped that when additional city waste treatment plants come on line, several city beach areas can be reopened. However, it may also be necessary to solve storm water run-off problems noted above, and this may be too expensive to accomplish in the near future.

Hudson River

- Urban storm water and combined sewer overflow: While new waste treatment facilities have improved water quality along much of the Hudson, there are still pollution problems near the older larger communities, attributable to urban stormwater and combined sewer overflows. The problems are most severe in the Capital District. Construction costs to eliminate overflows and to contain and clean up stormwater are generally high.

- PCB's and other toxic materials: Poly chlorinated biphenyls (PCB's), unwittingly discharged into the Hudson River without understanding the consequences, point up the long range water quality problems which can be caused by toxic materials introduced from manufacturing, agricultural or other processes. Many of these wastes have a long life period, cause serious biological consequences to various fish and animal species and tend to bio-accumulate. Prohibition of some commercial fishing in the River has been necessary because of PCB's. Increased testing and bio-monitoring in the case of newly introduced materials or processes, is needed. This, however, can best be done on a nationwide basis under federal auspices.

- Water-borne transportation impacts: Commercial shipping and recreational boating on the River subject its water quality to such transportation related difficulties as oil and hazardous substance spillage, and dredging, with its spoil disposal and botton disturbance problems.

- Thermal pollution: Concentration of a number of water cooled electric generating facilities along the River has had serious biological effects on certain aquatic species due to the raising or sudden changing of water

temperatures inherant in the operation of such plants. The Hudson River's situation is further complicated, because many of the plants are located near the River's freshwater/saltwater interface where biological activities are greatest and there are high concentration of fin fish. Cooling towers and other special mechanisms to minimize the impacts of heated waters are now considered in all proposed power facilities.

. Water supply withdrawals: Use of the Hudson as a water supply source for southeastern New York primarily by withdrawing water during periods of high flow (so-called "flood skimming") has been proposed. This action may affect the river's water by shifting the salt water wedge further upstream.

Lake Erie/Niagara River

. Eutrophication and nutrient concentrations: Both Lake Erie and Lake Ontario have high levels of nutrients, primarily phosphorus compounds, which cause excessive algae and weed growth in embayments and nearshore waters. Lake Erie is shallower and therefore more affected than Lake Ontario. International agreements to limit phosphorus input are succeeding for the Great Lakes, although the need to build more sophisticated wastewater treatment facilities seems an unnecessary burden to some New York State communities.

. Toxic compounds: Because of surrounding industrial and agricultural activities, Lake Erie's proclivity for carrying toxic materials is great. Higher than desirable levels of mercury and PCB's have been detected, and a discharge point along the Niagara River has been the source of Mirex pollution in Lake Ontario. At the Federal level, more surveillance and studies of impacts of such compounds is needed, along with guidelines for their use and manufacture.

. Atmospheric loadings: A significant portion of the nutrients, toxic compounds and other contaminants in the Great Lakes have been discovered to come from atmospheric sources. These atmospheric loadings are nearly impossible to control because their sources are hard to identify and may originate far outside the Great Lakes Basin. Much more surveillance and study are needed.

. Urban runoff and combined sewer overflow: Both Buffalo and Niagara Falls have problems related to their old combined sewers. Elimination of combined sewer overflows and retention of other contaminated storm runoff will be difficult and expensive.

. Port and harbor facilities: The Buffalo port and harbor facilities subject the waterfront area to the water

quality impacts associated with such activities -- problems of spillage of oil and hazardous substances and disposal of dredge spoil.

. Underwater gas production: Much local concern has been expressed that during future extraction of gas from state-leased lands under Lake Erie there may be possible contamination of lake water from salt or petroleum encountered while drilling. Even though such occurrences are considered geologically unlikely, great care must be taken during drilling operations.

Lake Ontario/St. Lawrence River

. Eutrophication and nutrient concentrations: The most serious areas of high nutrient concentration in Lake Ontario are in certain embayments. The concentrations are due to inflow from runoff from enriched tributary streams, unsewered peripheral development and, at least in the case of Irondequoit Bay, from combined sewer overflow. Such enrichment is causing eutrophication which disturbs recreational use of these bays and may adversly effect fish and wildlife habitat.

. Closed bathing areas: Lake Ontario beaches are closed near Rochester due to high coliform counts due to exposure to polluted waters discharging from the Genesee River. The Genesee, like Irondequoit Bay, receives contaminated combined sewer overflow primarily from the City of Rochester. Once eliminated, at considerable cost, the beaches may be used again for bathing.

. Thermal concentrations: The cluster of electric generating plants near Oswego results in some temperature change in nearshore waters. This is not a significant problem except in the immediate discharge plumes, which do have some effects on the natural migration of certain fish species along the shore. Starting up and shutting down of thermal discharges may be a hazard to some aquatic species because of sudden temperature changes. Cooling towers will be considered for new plants, if biological consequences are substantial.

. Summer and winter navigation: The use of Lake Ontario and the St. Lawrence as part of a major water transportation system exposes their waters and shorelines to impacts from spillage and dredging. Proposed year round navigation through the St. Lawrence and Lake Ontario may add some shoreline ice damage and disrupt ice fisheries, and water quality may be directly affected due to the increasing potentials for spillage.

. Mirex and other toxic concentrations: In 1976, Mirex concentrations reached such high levels in six Lake

Ontario species of sport fish that their possession was banned by New York State. This has had significant consequences on New York's developing salmonid fisheries program. As in Lake Erie, concentrations of mercury and PCB's also have required warnings regarding consumption of additional species. Nationwide surveillance of processes which may produce toxic substances is needed, along with testing of their impacts, under federal auspices.

## Existing Policies and Programs

### Point Discharges

The extensive wastewater facility construction grants program initiated in 1965 by the State of New York and strongly supplemented by the Federal Water Pollution Control Act and its amendments, has built or scheduled municipal (including some regional) sewage treatment facilities for all of the major problem areas of the State. Coupled with stronger discharge control programs under SPDES and NPDES and municipal treatment facilities operation and maintenance funding support, New York has made substantial progress in point source control statewide, including its vulnerable coastal areas.

There is some lag in the New York City area due to the scale of the projects and financing problems. This is also a problem in some smaller rural communities where per capita costs are high and growth potentials limited; alternatives to full-blown sewage systems may be needed.

A serious problem related to point discharges is that of providing for the continuing operation and maintenance of billions of dollars worth of municipal treatment facilities, which could become useless without special support. State and federal funds may be necessary to augment limited local operation and maintenance funds. In addition, continued monitoring and enforcement activities at local level may need financial support. Higher priorities may be necessary to support of such activities in coastal areas where point source problems are most critical.

As noted earlier, there is a shift in focus in the State's water pollution control program to include non-point sources, combined sewer overflows, identification and monitoring of toxic materials and other water quality problems. Such a shift hopefully will also include additional funding support. Congress is presently considering major changes to PL 92-500.

The increasing magnitude of public investment in wastewater treatment facilities in urbanized areas should help to reinforce policies for encouraging the concentration of additional growth in such areas rather than in patterns conducive to uneconomic urban sprawl.

Urban Storm Run-off and Combined Sewer Overflow

These sources play a significant role in the pollution of coastal waters, since they are one of the major remaining sources of problems once municipal and industrial point sources are controlled. Urban run-off contains nutrients, coliforms, chemicals and solids.

Control of these sources, whether it be structural (treatment of stormwater and overflows) or non-structural (street sweeping, land use controls) is likely to be difficult and expensive. Where it is undertaken, any method of control will have to be well justified and based on specific water quality related benefits. In most areas there must be much detailed technical analysis, program development and identification of the societal values and uses which would justify control (such as protection of shellfishing or bathing beaches) before appropriate controls can be undertaken.

It would be appropriate for the CZM program to play a major role in this work through the identification and evaluation of important coastal activities and resource areas impacted by these storm related pollution sources.

Urban Non-Point Sources

Non-point sources, diffuse and generally associated with overland runoff, are recognized to be significant contributors to certain kinds of water quality problems. In addition to urban stormwater, discussed above, other types of non-point sources identified in Section 208 of PL 92-500, include runoff from agriculture, forestry, construction sites and mining operations. The most important contaminants associated with non-point sources include sediment, primarily from land disturbing activities such as crop production, construction, mining, and forest harvesting and nutrients from animal wastes and both agricultural and domestic fertilizer use. Toxics and coliforms must be included if urban storm water is also involved.

Because they do not lend themselves to the more traditional methods of control of non-point sources is generally through non-structural solutions which involve better management of man's activities on the land. For agriculture, contour plowing and strip cropping are examples. Where needed to control non-point source pollution, the trend of programs under the authority of PL 92-500 is to identify and implement particular types of land management practices, termed "Best Management Practices" to reduce the potential for contaminant loadings carried by land runoff.

Many of these practices are the same as those which have been advocated for several decades by soil conservation programs to reduce soil erosion. Implementation programs for many types of non-point sources are likely to be closely linked to soil conservation programs. For example, recent

modifications to New York State's Soil and Water Conservation Law require that conservation plans be prepared for all farms of 25 acres or more . Congress is currently considering modification of PL 92-500 to explicitly provide support for farm plans and other non-point source control measures.

Given the existing state of knowledge and research in the area of non-point source control, full scale regulatory programs are probably premature at this point in time. Studies now in progress under Section 208 planning will help to make further determinations on rural non-point source control. However, work conducted under the CM program should seek to further identify the water uses being impacted by non-point sources and to establish clearly the values associated with these uses in particular locations.

Nutrient Levels

The major problem with nutrients in water is that their over-abundance can cause waters to be excessively fertile, resulting in excessive growth of rooted aquatic plants, algae blooms, the crowding out of desirable species and other adverse effects which disrupt contact recreation, boating and fishing and may lead ultimately to a complete alteration of the ecology of a water body.

In the marine waters of the state, nitrogen is probably the limiting nutrient, while phosphorous is generally the limiting nutrient in freshwater areas of the coastal zone. Nutrients are generally not a great problem in open waters. They can create severe problems, however, in the numerous bays which line the coasts of Long Island and the Great Lakes.

Nutrients may be contributed by a variety of sources, including municipal treatment plant discharges, urban storm-water, combined sewer overflows, malfunctioning septic systems, and agricultural runoff. For any given nutrient problem, a unique set of regulatory and structural measures may be required depending on the nature of sources in the tributary watershed. These may range from the sewering of shoreline cottage development, to application of special agricultural management practices, to nutrient removal at municipal treatment plants. Support for many of these measures is already available through PL 92-500.

It should be noted that a statewide limitation on the use of phosphate detergents has alrady reduced phosphorous inputs substantially. Additionally, there is a phosphorous removal requirement for treatment plants in the Great Lakes basins. Recent determination that atmospheric loadings are a significant factor in nutrient levels in the Great Lakes may make further reduction difficult.

Research is needed on the sources, transmission and consequences of nutrients in our coastal waters. The shifting

focuses of the federal water pollution control program, as evidenced in present Congressional debate, should allow for this need. In addition, such research is supported by both U.S. and Canada through the International Joint Commission.

Toxic Substances

Toxic materials such as mercury, PCB's and Mirex, bio-accumulate in various aquatic species and ultimately may do harm to man. Their presence has resulted in major restrictions on the taking of certain fish species both in the Hudson and Great Lakes.

New York State, based on it's experience with PCB's and Mirex, has initiated what will likely be a major element of the water pollution control program in order to identify and control toxics problems. This includes a major survey of industrial chemical producers; ambient biomonitoring (involving analysis of fish flesh samples); and the capability of "tracking" toxics sources when problems are identified. However, there are thousands of industrial chemicals and monitoring cannot be accomplished without knowing which chemical is to be analyzed. For example, it has been estimated by a Canadian fisheries planning study group that some 600 new chemicals are produced or used annually in the Great Lakes Basin. Thus, there is no assurance that other toxics incidents will not occur, either in New York or elsewhere.

The toxics problem is not confined to New York's coastal area, but rather it is of national and international concern. While monitoring, surveillance and impact studies may help in cases of known toxic compounds, they cannot guard against all occurences. Probably the best assurance against future toxics problems would be a national program to carefully regulate the development, production, and distribution of toxic industrial chemicals. Control is impractical on a state by state basis.

Residual Wastes

As water pollution control efforts lead to higher levels of municiapl and industrial wastewater treatment, greater volumes of residual sludges are produced. Because of their physical and chemical properties, ther are no easy solutions for the disposal of most sludges. Traditional methods have included land disposal either in landfills or by spreading on land, incineration, and ocean dumping. Land disposal poses problems with odors, runoff and leaching; incineration poses air quality problems; and ocean dumping can have both surface and subsurface negative consequences.

In New York State, most sludge disposal impacts on coastal environs occur in the New York City metropolitan area. Dumping in the New York Bight has been one of the causes of the demise of the area as a major fishing ground. The U.S. Environmental Protection Agency has mandated that dumping in the Bight be discontinued by 1981, but implementation

is likely to be very difficult.

Other forms of residual wastes also pose substantial hazards to water quality, especially in New York metropolitan area, where on-land disposal sites are limited. Disposal of building rubble, manufacturing wastes and residue from incinerators are among these. Even where on-land sites are available, the toxicity or hazardous nature of some residuals means long-term monitoring of disposal sites if the material does not readily break down or neuteralize.

Water Quality Management Planning programs being carried out at both the State and regional levels under Section 201 and 208 of PL 92-500 are currently conduction studies to evaluate the available alternatives for environmentally sound sludge management, and disposal, as well as the disposition of certain other residual wastes.

Oil and Hazardous Substances Spills

All of New York's coastal waters experience substantial commercial shipping with related oil and hazardous substances spill potential. Associated with these commercial shipping activities, are numberous oil and other bulk storage facilities distributed throughout the coastal area, particularly near major urban centers. Nearly 1000 oil and hazardous material spills were reported in New York State in 1976.

The potential development of off-shore oil and gas production and related handling facilities increases the possibilities of spillage. Outer Continental Shelf (OCS) studies by DEC pay particular attention to spillage problems associated with the Federal leasing program off Long Island. The recent lifting of a ban on gas drilling beneath Lake Erie means that special attention will have to be given to potential spillage and introduction of hazardous substances in this coastal area, as well.

Cumulative effects on water quality and other environmental degradation may be as great or greater from a series of small spill incidents as they are from a single large spill. This is why a relatively sophisticated surveillance, as well as clean-up, program is needed. Existing efforts under Section 311 of PL 92-500 do not seem to provide adequate attention to the prevention of spills. This is a matter which can be dealt with most effectively at the national level, as the sources of spills are practically all engaged in interstate commerce.

Within U.S. navigable waters, the Coast Guard has jurisdiction, mandated by federal law, to supervise necessary clean-ups. However, to supplement Coast Guard activity, the State Legislature in 1977 established an oil spill clean-up fund based on 1¢ per barrel tax upon petroleum products

in New York. The fund is administered by the State Department of Transportation, but involves DEC in actual surveillance and supervision.

A useful role for the CM program in New York State would be to monitor and document the impact of spills on important coastal resources on a continuing basis, and to develop recommendations for more intensive preventative measures. The CM program should also seek to influence the siting of coastal facilities which involve the potential for spills, particularly when the locations are in the vicinity of significant environmental resources.

Dredging and Dredge Spoil Disposal

Dredging and concommitant dredge spoil disposal are activities which are necessary in coastal zone areas, but may have substantial adverse environment effects. Under Section 404 of PL 92-500, the U.S. Corps of Engineers is given jurisdiction over disposal of dredge or fill materials into navigable waters at specified disposal sites. This authority has been interpreted by the courts to include virtually all waters draining into navigable waters, as well.

In the Long Island/New York City area, dredge and fill activities have significant interstate impact, since the manner in which such disturbances are handled in Long Island Sound and the areas of the Port of New York are of consequence to Connecticut and New Jersey. In relation to this, the Corps of Engineers and the States of New York and Connecticut have recently concluded a dredge disposal agreement for Long Island Sound which minimizes the number of disposal sites to be used.

New York State's coastal management program should utilize the procedures available through permit and environmental review programs to minimize the impacts of dredging and dredge spoil disposal activities. Because the Corps of Engineers, along with all other federal agencies, must operate within the "consistency provisions" of the Coastal Zone Management Act for approved coastal programs, it is essential that specific spoil sites and regulations be agreed upon during the formulation of the initial New York coastal plan.

Vessel Wastes

Vessel wastes are serious problems primarily in the confines of the numerous bays and estuaries along the coastline where diluting water volumes are low and small vessel usage may be high. In addition, lack of means to monitor and control larger commercial vessels passing in or near such coastal waters results in incidents of waste discharge from actions like emptying bilge tanks and cleaning or flushing

cargo areas. There may be serious public health problems, it vessel discharges occur in shellfishing areas or near public water supply intakes.

Sanitary vessel waste discharges prior to PL 92-500 were regulated by DEC under the N.Y. State Navigation Law through 7 NYCRR 656 & 657. These were "no-discharge" regulations since non flow-through waste treatment devices have yet to be developed for small boats that meet the standards of these regulations. Under PL 92-500. Federal regulations pre-empt New York regulations, and provide on an interim basis (until 1980) for flow-through type systems meeting lesser standards. However, EPA has provided that in certain critical waters, states may request prohibition of sewage discharge from such flow-through systems when they show there are sufficient on-shore pump-out stations and treatment facilities. New York has received permission to enforce no-discharge provisions on inland Lakes George and Champlain, but to-date has made no similar requests for coastal waters. Designation of such areas as part of an accepted state coastal management plan would oblige federal agencies to apply their own regulations consistent with state plans --- in this instance, prohibiting vessel discharges.

Thermal Discharge

Most of New York State's thermal electric generating capacity is located on its coastline because of the availability of the tremendous volume of water required for cooling purposes and because most of New York's population resides near the coast.

Thermal electric power generating results in large amounts of waste heat, released through discharge of cooling water which can create serious problems for aquatic species and habitats. EPA and the State have set water quality standards for thermal discharges. The State has also established extensive procedures for siting of power plants under Article VIII the New York State Public Service Law. This Law also provides for long range facility planning by all the electric utilities, reviewable annually by the State.

The location of power plants involves a broad range of important environmental, developmental, and land use issues in addition to the thermal discharge question. The CM program must focus on power plant siting as one of the key concerns of coastal areas, and specific provisions were made to include such considerations within required energy facility studies as part of the 1976 amendments to Section 305 of the federal CZM Act.

Obviously, any power plant siting plans or regulations, such as those related to thermal discharges, when incorporated into an approved state coastal management plan, will require

consistency on the part of those federal agencies, such as the Federal Power Commission, with respect to any actions taken by such agencies relating to these power facilities.

Groundwater Pollution or Loss

The interrelationships between groundwater and coastal water are not of great significance along most of the State's coast, primarily because, with large quantities of fresh surface water available, adjacent groundwater is not needed. However, on Long Island, most of the development outside N.Y. City depends on subsurface aquifers as the the sole source of water supply. Although this concern relates directly to the coastal surface waters only in terms of the salt/ freshwater interface, the importance and complexity of maintaining adequate and high quality supplies requires that all wastewater management alternatives on Long Island consider the groundwater issue. A major question is that of the need for recharge of treated wastewaters, as opposed to disposal via ocean outfalls. In addition, the recent detection of traces of toxic substances in Long Island groundwater warrants further investigation.

The Long Island groundwater situation is a major focus of the current Nassau-Suffolk Areawide Waste Treatment Planning program being conducted under Section 208 of PL 92-500. In proposing any water-related action on Long Island, whether it be through the CM program or water quality programs, the importance of groundwater must be recognized and the potential effects on groundwater considered in detail.

## General Policy Direction

In summary, based on program interrelationships, site specific issues, and the general types of water quality problems in New York's coastal area cited several broad elements in the implementation of a coastal management program can be identified which would lead to the improvement of water quality. As part of the management program, New York State will develop programs which would:

- Refine and apply management recommendations made in both the state CM and Water Quality plans for all those identified critical coastal areas where high levels of water quality must be maintained.
- Help to guide development to existing sewered areas or other areas where water quality can be controlled.
- Help to limit further pollutant generating activities on water quality limited segments of coastal and adjacent waters, where controls more stringent than the national effluent limitations are required.
- Assist in identifying areas most in need of various water quality management actions both structural and non-structural.
- Provide support for expanded water quality monitoring and testing in the most critical coastal water quality areas.
- Provide to meet project review processes which are necessary for water quality requirements in the coastal area.
- Provide support for expanded enforcement of water quality standards at all levels of government.

# PROTECTION OF FISH & WILDLIFE
# &
# THEIR HABITATS

Task 2.2

# PROTECTION OF FISH AND WILDLIFE AND THEIR HABITATS

## Introduction

It is essential that fish and wildlife resources receive adequate protection in the development of the Coastal Management Program. Fish and wildlife are the best indicators of the health of the State's ecosystems, and therefore, of man's environment. A reduction in the quality and quantity of fish and wildlife and their habitats would result in serious ecological, commercial, recreational and aesthetic losses to the State as a whole.

## Fish and Wildlife Issues

The problems which threaten fish and wildlife and their habitats in New York's coastal regions can be divided into two general areas of concern: 1) contamination of habitats, and 2) complete loss or degradation of habitats.

### Contaminants

New York's coastal habitats have been contaminated with toxic chemicals, heavy metals, bacteria, petroleum products, nutrients and possibly other as yet unknown or unidentified pollutants. This has been accomplished by direct point discharges onto coastal lands or waters or their tributaries and by such nonpoint means as surface runoff, erosion, percolation and precipitation or fallout from the air.

At the present time, the most critical of New York's coastal habitat problems - and therefore fish and wildlife problems - is the contamination of aquatic ecosystems with certain toxic substances. The most serious contaminants appear to be heavy metals and persistent industrial organic compounds such as polychlorinated biphenyls (PCB's) and Mirex. These substances are lethally toxic and/or produce sublethal physiological effects at very low concentrations. The organic compounds are very resistent to biodegradation and remain "tied up" in the living and nonliving elements of the environment for many years. Many of these types of contaminants are stored in the bottom sediments of coastal waters.

A characteristic phenomenon of these toxicants is their biomagnification in an ecosystem. This may occur as a result of direct environmental uptake or through food chain transfers. The severe reduction in numbers of several birds of prey such as the bald eagle, peregrine falcon and osprey is an example of the result of this contamination and biomagnification process. The ubiquity, toxicity and inertness of such contaminants combined with a limited technological capability for remedial measures indicates that these pollutants will continue to have serious short term and long term adverse impacts on fish, wildlife and man.

Table 1 provides summary information on the major contaminants in New York's coastal habitats.

Habitat Loss or Degradation

The second general area of concern with regard to the protection of fish and wildlife and their habitats is the complete loss or degradation of habitats. All species are absolutely dependent on suitable habitat for survival. Suitable habitat provides all of the biotic and abiotic elements required by an organism at every stage in its life cycle. Consequently, one cannot protect fish and wildlife species without preserving habitat. Furthermore, ecosystems must be the basic preservation unit.

The habitat types which have suffered the greatest losses in New York's coastal areas have been the freshwater and tidal wetlands. Thousands of acres of wetlands have been lost to unregulated dumping, filling and dredging. The most obvious impact of such practices is the loss of cover and breeding, nesting and feeding grounds for many resident and transient mammals, shorebirds and waterfowl. Other less evident but very important functions of wetlands are that they: 1) recycle nutrients; 2) act as sedimentation and filtering basins; 3) provide spawning and rearing grounds for fish, shellfish and crustaceans; 4) serve as a natural pollution treatment system; and 5) buffer inland areas from flood and storm damage.

Upland activities such as vegetation removal, stream channelization, wetland drainage and paving have adversely impacted many coastal tributaries. These practices have resulted in reduced base flows, elevated water temperatures, greater flow rate fluctuations during times of varying surface runoff, erosion and sedimentation. These changes have reduced the fishery's value for both resident and lake, river and marine based species.

Steam electric power plants are another source of environmental degradation to coastal waters. These facilities, particularly nuclear plants, require large volumes of water for cooling purposes. Unless a closed system utilizing cooling towers or other means of handling waste heated water is used, this heated waste water is discharged back to coastal waters. Other environmental stresses on aquatic ecosystems caused by once through cooling include impingement of fish on intake screens, entrainment of organisms within the cooling system, and biocide use to control algae growth in the system.

Other impacts are more difficult to evaluate such as the loss of natural shorelines as a result of development, bulkheading and vegetation removal; water quality accidents such as oil spills; water removal as in pumped storage operations or the proposed NYC water supply skimming project on the Hudson; loss of littoral zones from dredging; and the encroachment of development. Such impacts may seem relatively less important in comparison to the aforementioned problems of toxic contaminants.

| CONTAMINANT | PRIMARY GEOGRAPHIC AREA(S) AFFECTED | PRIMARY CAUSE(S) OR SOURCE(S) | TRANSPORT MECHANISM | IMPACTS |
|---|---|---|---|---|
| Polychlorinated Biphenyls (PCB's) | Hudson River | Industry | Point discharges to Hudson River; atmosphere; landfill leachate | Physiological and lethal effects on organisms; partial ban on fishing and possession of certain fish species from Hudson River |
| Mirex | Lake Ontario | Industry | Point discharges to Oswego and Niagara Rivers | Physiological and lethal effects on organisms; ban on possession of certain Ontario fish species; development of Great Lakes cold-water fishery delayed |
| Other Persistent Industrial Organic Compounds | Ubiquitous throughout world; concentrated in aquatic ecosystems | Industry | Point discharges; atmosphere; leachates; surface runoff; fluvial transport | Physiological and lethat effects on organisms; long term effects not completely understood |
| Lead | Lake Ontario; Lake Erie | Industry; leaded gasoline; lead shot from sport hunting; background sources | Atmosphere; surface runoff; fluvial transport | Physiological and lethal effects on organisms; full impact of present concentrations unknown |
| Mercury | Lake Ontario | Industry | Point discharges | Certain fish species contain concentrations above US FDA guideline of 0.5 ug/g; generally concentrations are decreasing |
| Cadmium | Constitution Marsh on Hudson River | Industry | Point discharge from battery manufacturing plant | Cd is extremely toxic; 50,000 ppm have been measured in sediments; full impacts on Constitution Marsh and lower Hudson unknown |
| Nutrients | Lake Erie; Lake Ontario; certain coastal embayments | Municipalities; industry; agriculture | Point discharges; surface runoff; atmosphere; sewage system seepage | Eutrophication (reduction in water quality, algal blooms, change in species composition to less desireable ones) |
| Fecal Coliforms | Long Island coastal embayments; Lake Ontario inshore areas | Combined sewer overflows; boating sewage; residential sewage | Point discharges; surface runoff; fluvial transport | May render shellfish inedible; indicator of a potential source of pathogenic bacteria; certain clam beds closed to harvesting on Long Island |

Table 1 Major contaminants in New York's coastal waters

However, these alterations of the natural environment may have cumulative or synergistic ecological impacts which are difficult to evaluate in the short term.

## Existing Policy and Programs

### Program strengths

In recent years, New York State has enacted legislation establishing a number of strong environmental management programs. Many of these programs should serve as a basis for the protection and wise use of the state's fish and wildlife resources in the overall Coastal Management Program.

Two such programs are the Tidal and Freshwater Wetlands Acts enacted in 1973 and 1975 respectively. The Legislature recognized the vital importance of wetlands to the environment and passed this legislation to insure that wetlands are accorded necessary protection. Any person wishing to conduct a regulated activity in a wetland must apply for a permit. Generally, regulated activities include any form of dredging, excavation, draining, dumping, construction, discharge of effluents, etc. In granting, denying or limiting a permit, consideration is given to the proposed activity's impact on the natural functions of a wetland.

Table 2 summarizes the major state and federal programs designed to protect fish and wildlife resources.

### Program Deficiencies

The future of fish and wildlife depends on habitat. Without suitable habitat animals cannot survive and reproduce. Often, endangered species and key game and fish species depend on small but critical geographic areas of their range. Unfortunately many of these small but extremely significant or critical habitats are threatened by destruction through land development, pollution and misuse. To perpetuate high quality fish and wildlife resources in New York and to perpetuate human enjoyment of them, these critical and special habitats must be protected.

The Bureau of Wildlife has a program which is presently identifying and mapping significant habitats statewide. However, for this program to be effective, legislation is needed which would mandate protection of all significant habitats, not just wetlands, through such means as land management planning, environmental impact reviews, control of impacting activities, land acquisition and public education.

Another area lacking program coverage is the inventory and identification of rare, threatened and endangered plant species. Although such a program would not be aimed at the protection of fish and wildlife and their habitats per se, such a program would be of importance to the maintenance of diverse and therefore stable ecosystems. Without updated

| PROGRAM | STATUTORY AUTHORITY | PROGRAM DESCRIPTION |
|---|---|---|
| Tidal Wetlands Act (NYS) | ECL Article 25 | Designed to protect and preserve tidal wetlands by preventing their despoilation or destruction, giving consideration to the reasonable economic and social development of the State. |
| Freshwater Wetlands Act (NYS) | ECL Article 24 | Protects and preserves freshwater wetlands from uses inconsistent with their natural function. The inventory of statewide wetlands and interim permit program are presently underway. A permanent permit program may be implemented by local governments upon offici filing of wetland maps by the State. Counties or NYS may administ the program if local governments do not. |
| Toxic Substances Monitoring Program (NYS) | ECL Article 17 | This program is designed to monitor the occurrence and significance of 17 different toxicants in fish from 102 sampling locations statewide over a 3 year period. |
| Fish and Wildlife Management Act (NYS) | ECL Article 11, Title 5 | This act gives DEC authority to develop and administer programs for fish and wildlife management in cooperation with private landowners. |
| Fish Propagation and Management (NYS) | ECL 11-0303 and 11-0305 | DEC is involved in a number of activities which relate to the propagation and management of fish. These activities fall within five areas: environmental protection, environmental management, species management, public use and extension services. |

Table 2. State and federal programs and policies directly concerning fish and wildlife and their habitats.

| PROGRAM | STATUTORY AUTHORITY | PROGRAM DESCRIPTION |
|---|---|---|
| Wildlife Propagation and Management (NYS) | ECL Articles 11 and 13 | Environmental protection programs includeinventorying, monitoring, and assessing the conditions of various species and habitats, and the actions which would impact these conditions such as pesticide and herbicide applications |
| Endangered Animal Species (NYS) | ECL 11-0535 | The Endangered Species Unit in DEC develops programs to establish and maintain populations of endangered and threatened wildlife species in the State. |
| Land and Forest Resources (NYS) | ECL 9-0501 and 9-0717 | DEC has the authority to acquire lands outside the Adirondack and Catskill Parks which are suitable for reforestation and the establishment and maintenance of forests for watershed protection, production of timber and other forest products and for recreation and other purposes |
| Wetland Acquisition and Restoration (NYS) | ECL Articles 24 & 25; Environmental Quality Bond Act, Section 260 (2) | DEC's Division of Fish and Wildlife develops and implements plans to restore wetlands as productive natural areas. Major activities include construction and maintenance of water control structures and dikes, control of water levels and wetland vegetation and establishment of food plots. |
| Wild, Scenic & Recreational Rivers Program (NYS) | ECL Article 15, Title 27 | This program is designed to preserve, protect and enhance rivers with outstanding natural, scenic, historic, ecological and recreational values. |
| State Nature and Historical Preserve Trust (NYS) | NYS Constitution, Article XVI, Section 4; ECL Article 45, ECL Article 51 Section 51-0701 (3) | Provides for the acquisition and administration of lands and waters outside of the Forest Preserve counties which, because of their wilderness character and natural beauty, or geological, historical and ecological significance should be preserved. |

Table 2 (Continued)

| PROGRAM | STATUTORY AUTHORITY | PROGRAM DESCRIPTION |
|---|---|---|
| Endangered Plant Species Protection (NYS) | ECL Article 9-1503; 6 NYCRR Part 193.2 and 193.3 | This program provides for the preparation of a list of endangered plant species meriting protection which can not be picked or removed from their native habitat, without the consent of the landowner. |
| Marine and Coastal Resources (NYS) | ECL Article 13 | DEC has responsibility for managing certain flora and fauna of the marine environment including the fish, shellfish, crustaceans and other invertebrate animal resources. |
| State Pollutant Discharge Elimination System (NYS) | ECL Article 17, Title 8 | State Pollutant Discharge Elimination System (SPDES) permits are required of all parties who propose to discharge pollutants into the State's waters. DEC incorporated National Pollutant Discharge Elimination System (NPDES) permits in its issuance of SPDES permits as of October 28, 1975. |
| Protection of Waters (Stream Protection Law) (NYS) | ECL Article 15, Title 5; 6 NYCRR Part 608 | Under this law permits are required for: changes, modifications, or disturbances to beds or banks of protected streams (those classified C "trout" or higher); excavations or fills in navigable waters or adjacent estuaries, tidal marshes and wetlands; and the construction of sizable dams or docks. |
| Fish and Wildlife Coordination (federal) | 16, U.S.C. 661-667e | Program designed to insure that wildlife conservation shall receive equal consideration and be coordinated with other features of water resource development programs. |
| Endangered Species of Fish and Wildlife (federal) | 16 U.S.C. 1531-1543 | A Federal program, in cooperation with states meeting program requirements, to inventory, and protect threatened or endangered fish and wildlife species. |

Table 2 (Continued)

information on the location and kinds of rare, threatened and endangered plant species it is very difficult to enforce the state's endangered plant species law. Some information does exist but it is out of date and would need extensive field checking.

## General Policy Direction

One of the purposes of the Coastal Management Program is to insure the wise use of coastal land and water resources. To achieve this, the development and implementation of state coastal management plans must give "full consideration to ecological, cultural, historic and esthetic values as well as to needs for economic development."

To assure the preservation and protection of fish and wildlife and their habitats, effective use must be made of existing fish and wildlife management programs in combination with several new programs.

Most significant of these is need for enactment of legislation to establish a program for protection of all significant fish and wildlife habitats. A program is also needed to undertake an inventory of rare, threatened and endangered plant species. These programs, along with effective implementation of the existing programs summarized in Table 2 would form the framework by which fish and wildlife and their habitats would receive protection.

Existing and new programs could be used for the achievement of coastal management objectives in several ways. One method involves the designation and management of Geographical Areas of Particular Concern (GAPC). Some GAPC's are designated based on their intrinsic natural resource value. The management of natural resource type GAPC's would insure a coordinated application of existing and new management programs to the most important statewide fish and wildlife resources. An example is the application of the rules and regulations promulgated by the New York State Tidal and Freshwater Wetlands Acts.

Another method concerns the application of a performance standard approach to determine acceptable land and water uses in the coastal areas both within and outside of GAPC's. The performance standard method of determining acceptable land and water uses would not restrict types of uses per se, but would base the acceptability of land and water activities on the effects of a proposed use, including the effects of the use on fish and wildlife and their habitats. A permit system would be the principal means of implementation. An example of the current application of this method is the State Pollutant Discharge Elimination System permits which must be certified as to the compliance with adopted state coastal management plans.

The consideration of fish and wildlife factors in the early review of proposed projects is another method of providing fish and wildlife protection. Programs such as the State Environmental Quality Review Act (SEQRA), National Environmental Policy Act (NEPA) and Cumulative Impact provide that environmental factors along with social and economic considerations be evaluated at the earliest possible time.

# ENERGY FACILITIES

Task 2.3

# ENERGY FACILITIES

## Introduction

A variety of energy facilities have traditionally been sited in coastal areas, primarily for access to cooling water and/or waterborne transport. It is most likely that the developers of future energy facilities will seek similar locations. In many instances, the facility will clearly require access to coastal waters such as a petroleum tanker dock or a liquified natural gas (LNG) facility.

In situations involving facilities such as oil storage tanks or a power plant with a closed cycle cooling system, the need for a coastline location may not be so essential. In view of the demands made on the shorefront areas for all types of uses, some determination of siting needs should be required, particularly for a large energy facility in a predominantly undeveloped area.

Presently in New York State, there are vastly different facility siting and permit procedures in effect. Electric power plants and transmission lines are subject to extensive review under Article VII and VIII of the New York State Public Service Law. Under these proceedings, public need and environmental compatibility of a proposed facility must be demonstrated.

For the other energy facilities, petroleum or natural gas, there are no similar requirements at the state level. Decisions relating to public need and location are often left to the developer and the local government. Unfortunately, as coastal resources become scarcer, this approach could give rise to greater conflicts, particularly between economic development and conservation interests. Not only will the chosen site for a facility be questioned, but also the need for the facility in the first place.

Clearly, an effective coastal management plan should address these major concerns regarding future energy facilities: Is there a proven public need for the facility? Does the facility require a site within the coastal area? If so, has the best possible location been selected?

## Issues Related to Energy Facilities

The Coastal Management Program must attempt to resolve the conflicts that will arise as a result of competing demands for New York State's limited coastal resources. One of the types of uses that will be in the center of these conflicts will be new energy facilities. Because of inherent operational characteristics on locational requirements, some of these facilities will need to be sited within coastal areas. Thus, the CM program must be able to sort out those energy related activities which are coastal dependent and insure that optimum sites are selected for these facilities.

Some of the energy facilities that may require sites within the State's coastal areas include:

- Electric power generation plants and transmission lines
- Petroleum refinery, off-loading and storage facilities
- Liquified natural gas terminals
- Natural gas pipelines
- Offshore gas production facilities

The issues that arise when such facilities are being considered for locations along New York coastlines generally center around three areas of concern: public need; impact upon the environment; and, public safety.

Electric Energy Facilities

The siting of electric power plants and transmission lines in New York State has always provoked local opposition. It seems, however, that the level of resistance has grown substantially over the last ten or so years. Residents and elected officials in coastal communities have voiced considerable opposition, for most of the major power generation facilities in the State are or are proposed to be located on coastlines. Based upon a plan recently submitted to the New York State Public Service Commission, about 20 new electric power generation units are proposed at various locations in the State's coastal areas. Transmission lines, on the other hand, are often not as heatedly resisted, but concern is raised when they are routed within coastal areas.

Thermal pollution of coastal waters has been a principal issue surrounding most power plant proposals. One of the prime siting considerations for such facilities is the availability of large quantities of water for cooling purposes. When the waters are used in this manner, their temperature levels are increased and, thereby, may have an adverse impact on aquatic ecosystems. Additionally, some fish species are killed at the intakes when the water is withdrawn from the coastal water body.

Radioactive emissions from nuclear fueled facilities is another issue. The fear of a "meltdown" of the reactor's cone is always a possibility, however slim it may be. The impact of this occurrence upon coastal and nearby areas is rather obvious. One that is less apparent, however, is the current practice of storing radioactive wastes at the power plant site. If improperly stored, these wastes may seep into the nearby surface waters or acquifers and present a public safety hazard for very long periods of time.

The intrusive visual appearance of these power generation facilities and air pollution emissions from fossil fueled units are often cited as issues. The latter is a major concern in the urbanized portions of the State's coastal areas where air quality is already poor. The former is of statewide concern, but it is particularly significant in coastal areas where recreation is a dominant activity.

The whole question of public need seems to be surfacing as another problem area. Of late, the projections of future electric energy requirements are receiving intensive scrutiny, for these forecasts appear to be out of line with population and development trends in New York State. This is one of the topics of controversy surrounding the power plant proposal at Jamesport, because it is contended that this facility is not necessary for Long Island's future power needs.

The cumulative effect of several electric power generation facilities in a given location is one issue that has been raised of late. This situation is of significance to the State's coastal areas, because there has been a tendency to cluster these power facilities. Two areas exhibit this condition: the Lake Ontario coastline in and near the City of Oswego; and, the Hudson River Valley from Greene and Columbia counties to northern Westchester and Rockland counties.

Electric transmission facilities will always be considered as visually intrusive in any environmental setting. Although most of the major transmission facilities run well inland from the State's coastal areas, there are instances where the two do meet. Often times, these lines lead from the power plant to the inland transmission grid, but there are several river crossings, particularly in the Hudson Valley. Future transmission facilities may have adverse impacts upon coastal waters, especially in the New York City area, where they are placed under the water bodies to connect onshore distribution systems. Additionally, the large voltage transmission lines require wide corridors which traverse many miles of the State's landscape. In so doing, many land use activities are hindered or otherwise restricted.

## Petroleum Related Facilities

Refining, offloading and storage activities are petroleum facilities that are often situated within coastal areas. The availability of water transportation, a very economical means of transporting products in bulk, is a primary reason for siting these facilities near the coastline. The coast's proximity to offshore drilling operations is also a faction cited for these onshore facilities. Ever since the oil embargo of 1973, there has been movement towards enlarging the petroleum storage capacity in the Northeast, and the coasts of the various states have been examined as to their respective potentials.

A major issue surrounding most petroleum related facilities is their adverse impact upon the quality of the coastal waters. Oil spills and water pollution emissions, resulting from the handling and processing of the petroleum, are the primary means by which the quality of the waters is impaired. If uncontained, these pollutants can eventually affect near-shore and onshore plant and animal life.

Air pollution is another concern that is raised, particularly in the more urbanized sections of the State's coastal areas where the quality of air requires improvement. Impact upon the aesthetic quality of the coast, and the potential fire and explosion hazard are other cited issues. From a positive point of view, these facilities are major economic uses which create jobs, pay substantial sums of local property taxes and attract other types of industrial uses. If the Outer Continental Shelf does prove to be a sizeable oil production area, New York City hopes to capitalize upon it and has already selected several sites along its coast for OCS support activities.

Natural Gas Facilities

Gas production wells, pipelines and liquified natural gas (LNG) terminals are uses that are or could be situated in New York's coastal areas. There is not much divergent opinion as to the need for natural gas within New York State; one only has to recall last winter's effect upon industries, businesses and schools. Questions do arise, however, over how the natural gas will get to where it is needed.

An issue currently brewing in the Lake Erie area is the drilling for natural gas in the lakebed. The ban on such operations was lifted recently by New York State for its portion of the Lake. The environmental impacts of such activity are of course, a principal concern, especially if the "find" is not a substantial one.

Liquified natural gas facilities also present particular concerns. One of these is the potential explosion hazard associated with this type of use. The sole LNG facility in New York State is situated on Staten Island and has been inactive since the explosion incident of a few years ago. Aside from the public safety aspect, hydrocarbon emissions emanating from these facilities are an environmental concern.

## Present Policies Related to Energy Facilities

Of the previously cited energy facilities, electric power plants appear to receive considerable attention from both the federal and state governments. Although several types of gas and petroleum facilities are regulated to some degree, the level of consideration does not match that given to electric energy operations.

The federal government, through the Nuclear Regulatory Commission and the Federal Power Commission, evaluates the need and suitability for nuclear fueled and hydroelectric (conventional and pumped storage) power generation units, respectively. The New York State Board on Electric Generation Siting and the Environment looks into the public need and the environmental compatibility of nuclear and fossil fueled power plants. This evaluation process is more commonly referred to as Article VIII proceedings. The Department of Environmental Conservation is responsible at the state level for assessing the need and environmental aspects of pumped storage facilities.

The State's Article VIII approval process is a rather extensive evaluative procedure, both in time and in the detail of the data required, that attempts to get at the actual need for the generation unit at the proposed site and the probable impacts that the facility will have upon air and water quality, vegetation and wildlife, the local economy and land use patterns. Alternative sites must also be considered under this process. The proposed sites, however, are selected by the utilities, and as indicated previously most of the locations are near large water bodies, particularly coastal ones. It would seem that a greater consideration should be accorded to inland sites during this approval process, so that the costs and benefits of both types of locations can be adequately assessed. Also, the time element should probably be streamlined in order to expedite the Article VIII proceedings.

Transmission facilities are reviewed and approved under the State's Article VII procedure. As is the case with power plants, public need and environmental compatibility must be demonstrated by the utility companies. Because of the operational characteristics of these facilities, the proceedings do not investigate many of the areas that are considered under Article VIII, consequently the process is not a lengthy one. The routing of the line is the topic of controversy, particularly when it traverses large open areas or cuts through valuable woodlands.

The State of New York is also in the electric power production and transmission business. The Power Authority of the State of New York (PASNY) owns and operates hydroelectric facilities on the Niagara and St. Lawrence Rivers and nuclear fueled units on Lake Ontario and the Hudson River. The electric power produced at these facilities is sold wholesale to large power consumers, such as the MTA, and to other utility systems in the State. PASNY is also involved in the construction of major transmission facilities. The purpose for PASNY's activities is to guarantee an adequate supply of electric power within the State, which in turn assists and furthers economic development opportunities in New York. PASNY's facilities are subject to Article VII and VIII proceedings.

Long range electric power facility planning was instituted in New York State with the adoption of Article VII of the Public Service Law. In cooperation with the New York Power Pool, the utility systems submit an annual plan which addresses future energy requirements, the types of generation and transmission facilities and their probable locations. The reason for this procedure (Section 149-b) is to develop an electric power system that can adequately meet future needs, but accomplish this objective in a comprehensive and coordinated undertaking of a statewide inventory for identifying potential sites that are suitable for future generation facilities.

Natural gas facilities such as LNG terminals and pipelines are also regulated by existing federal and state programs. The public need and environmental impacts are primary areas of concern. At the state level, the Department of Environmental Conservation evaluates the siting of LNG facilities from an environmental safety point of view. Pipelines, on the other hand, are certified by the Public Service Commission as to the facility's need and compatibility.

If gas production facilities are ever constructed in Lake Erie, the Department of Environmental Conservation has considerable authority with respect to the leasing of tracts, issuance of drilling permits and approval of pipelines leading from the wells to the shoreline. With the lifting of the ban on drilling in Lake Erie, it appears that the State is amenable to such activity provided it does not increase the risks to the coastal environment.

At present, there is no long range planning process for gas facilities in the State that is comparable to the Section 149-b procedure for electric utility systems. Hearings are currently being conducted on the feasibility of instituting this type of long term planning approach for future gas facilities. If it is determined that such a process should be established, the State's Coastal Management Program should be able to provide input into the development of siting criteria as well as further insight into future facility needs as they may apply to all or portions of the State's coastal areas.

From a statewide regulatory perspective, petroleum facilities -- refineries, pipelines, storage tanks, etc. -- are not restricted to the same degree as electric or gas facilities. Most of the regulation is at the federal level in terms of required permits for work related to harbor and shoreline alterations and licenses for deepwater port construction and operation. Other than water and air quality concerns, the State has little involvement in the siting of petroleum facilities. Additionally, there is no long range planning effort required by the State, which if advanced it would be strongly resisted by the oil companies. Since these petroleum facilities are traditionally sited in coastal areas, New York's Coastal Management Program in concert with the State Energy Office's present planning effort should strive to develop appropriate siting criteria and facility planning guidelines which could then be incorporated into a single approval procedure.

## Policy Directions For Energy Facilities

Based upon the previous discussion, the Coastal Management Program should undertake and/or support several efforts with respect to the siting and planning for energy facilities within New York's coastal areas which include:

- The Article VIII procedures relative to electric power generation units should be revised in order to streamline the approval process. At the same time, however, plant proposals that directly affect coastal areas should be required to clearly indicate an inland alternation site and demonstrate the benefits of the coastal location over the inland one.

- Long term planning processes should be established for both gas and petroleum facilities. Without these processes, management of the coastal areas will be difficult, for the program could not adequately account for the future land and water use requirements of these essential facilities. The Coastal Management Program can perform an essential role in both processes in terms of recommending suitable siting criteria and planning guidelines. The State Energy Office is presently investigating such possibilities, and this Office, the Public Service Commission and the Department of State should work collectively on these two areas.

- Improved and/or new siting approval procedures should be established for gas and petroleum facilities. Public need and safety and environmental compatibility should be demonstrated for a proposed facility, but possibly local governments should retain final approval responsibility with respect to siting within coastal areas. The Coastal Management Program would establish the locational criteria that the localities would incorporate into their decision process.

# ECONOMIC ACTIVITY

Task 2.4

# ECONOMIC ACTIVITY

## Introduction

The New York State Coastal Management Program (CMP) contends that along with the statewide development programs now evolving, an economic development program, aimed at just the coastal area, is justified. The justification is rooted in the fact that coastal areas: share many unique concerns stemming from the realization that much of their economic activity is coastal-dependent or, at least, coastal-oriented; are subject to severe development pressures; and, are environmentally the most vulnerable areas of the State.

This paper presents some preliminary thoughts as to how the Coastal Management Program may begin to accommodate the needs for improved economic activity while attempting to conserve the coast's valuable resources. One cannot be accomplished without in some way affecting the other. Ultimately, hard decisions may have to be made by state and local officials when the separate interests for environmental protection and increased economic growth clash over the use of land and waters within the coastal areas. The economic related issues confronting the State's shorelands and current policies affecting economic activity are briefly evaluated herein. This analysis is then followed by recommendations through which the Coastal Management Program may adequately take into account the economic uses of coastal land and water resources.

## Economic Issues

### Overall Economic Development Direction

The intensity and timing of growth, as encouraged, discouraged or guided by the government, have major impacts on the economic situation in a given area. The State and the various local governments have been planning, and continue to plan, as to how developmental pressures (or the absense thereof) should be handled. Virtually all of the planning agencies in the State appear to favor policies that lead to concentration of urban-oriented development, with the concomitant preservation of the remaining open space.

The pursuit of this concentrated growth policy could have beneficial effects upon economic activities:

1. Local fiscal situations might improve (due to such factors as reduced spending on roads, sewer systems, and disaster mitigation) with the probably consequence of lowering business, property and income taxes.

2. Private enterprises might further maximize their profits because concentration of development will bring about proximity to consumers (meaning reduced transportation costs) and nearness to the labor market (meaning an overall improved employment picture). The housing construction industry might also reduce land costs as new norms are established and people begin to accept less space for their living environment.

3. Concentration of development will also lead to reduced energy use, which in turn will assist in preventing another energy shortage like that which disrupted the State's economy last year.

4. The preservation of open space and the resulting enhancement of the environment will serve the dual purpose of stimulating those industries directly dependent on the environment while indirectly improving the competitiveness of New York's industries by improving the quality of life in the State.

The possible implementation of a concentrated growth policy is not without some negative impacts upon the State's economic activity:

1. Any concerted effort by the government to concentrate development would include policies such as discouraging auto use, encouraging the construction of more dense housing, and encouraging the preservation of farmland. These kinds of policies would have an immediate and pervasive impact on an area's economy. A policy discouraging auto use would obviously take away from that large segment of the economic sector that has actually grown up around the auto - e.g. auto sales, auto services, fast food chains, motels, shopping centers. Restrictions on urban sprawl might also cause severe dislocations in the housing and land markets. Traditionally, real estate and construction interests have oriented themselves towards opening up new areas for development. Reorientation is certainly possible, but the region will be at an economic disadvantage (especially if a neighboring community, or state, has not adopted similarly stringent laws and regulations).

2. Once the government takes on the responsibility for something like channeling growth and development, as a natural component of the process the government also aspires to accomplish other objectives. For example, the government may not only try to increase housing density, the government may also attempt to racially integrate the housing or require design standards. From the point of view of stimulating the economy these kinds of requirements would be regressive, because developers would be discouraged from investing their money.

Manufacturing

The decline in manufacturing has been severe throughout most of the State, and the urbanized areas within the coastal areas are no exceptions. The basic problems shared by most manufacturing concerns in the State (and the whole Northeast region) - high energy, transportation and labor costs; high property and corporate taxes; old building plants and little space for expansion - are actually compounded in the coastal area by especially strict environmental controls and especially high land costs.

Various regions within the State have developed plans aimed at strategically locating manufacturing concerns - e.g. Capital District and SLEOC call for only water dependent uses in the coastal area; Columbia County, after calling for concentrated development, relied on federal and state regulation to ensure compliance with basic environmental standards; and NYC applies performance standards when locating its manufacturing concerns. However, the regions, and the State as a whole, have not evolved satisfactory programs to stimulate the manufacturing sector, for too much attention has been directed towards channeling the growth (that, in actuality, is almost non-existent) and not enough has been directed towards stimulating that type of economic growth.

Harbor Development

Economic activity in the coastal area will in large measure revolve around the success or failure of those activities aimed at revitalizing the harbors. Some of the issues that will have to be faced include:

1. Accommodation of various uses competing for harbor space.- More than ever, space at deep harbors is at a premium. Dock space, space for support facilities, etc. are needed for the conduct of various uses such as commercial fishing, recreational fishing, cargo shipping and storage, passenger terminals, tourist facilities, recreational opportunities and manufacturing concerns. Because of this competition for space, some consideration may be necessary towards developing a process that would allocate space effectively.

2. Modernization of port facilities.- A harbor is usually in the oldest part of an area, and this is unfortunately reflected in the physical condition of the harbor area and the facilities themselves. If NY ports are to compete with others outside the State, a firm commitment will have to be made to a major overhaul--particularly

in order to accommodate shipments being made through the containerization process (as of now the ports in Albany, Buffalo, New York and Oswego are where containerization is or is going to be attempted).

3. Winter navigation.- Except for Albany, the upstate harbors are not operational during the coldest months. Technology is available to keep them open all year, but the operation would be costly and it might cause additional environmental damage.

4. Uneven rail freight rates.- Ports in New York State are losing business because the often necessary connecting rail service is frequently more costly than in neighboring states.

5. Undue competition between upstate ports.- Because of their relative proximity to each other, the upstate ports are often competing for the same business. This circumstance, along with the smallness of size (which limits their marketing capability) has lead some to suggest that increased coordination between these ports would benefit all parties.

Fishing

The fishing industry is declining in New York State. The NY Times recently reported that the Metropolitan NY Region had, in 1977, "its worst summer of inshore fishing in memory" while the St. Lawrence Eastern Ontario Commission relates in its "Report on Coastal Resources" that, according to the Great Lakes Basin Commission, the State's total commercial harvest (from Lake Ontario) has declined from 5.5 million pounds in 1917 to 200,000 pounds in 1975.

The major problem facing the industry is water pollution - a problem that the department of Environmental Conservation (DEC) has primary responsibility for resolving. For the next year. DEC will give priority attention to reducing pollution due to toxic substances, sewer overflows, urban runoff, nutrient enrichment, and oil spills. From a geographic perspective, DEC regards the following coastal areas as "hot spots": the New York City Metropolitan Area (where water quality is "characterized by low oxygen levels,... high bacterial contamination; isolated thermal pollution,... and high levels of heavy metals, oil and greases"); Lake Erie (which is no longer "dying" but is still very much polluted); the Lower Hudson River ("where all commercial fishing is prohibited except for shad, Atlantic sturgeon longer than four

feet, goldfish, and bait fishing"); and Lake Ontario (where "by far the major water quality problem.... is the bioaccumulation of toxic substances such as mirex and PCB's").* The Mirex situation is so bad, in fact, that the construction of a major fish hatchery was delayed, because it has been argued that either the Lake should be made cleaner beforehand, or else the hatchery should be located elsewhere.

Next to the water pollution problem, the following problem areas seem unimportant, but they are nevertheless significant and must be dealt with:

1. Destruction of wetlands and other near-shore areas which are vital to the breeding and feeding of fish.

2. The competition for space in harbors, particularly in the Metropolitan New York City Area.

3. Relations with those foreign countries which fish in American waters.

4. Coordination with Canada and other states with respect to improving the fishing conditions in the Great Lakes.

Agriculture

Agriculture within the coastal area is vitally important industry because: of the high dollar value of its products; the current and potential role farmland has in guiding development' and the products grown in these areas could not have grown (because of climatic differences) in any other region of the State.

Unfortunately, while coastal farmland is in some ways more valuable than non-coastal farmland, it is also in some cases, e.g. Suffolk and Monroe Counties, particularly vulnerable to development pressures because of its proximity to population centers.

Another problem facing the farmer is the current tax structure, which is based on the farmland's value if it had been fully developed. The rationale for paying taxes in this fashion has been contested in various regions and alternative approaches are being proposed and implemented.

A relatively recent phenomenon which has further jeopardized farming throughout the State is the inflationary spiral, which has caused farming costs to soar while a corresponding rise in farm revenue has not been realized.

* N.Y.S. Department of Environmental Conservation. "Environmental Actions."

An unpublicized problem faced by the agricultural industry is that as a result of the diminshing amount of farmlands in the State, agribusinesses have been failing. No separate figures are available for the coastal area, but one can assume that agribusinesses contribute substantially to the coastal economy, and its loss as a vital industry would have severe repercussions (difficulty for remaining farmers to stay in business).

Tourism and Recreation

Some of the problems and concerns facing the tourism and recreation industries include:

1. Water pollution, discussed at greater length previously is a threat also to recreation and tourism. The pollution situation is not improving at a desirable rate throughout the State, and the possibility remains of damage caused by new oil exploration and shipment. Continued degradation of water quality would have a severe impact on the State's economy (in the case of Long Island, for example, it has been estimated that the 1975 beach closings cost the regional economy $10 million per week).

2. Seasonal orientation is very strong with respect to the tourism and recreation industries, and this causes fluctuations in the employment picture and in the economy as a whole (a particular concern in the St. Lawrence-Eastern Ontario Region).

3. Income levels in these service industries are below average, so even when working, people employed in the tourism and recreation industries are not faring very well.

4. Much of the land that is devoted to recreation and tourism is government owned, and a substantial amount of additional land is under consideration for government purchase. When state or county-owned, not only does the land produce a comparatively low economic yield, but the locality in question loses out on the potential property tax revenues.

5. A significant proportion of the Stat's most beautiful coastal areas are relatively inaccessible. This inaccessibility of course contributes to the appeal of the area in question, but a balance must be struck which accommodates those who want to keep a virgin area as is, and those who want to maximize the number of people who can enjoy the land.

Energy Development

Energy development is a vital concern within the coastal area in the obvious sense that any area needs a sufficient supply of energy. On a more subtle level, however, the State's coastal area governments, businesses, and residents are deeply concerned about the impact that energy development will have because the coastal area, more than any other, will feel the full impact (the bad and the good) of that development.

Two specific issues that face the State, or, at the least, regions within the State, relate to: oil and natural gas finds, or potential finds, on the Outer Continental Shelf; and, the natural gas finds in Lake Erie that are being tapped by Canada, but as yet have not been sought by New York.

There are divergent viewpoints, of course, as to the efficacy of developing Atlantic and Great Lakes energy resources. New York City, for example, has been promoting itself as a staging area for off-shore development while Nassau and Suffolk have actually been in court in order to prevent oil exploration off their shores. On the affirmative side of the argument, it is conceded by development proponents that the environmental risk is significant and that the return in terms of energy-to-be-supplied is limited. However, development proponents contend that: the environmental risk can be minimized (which would make the risk an acceptable one;) New York State itself can be assured of a substantial portion of the retrieved energy resources; New York State has an obligation to the Northeast Region and to the nation as a whole to develop available energy sources and; the development of off-shore energy sources will act as a major stimulus to the State's economy by providing jobs, precipitating new construction, and guaranteeing a supply of energy for other industries.

Another aspect of energy development that relates directly to the coastal area is the siting of power plants. Right now, the site-approval process is a costly, lengthy affair that in many cases overlooks the important implications, in an economic sense, that the decision will have. The failure to address the siting issue from the economic perspective is the kind of ommission that can be rectified by an assertive Coastal Management Program.

A subtle, but perhaps the most pervasive way in which the coastal area and energy development are interrelated revolves around the simple fact that the coast is where the population and industrial centers of the State are situated, and steps taken to moderate consumption will, potentially, have the greatest impact on the development of new energy sources. This is the case, because reduced consumption will obviate the need for taking risks only because the region is strapped for energy and the economy is so much in need of some stimulation.

Mining/Dredging

From an economic standpoint, mining is desirable in the coastal area because: any possible source of energy should be investigated and an energy source is found, it should be developed; and, sand and gravel are critical to the construction industry.

The argument for prohibiting mining has been undermined with the passage of legislation that requires no scars on the land once the mining is complete. However, mining in the coastal land area is not a major concern, because there are relatively few locations where it is feasible.

Controversy over the dredging question persists, however, because dredging has been occurring all along the coastline, The consequences of this activity are ambiguous in terms of the environmental damage that is caused. When dredging is used to improve ship movements or water circulation, or to extract sand and gravel, there are several possible negative consequences:

1. Destruction of the productive parts of the estuarine system.

2. Increased turbidity which inhibits the photosynthesis process.

3. Smothering of organisms by the dredged material.*

4. Loss of beach areas and increased bluff erosion.

Those who support continued dredging operations contend that the predicted environmental damage is exaggerated so that the minimal damage that would be incurred and is not sufficient to sacrifice a necessary economic activity.

* "California '75," California Coastal Management Program.

## EXISTING ECONOMIC DEVELOPMENT POLICIES AND PROGRAMS

Any discussion of the economic development component of the State's Coastal Management Program (CMP) must take place within the framework of statewide economic development policies and programs.

Governor Carey has indicated strongly that development of a State economic base capable of providing diversified employment opportunities and assuring employment for all who wish it, is a major goal of his Administration.

Not all statewide economic development policies are explicitly stated, therefore, a brief review of current and proposed state programs and activities is necessary to provide a valid picture of existing statewide economic development policies.

The New York State Department of Commerce (DOC) has a lead role in State economic development activities. The Department's Industrial Development representatives routinely call upon New York's industrial firms to discuss their needs, concerns and problems and to inform them of state and federal programs which may be of value to them; and where problems exist, to provide other assistance in resolving them. The Department maintains a computer file of available industrial sites and plants for rapid response to locational inquiries. The International Division maintains offices in London, Tokyo, and Montreal in order to assist in the development of new, and the expansion of existing export markets for New York's manufacturers. The Department's Tourism INvision embarked, in 1977, on an expanded (and successful) tourism promotion program.

The Job Incentive Board (staffed by Department of Commerce personnel) may provide tax credits to manufacturing and wholesale industries expanding their operations in New York State.

The Department of State has administrative responsibility for State's participation in the Public Works and Economic Development Act and Appalachian Regional Development Act programs. Under both programs, the Department seeks to fund job intensive projects.

One of Governor Carey's early actions was to create the New York State Economic Development Board. The priority function of the Board, whose membership is composed of leaders from industry, labor and government, is to develop long term economic development policy recommendations.

Clearly, while it is the State's policy to assist in maintaining existing jobs and in creating new ones,the individual programs directed at job retention and development do not address the factors of location or classification both of which may be critical in coastal areas and are of concern to the Coastal Management Program.

Municipalities, (cities, towns, counties) may with State Legislative and Executive approval create not-for-profit Industrial Development Agencies (IDA). IDA's may acquire land and/or plant; may build or rehabilitate; may borrow through agencies such as the Job Development Authority (JDA). The IDA can be a most effective tool in an economic development program. It is a concern of the Coastal Management Program that the absence of a statewide economic strategy could lead to a situation in which IDA's were competing directly against each other which in turn could be detrimental to the Coastal Management Program's intent to encourage economic development within areas of existing economic activity. It could foster continued sprawl of economic uses rather than more functional clusters.

The JDA is authorized to make second position loans to not-for-profit local development corporations. These funds may be used for land acquisition, plant construction and equipment, but not for operating expenses.

The State's Job Incentive Board may under certain conditions, when petitioned by a city, county, or school district, certify a manufacturing or wholesale industry as eligible for tax exemptions by these entities.

Agriculture, an important industry in New York is not overlooked. State policy now permits a county upon petition by owners of working farms to authorize the creation of a agricultural district (provided the district is certified by the State as being "not inconsistent with comprehensive State plans, policies, and objectives). An agricultural district designation assures the farmer his land will be taxed on its value as agricultural land, not on the value it might have as residential or commercial property.

Based upon the preceding discussion it is apparent that another State policy is to encourage economic development activities at the local level.

Adequate highways, rail, air and port service are essential components of economic development. The New York State Department of Transportation is responsible for the short and long range planning for highway, railroad and airport development. Port development is not subject to this planning process; however, in 1976 the Department completed the "Upstate Public Ports Study." This study is of particular interest to the Coastal Management Program inasmuch as one or more ports are being considered for designation as GAPC's, and it makes specific recommendations for improving the economic viability of these ports and increasing their ability to work jointly to increase their share of existing markets.

The Department's regional offices maintain liason with local governments to assure that their transportation concerns and needs receive careful consideration in the development of State transportation plans.

Thus, another essential State policy is to provide for a transportation base supportive of economic development.

Energy is the life blood of economic development. Once abundant, the availability of energy resources adquate to meet today's needs and those of the foreseeable future is a problem of immediate concern to the State.

The State Public Service Commission through the Department of Public Service regulates the activities of energy producing municipal corporations and public utilities within the State. The PSC's regulatory powers include approval of transmission line routes, siting of generating facilities and rate structures.

The Power Authority of the State of New York has been authorized to construct, operate, and maintain power transmission lines and power plants. It has constructed nuclear, hydroelectric and pumped storage projects for the purposes of assuring an adequate supply of electric power within the State.

Inasmuch as the majority of electrical generating facilities in the State are located in coastal areas due to cooling requirement, siting of these facilities is of critical importance to the Coastal Management Program.

In view of the above discussion, economic development is encouraged in New York State through policies that assure sufficient supply of electric energy.

New York State has been a leader among states in the efforts to clean up its waters. Polluted waters, aesthetic and environmental considerations aside, exert a negative force on economic development. This is particularly apparent in the tourism industry. Inasmuch as industry creates and must dispose of tastes, it should be equally obvious that a state's development efforts in the industrial sector will be severely handicapped if adequate disposal facilities are lacking. To alleviate this, the State in addition to its own pollution control activities, has available low cost loans to assist industry in making pollution control improvements necessary to meet state standards.

The Department of Environmental Conservation is the State agency with prime responsibility in the area of waste disposal. Since 1967, over 150 comprehensive sewage studies have been completed for municipalities. Similarly, since 1969 over 35 county and city comprehensive solid waste disposal plans have been completed.

The Department has administered the Environmental Quality (Pure Waters) Bond Act of 1972 which has been instrumental in the construction of treatment facilities throughout the State.

Through these programs and policies, the State strives to assure that pure water supplies and waste water and solid waste disposal facilities are adequate to support economic activity.

The importance of recreation, in its many forms, in economic development should not be understated. Recreation has a two-fold effect on economic development. An area which possesses, over and above the basics of economic development requirements, a broad range of recreational (including cultural) opportunities will be more attractive as a plant or business site than one with a minimal range. Secondly, an area with this range of recreational opportunities may be able to develop a seasonal or year-round tourism industry. Recognizing this, recent legislation has expanded the authority of the IDA's to include promoting, developing, and constructing of recreation facilities.

The State Office of Parks and Recreation is responsible for development and operation of the State Park system, historic sites and certain marine operations. It is also responsible for developing the State Comprehensive Recreation Plan. As its name implies, this plan addresses recreational needs and potentials at state, regional, and local levels and, most importantly, includes private sector activities.

The Department of Environmental Conservation has responsibility for managing the Forest Preserve and related recreational facilities. It operates fish hatcheries and is responsible for fish and wildlife stocking programs.

Water oriented recreation is important to the economy of the coastal areas. The Coastal Management Program must provide direction to permit judicious development of this economic resource.

It may be stated that it is State policy to provide for a diversified public recreation base.

While there are others, the policies heretofore identified are major ones that directly or indirectly affect economic development. Each in its area is supportive of the goal of a State economic base capable of providing diversified employment opportunities and assuring employment for all who wish it. Therein may be a problem; these policies sound as they may be, appear to operate individually and not in concert with each other. As noted before, there does not seem to be a clearly defined and articulated statewide economic development strategy to harness these implementive policies to achieve their common goal.

## Economic Development Policy Directions

What should be the role of the Coastal Management Program relative to economic development? As a management program the CMP should not aspire nor attempt to become a full scale economic development program. Rather, through the management function its emphasis should be on formulating implementable economic policies specifically addressed to the needs and problems of the coastal areas. Regarding an implementive role, the program should probably avoid project development activities; it should function as a catalyst bringing the various resources of the Federal and State governments to bear on the needs of the coastal areas through local or regional agencies.

In the absense of a clearly defined and articulated statewide economic development strategy, determining the direction in which the Coastal Management Program should move becomes more difficult than it would if such a strategy existed.

Consequently, in its economic development efforts, the Coastal Management Program should assume a lead role in the formulation of a coastal areas economic development strategy based on statewide policies and coastal needs. A clearly defined and articulated development strategy, accepted at the state and local levels, will facilitate the implementation of the State's general economic policies within the coastal areas. While existing development policies are applicable to the coastal areas, additional supportive policies providing a greater specificty of direction are required to meet the needs unique to these areas.

As previously noted, State economic policies are directed primarily at maintaining existing jobs and creating new ones. These policies do not, at least directly, address the issues of location and type of economic activities; issues which may be critical in the coastal areas, if maximum beneficial uses are to be made of coastal resources.

One policy that the State should consider is to encourage the clustering or concentration of economic activities that occur within the coastal areas. To implement this proposed policy (which is consistent with the State's proposed 701 Land Use Element), use should be made the Geographical Area of Particular Concern concept. Utilization of the GAPC, that is building on an established development base, permits greater concentration of resources of federal and state governments in assisting municipalities in their development programs. The concentration of economic development resources is a strong deterrent to sprawl and in addition to stimulating economic activity is a conservation measure allowing for more appropriate land and shorefront uses.

Economically oriented GAPC's will permit through selected infrastructural investments and legislation, the limitation of future economic development to compatible activities. Over a period of time existing activities which are incompatible with the general economic base, may be replaced by more compatible ones.

The GAPC approach can be supportive of the general policy to encourage economic development activities at the local level. By restricting development efforts to a relatively limited and well defined area, local resources may be concentrated to achieve maximum developmental impact.

While adequate transportation sources, highway, rail, and air are universal components of economic development, port activities are uniquely coastal. The economic potential for the upstate ports has yet to be realized. The recent Upstate Public Ports Study makes specific recommendations for improving economic viability. It is apparent that a far greater degree of inter-port coordination than currently exists is a key element to development. While it is State policy to provide for a transportation base supportive of economic development, the ports constituted of autonomous authorities and commissions pose special problems for the provision of direct State support. Therefore, the CMP should analyze each port for potential designation as a GAPC. The CMP should be able to serve as a catalyst in fostering inter-port coordination and cooperation and in influencing state and federal participation in a comprehensive port development program.

In striving to further the State's policy to provide for facilities which are adequate (and environmentally compatible) to meet the energy needs, the CMP must provide, in a sense, double direction. Economic development in coastal areas is as dependent upon adequate energy as anywhere else. CMP then must provide direction at State and local levels to assure that adequate energy resources can be provided in the future. Concurrently, CMP must provide direction to assure that the siting of energy facilities does not negate the continuing development of other coastal economic resources. CMP may want to consider the siting of future energy facilities within established economic GAPC when feasible.

Whether or not the results of exploration of the Outer Continental Shelf will have significant effect upon New York's coastal area, remains to be seen. Still, CMP direction is necessary. Support should be given to exploration and exploitation of energy resources of the OCS provided the actions taken are consistent with sound environmental practies. (This is equally true for potential resources in the Great Lakes).

Recreation is a major (and growing) industry in New York State. State policy is supportive of continuing development of a statewide public recreation base. Importantly, recent legislation now provides support for private recreation development. Water-based recreation, swimming, boating and fishing are among the most popular recreational pastimes. CMP must provide policy direction to assure that in the pursuit of other types of economic development and the necessary energy need, serious damage is not done to currently viable recreational areas, and that efforts are made to assess land and shorefront areas for possible shifts in uses. While certain coastal recreational activities are not incompatible with other economic uses, e.g. marinas with certain port activities, the possible benefits accruing from the establishment of recreation GAPC's should be thoroughly analyzed and evaluated.

The primary economic development issues with which the Coastal Management Program must deal have been identified; as have the primary economic development policies and programs (the tools of development). Lacking a statewide economic development strategy, a principal task for the CMP is to formulate coastal areas economic development strategies. Then, under the broad umbrella of the existing general State economic policies, CMP should investigate the feasibility of development policies which address the specific concerns of the coastal areas. Only then will it be possible to construct an effective coastal areas economic development program.

PUBLIC ACCESS

Task 2.5

# PUBLIC ACCESS

## Introduction

Public access to the coastal environment is a key element in the management of coastal areas in New York State. The coastline possesses both recreational opportunities and aesthetic values that enrich the quality of life for the State's residents. It is the public's right to enjoy these amenities. At present, exercise of this right is hampered by problems relating to accessibility.

The public access issue has two main components -- access to existing and appropriate potential recreation resources, and access to the coastline at large. Both components are strongly linked to the recreation issue, but should be differentiated from that issue which focusses on providing adequate space for various forms of recreation in coastal areas. The first component of the public access issue -- access to recreation resources -- is directly related to the space need because problems in accessibility to recreation resources often stem from inequities in supply and demand. The second component also relates to the recreation issue, because increased access to the coastline at large must often be balanced by increased space at the waters edge to accommodate the public. However, the second component goes beyond questions of recreation space per se to include the demand for physical and visual access to the shoreline for aesthetic, educational, or psychological purposes.

Public access to the coastline is controlled by land ownership and development patterns along the shore. Commerce, industry, and population all cluster in these areas. Along many lengths of shoreline, the resulting land use patterns effectively cut off physical and visual access perpendicular to the shore, and private property rights that extend to the water's edge restrict lateral access along the shoreline.

Access to existing recreation resources is also difficult in some areas, particularly in metropolitan areas where demand exceeds supply. Traffic conjestion, inadequate parking facilities, residents - only restrictions, and prohibitive costs are a few of the problems.

Leisure time and activities in the State are rapidly expanding, yet existing barriers to public access persist and competition increases among private developers for remaining prime shoreline locations. If existing problems are not rectified and present trends are allowed to continue accessibility will be severely limited in the future.

The importance of public access to the shoreline is exemplified by the inclusion of this element in the Coastal Zone Management Act of 1972. The federal "public access"

planning requirements under this act stress a wide range of management responsibilities. To fulfill the requirements of subsection 305 (b) (7), New York State's program must include "a planning process that can identify public shorefront areas appropriate for increased access and/or protection." This planning process must include:

1) a procedure for assessing public areas requiring access or protection;
2) a definition of the term "beach" and identification of public areas that meet that definition;
3) articulation of State policies pertaining to shorefront access and/or protection;
4) a method for designation of shorefront areas as areas of particular concern (either as a class or as specific sites) for protection and/or access purposes, if appropriate;
5) a mechanism for continuing refinement and implementation of necessary management techniques, if appropriate; and
6) an identification of funding programs and other techniques that can be used to meet management needs. (16 USC § 1451/PL 94-370)

New York State's coastal management program will address these questions in the course of the program. This paper initiates the process by discussing the main issues related to public access, identifying existing programs that address issues and the gaps between issues and programs, and indicating how New York State will deal with the problem.

## Issues and Concerns

The following specific issues are discussed relative to the public access issue: transportation limitations, use restrictions, socio-economic factors, development patterns, and legal constraints. A few specific issues that directly relate to the supply and demand of recreation resources are discussed in the recreation issues paper. While it is acknowledged that these issues also affect access, they are not repeated here. Included in this category are use conflicts, excessive use, and supply versus demand. Refer to the recreation paper for a discussion of these closely related issues.

### Transportation Limitations

Physical characteristics of the access roads to recreation facilities and the parking areas at those facilities directly affect accessibility. In a study prepared by the Long Island Sound Regional Study, it was determined that town beaches were often difficult to locate, due to the lack of directional signs and the fact that access roads were generally meandering streets through residential neighborhoods. In many instances, it was found that town or neighborhood facilities lacked parking lots, and no parking was allowed on the streets adjacent to beaches.

Transportation corridors and modes of transportation directly affect the design of recreation systems. The larger the parking area allocated for vehicles, the smaller the area for recreating, given a finite amount of space. The use capacity of many coastal recreational areas is directly influenced by these resource allocations. Beaches are often closed, not when the facilities are crowded or the ecological quality degraded, but when the parking lot is full. In many instances, recreation properties could accommodate increased use capacity by limiting automobile access and providing instead an alternative mode of transportation. Shuttle systems could transfer people from remote parking areas to the shoreline, reducing the need for parking within the immediate coastal zone. This shuttle approach can also be used to provide exclusive transit access to areas that are environmentally fragile or overused. Mass transit for recreation would provide both improved environmental quality and better access, reducing the need for more parking space at recreational areas. Other transportation alternatives to private auto use include aquatic access by ferry or boat and bicycle and pedestrian travel.

Transportation limitations are particularly evident in metropolitan areas, such as New York City and its environs, Long Island, and the Buffalo area. In the Long Island Sound region various local beach bussing programs have been initiated to provide local access to recreation resources.

This access is restricted to local residents and serves local needs. The mass transit efforts are not regionally oriented or coordinated. To be effective mass transportation must be a regional effort.

Use Restrictions

Use restrictions take several forms. In many public facilities access is limited by the mode of transportation permitted or encouraged to the property. Restricting buses carrying residents and/or non-residents discriminates against social class and/or residence. Restricting auto parking near a park or beach often encourages only localized use. Differentation of fees is sometimes utilized for resident/non-resident users. Beaches are often restricted to residents who contribute to the local tax base. Private facilities such as country clubs often limit membership, which assures some degree of accessibility to the club's recreation facilities but at the same time discriminates against social class. Restricting the use of coastal lands and facilities causes a reduction in the resource options open to the recreator and places additional burden on nearby parks that have no use restrictions.

Socio-Economic Factors

Many areas of the coastal zone have been developed for recreational activities involving expensive items such as large boats, second homes, and exclusive clubs. These activities are limited to a relatively small portion of the general population. High costs, ownership responsibilities and maintenance difficulties are significant deterrents to these activities. Unless these expensive recreational resources are made available to the general public through rental programs, many people will be precluded from enjoying many of the coastal areas of New York State.

Rising land and construction costs, high property taxes, limited amounts of available land, and demands for higher-priced housing and visitor accommodations all act as restrictions to coastal access. Few housing and tourist facilities for low and moderate income persons are now being built in many coastal areas of New York State. Many existing housing and tourist facilities serving the low and moderate income population are being replaced by higher cost apartments, condominiums and motels. This trend is causing a change in the character of the population near the coast. Many elderly, low and moderate-income people cannot afford the high costs of coastal living and are forced to live elsewhere.

Development Patterns

Private development serves as a deterrent to coastal access. Along the immediate coastline, homes, businesses and industries

often restrict perpendicular access to the coastline and monopolize available road capacity and parking facilities. Where private property rights extend to the water's edge, lateral access along the shoreline is restricted. In some instances, the public's right to lateral use is recognized, but perpendicular access is restricted by private development. A related problem is gaining access to coastal waters themselves. While coastal waters can be used by all, development patterns often make this impossible.

Many transportation corridors restrict public access to the coastal areas. Railroads and highways often block usage of extensive shoreland areas. One such example is the New York Central Railroad located along the east bank of the Hudson River in downstate New York. This railroad line presently blocks access to extensive areas of the Hudson shoreline, and with future development and use of high speed locomotives, public access will be restricted to an even greater extent.

Visual access problems are caused by development patterns and specific structural designs that block the coastline from view. Elevated highways and tall and massive buildings near the shoreline block visual access in many areas, particularly in urban areas. Strip residential development along the coastline, characteristic of long stretches along the Great Lakes, restricts visibility between residences as well as limiting physical access to the shore.

Legal Constraints

Increased public access to existing public and privately owned parks and beaches would help to meet some of the current and future demands for such resources. The claim of public access to beach lands, both public and private, is under increasing litigation in the United States. Beach access rights are a complex area of the law, with legal doctrine presently in a state of flux. Court holdings frequently depend upon the peculiar nature of the original dedication, upon the law of the state and upon provisions of a town's special charter from the State. Common problems include: Can a public beach be restricted to city residents? Can differential fees be charged to residents and non-residents? Does a municipality hold park lands in trust for the people of the State or for the people of the particular municipality? Can public recreational rights be established despite private title to the land? These are a few of the decisions to be made as increased access is acquired.

This issue is of particular importance to the Long Island region where the majority of beach shoreland is closed to the public. In Nassau and Suffolk Counties private ownership holds approxiamtely 74 percent of the coastline. The remaining 26 percent which is publicly owned is not absolutely opened to the public since many town beaches are opened to only local

residents. (Source: Long Island State Park and Recreation Commission, Water-Oriented Recreational Data, June, 1977)

The provision of public access to the shoreline on public utility properties has been suggested as a means of providing increased access to the coastal zone. The legal, institutional and political ramifications of this concept must be dealt with before this approach can be used efficiently. Under standard tort law, a private utility which opens its grounds to the public for recreational and access purposes would be responsible to keep such land safe for entry or use for recreational purposes and to warn of dangerous conditions. It is one matter to impose access conditions upon utilities but it is another matter to assess the financial costs of such multi-purpose use and to determine how these costs should be allocated. New York State needs statutes providing strict policy direction on these matters. Should the utility owners be relieved of liability? Should the state lease and operate such areas?

Confusion exists in some areas as to the demarcation line between private property and public land along the water's edge. While it is generally assumed that mean high water mark constitutes this line, court cases along the Great Lakes shoreline in New York State suggest that mean low water mark should be used. In areas of fluctuating water levels, such as Lake Ontario, establishing this line is made even more difficult.

## Existing Policies and Programs

### Identification of Existing Policies and Programs

A variety of Federal, State, and Local policies and programs deal with some aspect of the public access issue as discussed here. The following discussion highlights pertinent policies and programs and briefly indicates how they affect public access in the coastal area. For a full list of all programs touching on some aspect of public access, see Appendix.

The major planning program affecting public access is the New York Statewide Comprehensive Plan (SCRP), which provides program direction and policy for the public sector of New York State. Coastal recreation is a focal point of this recreation plan. SCRP has developed policy guidelines that foster a philosophy that access to coastal waters should be available to all citizens. Access provides an opportunity for people to enjoy, visually and physically, the natural and man made resources of an area. SCRP recommends the following policies in relation to public access: the acquisition of development rights and scenic and conservation easements, obtaining the right of first refusal to acquire ownership of quality open space as the land comes on the market, and acquisition of lands where improved water quality is anticipated due to compliance with the Federal Water Pollution Control Act. Also recommended are the creation of zoning and tax incentives to preserve open space shoreline lands for use as public recreation, the retention of desired lands in a state supported land bank, and the modification of state legislation to give local and regional governments better land use controls.

Several programs focus attention on types of environments of critical concern in the State. A few of these programs, such as the New York State Wild, Scenic and Recreational Rivers Act and tidal and freshwater wetlands legislation, exert regulatory authority over designated environments. When such designations occur near the waters edge, these areas can serve as access ways to adjacent shorelines. Another program concerned with critical areas, the Urban Cultural Parks Act, provides potential for increased access in urban areas where access problems are often severe. However, no regulatory authority exists at the present time to control access in these areas.

Other programs provide opportunities for addressing access issues through the review process. In the review of the siting of major transmission facilities in the State, the Public Service Commission is directed to determine the environmental impact of proposed facilities. The law does not require specific consideration of public access. Explicit reference to recreational uses and public access concerns in project review would certainly aid the cause of increased

public access through utility properties. In requiring reviews of the environmental impacts in public and publicly financed projects, NEPA and SEQR provide opportunities for physical and visual access issues to be evaluated and addressed, although neither review process specifically directs agencies to modify project plans based on public access purposes.

A number of parkways, trails, and greenways have been established or are being planned in various coastal areas. Parkways are already in existence on Long Island, in parts of western New York along the shore of Lake Ontario, and in the Hudson Valley. The St. Lawrence-Eastern Ontario Commission is currently planning a seaway trail for its coastal region, and the Hudson River coastal area is the site of the current development of bikeway systems and shoreline parks in two areas of the State: from the George Washington Bridge to Bear Mountain; and from the Bronx to the old Croton Reservoir. These trails and parkway systems provide excellent opportunities for visual access to the shore, as well as lateral access along the shoreline. The development of such trails in other areas would greatly increase access in many currently restricted areas.

The acquisition of land to increase public access has been accomplished by several programs. The New York State Park and Recreation Land Acquisition Act has provided monies for public access areas as well as recreation areas in the coastal area. The Division of Fish and Wildlife in the New York State Department of Environmental Conservation has a program to acquire public fishing access to lakes and large rivers, including the provision of boat launching sites. The Land and Water Conservation Fund appears to be more directed to the acquisition of particular recreation resources, rather than access to those resources.

In the realm of available local tools, zoning and subdivision regulations can be employed to increase access. The use of setbacks and restrictions on the height and scale of shoreline structures can be applied to shoreline areas for the preservation of visual access to the shore and lateral access along the shoreline. Subdivision regulations offer additional opportunities to expanding public access to coastal resources; in areas planned for development that would limit potential access to coastal areas, developers could be required to dedicate public easements for shore access.

Public purchase is an effective means of promoting public access, although funds for this purpose are limited. A variation is provided in the leaseback agreement, which leases the property to be used within specific limits set forth in the agreement. Less than fee simple purchase through easements, which either grant specific uses or restrict them, are also less costly forms of purchase. Affirmative easements include hunting, fishing, and beach access, while negative easements may be purchased for conservation and scenic purposes.

Preferential and deferred tax assessment can also be applied to encourage shoreland property owners to maintain their holdings in a state that preserves open space. Conpensable regulations, tranferable development rights and land banking represent applicable methods having future promise. Transferable development rights allow rights to develop property, rather than property itself, to be exchanged. This approach may have great potential in urban areas to assist in the preservation of coastal areas subject to intense development pressures. Land banking involves advance acquisition of major land parcels by a public entity for the purpose of guiding future development. Unless capital sources are increased significantly, utilization of this approach will be limited.

Assessment of Policies and Programs

The following gaps have been identified between issues and existing policies and programs:

- Federal and State programs do not require specific consideration of public access concerns in project review processes, and no modifications of project plans for access purposes are required. No specific state statutes exist that require consideration of public access in the development of public utility facilities located within the coastal zone.

- The problem of liability in the area of access through private utility lands, and other privately owned lands, is not effectively eliminated.

- Issues of private title of land versus public right, such as differential fees and restrictions to local residents in existing recreation areas, are not effectively addressed.

- Funding for land acquisition and protection is very limited in New York State, with many of the fund sources already allocated. Additional funding is needed to acquire lands to improve public access.

- Existing policies and programs do not resolve the issue of where the demarcation line should be drawn between private property and public land along the waters edge. Confusion exists particularly along the Great Lakes shorelines in New York State.

Program Recommendations

Two main goals should govern policy for public access, responding to the two main components of the issue identified in the introduction of this report. Limited program recommendations are presented, following the goal statements. It should be remembered that the public access issue is strongly linked with the recreation issue. Specific programs for approaching the public access goals must be developed in close coordination with recreation programs.

- Increase access to existing recreation resources along the shoreline, where appropriate and desirable. Ensure that future recreation resources accommodate access needs to the fullest extent possible.

- Increase access to the coastline at large, except in cases where it is deemed inappropriate or undesirable.

The planning process outlined in the introduction to this report should be closely adhered to in achieving these goals. Areas appropriate and desirable for increased public access must first be identified. The capability and suitability of existing areas to support increased access must be studied, in conjunction with recreation studies on supply and demand. Emphasis should be given to urban areas, or other areas where demand clearly exceeds supply. Once identified, means for increasing their accessibility must be developed. Alternatives to private automobile use should be promoted, including public transit, acquatic access by ferry or boat, bicycle and pedestrian travel, and multi-model combinations, such as shuttle services. Other constraints to increased access to existing facilities, such as resident only restrictions, should be examined.

The second goal fosters the philosophy that it is the public's right to enjoy amenities of the coastal environment for purposes other than recreation. While private property rights must and shall be respected along the shoreline, there are many ways to increase public access in areas of private ownership. New developments should provide public access ways to the shoreline, except in those cases where it is determined that public access is inappropriate. In such cases, "in lieu" fees should be paid for the acquisition, maintenance, and operation of public access at a suitable location elsewhere. Undeveloped shoreline property should be evaluated for public access use before any development is permitted. Public service facilities should be required to include access provisions, where appropriate. Siting and design guidelines should be developed to promote visual and physical access to the shore. Regulatory agencies should be provided with powers to require public access as a condition for approval of certain types of development. Grants of immunity to tort liability for grantors of access easements through public facilities should be considered.

An active program of fee and less than fee simple purchase should be initiated. In urban areas, public acquisition may be crucial to preserving remaining open waterfront areas and to provide urban residents access where development precludes effective access to the coast. The State should obtain the right of first refusal to acquire ownership of quality open space as the land comes on the market. Where improved water quality is anticipated due to compliance with the Federal Water Pollution Control Act, acquisition of coastal lands is desirable. Other desired lands should be

retained in a State supported land bank for the purpose of guiding future development. Additional funding is recommended for existing acquisition programs, such as the Land and Water Conservation Fund, for these purposes.

Localities and private owners and developers should be encouraged to promote access through technical guidance, funding, education, and the use of financial incentives. Modifications to existing legislation could provide local and county governments with the opportunity to adopt land use controls that enforce public access concerns.

Two existing programs -- the coastal trailways systems being developed in some parts of the state and the Urban Cultural Parks Act, should be given vigorous endorsement. These programs possess great potential for improving visual and physical access to the shore. The concept of devising a coastal trailways system for other lengths of coastline, where appropriate, should be considered.

The issue of the demarcation line between private property and public land at the water's edge must be resolved. The resolution of this issue may affect the potential for increased lateral access along some lengths of shoreline in the State.

# APPENDIX

## Federal

Coastal Zone Management Act of 1972 (16 USC § 1451/PL 94-370)

Department of Transportation Act (49 USC § 1651, PL 89-670)

Dingell-Johnson Act (16 USC § 777)

Federal Aid Highway Act of 1976 (PL 94-280)

Federal Power Act (16 USC § 803)

Federal Water Pollution Control Act Amendments of 1972

Highway Beautification Act of 1965 (PL 89-285)

Housing Act of 1961 (42 USC § 1500, PL 87-70)

HUD 701 Program

Land and Water Conservation Fund Act of 1965 (16 USC § 460, PL 88-578)

National Environmental Policy Act of 1969 (42 USC § 4321, PL 91-190)

National Flood Insurance Act of 1968

National Historic Preservation Act (16 USC § 470, PL 89-665) and Executive Order 11593

National Pollutant Discharge Elimination System (NPDES)

Open Space Program -- U.S. Department of Housing and Urban Development

Pittman-Robertson Act (16 USC § 669)

River and Harbor Act of 1970 (PL 91-611)

Rockefeller Task Force Report: The Use of Land

Urban Beautification and Improvement Act (42 USC § 1500, PL 89-117)

Water Resources Planning Act of 1965

Wild and Scenic Rivers Act (16 USC § 1271, PL 90-542)

Wilderness Act of 1964 and the Eastern Wilderness Act of 1975

Bureau of Outdoor Recreation

National Oceanic and Atmospheric Administration

United States Coast Guard

National Park Service

United States Fish and Wildlife Service

National Marine Fisheries Service

Office of Sea Grant/Marine Advisory Service

Army Corps of Engineers

## State

Agricultural District Law

Department of Transportation -- "Scenic Enhancement of Highways" Program

Environmental Conservation Law, 9-0501

Environmental Conservation Law, Article 1

Environmental Conservation Law, Article 3

Environmental Conservation Law, Article 49 -- Protection of Natural and Man-Made Beauty

Environmental Quality Bond Act

Fish and Wildlife Management Act

Fish Propagation and Management Program (DEC)

Flood Insurance Programs (ECL Article 36)

Floodplain Regulations

Freshwaters and Wetlands Act of 1975 (ECL Article 24)

Mined Land Reclamation Law (ECL Article 23, Title 27)

New York Analogues, Article VIII -- Siting of Major Utility Facilities (37 Mck LNY § 120-30)

New York State Development Plan

New York State Nature and Historic Preserve Trust (NY Conservation Law s 2-0101)

New York State Wild, Scenic and Recreation Rivers Act

New York State Statewide Comprehensive Recreation Plan of 1972

Park and Recreation Land Acquisition Act (NY Conservation Law s 1-0701)

Parks and Recreation Bond Act of 1960

Parks and Recreation Law

Power Authority of New York State

State A-95 Clearinghouse

State Environmental Quality Review Act of 1975 (ECL Article 8)

State Pollutant Discharge Elimination System (SPDES)

Stream Modification

Tidal Wetlands Act (ECL Article 25)

Urban Cultural Parks Act

Water Resources Law (ECL Article 15, Titles 3 and 5)

## Regional and Local

Central City Law, Town Law, Village Law and General Municipal Law -- Land Use Regulations

County Environmental Management Councils

Great Lakes Basin Commission

Hudson River Valley Commission

Municipal Planning Agencies

Public Purchases

# RECREATION RESOURCES

Task 2.6

# RECREATION RESOURCES

## Introduction

Coastal areas are New York State's most important recreational resources, providing a variety of water enhanced and water dependent activities. These areas are the most heavily utilized recreation areas in New York State, with most recreation taking place in the narrow band directly adjacent to the coastal shorelands. A wide variety of recreational opportunities are offered in coastal areas, including swimming, boating, fishing, picnicking, camping, golfing and other recreation values such as aesthetic enjoyment, ecological interest and historic/cultural enrichment. Recreation experiences have both tangible and intangible values, including direct dollar expenditures, personal satisfaction, and social and cultural benefits.

Each recreation resource within a region has a maximum user capacity, which if over-used, results in the impairment of resource quality and the recreation experience. The coastal recreational resources of New York State are utilized extensively both by coastal area residents and by persons from all parts of the State and other states. Recreation expenditures frequently provide the economic base of many local and regional components of the State. All these elements must be recognized in developing management plans for the coastal resources of New York State.

This report identifies the issues involved in coastal recreation. Existing local, state and federal policies and programs related to coastal recreation are identified and assessed. The final segment of this report provides general policy direction and recommendations for the management of recreation in the coastal areas of New York State.

## Recreation Issues

New York State generates tremendous demands on its coastal waters for recreation. An increasing number of uses competing for a relatively fixed amount of coastal land, excessive use of coastal resources, peak use pressures, need versus demand, and long term recreation trends represent significant concerns to recreation. Each of these issues is evaluated below. Public Access, one of the most significant issues, is treated in a separate paper.

## Use Conflicts

Use conflicts in coastal areas of New York State are major barriers to coastal recreation. An increasing number of recreation participants and activities are competing for a relatively fixed amount of coastal area. Length of available shoreline, type of access, and density of development are the major components of use conflict. These restrictions are caused by intensity, mixing, and incompatibility of uses and involve physical competition for space, psychological incompatibility and destruction of resource-related values.

When public access to the coastal zone is limited, coastal use tends to concentrate around access points, resulting in serious conflicts of interest which cause reduced health and safety, deterioration of the quality of recreational experiences, and inefficient use of coastal waters. A direct impact of conflicting use is demonstrated by wharf and cargo areas. Very often commercial enterprises have an indirect impact by rendering water quality unfit for nearby recreation activities. Dredging and spoil disposal often reduces shoreland areas and wildlife habitats. Recreation is considerably more vulnerable to these use conflicts than many of the other coastal uses. Conversely, an improperly located recreation facility may create pressures which inhibit the development of needed commercial facilities.

## Excessive Use

The increasing number of persons participating in diversified recreation pursuits have a significant impact on the coastal resources of New York State. Excessive recreational use can damage the fragile resources found in many coastal areas. Some areas, such as wetlands and dunes, may be damaged by excessive foot traffic. Islets and offshore rocks that provide protected bird sanctuaries are often disturbed by human intrusion. Excessive use can also result in water and noise pollution.

In order to sustain our present shorelands area, a balance between peak use and resource preservation must be established. To protect the environment of coastal areas, as well as the quality of recreational experiences, recreational use should be controlled according to the carrying capacity of each area. Access and recreational use should be limited where necessary to prevent significant damage to natural resources.

## Peak Use Pressures

Most coastal recreation occurs irregularly in peak use periods due to temperature and climatic constraints and the limited vacation season in New York State. The effective coastal recreation season is composed mainly of weekends and the summer vacation months. This peak use phenomena is an unavoidable issue encountered when providing parks, access, and open space areas to population centers. Coordinated programs are needed which mitigate the human and resource impacts of these peak use periods and which redistribute these pressures.

## Recreation Needs and Demands

The critical components in the determination of coastal recreation resource needs are supply and demand. Coastal planning must identify and assess the demands on coastal recreation opportunities. Flexibility in these demands must be determined. For example, how many people are satisfied with swimming at a pool if the beach experience is not available? Exchanges can and must be made to realize the full potential of the coastal area. The accommodation of future demands and needs must also be addressed in coastal management programs. Management must focus on the protection of heavily used areas and the improvement of areas advantageiously located in relation to demands. The study process must identify where sites are available, identify areas of constraint such as water pollution, and confirm sites which are over-used and under-used, determining program linkage with transportation, public access, water quality, safety and aesthetics.

The high travel costs associated with recreation activities often forces the low income, less mobile segments of the urban population to restrict their activities to those areas in close proximity to urban centers. These centers are often the areas where pollution and multiple use impacts are most severe, where insufficient recreation opportunities exist and where recreation sites are often inaccessible due to overcrowded conditions.

The relative costs of participating in many coastal recreation activities have also become a barrier to many segments of the population. Most people can afford a swimming or shore fishing experience, but many are unable to afford those activities which require substantial investments, such as deep sea fishing, scuba diving, water skiing, and boating. The problem is how and to what degree latent demand (due to lack of economic resources) is to be accommodated.

## Long Term Recreation Trends

The long term trends in recreation must be continually monitored to provide a coordinated and systematic recreation process in the coastal areas of New York State. As persons move from one recreation system or trend to another, their requirements for shoresites, recreational equipment and facilities change. For example, current trends show that the public is moving from high-powered motorboat craft to smaller craft. The requirements for shoresites, channels, facilities, etc., accompanying this trend are quist distinct. Recreational planning must continually address these long term trends and be prepared to adapt and enhance the recreational experience as these trends emerge.

Long term trends are also related to the coastal economy. Rental properties, equipment sales, accommodations, represent significant economic components of coastal recreation. Coastal planning must continually assess recreational trends and their relationship to the coastal economy. The coastal economies of the State must be enhanced through recreation where possible.

Finally, values must be assigned to recreation components, such as resource quality, wilderness solitude, and aesthetic concerns. The economic costs and benefits associated with recreational use must be evaluated so that recreation can compete with alternative coastal resource uses in resource allocations and decision making processes.

## Recreational Boating

More specific issues are associated with particular types of recreation. As an example, issues related to recreational boating are discussed. In a future expanded version of this paper, issues relating to other types of recreation will be discussed.

Boating is a significant recreational activity in the coastal waters of New York State. The fundamental requirement is a recreational system which provides for a safe and desirable means of accommodating recreational boating and fishing.

Minimum concern must deal with the provision of sufficient numbers of havens or 'Harbors of Refuge' along the shoreline. Adequate harbors should be provided at suitable intervals along the coast, so as to provide public access and safety in the event of rapid development of inclement westher, a common occurence within the coastal area. Sufficient numbers of harbors are needed to make boating safe and desirable. The Harbors of Refuge Program established by the Office of Parks and Recreation addresses this boating issue and proposes suitable harbor sites along much of New York's shoreline.

In addition to the minimum need of coordinated access and safety sites, coastal recreation provisions should also address the relationship between recreational boating and the economy of the coastal area. Provisions must be made for tourism, transient facilities, laundry sites and other services required by the recreational boater. The boater must be able to dock, lunch, swim and shop onshore and at the same time have sufficient sites for access and safety while at sea.

The issue of increased public access to boating activities if of paramount concern. Much of the public cannot afford boating equipment. Others consider the responsibility of ownership and maintenance significant deterents. The possibility of rental systems, charter boats and ferry services must be evaluated for the improvement of boating opportunities for the public.

The harbor issue also has a strong relationship to coastal erosion and the protection and maintenance of channels, dredging and other water related concerns. These interrelated elements must be addressed if New York State's shoreline is to be protected, maintained and enhanced.

## Existing Policies and Programs

A variety of local, State and Federal policies and programs deal with recreation. Many specifically address recreation elements, while others have indirect significance. Aside from the Coastal Zone Management Act of 1972, no policies and programs deal with coastal recreation exclusively. For a full list of applicable policies and programs, see Appendix.

Many have had little significance other than providing reference to the recreation element. There are a number of policies and programs that have had a strong positive effect on many of the recreation issues in the past and have strong potential for future use. These programs are briefly assessed below for their relation to recreation issues and their usefulness in promoting recreation concerns.

1. New York Statewide Comprehensive Recreation Plan

The New York Statewide Comprehensive Recreation Plan (SCRP) provides program direction and policy for the public recreation sector of New York State. Coastal recreation is a focal point of this recreation plan. SCRP has developed policy guidelines that foster a philosophy that access to coastal waters should be available to all citizens. "Waterways, wetlands and feeder rivers have potential to be used as part of an overall comprehensive recreationway and open space system. What is needed to accomplish this is greater shoreline access and rigid water pollution abatement."

To facilitate management of the shorefront SCRP recommends: the acquisition of development rights and scenic and conservation easements, obtaining the right of first refusal to acquire ownersip of quality open space as the land comes on the market, and acquisition of lands where improved water quality is anticiapted due to compliance with the Federal Water Pollution Control Act. Also recommended are the creation of zoning and tax incentives to preserve open space shoreline lands for us as public recreation, the retention of desired lands in a state supported land bank, and the modification of state legislation to give local and regional governments better land use controls. Additional funding and land acquisition is needed to foster recreation concerns, public access and aesthetic quality goals.

2. Urban Cultural Parks Act:

The Urban Cultural Parks Act requires the New York State Office of Parks and Recreation to undertake a survey and formulate a plan for the creation of a statewide system of urban cultural parks which would provide for the preservation, interpretation, development and use, by public and private entities, of the historic, cultural and architectural resources found in definable urban and settled areas throughout the state.

The Urban Cultural Parks Concept explicityly includes urban waterways as potential urban cultural parks. As such it will provide New York with the opportunity to address important coastal recreation issues, including public and visual access, aesthetics, needs and demands of urban areas, and use conflicts. With firm commitment and funding this program could provide additional recreation sites in coastal urban environments, public access to these coastal recreation areas and preservation of the aesthetic and cultural/historic qualities of coastal communities.

The first year pilot effort under the Urban Cultural Parks System will focus on one such coastal resource -- the Mohawk-Hudson Industrial Gateway area, at the historic confluence of these nationally significant waterways.

3. National Historic Preservation Act; New York State Nature and Historic Preserve Trust:

The National Historic Preservation Act established a comprehensive program to protect cultural resources from adverse federal actions. This act established a National Register of Historic Places and requires that the Advisory Council on Historic Preservation be consulted as to impacts of projects. These elements have had significant effects on cultural/historic recreation concerns in coastal areas and provide substantial opportunity for the protection of additional resources.

The State Nature and Historic Preserve Trust provides for the acquisition and administration of lands and waters outside of the Forest Preserve Counties which possess special wilderness character and natural beauty or geological, historical and ecological significance. This program provides an important opportunity for additional acquisition and preservation of recreational and ecological resources in coastal areas. Continued and increased commitment to acquisition and funding is needed to promote recreation goals.

4. Federal Power Act; New York Public Service Law Article VIII -- Siting of Major Utility Transmission Facilities:

The Federal Power Act requires the Federal Power Commission when reviewing license applications to consider whether a project is adaptable to "other beneficial public uses, including recreational purposes" and authorizes the Commission to require the applicant to make appropriate modifications to development plans as a condition of approval. This act specifically directs federal agencies to modify project plans for recreational purposes and provides a limited means for addressing the issue of public access to coastal areas. Additional commitment in project reviews related to the coastal area would further recreation and public access concerns.

Article VIII of the New York Public Service Law authorizes the New York Public Service Commission to grant certificates of environmental compatibility and public need for the construction and operation of electric and fuel gas transmission facilities. The Commission is directed to determine "that the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives and other pertinent considerations." The law does not require specific consideration of recreational uses. "Other pertinent considerations" might be construed to provide authority to impose conditions requiring public recreational facilities or beach access, but opportunities are few. Explicit reference to recreational uses in project review would certainly create a stronger mandate and a sounder legal position in aiding recreation concerns. Amendments in policy direction of the Public Service Commission to include recreational uses are needed, if recreational goals are to be promoted.

5. Land and Water Conservation Fund Act:

The purpose of this fund is to assist in the preservation, development and accessibility of a sufficient and desirable quality and quantity of outdoor recreation resources. The act provides: 1) funds and assistance to states in planning, acquisition, and development of needed land and water areas and facilities, and 2) funds for the Federal acquisition and development of certain lands. In order to qualify for Federal assistance under this act, states are required to prepare a comprehensive statewide outdoor recreation plan which addresses scenic, historical, cultural, and recreational elements and provides a framework for recreational planning. Funds from this program have provided for the acquisition and preservation of many coastal recreation resources in New York State.

6. Dingell-Johnson and Pittman-Robertson Funds:

Federal aid for Fish and Wildlife Restoration programs is provided for in the Dingell-Johnson and Pittman-Robertson Funds. Public recreation is permitted in wildlife refuge areas as a secondary use, if recreation activities are consistent with the primary objectives for which the area was established. Priority is afforded to recreational uses directly associated with wildlife and habitats, including sightseeing, nature observation, photography, interpretive centers and exhibits, fishing and boating. Fish and wildlife purposes claim first priority in allocating these funds, thereby limiting the amounts of monies available to provide recreation opportunities and manage recreational use. Opportunities for recreation are available but increased funding is needed to support these recreational activities.

7. New York State Tidal and Freshwater Wetlands Acts:

The Tidal and Freshwater Wetlands Laws are designed to protect the vital and productive wetland areas of New York State through the regulation of activities which may impair

the functions served by wetlands or the benefits derived from them. Many wetlands act as key local recreation resources, providing both active recreation values, such as fishing, and less tangible values, such as aesthetic enjoyment and a place for nature study and appreciation.

The recently established Freshwater Wetlands Law provides local governments with the opportunity to establish strong commitment and control in the preservation of these recreation and ecological elements. Active and firm enforcement of these laws and regulations will aid recreation concerns.

8. Park and Recreation Land Acquisition Act; Parks and Recreation Bond Act:

The Park and Recreation Land Acquisition Act provides funds for the acquisition of lands for outdoor recreation and to serve multiple purposes involving the conservation and development of natural resources. Lands acquired for parks must consist of predominately open or natural lands suitable to serve the recreation needs of expanding metropolitan populations or desirable to preserve the scenery or natural resources of the area. Numerous coastal recreation areas have been provided through this law. To promote additional coastal recreation, aesthetics and public access to the coastal zone, additional fulnding and firm commitment will be needed.

The Department of Environmental Conservation's Division of Fish and Wildlife has a program under the authority of the Parks and Recreation Bond Act to acquire public fishing access to lakes and large rivers. Provisions for boat launching sites are included. These purchases also help to ensure continued fisheries management on public lakes and rivers. Additional funding and commitment to acquisition is needed to further recreation, boating and public access concerns.

9. Fish and Wildlife Management Act (FWMA); Environmental Conservation Law -- Articles 3 and 11:

FWMA provides for fish and wildlife management in cooperation with private landowners. This act is also used as a device for providing public access to private lands and waters for the enjoyment of fish and wildlife resources. Article 3 of the Environmental Conservation Law (ECL) provides DEC's Division of Fish and Wildlife, with the authority to acquire public fishing access to lakes and large rivers, including the provision of boat launching sites. Public access to fishing areas on state-owned lands is also provided. Additional access is obtained by incorporating provisions for public use in private and public water development projects and through cooperative planning with other agencies, such as the Corps of Engineers. Fisheries management is broadly interpreted under Article 11 of the Environmental Conservation Law to include, among other elements, the provision for public access to fish resources through acquisition and development.

10. Coastal Parkways and Trails:

A number of parkways, trails and greenways have been established or are being planned in many coastal areas of New York State. Parkways are already in existence on Long Island, in parts of western New York, along the south shore of Lake Ontario, and in the Hudson Valley. The original intent of these parkway systems was to combine some of the natural amenities of outdoor recreation, such as sightseeing, driving for pleasure, and scenic views with transportation needs. They are to act as buffer zones offering natural and aesthetic qualities.

The St. Lawrence-Eastern Ontario Commission is currently planning one such system for its coastal region, to be known as the Seaway Trail. This touristway concept envisions the designation of State highways along the waterwav as scenic highways with appropriate scenic overlooks, information centers and signs bearing logos representative of the area's resources. Plans for this trail include accommodations for vehicular traffic as well as hikers and bikers. The Seaway Trail would be a water component of the Nation Trail System.

The Hudson River Coastal Area is the site of current development of bikeway systems and shoreline parks in two areas of the State -- (1) from the George Washington Bridge to Bear Mountain and (2) from the Bronx to the Old Croton Reservoir. Proposals for other parts of the Hudson include the acquisition and development of islands, acquisitions in the Hudson Highlands and the Mohawk-Hudson Industrial Gateway Park System.

11. Public Purchase

Various means of public purchase can and are used in the management of recreation lands. The acquisition of fee simple absolute interests in property through condemnation or negotiated purchase provides specific land use restrictions, such as recreation concerns. Leaseback agreements leases the property to be used within the limits set forth by the restrictions. Less than simple acquisition involves easements which are interests in property granting specific uses or restricting them. Affirmative easements include hunting, fishing, and beach access. Highway and public utility easements can also be utilized in securing shoreland and beach access. Negative easements are analogues to the purchase of development rights and include conservation and scenic easements.

Preferential and deferred tax assessment can also be applied to encourage shoreland property owners to maintain their holdings in a state that preserves open space. Conpensable regulations, transfer of development rights and land banking represent applicable methods having future promise. TDR may have great potential in urban areas to assist in the preservation of coastal areas subject ot intense development pressures. Land banking will involve advance acquisition of

major land parcels by a public entity for the purpose of guiding future development. Unless capital sources are increased significantly, utilitzation of this approach will be limited.

As documented above, the majority of existing local, state and federal policies and programs have great potential for addressing many of the issues involved in coastal recreation. In most cases the potential is present, but additional funding and firm commitment to recreation concerns are needed to effectively deal with recreational issues.

Existing policies and programs are inadequate for addressing use conflicts. The inadequacy exists because Federal and State statutes do not require specific consideration of recreation concerns in project review processes. No modifications ofproject plans for recreation purposes are required in existing Federal or State policy. No specific State statutes exist that require consideration of recreation uses in the development of utility facilities. Policy lacks commitment in review processes through which the potential for shoreline property for possible recreation use could be evaluated before any development is permitted that would foreclose such opportunities.

## General Policy Direction

In order to effectively address recreational issues in coastal management, a comprehensive recreation system is needed which provides specific policy for coastal areas to augment existing policies and programs. The recreational issues detailed in earlier sections of this report must have policy directionto be resolved. The following statements provide a number of recommendations that are under consideration.

- Assess the supply of coastal recreation resources and determine the extent of recreation demand and resource need.

- Encourage the development and acquisition of needed public and private recreation facilities.

- Develop public assistance and planning programs that lead to a cooperative effort by public and private interests in promoting an organized development and distribution or recreational services and facilities. Increase coordination with the private sector to gain a more complete utilization of recreational facilities.

- Promote public concern for recreation resources, needs and quality through public meetings and circulation of pertinent literature.

- Design a long range program to protect coastal recreation resources from excessive use.

- Promote a balance between peak use and resource preservation by controlling recreational use according to the carrying capacity of each area.

- Require an evaluation of any shoreline property's potential for recreational use before any development is permitted that could foreclose such opportunities.

- Locate recreation activities and facilities that do not require location in the immediate shoreline inland and connect them to the coastline by trails, bicycle paths, shuttle buses and public transit.

- Obtain the right of first refusal to acquire ownership of quality open space as the land comes on the market.

- Acquire coastal lands where improved water quality is anticipated due to compliance with the Federal Water Pollution Control Act.

- Establish a State supported land bank for the purpose of guiding future development.

- Encourage shoreland property owners to maintain their holdings in a state that preserves open space through preferential and deferred tax assessment.

- Develop a set of statutes that provide beach access rights and provides for grants of immunity to tort liability for grantors of access easements to public entities.

- Promote Federal designation of state coastal resources for recreational purposes under the National Park Service, in particular projects distinctly oriented toward satisfying urban recreational needs in a coastal setting, such as Gateway in New York City.

- Provide additional funding through existing programs for acquisition of recreation and public access areas in the coastal zone; i.e., Land and Water Conservation Fund, Water Resources Planning Act, Dingell-Johnson Act, Pittman-Robertson Act, National Historic Preservation Act, New York State Nature and Historic Preserve Trust, New York State Wild, Scenic and Recreation Rivers Act.

- Provide firm commitment and funding to the 'Harbors of Refuge Program' administered under the Office of Parks and Recreation for the provision of suitable and adequate harbor sites along the coastline.

- Encourage coastal municipalities to develop land use control measures, including zoning, subdivision regulations, and public purchase, to promote recreation in the management and development of their particular coastal area.

## Federal

Coastal Zone Management Act of 1972 (16 USC § 1451/PL 94-370)

Department of Transportation Act (49 USC § 1651, PL 89-670)

Dingell-Johnson Act (16 USC § 777)

Federal Aid Highway Act of 1976 (PL 94-280)

Federal Power Act (16 USC § 803)

Federal Water Pollution Control Act Amendments of 1972

Highway Beautification Act of 1965 (PL 89-285)

Housing Act of 1961 (42 USC § 1500, PL 87-70)

HUD 701 Program

Land and Water Conservation Fund Act of 1965 (16 USC § 460, PL 88-578)

National Environmental Policy Act of 1969 (42 USC § 4321, PL 91-190)

National Flood Insurance Act of 1968

National Historic Preservation Act (16 USC § 470, PL 89-665) and Executive Order 11593

National Pollutant Discharge Elimination System (NPDES)

Pittman-Robertson Act (16 USC § 669)

River and Harbor Act of 1970 (PL 91-611)

Rockefeller Task Force Report: The Use of Land

Urban Beautification and Improvement Act (42 USC § 1500, PL 89-117)

Water Resources Planning Act of 1965

Wild and Scenic Rivers Act (16 USC § 1271, PL 90-542)

Wilderness Act of 1964 and the Eastern Wilderness Act of 1975

Bureau of Outdoor Recreation

National Oceanic and Atmospheric Administration

United States Coast Guard

National Park Service

United States Fish and Wildlife Service

National Marine Fisheries Service

Office of Sea Grant/Marine Advisory Service

Army Corps of Engineers

## State

Agricultural District Law

Department of Transportation -- "Scenic Enhancement of Highways" Program

Environmental Conservation Law, 9-0501

Environmental Conservation Law, Article 1

Environmental Conservation Law, Article 3

Environmental Conservation Law, Article 49 -- Protection of Natural and Man-Made Beauty

Environmental Quality Bond Act

Fish and Wildlife Management Act

Fish Propagation and Management Program (DEC)

Flood Insurance Programs (ECL Article 36)

Floodplain Regulations

Freshwaters Wetlands Act of 1975 (ECL Article 24)

Mined Land Reclamation Law (ECL Article 23, Title 27)

New York Analogues, Article VIII -- Siting of Major Utility Transmission Facilities (37 Mck LNY § 120-30)

New York State Development Plan

New York State Nature and Historic Preserve Trust (NY Conservation Law §§ 2-0101)

New York State Wild, Scenic and Recreation Rivers Act

New York Statewide Comprehensive Recreation Plan of 1972

Park and Recreation Land Acquisition Act (NY Conservation Law § 1-0701)

Parks and Recreation Bond Act of 1960

Parks and Recreation Law

Power Authority of New York State

State A-95 Clearinghouse

State Environmental Quality Review Act of 1975 (ECL Article 8)

State Pollutant Discharge Elimination System (SPDES)

Stream Modification

Tidal Wetlands Act (ECL Article 25)

Urban Cultural Parks Act

Water Resources Law (ECL Article 15, Titles 3 and 5)

## Regional and Local

Central City Law, Town Law, Village Law and General Municipal Law -- Land Use Regulations

County Environmental Management Councils

Environmental Impact Statements

Great Lakes Basin Commission

Hudson River Valley Commission

Municipal Planning Agencies

Public Purchases

Regional Planning Boards -- Capital District, Central New York, Erie and Niagara Counties, Genesee/Finger Lakes, Nassau-Suffolk

St. Lawrence-Eastern Ontario Commission

Subdivision Controls

Tri-State Planning Commission

Zoning Ordinances

# IMPACTS OF OUTER CONTINENTAL SHELF ACTIVITIES

Task 2.7

# IMPACTS OF OUTER CONTINENTAL SHELF ACTIVITIES

## Introduction

In the last three years the U.S. Department of the Interior has begun an accelerated leasing program for oil and gas drilling on the Continental Shelf. This program, one which has major environmental, economic and social implications, for the first time encompasses areas in the Atlantic Ocean along the East Coast of the United States - areas never before subject to oil and gas exploration, development or production.

Because the Atlantic coastal states have had no previous experiences with the offshore oil and gas industry, an entirely new set of complex issues has been raised concerning both the positive and negative aspects of hydrocarbon resource development. One of the greatest difficulties inherent in the resolution of these issues lies in the fact that the magnitude of these impacts can only be determined when the amount of economically recoverable resources is known. Until exploratory drilling is undertaken, no one can know the nature and extent of the resource and, consequently, what the impacts of exploration and production will be on the State.

New York State is situated between two leasing areas - the Baltimore Canyon (Mid-Atlantic) to the south and the Georges Bank (North Atlantic) to the northeast. Due to its unique geographic position, the State must be able to assess the cumulative and synergistic effects of offshore drilling and related activities as they originate from both areas. One lease sale already has been held in the Baltimore Canyon, and at least three more sales have been scheduled for both leasing areas.

## Significance of OCS Development

OCS development on the East Coast may have both positive and negative effects. On the positive side, this new industry may provide needed jobs, a particularly important factor in areas presently experiencing economic problems. The number of jobs that will probably be available for New Yorkers will be insignificant when compared to the total work force of the New York metropolitan area. These jobs, however, could provide employment opportunities to those presently unemployed. Additionally, the industry could generate opportunities to start or expand ancillary industries that may remain long after the oil and gas resources have been depleted. The potential energy supply gains for the State could prove an important supplemental source easing present energy supply programs.

On the Negative side, there could be environmental problems caused by oil spills and introduction of material such as drilling

muds into the offshore environment. Major spills could have disastrous effects on the commercial and recreational fishing industries, and if they reach the shoreline, substantial financial losses would accrue to the tourism and recreation industry.

New York State's ability to influence the federal decision-making process, especially in the offshore areas, will affect the types and magnitude of impacts that the state could receive. By working with the responsible federal agencies continually to ensure meaningful state participation, New York can seek to minimize environmental risks while ensuring its fair share of facilities, jobs, and energy supplies.

## Evaluation of Issues

A major concern of state government is how to best influence the federal decision-making process to maximize benefits and minimize risks to its residents. In the case of the leasing program, the offshore decisions made by numerous federal agencies are beyond the jurisdiction of the states. In effect, the states have no statutory role in the OCS decision-making process and can only review and comment on policy and technical areas of interest to them. Coastal states must be able to accurately assess the impacts of federal actions beyond the three-mile limit in that these actions may ultimately have effects upon the coastal areas within that limit. Coastal states, and especially New York, have made major commitments to the preservation, protection, and management of resources and to public and private development within their coastal areas. These states, therefore, have an important stake in ensuring that federal agencies proceed with their responsibilities in a socially, economically and environmentally compatible manner.

### Geographic Concerns

Within New York State, the marine coastal area can be divided into two rather distinct sections, each with different approaches to the OCS issues. The City of New York is interested primarily in attracting OCS-related facilities and specifically has encouraged the oil and gas industry to locate within the Port of New York. The Port has a wide range of underutilized and underdeveloped facilities which could easily accommodate the needs of the industry with few, if any, adverse impacts. An infusion of new job opportunities is a necessary ingredient to maintain the economic viability of the Port. On the other hand, the predominant feeling in the Long Island area is one of caution and concern. Given present conditions, Long Island is not expected to be a prime location for the siting of onshore facilities associated with OCS development. Thus, employment opportunities would be limited, if any. Offshore oil and gas activity would, however, increase the potential for oil spills that could affect the billion dollar tourism and recreation industries and the multi-million dollar fishing industry. In effect, Long Island communities feel that they are being exposed to serious risks while unlikely to receive significant benefits.

Environmental Issues

The potential for oil spills from OCS activities is always present. In fact, even without the addition of OCS development, present tanker traffic along the Nantucket to Ambrose traffic lane poses a threat to the coastal resources of Long Island.

Although it is difficult to ascertain the environmental damages that could result from spills, there are other environmental problems posed by OCS activities, such as the dredging and laying of pipelines, and the effects of drilling muds and their introduction to bottom sediments. Related to these activities are possible geological hazards that may result in spills. Navigational hazards posed by drilling platforms in accepted traffic fairways also could be a problem. Adding to these problems is the questionable effectiveness of available technology for controlling oil spills under the severe weather conditions prevalent in the Atlantic.

In general, the experiences of the oil and gas industry in the Gulf of Mexico may not be transferable to the harsh weather conditions of the Atlantic. Conditions in the North Sea are more akin to those existing in the North Atlantic. Thus, the industry may have to revamp its technology to better respond to the more severe temperature, wind, wave and sea bottom conditions.

Based on the amount of oil and gas resources discovered, there is a 70% chance that there will be between 2 and 7 spills, each in an amount greater than 1000 barrels, over the life of the field in the Mid-Atlantic. In the North Atlantic, there is an 80% chance that there will be between 1 and 4 spills greater than 1000 barrels. Numerous smaller spills can be expected in both areas.

Economic Issues

New York State could receive both direct and indirect economic benefits and costs as a result of OCS development. If significant "finds" are made, OCS development could generate approximately 2800 jobs and $50 million annually during the peak years. Perhaps more importantly, the introduction of a new industry could give New York City a needed psychological lift. Additionally, ancillary industries may prove to be an outgrowth of the primary facilities. Such ancillary industries would remain long after production has been completed. Based on employment estimates for a high resource find, some $2 million in state taxes would be generated as well as additional local income from local taxes. Another important aspect of OCS development is that new investment and capital for energy industries may shift to the East Coast and thus stimulate other investments in the area. Of course, all these assumptions are based on the fact that New York State does succeed in attracting the industry.

As to economic costs, oil spills could have drastic impacts on the tourism, recreation, and fishing industries of the State.

A large spill in the Nantucket to Ambrose traffic lane could result in a range of direct weekly expenditure losses of between $2 and $13.3 million to the billion dollar tourism and recreation industry. A 5% reduction in commercial harvesting of fish and shellfish, as a consequence of an oil spill or other OCS-related loss of fishing time, would result in losses of between $200,000 and $500,000 in the peak month of July. While minor reductions in harvesting can be absorbed by the industry as a whole, the complete loss of fishing time to a few individuals or firms for a month or even a week would cause extreme financial hardships.

Energy Issues

If New York can capture its fair share of the energy recovered from the Outer Continental Shelf, a high resource find may be an important supplemental source of energy supply for the State. This could prove to be an important reserve cushion at a time when the State is moving towards lessening its dependence upon imported petroleum during the remainder of the century. Under a high resource find, New York could meet 5% of its oil supply and 28% of its natural gas needs from Outer Continental Shelf resources over a twenty-year period. A low find could be expected to contribute 1% of the State's oil needs and 4% of its natural gas needs over a similar time period. These figures are based on current demand and supply and assume that New York State would receive a share of OCS resources in line with present federal allocations.

This important supplemental source of energy could increase the energy supply options available to New York State and may reduce the need for curtailments or strict conservation measures during the next twenty years.

Legal Constraints

New York State posseses a wide range of legislative authority to help guide the siting of any new facilities resulting from OCS development. Some of this authority is indirect, such as the Tidal Wetlands Law and the Stream Protection Law, but it does provide a solid regulatory base for environmental purposes. There is little state control, however, over where OCS-related activity should be located and little ability to direct it to environmentally desirable areas. In the case of energy facilities, New York has extensive authorities related to the siting power plants and transmission lines, but there is no comprehensive regulatory process for the siting of other major energy facilities.

While it is too soon to adequately assess its effectiveness, State's oil spill law, enacted in 1977, should result in stricter controls for the handling and storage of petroleum and petroleum products. This will substantially reduce the risks of spills to the State's coastal resources.

At the federal level, a substantial amount of work remains to be done with the federal agencies to ensure that New York

have a meaningful role in influencing decisions that will ultimately affect its coastal areas. One of the most pressing problems is the lack of coordination at the federal level for the wise use of the ocean's resources. Permit issuance responsibilities now fragmented among numerous agencies may lead to conflicting ocean uses.

## Present Policies Related to OCS Development

### Federal and State Policies and Programs

The policy of the federal government towards offshore oil and gas has been to develop and produce resources as fast as possible so as to ease energy shortages and reduce dependence on foreign sources. This approach has been modified somewhat, but basically it has not changed. This policy is short-term at best and can provide only limited, if any, relief from the Nation's heavy dependence on foreign sources. This stance also raises the question of what the nation will do after exhausting all of its oil and natural gas supplies. The new program to stockpile a one-year supply of oil in salt domes, to ease the threat of an embargo, only serves to sharpen the focus on this question.

The federal leasing program, administered under authority of the outmoded Outer Continental Shelf Lands Act of 1953, largely has involved closed transactions between the petroleum industry and the federal government with little or no involvement on the part of state and local governments. Only recently, with the spread of the OCS leasing program to the "frontier" areas of the Atlantic and Alaska, have states become more involved with the process. The process has been significantly modified to reflect state involvement and concerns. Nevertheless, amendments to the OCS Lands Act are needed, and the present Administration is actively supporting these amendments presently before Congress.

At the state level, officials have been cooperating with the federal agencies to ensure that OCS development proceeds with maximum environmental safeguards and a minimum of risk to the residents of New Yorker. The State has actively supported the amendments to the OCS Lands Act as being necessary to alleviate many of its concerns with the leasing process. Concurrently, state officials have taken every opportunity to help other state and local agencies understand OCS exploration and development and have aided efforts to maximize benefits to New York by encouraging the location of OCS facilities within the State. While the State can provide information, expertise and incentives on siting and related issues, the promotion or nonpromotion of sites in the first instance is the responsibility of local governments. State environmental laws clearly specify areas that should be avoided (i.e. wetlands), and they dictate consideration of all environmental factors before decisions are made as to a specific site.

Assessment of Policies and Programs

The present federal OCS leasing process is a major contributor to the issues and problems noted earlier. The Outer Continental Shelf Lands Act of 1953, which establishes the framework for leasing, was enacted in a period of cheap energy and lack of environmental concern. This Act failed to take into account the necessity for state participation in the process.

In addition, the acceleration of the leasing program has exacerbated weaknesses in the administration of the program. Federal OCS-related permit responsibilities are fragmented and uncoordinated, and as a result, such important issues as navigational safety may be inadequately considered.

The broad authorities granted in the OCS Lands Act of 1953 have given the U.S. Department of the Interior considerable latitude in the management of the leasing program. The fact that most requirements have been established by regulation rather than by the statute has meant that political changes in the executive branch of the federal government have resulted in changes in the leasing program. This has reduced the predictability of the leasing process for all parties and made long-term commitments difficult to achieve and maintain.

The coastal states have limited ability to affect OCS-related issues. Much of this is a consequence of the structure of the present federal leasing process and its inadequate role for the states; changes are needed to make it more responsive to their needs. Other factors limit the influence of the states also.

To protect their interests, the states must respond to the leasing process, but the limited and short term funding available to them from the federal government for formulating a response limits their ability to respond effectively. Although the leasing process will be a long-term concern, there is at present no corresponding long-term commitment for assistance from the federal government.

The OCS leasing program is only one aspect of the broader issue of ocean policy, but it is one that is becoming more critical as conflicts among different uses of the ocean increase. There is currently a lack of federal coordination among and within federal agencies on the wise use of ocean resources. Conflicts among OCS development, fishing and navigation are already apparent, and additional ones can be anticiapted in the future from development of mineral resources on the seabed, development of offshore energy facilities and ports, and other coastal dependent uses.

## Management Recommendations

A number of important OCS-related policy directions have been recommended by DEC staff for incorporation into the State's Coastal Management Program:

. The State should be prepared for a long-term involvement with the OCS leasing process, maintaining a capability for technical and policy review of all related federal actions affecting it, either directly or indirectly.

. The State should help localities to maximize the economic benefits for OCS development. This could include early involvement in any efforts that are aimed at bringing offshore gas or oil ashore into the State via pipelines or tankers. Additionally, the State could consider the possible inclusion of those sites which are particularly suited for onshore support bases on the list of GAPC's, and thereby encouraging the development of these locations for such economic activities.

. The State should take the necessary steps to ensure that the best available technology is employed by the energy industry in the exploration, development and production of OCS resources. Concurrently, the State should develop the capability to respond to oil spills (while not duplicating federal efforts), and it should ensure that ecologically sensitive sites that are vulnerable to spills are accorded maximum protection.

. Administrative reorganization of ocean resource functions and regulatory responsibilities at the state level should be undertaken.

. The State should assess the desirability of implementing general energy siting legislation to better direct and influence the location of facilities consistent with environmental concerns.

The above proposals will be analyzed as part of this year's Coastal Management Program effort.

# AGRICULTURAL RESOURCES

Task 2.8

# AGRICULTURAL RESOURCES

## Introduction

Agriculture is New York's largest single industry with sales of $1.4 billion.[1] Dairy farming accounts for more than 50% of these sales. Fruit and vegetable production, the second largest source of income accounts for 13% of the total. Other major farm products are cattle and calves, poultry products, and nursery crops. To produce this wealth, farming occupies 8.3 million acres of land or approximately 30% of the total land area of the State. Of this 8.3 million acres, 35% (2.9 million acres) are in the coastal counties of the State. These counties are the primary location of the State's important fruit and vegetable farming which in 1974 had a market value of $185.5 million. They accounted for $137 million or 73.4% of the total value of fruit and vegetables produced in New York. Table 1 presents a summary of data relevant to agriculture in coastal counties.

## Agriculture in Coastal Areas

The State's coastal areas fall within several distinct agricultural regions of State (Figure 1).[2] Three of these regions, the Erie-Ontario Plain, the Hudson Basin, and Long Island are particularly productive, include most of the State's coastal area, and to varying degrees are dependent on their coastal location for their productivity. Several agricultural regions are found along the St. Lawrence-Eastern Lake Ontario coast. Dairy farming predominates in these regions, but the farming is generally not as dependent upon its coastal location.

While only a small portion of the agricultural land in coastal counties is in fruit and vegetables, it produces nearly 10% of total market value of all agricultural products produced in New York State. Moreover, the fruit and vegetable farming is concentrated in areas of the coastal counties immediately adjacent to coast, and this concentration tends to diminish as one moves inland. This is particularly true of fruit farms which benefit from positive climatic influences of the coastal waters. Figure 2, a computer map of the distribution of orchards in Wayne County, illustrates this pattern.

The Erie-Ontario Plain extends from Chautauqua to Wayne County and inland generally from 5 to 30 miles. Fruit is the region's single most important farm product with the greatest concentration of farms occurring in Wayne County (apples, cherries) and Chautauqua County (grapes). The moderating effects of the

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1 All Data used is from the 1974 U.S. Census of Agriculture and is for farms with sales of over $2,500.

2. Howard Conklin, The Nature and Distribution of Farming in New York State, New York State College of Agriculture 1968.

TABLE 1

AGRICULTURE IN NYS COASTAL COUNTIES

| | Land in farms w. sales over $2500 | | | Value of Ag. Prod. Sold % Change 68 - 74 | Land in Orchards | | | Value of Fruit | | | Land in Vegetables | | | Value of Vegetables | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | '74 | '69 | % Change | | '74 | '69 | % Change | '74 | '69 | % Change | '74 | '69 | % Change | '74 | '69 | % Change |
| Chautauqua* | 287,095 | 272,106 | 5.5 | 62 | 19,467 | 16,435 | 18.4 | 15,720 | 7,391 | 112.7 | 4,194 | 5,993 | -30.0 | 2,166 | 1,453 | 49.1 |
| Erie | 184,337 | 173,962 | 6.0 | 61 | 2,268 | 2,289 | .9 | 2,040 | 1,397 | 46.0 | 14,342 | 16,161 | -11.3 | 6,787 | 3,980 | 70.5 |
| Niagara * | 129,123 | 119,814 | 7.8 | 60 | 13,597 | 13,115 | 3.7 | 7,597 | 4,910 | 54.7 | 3,087 | 2,532 | 21.9 | 2,476 | 1,097 | 125.7 |
| Orleans * | 144,020 | 140,276 | 2.7 | 59 | 8,731 | 10,375 | -15.8 | 5,729 | 3,361 | 70.4 | 11,237 | 13,535 | -17.0 | 6,137 | 4,747 | 29.3 |
| Monroe * | 126,146 | 125,610 | 0.4 | 45 | 4,690 | 5,646 | -17.0 | 3,369 | 2,278 | 47.9 | 10,114 | 8,722 | 16.0 | 4,741 | 2,441 | 94.2 |
| Wayne * | 177,930 | 183,616 | -3.1 | 75 | 28,465 | 31,360 | -9.2 | 18,397 | 10,350 | 77.7 | 8,020 | 9,316 | -14.0 | 3,986 | 2,522 | 58.0 |
| Niagara-Wayne | 464,249 | 457,120 | 1.6 | -- | 55,483 | 60,496 | -8.5 | -- | -- | -- | 32,458 | 34,105 | - 4.8 | -- | -- | -- |
| Cayuga | 252,430 | 231,617 | 8.9 | 76 | 464 | 568 | -18.3 | 213 | 200 | 6.5 | 5,864 | 4,407 | 33.1 | 2,038 | 821 | 148.2 |
| Oswego | 118,842 | 125,562 | -5.4 | 33 | 997 | 1,304 | -23.6 | 745 | 569 | 30.9 | 4,454 | 5,347 | -16.7 | 3,813 | 2,718 | 40.2 |
| Jefferson * | 356,008 | 350,329 | 1.6 | 45 | -- | 2 | -100.0 | -- | 1 | -- | 193 | 28 | 689.0 | 46 | 2 | 2200.0 |
| St.Lawrence* | 404,391 | 460,000 | -12.0 | 27 | 15 | -- | -- | 38 | 3 | 1166 | 247 | 172 | 43.6 | 71 | 24 | 195.8 |
| Albany | 59,751 | 53,063 | 12.6 | 43 | 562 | 791 | -29.0 | 418 | 300 | 393 | 1,039 | 1,348 | -22.9 | 687 | 476 | 44.3 |
| Rensselaer | 87,632 | 96,703 | -9.4 | 32 | 318 | 352 | - 9.7 | 378 | 190 | 98.9 | 324 | 611 | -47.0 | 169 | 230 | - 26.6 |
| Greene | 61,016 | 63,557 | -4.0 | 21 | 355 | 494 | -28.2 | 250 | 230 | 8.7 | 233 | 161 | 44.7 | 121 | 39 | 210.3 |
| Columbia * | 141,003 | 154,532 | -8.8 | 39 | 6,012 | 7,552 | -20.4 | 4,155 | 2,869 | 44.8 | 1,593 | 1,122 | 41.2 | 991 | 266 | 272.6 |

TABLE 1 (con't.)

AGRICULTURE IN NYS COASTAL COUNTIES

| | Land in farms w. sales over $2500 | | | Value of Ag. Prod. Sold % Change 68 - 74 | Land in Orchards | | | Value of Fruit | | | Land in Vegetables | | | Value of Vegetables | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | '74 | '69 | % Change | | '74 | '69 | % Change | '74 | '69 | % Change | '74 | '69 | % Change | '74 | '69 | % Chang |
| Ulster | 65,717 | 67,912 | -3.2 | 51 | 14,364 | 14,578 | -1.5 | 12,133 | 7,349 | 65.1 | 3,335 | 2,872 | 16.1 | 2,275 | 976 | 133.0 |
| Dutchess | 121,024 | 144,180 | -16.1 | 10 | 3,046 | 3,290 | -7.4 | 2,327 | 1,957 | 18.9 | 1,467 | 1,492 | - 1.7 | 906 | 449 | 101.7 |
| Orange | 143,657 | 146,657 | -2.2 | 21 | 2,784 | 2,611 | 6.6 | 2,590 | 1,317 | 96.7 | 9,932 | 11,124 | -10.7 | 15,090 | 9851 | 53.2 |
| Putnam | 5,255 | 12,438 | -57.8 | 22 | 118 | -- | -- | 167 | 65 | 156.9 | -- | 39 | -100.0 | -- | --- | -- |
| Rockland | 1,059 | 3,834 | -72.4 | | 91 | 506 | -82.0 | 142 | 356 | -60.9 | 435 | 722 | -39.7 | 289 | 526 | -45.1 |
| Westchester | 8,483 | 11,099 | -23.6 | | 430 | 339 | 26.8 | 360 | -- | -- | 487 | 347 | 40.3 | 401 | 108 | 271.3 |
| Nassau | 986 | 2,023 | -51.3 | | 7 | 25 | -72.0 | 4 | 18 | -78.8 | 262 | 315 | -16.8 | 323 | 212 | 52.4 |
| Suffolk * | 53,189 | 59,505 | -10.6 | 37 | 512 | 495 | 3.4 | 741 | 589 | 25.8 | 5,218** | 6,954 | -25.0 | 6,002 | 5,199 | 15. |
| Coastal Counties Total *** | 2,929,094 | 2,998,395 | -2.3 | | 107,293 | 112,127 | -4.3 | 77,513 | 45,700 | 69.6 | 86,077 | 93,320 | -7.8 | 59,522 | 38,137 | 56.1 |
| NYS Total | 8,285,052 | 8,372,844 | -1.0 | 47 | 132,223 | 133,616 | -1.0 | 101,079 | 59,672 | 69.4 | 146,207 | 144,111 | 1.5 | 85,465 | 52,023 | 64. |

* These counties have significant coastal agriculture

** Vegetables does not include potatoes in Suffolk County land in potatoes was 1974 - 27,187, 1969 - 33,786

*** Coastal Counties possess 35.4% of the State's farmland; 81.1% of the land in orchards; and 58.9% of the land in vegetables. They account for 73.4% of the value of fruits and vegetables sold.

# AGRICULTURAL REGIONS OF NEW YORK STATE

A. E. EXT. 214 1963

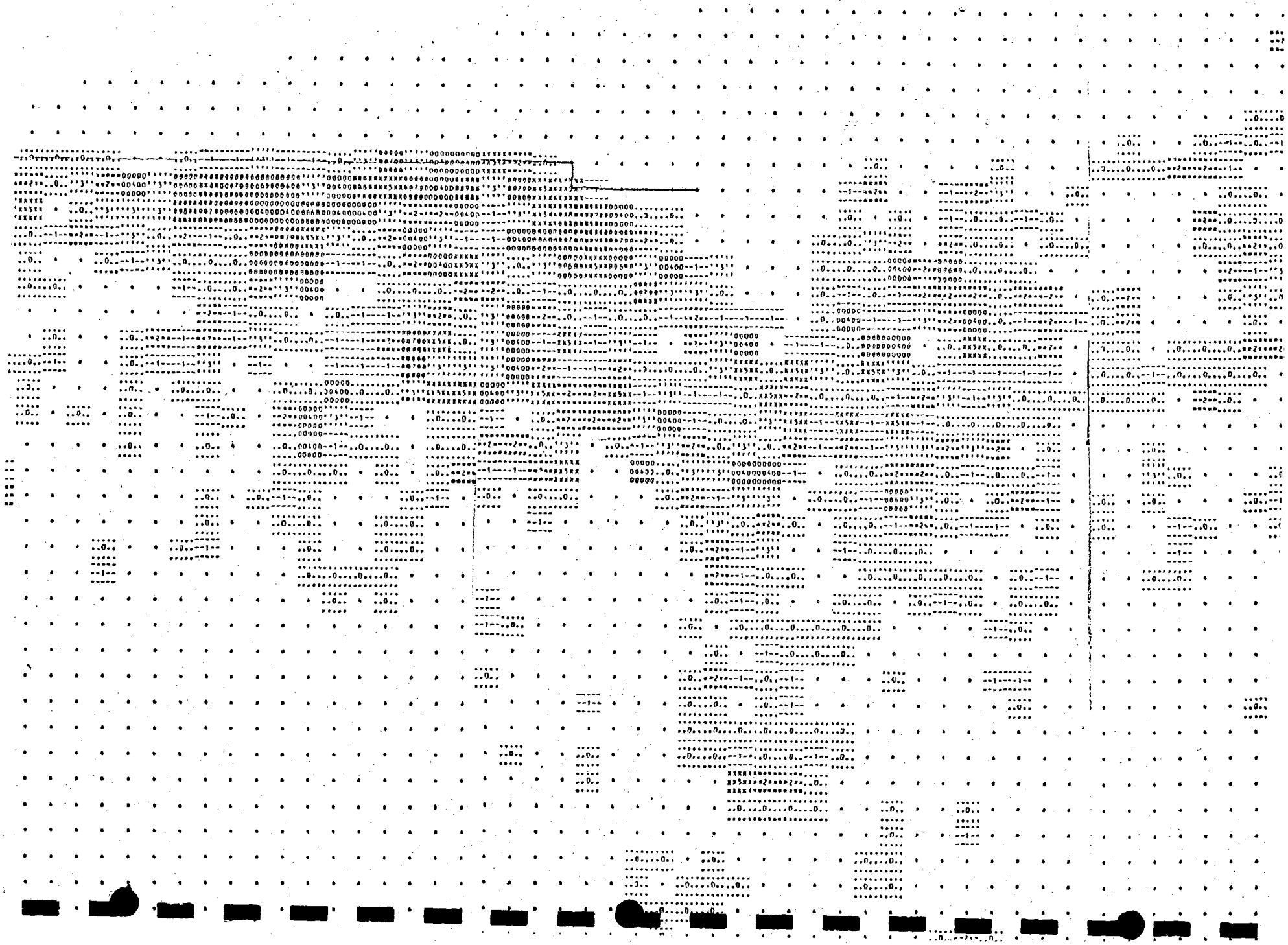
See Other Side for Description of Regions


Department of Agricultural Economics
New York State College of Agriculture
A Unit of the State University of New York
Cornell University, Ithaca, New York

H. E. Conklin and E. E. Hardy


Figure 1

FIGURE 2: DISTRIBUTION OF ORCHARDS IN WAYNE COUNTY



Lake on the climate, the soil and topography of area, and access to large markets are the principal factors that have combined to create the unique growing conditions. Howard Conklin's study indicates that where farming exists near the coast, it is predominately high economic viability farming.

In Chautauqua County the coastal plain extends inland only about 2 - 4 miles and is planted almost exclusively in vineyards, these produce more than half the grapes harvested in New York. The effect of the coastal location is most significant in this Chautauqua 'grapebelt'. In the spring the cool moist air originating over Lake Erie delays germination and budding, and thereby reduces the likelihood of frost damage. This is critical because grape yields are very sensitive to spring frosts.

Although most of Erie County lies within the Erie-Ontario plain and has significant agricultural lands none of these are near the coast. Niagara County also does not have any significant farming near the Niagara River, but the entire length of its Lake Ontario shore is heavily planted in orchards.

Orleans County is also a significant fruit producer. Though orchards are found throughout the county, they are most concentrated near the coastline.

The extent of Monroe County's coastal agriculture has been greatly reduced by the growth and development of Rochester and the surrounding towns. However, the western part of the county's coastal area is predominately prime farmland, and small areas of prime farmland are distributed throughout the coastal area.

Finally, Wayne County is the most important fruit producing area in the State, accounting for more than 18% of the total market value of all fruit produced in the State. Within this county the concentration of orchards along the coast is the greatest found on the Lake Ontario Plain.

The St. Lawrence-Eastern Lake Ontario area includes parts of three agricultural regions. However, the Oneida plain contains little or no agriculture within its coastal area. The other two areas are primarily dairy farming areas, and include the coastal area of Jefferson and St. Lawrence counties. Dairy farming is an important industry and accounts for more than 30% of land use. Though prime farmland is widely distributed throughout the area, it does not predominate as it did in much of the Erie-Ontario Plains.

The Hudson Basin agricultural region is an area approximately 10 miles wide and lying on either side of the Hudson River. It extends approximately from Albany to Newburgh. It is an intensive fruit farming area and most of the farmland is, according to Conklin, of high economic viability. Columbia and Ulster Counties have extensive orchards near the River.

Putnam, Orange, Westchester, Rockland, New York City, and

Nassau have no agriculture of any significance in coastal areas. However, Suffolk County with only 6% of the agricultural land in the State has the highest value of agricultural products sold in New York State, $69 million, nearly 5% of the total. All of the land in farming can be classified as prime. Potatoes, vegetables and ducks are the major agricultural products.

Trends in Farming

Until recently the State was losing its farmland at an alarming rate. Though loss of farmland remains a problem this trend has slowed with the rate of loss of land in farms decreasing to only 1% between 1969 and 1974. Loss of farmland within coastal counties was greater, 2.3% but less than it had been. However, the decline has not been uniform throughout the coastal area. In Chautauqua County acreage increased and, more significantly for coastal agriculture, land in orchards increased a rather substantial 18%. In the Lake Ontario Counties of Niagara, Orleans, Monroe, and Wayne, while the land in farms increased 2.2% land in orchards declined 8.3%. In St. Lawrence and Jefferson County where dairy farming predominates acreage in Jefferson increased slightly, however, in St. Lawrence County there was a substantial decline. In the Hudson Valley the principal agricultural Counties of Columbia and Ulster had overall declines in farmland with land in orchards also declining, slightly in Ulster more precipitiously in Columbia County. And finally in Suffolk County there was a significant decline in farmland of 10.6%. Thus, though Statewide the decline in farms has been less dramatic of late, in coastal counties, the situation has varied from stability, to increase, to sustantial decline. With regard to orchards which are concentrated in the immediate coastal areas, there have also been variations in the trend from relative stability, to increase, to decline. Decline though is the most common situation. Therefore, the important conclusion to be drawn is that valuable farmland is still being lost.

## Agricultural Issues

There are two major issues relative to agriculture in the State's coastal areas. The first is the continued loss of farmland to other uses. The second is the water pollution caused by agricultural activities. While these issues apply throughout the State, they are particularly critical in coastal areas, because prime and unique farmlands are more characteristic of the coastal area and the water bodies susceptible to pollution from agricultural runoff are extensive and important for many other uses. Secondary issues relate to the probable priority that will be accorded to agricultural uses in coastal areas, the extent to which agricultural resources and impacts will be factors in determining the coastal boundary, and the identification and definition of important and valuable farmland.

Loss of Agricultural Lands

Though the rate of farmland loss has slowed, significant losses of valuable farmland are still occurring among the orchards along

the Lake Ontario shore and in the Hudson Valley, and for all types of farms in Suffolk County. Even where losses have not occurred or the rate of loss has slowed, most of the causes remain and the pressure for conversion to other uses is still felt. Urban development is the major cause of the loss of farmland but not always a direct one. In addition to direct conversion to urban uses, land goes out of farming at the fringe of urban areas for several other interrelated reasons. Because farming is dependent on nearby agribusiness enterprises which in turn require a critical minimum density of active farms, once a certain number of farms cease production and the level of agribusiness is reduced, the economic viability of the remaining farms is reduced. The proximity of an urban labor market provides alternative employment opportunities to farmers and farm laborers. In urban/rural fringe areas as the number of incompatible land uses increase farm operations can become restricted. For example, nearby residential development can lead to noise ordinances that limit use of farm machinery to certain times. Land values rise, and taxes increase. All of these combined with the expectation that conversion to urban uses will eventually occur create a disincentive to invest. The result is that farms will discontinue operation in areas of urban expansion sooner than in remote areas, because alternative investment and employment opportunities are greater, production costs are higher, and farm capital investment may have been deferred or diminished. In addition to urban development, declining or low net farm income and high inheritance taxes are factors in the loss of farmland.

The consequences of this loss of farmland are several: employment in agriculture and agribusiness is reduced; food costs may rise because of greater transportation costs; the variety of food available may decrease or the availability of unique crops drastically reduced; options to increase food productions in the future are reduced when certain land uses replace agriculture; a monoculture limited to certain geographic areas increases society's vulnerability to a crop failure; and, valuable open space with a particular aesthetic quality near urban areas and throughout the State is lost.

Impact on Water Quality

Agricultural runoff is a major cause of reduced water quality in much of the coastal area. Current agriculture practices result in sedimentation and the introduction of large quantities of nutrients. Sedimentation has several adverse impacts. It silts up spawning beds, it fills crevices in which invertebrates eaten by fish would hide, and it cuts down light penetration, reducing the productivity of the water and thus the food for fish, the fish themselves, and ultimately the opportunities for sport and commercial fishing. Recreation opportunities are reduced, because the turbidity of the water is unattractive. This is of major importance on Long Island and in the Thousand Islands where recreation is a major industry. Sediment may also act as a carrier of pesticide residues. Estuaries, bays, and coastal

harbors tend to become base sediment traps where commingling of fresh sediment ladened water with salt water plus the influence of tides, waves, currents complicates the despositional process in such coastal areas. Modern farming practice calls for the use of large quantities of fertilizers, and the runoff carries nitrogen and phosphorus into coastal waters, accelerating the process of eutrophication. Animal wastes also result in excess nutrients in coastal waters. The problem of animal wastes is most critical in duck farming areas of Suffolk County and dairy farming areas of eastern Lake Ontario.

Other Agricultural Issues

Different approaches to the task of identifying important farmland have been taken. Howard Conklin's study identified farms based on high, medium viability. The State Development Plan - 1 modified this into categories referred to as exceptional, high viability, and medium viability farming areas. The Soil Conservation Service identifies soils according to several categories of capability and also has a system of identifying important farmland as prime, unique, or of statewide or local importance. However, in a report prepared for the State '701' Land Use Element, the Agricultural Resources Commission recommended that "No one all emcompass definition of important farmlands is practical or desirable. The Agricultural Resources Commission recommends the best approach to be one of providing a more comprehensive data base consisting of a series of uniform scale, overlay maps and in various combinations to provide a basis for analyzing resultant geographic patterns and relationships between those patterns. This data base can then be utilized to develop an effective agricultural land use policy and procedures for implementing that policy." This latter recommendation is perhaps the best approach and will be followed by the Coastal Management Program as it relates its objectives to agricultural resources.

While the Coastal Zone Management Act states that direct and significant impact on coastal waters is the criterion for inclusion of an area within the Coastal Zone boundary, the boundary must recognize the integrity of coastal resources, such as important agricultural areas and parcles, and the effect of imposing certain regulation or protection on part of a particular agricultural area. This may lead to a coastal boundary extending some distance inland.

## Existing Policy and Programs

State policy on agriculture is clear and universally supported, though not always well effectuated. In the late 60's and early 70's, when urban enroachment and farmland losses were still the rule, the State, through its Constitution and legislative process, took steps to reverse the prevailing trends. First, the State adopted as part of its Constitution, Article XIV Paragraph 4, which declares that the policy of the State will be to "encourage the development and improvement of its agricultural products."

Generally embracing the wording of the constitutional mandate, the Legislature, in 1971, passed the Agricultural Districts Law. Significantly, however, the Legislature cited a second reason for encouraging the development and improvement of agriculture: namely, that agricultural lands are "valued natural and ecological resources which provide needed open spaces for clear air sheds, as well as for aesthetic purposes" (Agricultural Districts Law: Section 300).

Thus, the State has clear policy of preserving agricultural lands. This has been reiterated in nearly every planning and policy documents at all levels of government in the State. All the local CZM subcontractors in the State stated such a policy in one form or another.

The Agricultural District Program is the principal program by which the State attempts to implement its policy of preserving farmland. Though it has been successful in terms of the quantity of the land included, it has limitation, is not permanent, particularly in some parts of the coastal area such as Wayne and Chautauqua Counties, and does not guarantee preservation of important farmlands. It is voluntary and does not address all the causes of the loss of farmland which were described previously. Other possible approaches to the preservation of farmland need to be considered. These include exclusive agricultural zoning, public purchase and lease back arrangements, transfer of development rights, pruchases of development rights, as in Suffolk County, differential assessment, other changes in tax law, and improvements to the agricultural district program.

The State has also passed the Accelerated Soil Survey Bill of 1976. A list of counties which deserve top priority for classification of mapping of prime soils, unique farmlands, and soils of statewide importance within agricultural districts includes, but is not limited to, the following counties: Steuben, Onondaga, Lewis, Schoharie, Washington, Ulster, Orange, Tompkins, Cortland, and Broome. Columbia, Oneida and Chautauqua Counties were identified as counties which should receive priority attention for acceleration of modern soil surveys in 1976-77. The SCS will provide a list of prime soils and soils of statewide importance on a county by county basis for the state. In addition, SCS will, on soil maps, delineate the location of unique farmlands and provide lists of land capability classes, I, II, III, and IV on a county by county basis for the state. The NYS Office of General Services is to prepare maps showing the location and distribution of important farmlands.

With regard to agriculture and water quality the policy is clear, it is that of the FWPCA. However, as this is implemented conflicts with other accepted policies may arise. The areas of potential conflict will be identified as section 208 plans are prepared. It is also possible that coastal management objectives may require stronger controls be incorporated in 208 plans.

Other programs which are important to resolve the issue of agricultural runoff are small Watershed Management Planning and Soil and Water Conservation Plans. Much of the problem can be solved through the development and implementation of these plans. These programs are discussed more fully in the issue paper on Water Quality.

## General Policy Direction

The Coastal Management Program views agriculture as one of the most important and best uses of land within the coastal area. The management program will be designed to support existing programs for farmland preservation, will encourage strengthening of these programs, and will propose new methods for preserving agriculture in the coastal area. Where there are large contiguous tracts of farmland that extend near to and along the shoreline and the crops grow are strongly dependent on that coastal location for their productivity, these lands will be considered for inclusion within the coastal boundary.

With regard to water quality and agriculture, there is some potential for conflict between the objectives of perserving agriculture and controlling runoff, particularly as to timing and method. The degree of conflict, if any, will depend upon the specific proposals for controlling runoff of the '208' plans now in preparation. The Coastal Management Program will seek to achieve a balance between the two objectives, should any conflicts arise.

# FLOOD PLAIN MANAGEMENT
# &
# BEACH EROSION

Task 2.9

# FLOOD PLAIN MANAGEMENT AND BEACH EROSION

## Introduction

The Coastal Zone Management Act requires a state's management program to include a planning process for assessing the effects of shoreline erosion and evaluating the methods to prevent, control and restore the impacts of erosion. This process must take into account that the character of the coastline is constantly changing, affected by weather, tides or fluctuating lake levels, occupied by housing and business structures, and altered by man-made improvements such as groins and jetties. Flooding, erosion and severe storms are common occurrences in coastal areas, and the consequences of them on these areas are concerns with which a management plan must contend.

Severe weather, flooding and erosion occur throughout New York State's coastal areas, but in differing degrees and with varied effects. This is due in part to the types of coastal areas in the State which include Lakes Erie and Ontario, Niagara and Hudson Rivers, the Long Island Sound and the Atlantic Ocean.

The consequences of these natural forces upon the coastline include a loss of recreational and economic resources, the disappearance of valuable land and damage to existing structures. Resolving these issues requires adherence to existing legislation, programs designed to protect the shoreline and the enactment of new legislation to promote activities which enhance the wise use or protection of the shoreline while guarding the public and private interests in the coastal areas.

To efficiently utilize the resources of these areas, the forces working to reshape the shorelands must be given proper consideration. A management plan must be concerned with protecting man from natural forces and from himself. Building in the flood plain or along beach bluffs must be measured against environmental concerns such as natural change, flooding, erosion, hurricanes, and natural habitat intrusion. There is a strong need in the State's coastal areas for coordinating and implementing the proper management and protective measures in order to effectively combat the hazards and problems that are common to these areas.

## Statewide Erosion and Flooding Problems

### Causes and Consequences

One of the objectives of the Coastal Management Program is the wise use of the State's coastal resources while minimizing the dangers of damages to such uses. When structures are built too close to the shore, damage is inevitable. It usually results from several natural occurrences, such as severe storms and hurricanes, flooding, erosion of beaches and bluffs, sedimentation and cyclical lake levels. Structural damage, however, is only the beginning, for these coastal processes and forces of nature

often result in substantial economic and recreational losses.

Waves, storms, winds and rainfalls are responsible for breaking down and building up the shoreline. These forces, acting upon the coastline, are mainly responsible for the erosion, flooding and sedimentation problems which are characteristic of the State's coastal areas.

Weather is the chief agent in changing the face of the shoreline. During periods of above average precipitation the water levels of the Great Lakes increase and, because of these water bodies' large storage capacity and small outlets, remain high for long periods of time. When this condition exists, the submerged beaches provide less protection to the backshore areas during storms and periods of high waves. Beaches and bluffs suffer accelerated erosion, and flood waters reach farther inland causing greater damage over a more extensive area.

Severe weather affects the Atlantic Ocean coastal area and subjects its shorelands to flooding and erosion. Major storms, such as hurricanes, approaching the shore coincident with the high tide can create tidal levels 15 to 20 feet above normal. These high tides, severe winds and wave run-up can cause flooding well inland at some locations on Long Island and New York City. Flooding and erosion problems are also accentuated by factors other than weather, particularly the position of the shoreline in relation to wind direction and the erodibility of the beach and bluff soils.

Major Problems in the State

In the State's coastal areas, flooding and erosion are most acute along the Atlantic Ocean. Areas of critical erosion, however, are also found along the coast of the Long Island Sound and the south shore of Lake Ontario, especially in the Rochester area (Orleans and Monroe Counties).

The "Great Lakes Region Inventory Report" of the National Shoreline Study estimates that approximately 196 miles of Lake Erie and Ontario are susceptible to erosion. Of this total, only 17 miles sustain critical erosion resulting in a rapid loss of land and accompanying structural damage and ultimately impacting coastal aesthetic, economic and recreational resources. Along the Niagara River the principal erosion problem is the Niagara Falls. On Lake Ontario, erosion and flooding produce continual and extensive damages to the shorelands and the development on them. These hazards threaten the area's coastline, especially during periods of high water levels. The on-shore damages occurring during these periods are not appreciably lessened by existing governmental development controls or by protective structures. Of the approximate 470 protective structures examined in one study, half were determined to be of only limited effectiveness in preventing property damage.

In the Long Island Sound coastal area, flooding is caused by hurricanes and storms which generate excessive winds and

high water levels. The north shore of Nassau County is characterized by high bluffs. Erosion is critical along these bluffs which threatens all structures on them. Flooding occurs along most of this northern shoreline, but it does not extend very far inland. Suffolk County's shoreline along the Sound is affected by erosion caused by wave action, and during severe storms it is accompanied by flooding in low-lying areas. Land and structural damages caused by erosion have occurred along the entire length of Suffolk County's north coast.

The bluffs and headlands in Suffolk County are fronted by low, narrow beaches which offer little protection against erosion. Littoral drift does not provide sufficient replacement of sand for beaches. The slopes of the bluffs attacked by waves have become denuded of vegatation. Rainfall and surface runoff further increase the rate of erosion in such unstable situations. Protective structures have not provided the stability necessary to prevent or minimize the effects of erosion. The lack of coordinated planning among private property owners has contributed to the ineffectiveness of this preventive approach to shoreline protection.

Along the Atlantic Coast of Long Island and New York City, flooding and erosion problems are extensive. This shoreline is heavily used for recreational purposes, but extensive residential and commercial activities and tidal wetlands are also found in this area. Tidal inundation and erosion occur during major storms, and damage is evident on shore protection structures and residential and commercial structures further inland. Protective measures such as groins, jetties and revetments are inadequate during these severe weather situations.

The ocean faces of the barrier islands are highly erodible. Navigation through inlets, such as Fire Island Inlet, has become more difficult. The shoaling and narrowing of these inlets increase tidal flow, and thereby augment existing erosion and sedimentation problems.

## Specific Erosion and Flooding Concerns

### Great Lakes

Lake Erie, a relatively shallow body of water, is subjected to seiches. These phenomena consist of a "tilting" of the lake surface caused by major barometric pressure differences between the east and west ends of the water body and by strong winds. Water levels of 8 to 10 feet above normal have occurred along Lake Erie's shorelines in New York State, resulting in greater erosion and flooding conditions.

The Niagara River is dependent upon the water level of Lake Erie. The velocity of the river in the vicinity of Niagara Falls attains speeds of 30 to 40 feet per second. It is at this location where erosion is a problem. Currently, the rate of erosion is about three and one-half feet per year. Since tourism is a major

component of the local economy, concern is raised about the erosion rate and the pile-up of debris at the base of the American Falls, the area's principal attraction. The River is also affected by ice jamming and tributary flooding. Ice jamming upstream of the hydroelectric facilities at Niagara Falls reduces the available head of water for producing electric power. Only minor tributary flooding occurs in the Niagara River coastal zone.

Erosion and flooding on the south shore of Lake Ontario continually damages the shorelands and the development on them. In Niagara County the shoreline is principally a low bluff consisting of erodible unconsolidated soil. During periods of high water levels, significant erosion occurs along this portion of Lake's coast. The coastal area in Orleans and Monroe Counties has also experienced severe erosion and flood damage during high water periods particularly in the early 1950's and 1970's. The Irondequoit Bay area is characterized by numerous sediment laden streams, unstable fill and examples of slumping and gulleying. The Bay, itself, is choked with sediments. The unprotected portions of Wayne County's shoreline are subject to significant erosion. Flooding is common when the Lake's water levels are high, particularly in Sodus Bay and along barrier beaches.

Shoreline erosion and flood hazards continually threaten the area's coastline, particularly when Lake Ontario is above its long-term average water level. Existing development controls and protective structures have been of only limited effectiveness in preventing property damage and loss of shoreland.

Long Island Sound

Nassau County contains about 65 miles of shoreline along Long Island Sound. Erosion is critical along the bluffs in Manhasset, Port Washington, Sands Point, Sea Cliff, Glen Cove and Center Island. Residences at the top of these bluff areas are occasionally threatened. Tidal flooding occurs along the entire length of the County's coastline, but it is limited to the immediate shore area.

In Suffolk County, the Sound's coastline is susceptible to erosion by wave action and flooding in low lying areas. The high projecting headlands and bluffs fronted by narrow beaches are highly erodible, and the littoral drift does not adequately nourish these beach areas. The shoreline recedes at an average of 1 to 2 feet per year in this reach, with some locations such as Eatons Neck, Waterside Port, Old Field Points and Mattituck Hills experiencing rates up 3.5 feet per year.

Atlantic Ocean

Over 50% of Staten Island's shoreline is highly susceptible to erosion, a portion of which is situated within the Gateway National Recreation Area. Extensive flooding has occurred along Staten Island's coast which has caused substantial damages to

residential properties and recreational facilities.

Along the south shore of Brooklyn (Coney Island), flooding and erosion are major problems. Shore protection, residential and commercial structures have incurred extensive damages. It is estimated that a maximum flood would inflict damages amounting to $20 million (1971 dollars). The Coney Island beach, intensively used for recreational purposes, is continually eroding and periodically requires artificial replenishment.

The barrier island located between Jones' and Fire Island's inlets and intensively developed for recreation, is subject to severe erosion. The principal cause of this condition is a jetty on the easterly side of Fire Island Inlet which intercepts the movement of sand nourishment.

The reach from Fire Island Inlet to Moriches Inlet includes the Fire Island barrier beach. Erosion has been severe along the ocean side of this beach. Attempts have been made to restore and stabilize the beach, but they have not provided a permanent solution to this problem. The developed portions of Fire Island are vulnerable to tidal flooding during severe storms.

Considerable high value residential development exists on the barrier island situated in the reach extending from the Moriches Inlet to Shinnecock Inlet. Erosion on the ocean side of the island is the principal problem in this area. Also, tidal flooding has overwashed the island in places, resulting in a loss of recreational beach and several large structures.

From the Shinnecock Inlet to Montauk Point, flooding is the major concern, however, the Beach Hampton portion of this reach is subject to critical erosion. This condition is also present along half of the Eastern Forks reach.

Hudson River

The Hudson River from the Atlantic Ocean to the Troy Dam is a tidal estuary. It is used as a major navigation channel year-round. The river is occasionally affected by ice and flooding in the Albany-Troy area. The continuing problem along the Hudson is sediment deposition in the river from overland runoff and tributary streams. Associated with this problem is the one of dredging the sediment and floatable debris to maintain navigatable commercial shipping and recreational boating channels and the disposal of the residual wastes once collected.

## Existing Policies and Programs

There are a number of governmental programs which are aimed at mitigating the impacts of flooding and erosion in coastal areas. Federal programs tend to emphasize structural protection measures. Whereas, non-structural management programs are generally preferred by New York State and its local governments.

### Federal Programs

Through the creation of county soil and water conservation districts, the Soil Conservation Service financially aids local governments in the construction of flood control projects. The SCS also provides technical and financial assistance to localities for measures that reduce stream erosion and control sedimentation.

The U.S. Corps of Engineers participate in a variety of management programs that focus upon the reduction of shoreland flooding and erosion, construction of navigation facilities, and the regulation of filling activities and shoreline structures. The major responsibility of the Corps rests in shore erosion control, for its activities center upon determining the cause of beach erosion and undertaking shore protection and beach restoration projects. The latter, if constructed on publicly owned lands, can receive federal assistance of up to 70% of project cost. In addition to the programs cited above, Section 111 of the 1968 River and Harbor Act authorized the Corps to study and construct projects that would prevent or mitigate shore damages resulting from federal navigation works. This type of project is financed fully by the federal government.

The Bureau of Outdoor Recreation offers assistance to local public agencies for the acquisition and development of outdoor recreation facilities. The National Park Service has had a considerable impact upon New York's coastal areas, for it has acquired and now administers the Fire Island National Seashore and the Gateway National Recreation Area on the Atlantic Ocean coast.

The Federal Insurance Administration administers the National Flood Insurance Program. Under this program, residents in communities which adopt and enforce the required development controls for its flood plain areas are eligible to purchase subsidized insurance for structural damages caused by flooding and flood-related erosion. In communities where such controls are not in force, most banking institutions cannot extend mortgages and loans for the construction of buildings in flood hazard areas.

### State Programs

New York State's flood and beach erosion control programs also provide financing for shore protection projects. Currently, the State shares with local governments the costs and other responsibilities that are not covered under federal programs

for projects in the New York City-Long Island area.

The State's Flood Plain Management Program offers technical assistance to local governments in the preparation of development regulations required under the National Flood Insurance Program. The legislation which established this program also allows the State to enforce appropriate flood plain regulations in communities that fail to adopt and administer such regulatory provisions, so that owners of property situated in flood hazard areas may be eligible for subsidized insurance.

The Office of Natural Disaster and Civil Defense coordinates State and local efforts during major disasters such as hurricanes and floods. The Office also provides technical assistance to communities in the preparation of disaster plans.

Local Programs

Under Article 5-B, Section 280 of the N.Y.S. County Law, special hurricane protection, flood and shoreline erosion control districts may be established. The purpose of these districts is to finance control projects by levying assessments on those who benefit from such projects. These may include the construction or reconstruction of dunes, bluffs, bulkheads, dikes, groins, jetties and other improvements on publicly owned lands.

Local governments can institute non-structural management programs for erosion and flood areas within their respective jurisdictions by enacting the appropriate site design, zoning and building regulations, and by acquiring total fee and less than fee interests in lands along the coastline.

Assessment of Present Programs and Policies

Recurring flooding problems have led both the federal and state governments to enact legislation aimed at encouraging better flood plain management practices. The Federal Flood Insurance Act and the State's Flood Plain Management Act have prompted many coastal communities to adopt and enforce zoning and building regulations which adequately take into account flooding concerns. These land management tools can modify the ever increasing flood-related structural damages by regulating the type of development within flood plains and by establishing construction standards for flood proofing new structures built in these hazard areas.

Recently, the Federal Flood Insurance Act was amended in order to provide insurance protection for flood-related erosion losses. Program regulations, however, have yet to be formulated, so the impact of this provision upon land development activities cannot be determined at this time.

The State and federal governments involvement in beach erosion control is limited to projects on publicly-owned lands or on properties on which protection will provide public benefit. The lack of erosion control planning on a statewide basis is the major

gap in current flood and erosion management efforts. Erosion management is, at present, a matter of local government responsibility. To be effective, the State should ensure that adequate local controls are in force. The wrong protective measure can often lead to increased damages.

There are, at present, no suitable structural alternatives for protecting the shorelines of the Great Lakes from erosion caused by high water levels. The water levels in the Lake are regulated to some degree, but a study conducted by the International Joint Commission concluded that the fluctuations in lake levels are a natural phenomena and that protection from the impacts of these levels cannot be resolved by structural regulation at acceptable environmental and financial costs. Careful land use planning in the coastal areas is the more appropriate course of action.

Along the Hudson River Valley, the location of disposal areas for dredge material and floating debris may cause aesthetic and environmental problems as well as conflict with recreational interests. From financial and operational points of view, much of the residual wastes will need to be deposited in coastal areas. Sites have already been identified, but a program should be established to preserve them for future use.

## Management Recommendations

### Policy Directions

Protecting the State's coastlines from severe erosion and flood damage requires the use of existing programs, education of the general public and the encouragement for new programs such as shoreline planning and flood and erosion control ordinances which protect existing interests in the shore lands and provide for both orderly development and protection of coastal resources.

The principal issues arising from the problems of flooding, erosion, lake levels, sedimentation and storms include the loss of economic and recreational coastal resources, the damage to structures and the loss of land. To protect coastal areas from the effects of flooding and erosion, the typical procedure has been to build obstacles to diminish the power of the wave and to install devices to prevent the inland movement of flood waters.

The National Flood Insurance Program has designated flood hazard areas in New York State. Communities, to avoid the imposition of sanctions and thus gain eligibility for subsidized flood insurance, must demonstrate their concern by adopting the appropriate development regulations. The existing land use and building regulations of coastal communities should be examined to determine their effectiveness in limiting the types of development activities that are allowed within designated erosion and flood prone areas.

Along the shore of Lake Ontario, erosion and flooding are serious problems which cause economic hardships and loss of recreational areas. Most of the coastline is privately owned and, therefore, property owners cannot receive federal aid for shore protection projects. The many protection structures that have been built along the Lake by private property owners have proven to be of variable effectiveness. Non-structural measures, however, could be quite effective in limiting the extent of flood or erosion related damages. Development regulations should be adopted and enforced to prevent the locating of unsuitable land use activities within these hazard areas.

The Corps of Engineers conducted a study on the effectiveness of structural protection along the Long Island Sound coast. The study found that the existing privately constructed protective structures would not prevent damages from the tides and waves generated by hurricanes and other severe storms. It would be uneconomical and impractical to construct protective measures that could withstand such tides and waves. The study recommended, as should the Coastal Management Plan, than non-structural measures should be used to reduce flood damages in the Sound. Hurricane preparedness plans, a local responsibility, should be required.

Erosion in the Sound, especially along the developed bluffs in Nassau County, can be abated by structural measures, such as stone armor protection. The municipalities with jurisdiction over the eroding bluffs should regulate development activities and practices in the undeveloped hazard areas by land use planning methods, such as minimum setback distances for new structures.

Most of the communities on the Atlantic coast are eligible under the National Flood Insurance Program for insurance coverage of flood related structural losses. Many of the heavily developed areas cannot effectively use existing regulations to guide future development, because there is little undeveloped land remaining. In less urbanized areas such as the Eastern Forks, use controls and structural setback distances would be beneficial and should be required. Structural measures including groins, beach fill, sand bypassing projects and other techniques will be necessary to protect barrier beaches, developed communities, and environmentally sensitive areas.

Hurricane protection plans, where feasible, would offer protection from flooding and tidal inundation. The major focus of these plans is the development of dunes, which if they are of sufficient height afford protection to the inland areas. Another feature of these protection plans is the stabilization of dunes. Some localities, however, oppose dune growth because it restricts beach access, limits ocean views from shoreline residences, and intensifies the potential for additional land use development near the stabilized beaches.

Sedimentation in the Hudson River hinders recreational and commercial navigation. Dredging of the river and harbors and

the collection of floating debris presents a major waste problem. Dumping off the New York City coastline is being restricted by the Environmental Protection Agency, and the depositing of dredge fill along riverbanks is aesthetically displeasing and environmentally conflicting. The Coastal Management Program must direct attention to the possibility of land disposal of dredge spoil and floating debris.

The interface between land and water is the shoreline. Protecting the shoreline is a prime responsibility of the Coastal Management Program. The use of the coastal areas for environmental, recreational, industrial, commercial, agricultural and housing purposes will not be possible without the implementation of proper management techniques to safeguard life and property from the effects of weather, flooding and erosion.

# COASTAL AESTHETICS

Task 2.10

# COASTAL AESTHETICS

## Introduction

New York's coastal areas are unique resource areas in the State. Of the shoreline's many assets, perhaps none are as universally appreciated as its aesthetic quality, as expressed through its scenic, architectural, historical and cultural resources. Ironically, it is these very aesthetic resources that are consistently the most imperfectly understood, incompletely identified, and infrequently considered in most planning efforts.

Problems stem from complexities in aesthetic resource assessment. Individuals' perceptions vary about which landscapes or townscapes can actually be called aesthetically valuable. In addition, there is an absence of quantifiable data for weighing aesthetic concerns against other more easily measured needs. In New York State, assessment difficulties are compounded by the character of the shoreline, marked by a large number of aesthetic resources that are less dramatic than those of the Maine or California coasts. As a result, many existing or potential resources may go unrecognized.

Factors that actively contribute to aesthetic quality devaluation include the following: economic constraints and needs; physical and locational requirements of some shoreline activities; and personal preferences and a lack of understanding about the effects of misuse of resources on that elusive value known as "aesthetic quality."

Given these problems, it is not surprising that there is an absence of effective means for protecting and enhancing aesthetic quality. While there are a number of policies and programs available that incorporate aesthetic concerns, there is no systematic approach to the issue. In addition, those mechanisms that do exist are often unused or ineffective because of a lack of commitment to the program or insufficient funding.

These factors result in land use and development practices that neutralize, block from view, or degrade aesthetic resources. In other cases, inattention to restoration or redevelopment needs, or the absence of corrective practices, has diminished aesthetic quality. Coastal processes of erosion and flooding also take their toll by eroding natural aesthetic attributes and debilitating shoreline structures.

These issues are the subject of this paper. After a review of the issues, recommended policy directions conclude the study. The remainder of the introduction defines aesthetic resources for the purposes of this study, briefly discusses their significance, and indicates broad goals with respect to aesthetic quality.

Defining Aesthetic Resources

Traditionally, aesthetic resource studies, if they have been conducted at all, have been concerned with specific resources of natural scenic value, the viewing points from which these were visible, and the presence of blighting factors, such as junkyards.[1] The emphasis on natural resources results from the perception that natural landscapes are more aesthetically pleasing than man-dominated environments. Modification of natural landscape patterns and other evidences of human intervention are often considered undesirable qualities.[2]

However, on some lengths of shoreline, particularly in the more urbanized areas, natural landscape patterns have been altered by man, but the result has not been a degradation of aesthetic appeal. On the contrary, development has contributed activity, intrigue, and meaning to otherwise commonplace natural shorelines. Historic and architectural features and townscapes are aesthetic resources. Beyond these, evidences of coastal activities, such as harbors, fishing villages, ships, and wharfs, are all an integral part of the coastal aesthetic experience.

A number of factors work together to produce aesthetic quality in a landscape or townscape. Visual quality is strongly linked to the level of complexity in a scene; harmony of diverse elements is also necessary so the variety presented does not produce sensory overload for the viewer.[3] Three characteristics common to coastal scenes also generally contribute to aesthetic quality: the presence of water, the dynamics of the land/water interface, and expansive views. This suggests that all coastal landscapes, even the more common or ordinary, possess inherent aesthetic attributes which, if managed properly, can provide a measure of aesthetic enjoyment for the viewer.

Understanding the aesthetic potential of some features and areas along the coastline is an important concept in enhancing coastal aesthetic quality. Selective cutting of vegetation along a roadside may reveal attractive shoreline views; bright colors and interesting graphics on oil tanks in urban areas may render an otherwise blighted area visually exciting. While

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1 Roy Mann Associates, Inc. Aesthetic Resources of the Coastal Zone, prepared for the Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, 1975.

2 Litton, R. Burton, Water and Landscape: An Aesthetic Overview of the Role of Water in the Landscape, Port Washington, New York: Water Information Center, Inc., 1974.

3 Rapoport Amos and Kantor, Robert, "Complexity and Ambiguity in Environmental Design," Journal of the American Institute of Architects, No. 33 (July, 1967).

it is recognized that certain features and areas are beyond improvement, there are nonetheless many instances where minor additions or subtractions to the scene can significantly improve the aesthetic experience.

For the purposes of this study, then, aesthetic resources will include natural features and areas, sites and townscapes of historic, architectural, or cultural value, activities which lend intrigue and meaning to the coastal scene, and areas of potential, and as well existing, aesthetic quality.

Importance of Aesthetic Quality

The aesthetic attributes of coastal areas have, along with their recreation potential, made these areas prime locations for vacationers. Beachgoers, picknickers and sightseers frequent public shorelines during the summer season. In areas of high scenic quality, the tourist and recreation industries may be the economic mainstay of the town. In other areas, the potential for developing the tourist or recreation appeal may provide the best alternative toward economic solvency for depressed areas. Historic and architectural resources have educational qualities as well as being attractive features in themselves. Coastal activities enrich a scene through interesting visual images and evidence of human dynamics.

Beyond these benefits, the inherent attributes of shorelines satisfy psychological needs common to all people. On a philosophical level, natural shorelines display values of permanence, immensity, peace and solitude -- qualities that are often lost or forgotten in the rapid pace of an urbanized world.[4]

The importance of protecting and enhancing aesthetic resources has been recognized for years. Recently coastal aesthetic resources have been given greater importance by their explicit inclusion in the Coastal Zone Management Act of 1972. The following passage stresses this role (from Section 302 (b)):

> The Congress finds that the Coastal Zone is rich in a variety of natural, commercial, recreational, industrial, and aesthetic resources of immediate and potential value to the present and future well-being of the nation.

In addition, states are encouraged to give "full consideration to ecological, cultural, historic, and aesthetic values as well as to needs for economic development" (Section 303 (b)).

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4 Gussow, Alan, "Not an Edge, But A Delicate Interpenetration," in Visual Quality and the Coastal Zone, Conference Proceedings, S.U.N.Y. College of Environmental Science and Forestry, 1976.

The recreational, economic, educational and psychological value of aesthetic resources, as well as the emphasis given them in legislation, makes them important areas of consideration in the Coastal Management Program.

Broad Goals

Given the definition of aesthetic resources and the importance of their protection and enhancement to the people of the State, the following statements summarize statewide goals for coastal aesthetic quality.[5]

- To preserve and protect existing aesthetic resources, both natural and man-made
- To develop future aesthetic resources and prevent aesthetic deficits, particularly in the case of new development
- To restore and enhance areas that are aesthetically deficient, blighted, or deteriorated
- To increase visual access to the shore and physical access to the shore's aesthetic resources

## Issues and Concerns

Aesthetic Resource Assessment

While there is general agreement conceptually that aesthetic resources should be considered in the planning process, attempts at assessing aesthetic quality are surrounded by complexities and ambiguities. The problem lies in developing acceptable methods for defining and quantifying aesthetic values; lack of agreement of these procedures has resulted in aesthetic resources being unsystematically inventoried, at best, or sometimes disregarded altogether. In the final analysis, aesthetic concerns are often lost or overridden in favor of those that are perceived to be more readily quantifiable.

Perceptions vary about what constitutes aesthetic quality and which landscapes possess it. Primarily, in identifying scenic resources, there is general agreement on which landscapes possess high scenic value and which, conversely, are of low value. However, opinions vary on which of the middle range landscapes and townscapes possess aesthetic attributes. Therefore, in identifying scenic resources, there is a tendency to include only those areas generally agreed upon as superior in aesthetic value, while the less obvious resources go unrecognized. Another perception problem rests with the traditional concept of aesthetic man-made resources. The tendancy to ascribe aesthetic significance only to areas of traditional historic or architectural merit has worked against other developed areas of value. Harbors, wharfs, and other evidences of coastal activities can also contribute to the coastal aesthetic experience.

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5 Largely adapted from Roy Mann Associates, Inc.

Aesthetic assets vary from region to region, depending on the extent and quality of the aesthetic resource base. That is, in a given region a particular flat beach may afford a great amount of pleasure to residents because it is the only bit of undeveloped shoreline left in the area. In a region dominated by dramatic landscapes, however, the flat beach may appear relatively uninteresting compared to high bluffs and rocky shore. Therefore, it is difficult to assess relative merit when criteria are based upon finite physical forms.

These problems are illustrated in New York State's coastal areas. Little controversy exists over the importance of preserving and enhancing more outstanding examples, such as the nationally significant Niagara Falls, the Hudson River Palisades, or the Thousand Islands in the St. Lawrence Seaway. However, long stretches of coastline are characterized by less dramatic shorescapes, such as the mostly linear, flat to moderately rising shoreline of Western Lake Ontario, and Long Island's urbanized and suburbanized South Shore. Determining which of these shorescapes are aesthetically valuable, and how we should manage them, if at all, is a more controversial issue. This problem is most pressing in or near urban areas, such as Long Island and upstate coastal cities and communities, where development pressures are greatest and where a large number of more ordinary townscapes exist. The problem of developing one set of rigid criteria to judge relative merit of aesthetic resources is also evident in the State, considering this range of resources.

In order to approach these problems, there is a need for developing a comprehensive system for identifying, assessing, and developing priorities for aesthetic resources which will give some order to the study of coastal aesthetics in New York State, but will allow enough flexibility for refinements at the local or regional level. An integral element in this system is the development of a definition of aesthetic resources which incorporates less obvious resources. Broadening people's perceptions about what constitutes aesthetic quality, and educating them on methods of studying it, are program needs.

Economic, Physical, and Personal Determinants

A number of factors related to economic, physical, and personal needs and concerns of shoreline users have contributed to the degradation of shoreline appearance. Primarily, some types of utilities and industrial facilities, such as marine terminals and energy related facilities, require waterfront locations for their operation. Operational requirements may call for certain design elements, such as towers, loading cranes, or warehouses, that are visually intrusive. While it is recognized that these facilities have siting and design requirements which must be met, the improvement of their appearance must be a concern in any aesthetic quality study. Moreover, some of these activities actually have educational or human interest value, and as such might qualify as potential aesthetic resources in a broader

sense of the term. A full evaluation of alternative sites and designs, as well as imaginative techniques for taking full advantage of their unique qualities as objects of public interest, is necessary.

From an economic point of view, the siting and design of development that is visually compatible with existing landscapes and development may be an expensive prospect. The profit motive may render such considerations unattractive. Lack of funds for restoring or rehabilitating blighted or deteriorated areas is a main reason for the presence of blighted areas. Transportation routes, such as highways and railroads, can economically be built on the flat land beside waterways. These highways and railroads block visual and physical access to the shore, particularly in New York City and upstate urbanized areas. Running beside the Hudson River from New York to Albany, the railroad provides scenic travel for rail passengers but creates access problems for others. While these uses may not be coastal dependent, economics and land availability has influenced their locatio

Personal preference for direct shoreline access and private waterfront property has encouraged coastal sprawl, thereby challenging natural landforms and contours and restricting access to the shore. The problem is particularly pressing in areas of high scenic value, such as the Thousand Islands area, where the special qualities of these unique resource areas are seriously impaired by sprawl residential development along the shore. In addition, a general lack of understanding prevails about how inattentive site planning and structural design can adversely effect aesthetic resources, and, conversely, how to minimize intrusion through siting and design that is attentive to natural landscape patterns.

Arresting these factors necessitates a combination of controls and incentives for shoreline development, including restrictions on development that are not coastal dependent, siting and design guidelines to improve the appearance of those types of development that are coastal dependent, and economic incentives for aesthetically compatible site planning and improvement of degraded resources.

Absence of Controls and Incentives

No effective statewide mechanism exists for controlling the siting and design of visually intrusive elements along the shore. The tools of zoning and subdivision regulations have been used on occasion at the local scale to control siting and design, but their application has been minimal. The problem is that regulations, such as stringent design standards, create legal problems and court actions by affected property owners. Therefore, while enabling legislation exists to control siting and design at the local level, localities by and large have not effectively used it to enforce aesthetic concerns.

In recent years the review of certain projects effecting environmental quality, including aesthetic quality has been

instituted at the state level. However, this review has often focussed on those aspects of the environment that are more readily quantifiable. Aesthetic concerns, as discussed in this paper, are generally assigned a lower priority, if considered at all.

Acquisition programs are an effective alternative for regulatory protection of scenic resources, but such programs are costly. A more economically feasible alternative is the less than fee simple purchase, in the form of purchase of development rights or scenic easements.

The techniques of financial incentives for certain types of coastal development and disincentives for other types is a reasonable means for promoting aesthetic resource preservation. At present, preferential tax assessment is granted certain farmlands through the Agricultural District Law. However, the use of this technique in preserving other aesthetic resources, such as historic districts in urban areas, has not been fully explored.

Educational efforts to increase awareness of aesthetic values in shorescapes are also lacking. Ideally, increased awareness would lessen the need for controls.

Land Use Development Practices

Specific land use development practices, or the absence of corrective practices, impinge on aesthetic quality in several different ways. These practices or absence of them can be summarized as follows:

- Overall development patterns and specific structural designs that, through incompatibility with natural shoreline features and lack of appreciation for man-made features, diminish shoreline appearance.

- The siting of visually intrusive elements in areas of high scenic value, thereby undermining the special qualities of these areas.

- The siting and design of development that limits visual access within the coastal area by blocking views to the shoreline and shore activities from inland locations and from the shoreline to the inland landscapes.

- The presence of areas of visual blight and deterioration, caused by failure to restore degraded resources.

These practices are caused by the combination of factors reviewed in the preceeding sections of this report. Resolving these problems requires a combination of investment strategies, regulatory mechanisms, financial incentives, and educational techniques.

## Coastal Processes

Coastal processes contribute to the erosion of aesthetic attributes and the creation of visually unappealing scenes. In particular, wave action during storms and periods of high water causes erosion of dunes and other shorelands. Erosion both eats away at aesthetic features and creates unsightly scenes, such as the uprooting of vegetation and the undermining, and eventual collapse, of land on which structures have been built. High water and storms also create flood hazards for lands at close proximity to the shore. Destruction of shorefront properties and structures, and accompanying scenes of visual blight and deterioration, is worst where development has been allowed in flood prone areas. Another problem relates to changes in the erosion-deposition cycle that created some of the shorelines attractive sandy beaches, and the fact that changes in this cycle threaten the perpetuation of these aesthetic resources.

Some of these coastal processes are purely the result of natural forces. As such, lessening their impact requires working with nature, rather than against nature, by such means as restricting development in flood prone areas to that which can withstand periodic flooding and developing nonstructural erosion-control measures which soften the blows of wave action naturally. In other cases, man has induced flooding and erosion through channelization of natural waterways and alteration of natural landscape features. Here it is necessary to study the impacts of certain activities on coastal processes and cease those activities which induce destruction if the aesthetic quality objectives are to be met.

Erosion problems are particularly evident on Lake Ontario, where a rising lake level has eaten away at bluffs, sand dunes, and beaches. High water levels have also caused the destruction of structures in its path; the result has been broken piers and collapsed houses that, if not repaired or removed, detract from the visual scene. Erosion on Long Island also wears away at the aesthetic assets of the ocean barrier beaches and the bluffs along the Sound.

# Present Policies and Programs

## Analysis of Existing Policies

There are a number of policies and programs at the State level that ostensibly deal with some aspect of aesthetic quality (for a full list, see Appendix). However, the potential usefulness of many of these policies or programs in addressing the aesthetic quality issues identified in this report is limited for the following reasons:

- Aesthetic quality concerns are dispersed over a number of different programs and several agencies. This decentralization makes monitoring of their effectiveness with respect to aesthetic quality difficult.

- Many of the programs are directed at critical environmental areas. While these programs often make mention of aesthetic concerns in these areas, aesthetics is adjunct to other purposes (e.g. wetlands, floodplain regulations).
- A few programs with specific aesthetic quality objectives are limited to particular geographic areas in the State (e.g. SLEOC, Hudson River Valley Commission).
- Several programs and projects, while appearing to have a direct impact on aesthetic quality, have been relatively unsuccessful due to lack of commitment of funding (e.g. the New York State Nature and Historical Preserve Trust, Environmental Conservation Law, Article 49 -- Protection of Natural and Man-made Beauty).

Despite these shortcomings, several state programs have positively affected some aspect of aesthetic quality in coastal areas or have potential for positively affecting coastal aesthetic quality. A preliminary list of these programs, and a brief indication of their existing or potential usefulness for aesthetic quality concerns, follows:

1. A-95 Review, NEPA, and SEQRA -- While aesthetics is normally given a subsidiary role (if considered at all) in these reviews, aesthetics could be given a much greater emphasis in both the environmental impact statements required of agencies and the review process. Aesthetic concerns could be incorporated into the siting and design of facilities financed with federal or state funds if it was made explicit that such concerns were required in the EIS's and would be a basis for review.

2. National Historic Preservation Act and State Historic Preservation Program -- In providing for a register of historic resources and requiring consideration of such resources in Federally financed projects, these programs have had a positive effect on some of the coasts man-made resources. However, designation of worthy resources is usually limited to those of traditional historical, archeological or architectural integrity. The concept of worthy man-made resources might be expanded, and a greater number of resources (townscapes, harbors, etc.) included in the registry to afford them protection.

3. Wild, Scenic, and Recreational Rivers Act -- By providing regulatory authority to control development and to block incompatible development within designated scenic corridors, this Act has great potential for protecting the scenic qualities of river mouths and river corridors. However, few rivers within the coastal zone are designated. Additional designations of the coastal area segments of certain rivers would aid aesthetic quality goals.

4. New York State Park and Recreation Land Acquisition Act and New York Statewide Comprehensive Recreation Plan -- Much of the State's park efforts have preserved aesthetic quality in coastal areas through acquisition of scenic areas as parkland. The Statewide Recreation Plan addresses aesthetic concerns throughout, including policy guidelines for access to coastal waters. These programs have had a decided positive effect on aesthetic quality. Additional funding and a commitment to acquisition of land to increase access, as well as preserve scenic parcels, would further aesthetic quality concerns.

5. "Scenic Enhancement of Highways" Program, NYS Department of Transportation, and Article 49, Environmental Conservation Law. By providing for the designation of scenic highways in the State and the development of programs for their preservation and enhancement, these programs have potential for improving visual access to the shore from designated highways and the development of potential scenic overlooks and other viewing points. Additional funding and commitment to these programs would further aesthetic quality goals.

6. Urban Cultural Parks Act -- By its explicit inclusion of urban waterways and adjacent land as potential urban cultural parks, this law could have a significant impact on urban waterfronts in the coastal zone that are in need of both preservation and rehabilitation.

7. Article 49, Environmental Conservation Law -- This article gives broad powers to DEC for the protection of the State's "scenic, aesthetic and cultural resources." Among the functions assigned to DEC are: an inventory of aesthetic resources; designation of appropriate sites (including highways) and development of programs for their preservation; and the promotion of aesthetic considerations in the siting and design of State facilities. However, actual application of this article has been minimal as evidenced by the absence of specific programs based on it. This article could provide a critical link in aesthetic quality protection in the coastal zone specifically through the designation of specific sites and development of programs for their protection.

8. State Nature and Historic Preserve Trust -- While this program provides for the acquisition and administration of areas of natural beauty or geologic, historical and ecological significance, no funds have yet been expended to acquire such lands. The provision of funds from the 1972 Environmental Quality Bond Act for this purpose would obviously further aesthetic quality goals. Areas identified by the Trust as suitable for acquisition could be useful input into a state level inventory of areas of special aesthetic concerns.

## Recommended Policy Direction

To address identified issues on a statewide basis, there is a need to elevate aesthetic concerns so they are on a par with other concerns. Several existing programs address particular problems, but there is no overall framework for dealing with the issue at large, as discussed here. A comprehensive system is needed at the state level for protecting and enhancing aesthetic quality following the broad goals identified at the beginning of this report. These goals are repeated here for reference purposes.

- To preserve and protect existing aesthetic resources, both natural and man-made
- To develop future aesthetic resources and prevent aesthetic deficits, particularly in the case of new development
- To restore and enhance areas that are aesthetically deficient, blighted, or deteriorated
- To increase visual access to the shore and physical access to the shore's aesthetic resources

Listed below are components of this comprehensive system, which can be considered preliminary policy and program directions. Various existing policies and programs can be drawn from to accomplish certain tasks within this system (a preliminary identification of useful programs is presented in the preceeding section). Reference is made here to only a few of the most pertinent programs. The respective roles of all useful programs will be identified at a later date.

1. Develop an inventory of areas of special aesthetic concern at the state level within coastal management area boundaries. Consider Article 49 of Environmental Conservation Law as the legislative authority for this inventory. Include the following categories:

   a. coastal viewshed
   b. outstanding aesthetic assets -- areas of natural, historic, architectural or cultural interest
   c. blighted or deteriorated areas
   d. viewing points, areas of visual access, and scenic highways, both existing and potential

2. Develop programs for preserving, protecting, or restoring areas of special aesthetic concern. Consider Article 49 of the Environmental Conservation Law as the legislative authority for the development of these programs. Include the following concepts:

   a. areas should be evaluated for priority action, based on such factors as scale of importance of resource, pressure for development, accessibility to the public

b. areas presently maintained as aesthetic resources should be studied for adequacy of existing protection mechanisms

3. Determine various means at the state level for implementing program recommendations, using existing programs to the fullest extent possible.

   a. consider acquisition of fee or less than fee interests in areas of highest priority
   b. consider restrictions on areas of outstanding aesthetic quality, if acquisition of fee or less than fee interests is impractical or undesirable
   c. consider preferential tax measures to encourage preservation or restoration by private owners

4. Develop general statewide siting and design guidelines, for use by state and local governments, for new and existing development in coastal management boundaries. Establish a design review process for development of larger than local concern, using NEPA and SEQRA to the fullest extent possible. Include the following considerations:

   a. guidelines should be general enough to be applicable to state as a whole, and refinements should be made at the local and/or regional levels
   b. guidelines should focus on the aesthetic compatibility of various environment types (including natural and man-made environments) with various types of development
   c. the design review process should include study of the visual impacts of proposed projects and land use changes
   d. visual access should be an important consideration in both guidelines and the review process
   e. techniques (simple and preferably low cost methods) to improve existing development should be included

5. Encourage communities to re-examine present or develop local zoning or land use control measures that further aesthetic quality.

   a. include aesthetic concerns as a requirement in the local planning process
   b. develop zoning provisions that include aesthetic quality concerns
   c. provide funding and technical assistance to localities to develop siting and design guidelines for their own communities, based on statewide guidelines, and zoning and land use controls

6. Increase public awareness of aesthetic resources and aesthetic quality concerns through education and discussion.

a. develop informational literature
b. hold public meetings
c. develop scenic and cultural tours to promote awareness
d. consider preparation of a guidebook for use by coastal developers and property owners that incorporates aesthetics into site planning and design

Appendix

Federal Policies and Programs

National Environmental Policy Act of 1969 (42USC § 4321, PL 91-190

Water Resources Planning Act of 1965 (Hudson River Level B Study and the Long Island Sound Regional Study)

Wild, Scenic and Recreation Rivers Act (16USC § 1271, PL 90-542)

National Historic Preservation Act (16USC § 470, PL 89-665) and Executive Order 11593

Federal Water Pollution Control Act Amendments of 1972 (includes 201, 203 and 208 programs)

HUD 701 Program

Wilderness Act of 1964 and the Eastern Wilderness Act of 1975

River and Harbor Act of 1970 (PL 91-611)

Federal Aid Highway Act of 1976 (PL 94-280)

Department of Transportation Act (49USC § 1651, PL 89-670)

Highway Beautification Act of 1965 (PL 89-285)

Urban Beautification and Improvement Act (42USC § 1500, PL 89-117)

Housing Act of 1961 (42USC § 1500, PL 87-70)

National Flood Insurance Act of 1968

Land and Water Conservation Fund Act of 1965 (16USC § 460, PL 88-578)

National Pollutant Discharge Elimination System (NPDES)

National Oceanic and Atmospheric Administration (research grants to the New York Sea Grant Institute

United States Coast Guard

State Policies and Programs

State Environmental Quality Review Act (ECL Article 8)

Wild, Scenic and Recreation Rivers Act

Nature and Historic Preserve Trust (New York Conservation Law § 2-0101)

Freshwater Wetlands Act (ECL Article 25)

Mined Land Reclamation Law (ECL Article 23, Title 27)

Participation in Flood Insurance Programs (ECL Article 36)

Water Resources Law (ECL Article 15, Titles 3 and 5)

Urban Cultural Parks Act

Park and Recreation Land Acquisition Act (New York Conservation Law § 1-o701)

Environmental Quality Bond Act

Environmental Conservation Law, Article 1

Environmental Conservation Law, Article 49 -- Protection of Natural and Man-Made Beauty

Parks and Recreation Law

New York State Development Plan

New York Statewide Comprehensive Outdoor Recreation Plan of 1972

Hudson River Valley Commission (Executive Law Article 25, Section 721)

State A-95 Clearinghouse

St. Lawrence-Eastern Ontario Commission

Great Lakes Basin Board

International Commission for the Niagara River (and other New York-Canadian agreements related to tourism)

State Pollutant Discharge Elimination System (SPDES)

Agricultural District Law

Floodplain Regulations

Stream Modification

Department of Transportation -- "Scenic Enhancement of Highways" Program

Mined Land Reclamation Law (ECL Article 23, Title 27)

Local Policies and Programs

Zoning Ordinances

Subdivision Regulations

Municipal Planning

HUD 701 Program

Environmental Impact Statements

Local Conservation Commissions

County Environmental Management Councils

Hudson River Conservation Society

The Center for the Hudson River Valley

# AIR QUALITY MANAGEMENT

Task 2.12

# AIR QUALITY MANAGEMENT

## Introduction

Since all of the State's coastal areas are affected by Federal and State policies to abate and prevent air pollution, there needs to be extensive coordination between coastal management planning and the State's air pollution control program. The Coastal Zone Management Act reflected this need by stating requirements that any air pollution control program developed pursuant to the Federal Clean Air Act be incorporated into any coastal management program. Given the State's authority to regulate pollution sources through traditional "stack controls" and by implementation of land use strategies, proper coordination can result in the two programs being mutually supportive.

Lack of appropriate coordination between these programs could result in air pollution control program having detrimental impacts on the ability to achieve CZM objectives. While not widespread, this would occur in important coastal regions where explicit or implicit strategies under the air quality programs could conflict with proposed land and water uses. At present there is insufficient coordination between these two programs. Steps must be initiated, so that the air pollution control program can be effectively utilized to support CZM objectives.

The 1977 amendments to the Clean Air Act (PL 95-95) mark major new national initiatives, especially with respect to preventing air pollution through controlling the location of economic activity. It is therefore necessary that steps be taken immediately to link coastal management planning and programming to the states' air pollution control activities.

## Air Quality Issues

New York State through the Department of Environmental Conservation (DEC), as required under the Clean Air Act Amendments of 1970, developed a State Implementation Plan (SIP) in 1972-73 to achieve national air quality standards for six pollutants: particulates, sulfur dioxide ($SO_2$); nitrogen dioxide ($NO_2$); oxidants; carbon monoxide (CO); and hydrocarbons (HC).

Plans had to be submitted to the U. S. Environmental Protection Agency (EPA) to attain primary standards (to protect public health) for almost the entire state within the targeted date of July 1, 1975. Secondary (more stringent standards) were to be achieved as soon as possible, but the law allowed consideration of economic and technological factors and there could be delays in attainment dates into the 1980's.

While all areas of the State were addressed in the SIP, the major problems are the New York Metropolitan and Buffalo Areas, where concentration of industry and population is the greatest. All of the State's coastal regions were covered in the SIP, since concentrations of pollutants for some or all of the six contaminants were above national standards on a statewide basis. Because of problems in achieving these standards, EPA allowed delays in attainment until 1977. However, standards for some pollutants, oxidants statewide and particulates and carbon monoxide for some areas, still have not been achieved.

The thrust of the State's strategy to achieve the standards has been based principally upon implementation of regulations to reduce stationary source pollution emissions from existing major industrial plants, fossil fuel electric generating facilities and municipal incinerators. For New York City, DEC also was required to reduce motor vehicle emissions. It developed with the participation of New York City a far reaching and controversial Transportation Control Plan (TCP) that called for various traffic control regulations and the discouragement of vehicular access to Manhattan's central business district. Except for this plan, the focus of the State's air pollution control program was on traditional control at the "smoke stack" rather than land use regulations.

Federal Court interpretations of the Clean Air Act led to EPA mandates to New York and other states to revise their SIP's. Present requirements include strategies to maintain air standards in light of economic growth and development, and regulations to ensure that all "clean airs" of states not be allowed to incur significant deterioration in air quality.

These latter requirements now necessitate the State's air pollution control program to focus upon controlling the location of major new sources of pollution and the regulation of land use. The 1977 amendments to the Clean Air Act (PL 95-95) reinforce this need and will require the State to implement regulatory and other management mechanisms that may require restrictions on new industrial facilities in areas where standards are not being achieved.

As a result of federal mandates, the State will be addressing the prevention and control of air pollution through modifications and extensions of its SIP with strategies, regulations and standards that will directly impact land uses in coastal areas. Specific actions that the State must accomplish that are of critical importance to the coastal management program include:

1. Revision of the SIP to prevent significant deterioration of air quality in all "clean air areas" of the State.

2. Revision of the SIP to attain standards in current non-attainment areas.

3. Revision of the SIP to ensure the growth and development will not affect the maintenance of standards over time.

Under these three requirements, the DEC with the participation of other state and local agencies has initiated major planning, regulatory and management programs to achieve mandated federal clean air objectives. Many of these objectives can only be achieved through existing and new regulatory mechanisms that restrict pollution emitting sources (large facilities and the agglomeration of smaller activities) from numerous locations in the State's including coastal areas.

Chautauqua County has identified another issue with regard to air quality and coastal resources. Sulfur dioxide and ozone are believe to be a threat to the viability of the grape industry.

## Air Quality Existing Policies

### Significant Deterioration

Congress has established three land area classifications that are tied to specific allowable increments in particulate and sulfur dioxide ($SO_2$) over baseline levels. Class 1 standards are set to protect pristine areas, Class 11 to allow moderate development and Class 111 to permit more intensive development.* The law mandates Class 1 designations for certain federal lands such as national parks and wilderness areas and makes other federal lands such as national monuments and seashores ineligible for Class 111 designation.

Most land areas in New York State are now designated Class 11 under PL 95-95, but the Governor can redesignate to Class 1 or 111 after following prescribed procedures:

- Assessment of the environmental, economic and energy effects of re-designation
- Public hearing on proposed re-designation
- Concurrance on re-designation by local governments representing the affected areas in the form of legislation and/or resolutions
- Consultation with the state legislative leaders on this matter.

The EPA administrator must approve of the Governor's redesignations except in instances where the above and other procedural requirements have not been met.

All areas within the State's coastal regions, except areas of current non-attainment of standards (see following sections), can be subject to potential re-designation to Class 1, Class 11.

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* Congress had mandated EPA to set standards for $No_x$, HC, CO oxidants within 2 year

or by no action, continuation of the current Class 11 designation.* This process will directly shape important land use and economic development prospects by restricting major air emissions industries and facilities from certain locations or allow their potential expansion in other locations. Implications for the coastal management program of the significant deterioration land use categories are:

1. Re-designation to Class 1 status will support the preservation of the coastal natural environment, protect GAPC's and allow some development but, not at great concentrations and without "heavy industry" attributes. Major fossil fueled electric generation plants and other energy facilities, will not be able to locate in Class 1 areas.

2. Class 11 areas can support fairly moderate economic growth and industrial development, however, concentration of heavy industries such as refinery and petro-chemical complexes, steel mills, cement plants or major power plants probably cannot locate within Class 11 areas. The determination of locational prospects for any type of these facilities in Class 11 areas will be dependent upon technical analysis and studies.

3. Re-designation to Class 111 areas could permit relatively intensive economic development and can absorb major heavy industries. These industries will, however, have to meet stringent federal performance standards with respect to emissions limitations. In all the area classes, national air quality standards will have to be maintained irrespective of the standards regarding the pollution increases allowed under each of the designations.

Most areas of New York State except for the very "clean" areas in the Adirondacks and north country have moderate to heavy concentrations for particulates and $SO_2$. Therefore, as a practical matter, the increases allowed under Class 111 cannot be fully used because of requirement to maintain national standards.

Because of the dispersion characteristics of air pollutants, DEC will have to establish the air quality relationship within coastal regions in order to develop a comprehensive re-designation strategy. It will be difficult, for example, to designate as Class 1 any areas subject to substantial air quality degradation from adjacent locations because of prevailing wind conditions.

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* Detailed review is required of federal lands such as Camp Drum in Jefferson County, the Fire Island National Seashore and the National Gateway Park with respect to their status under the law.

The classification of small discrete areas as Class 1 within close proximity to large Class 111 areas, or even Class 11 areas, may not be possible. Because of air quality conditions, these potential limitations are likely to mean that GAPC's may not be able to be given deserved Class 1 designations if they are interspersed among prime industrial land use locations needing Class 111 designations. The alternative "trade-offs" associated with these types of situations will require considerable assessment.

Attainment of Standards

The 1970 Clean Air Act amendments required the states to achieve primary national air standards by 1975 with extensions allowed by EPA to 1977 in situations where technological related conditions make the 1975 target unfeasible. Currently, primary standards are not being achieved in many areas of the State.

For the coastal regions the non-attainment areas are identified in Chart 1. While these areas are geographically limited, represented among them are the core areas of two of the State's largest urban areas - New York and Buffalo.*

In enacting the 1977 Clean Air Act amendments, Congress recognized the reality of current non-attainment. The amendments extend attainment for the problem areas in New York and other states to 1982. In the case of severe oxidant or CO problems, a state may be granted further extensions to 1987 after demonstrating the infeasibility of achieving standards by 1982 with "reasonably available strategies". A revised SIP must be submitted by states in 1979 containing the development of control programs and authority needed to achieve national standards.

A major issue with respect to non-attainment areas, one that impacts economic development and land use and, therefore, the coastal management program, concerns the ground rules for allowing expansion of major industrial and other potential emissions sources. The 1977 amendments re-affirm EPA policy prommulgated in 1976 on "emissions offset". This required that any new or expanded facility generating emissions obtain equal reductions in emissions from existing sources in the non-attainment area. This policy was meant to provide a means of allowing industrial development in non-attainment areas since strict interpretation of the 1970 act would have meant the barring of any new (or expansion of) major emission sources from non-attainment areas.

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* The special situation with respect to oxidants is discussed in the footnote in Chart 1

The 1977 amendments allow states to use the EPA "emissions offset policy" or an approved state management program and permit procedures which insures progress towards achieving air standards by the target date. The offset policy or approved state program would be the means by which new emissions sources could locate in areas of the coastal regions deliniated in Chart 1.

As a practical matter, it is likely to be extremely difficult for any major emissions source, such as a large chemical plant or fossil fueled utility power plant, to locate in any of the State's non-attainment areas. The State would have to document where the emissions offset were obtained or demonstrate the fact that new emissions sources are not inconsistent with an approved attainment program.

The importance of non-attainment policies for coastal management planning is two fold:

1. For overall land and water uses the CZM program must incorporate the inherent restrictions imposed on the location of many industries as a result of requirements to adhere to the emissions offset for the non-attainment areas noted in Chart 1. While the restrictions are most applicable to heavy industries, federal and state non-attainment policies might affect any new plant or facility that meets category and size criteria for permit requirement. Thus, many large commercial and medium size industrial facilities are likely to fall under the "emissions offset" policy.

2. For the management and protection of natural resource GAPC's, stringent Federal and State policies to improve air quality in non-attainment areas can be supportive of this key element of the State's Coastal Management program. State authority under the air pollution control program can be used to help achieve land use objectives for GAPC.

Maintenance of Standards

A 1973 Federal Court decision on State Implementation Plans with respect to the need to address long-term maintenance of standards has required all states to develop a formal maintenance planning process under EPA regulations. The focus of this effort is: to identify areas within states where economic growth and development might result in violation of air quality standards over the next 15 years; to undertake technical analysis to determine if growth would, in effect, result in violation of pollutant standards; and, to develop any necessary maintenance strategies for insuring that standards are maintained.

If maintenance strategies are needed they are to be developed as revisions to the SIP and submitted to EPA. The 1977 Clean Air Act amendments do not seem to mandate any specific substantive changes in the maintenance planning process. However,

Chart 1: Coastal Regions in New York State Where Federal Primary Air Quality Standards Are Not Being Achieved: Status as of July 1977

| Region | Sub-Areas | Pollutant |
|---|---|---|
| Long Island | All | Oxidants[1] |
| New York City | All | Oxidants[1] |
| | Manhattan CBD | CO |
| Hudson Valley | All | Oxidants[1] |
| Eastern Great Lakes | All | Oxidants[1] |
| Western Great Lakes | All | Oxidants[1] |
| | Niagara Falls, Buffalo and environs | Particulates |

Source: NY State DEC, Division of Air Resources - August 1977.

1 The statewide photo-chemical oxidant problem (smog) reflects a combination of high instate natural and man-made levels of ozone plus the impact of the interstate transport of hydrocarbon & $NO_x$ from points west of New York. To date, strategies to control this problem have suffered from technological difficiencies and lack of interstate cooperation.

some impacts on the schedule for state submission of any necessary plans are likely as a result of new federal mandates for submission in 1979 of overall revisions to the existing SIP.

New York State has 10 designated maintenance areas, five of which include all or part of the coastal regions as indicated on Chart 2. These ten areas were identified and submitted to EPA for designation in 1974 by DEC after consultation with regional and local planning agencies. Chief elected officials of local governmental units in these areas were notified by the Department of their status and the general work program that should proceed in accord with EPA guidelines.

The maintenance planning process represented the first instance of major statewide involvement of regional and local agencies, other than county health departments in the State's air pollution control program. This increased intergovernmental planning focus was needed for two basic purposes - to obtain local information on growth patterns and land uses for inputs into the regional technical analysis and to ensure that the local interest is represented in the development of any strategies and regulations that might be necessary to maintain standards.

At the present time intensive technical analysis is being done by DEC to ascertain future air quality conditions. Basic, demographic and land use data is being provided by a number of regional planning agencies. EPA regulations require that this data base be consistent with other "inventory type" information being developed under areawide waste treatment management planning (Sec. 208) of the 1972 federal Water Pollution Control Act amendments, HUD housing and land use planning (Sec. 701) and the CZM program.

The sequence of major elements of the maintenance planning process for all of the designated areas is as follows:

1. Development and projections of the emissions inventory.
2. Modeling of current and future air quality.
3. Submission of technical analysis and finding to USEPA.
4. Development of draft maintenance control strategy document where required by DEC with inputs from state, regional and local agencies.
5. Public hearing.
6. Submission of maintenance plans (revision to SIP) to EPA.

All of the above elements were scheduled to be accomplished during the 1977-1979 period with specific staging of each element for individual maintenance areas specified in DEC submissions to EPA. As noted above, however, the scheduling is likely to be modified consistent with the new mandates for overall SIP revisions under the 1977 Clean Air Act amendments.

Chart 2: Air Quality Maintenance Areas Within the States Coastal Regions*

| Maintenance Area | General Boundaries | Coastal Region | Designated Pollutants |
|---|---|---|---|
| NY Metro Area | NY City, Nassau, Suffolk Westchester and Rockland Counties | Long Island New York City and part Hudson River Valley | Particulates $SO_2$ NOx Oxidants and CO |
| Mid-Hudson | Orange and Putnam Counties and valley areas of Ulster and Dutchess | Hudson River Valley | Particulates |
| Capital District | Most of Albany and Schenectady Counties, Western Rensselaer and Southern Saratoga County | Hudson River Valley | Particulates and $SO_2$ |
| Rochester | Monroe County, Western Wayne and parts of Ontario and Livingston | Western Great Lakes | Particulates |
| Niagara Frontier | Erie and Niagara Counties | Western Great Lakes | Particulates and $SO_2$ |

* The five other maintenance areas in the State are: Utica-Rome, Binghamton Area, Syracuse Area, Elmira-Corning Area and Jamestown Area. They have been designated for particulates.

The implications of the State's maintenance planning program for coastal management planning could be substantial. If widespread air maintenance strategies directed at controlling the location of emissions sources are required to maintain national air standards over the 15 years, this will affect land and water uses in the coastal regions substantially.

Work on key elements of the maintenance planning process has not progressed to the stage where it is possible to identify future air quality problems and, therefore, the necessary control strategies - traditional source control approaches or land use restrictions. However, based upon information to date and DEC policies, the following conditions with respect to implications for coastal management planning can be identified:

1. Widespread maintenance control strategies are not likely to be needed for most of the maintenance areas in the coastal regions because of relatively modest expections with respect to overall economic growth and the expansions of major emissions sources.

2. Maintenance of standards may be a problem over the next 15 years for specific locations in the following coastal regions.
   . Western Suffolk County
   . Hudson River Valley
      .. Urban areas and fringes in Orange, Dutchess, Ulster and Putnam
      .. Suburban areas within the capital district
   . Urban fringes of the Rochester area.

3. DEC policy with respect to the development of any required maintenance strategies and regulations will be to identify and implement, where feasible, traditional air pollution control techniques (at the smoke stacks) rather than seek land use of controls.

4. The department will only seek to develop land use of controls under the following conditions:
   . If traditional control techniques are not effective
   . If there is is an explicit state/local preference for them
   . If there is capability at the local level to implement land controls.

When the State's maintenance planning analysis is completed, the potential implications for coastal management planning will be more evident. However, the Coastal Management Program cannot assume a passive position and react after the fact. Explicit actions to integrate coastal and air planning are needed at this point. The next section addresses this issue and others regarding the relationship between the State's air programs and coastal management objectives.

## General Policy Direction

The recommended policy directions for the Coastal Management program with respect to the issues of coordination with and utilization of the states air program to achieve coastal management objectives is based upon the following air program outlooks:

1. First priority of the State's air pollution control program, with respect to meeting federal mandates under the 1977 Clean Air Act amendments and prior legislation, will be concentrated within the next year on revising the SIP so as to attain standards in present non-attainment areas. Additionally, if EPA promulgates air standards for additional pollutants, such as lead, this will receive a high priority.

2. Current state programming efforts for air quality maintenance will undergo some changes with respect to intergovernmental arrangements and program time schedules. In keeping with the 1977 amendments, greater participation at the local level will be sought by DEC and the timing of maintenance plans will be shifted to be consistent with the overall 1979 target for SIP revisions.

3. Major technical, administrative and intergovernmental coordinative requirements associated with implementation of significant deterioration regulations can be expected to result in a slow statewide implementation during the next 1 to 2 years. The highest priority for implementation will be in those specific situations where re-designation is needed to Class lll to allow the siting of energy facilities, the expansion of existing industrial complexes, or the locations of new plants. Only limited overall re-designation proceedings for coastal areas are likely because of DEC budget and staffing limitations. Action at the top levels of DEC and state government, with respect to program priorities and resources, will be necessary to complete a comprehensive statewide re-designation process by 1980.

The following major policy and procedural initiatives are necessary to ensure that the State's air program will contribute to the needs of coastal management objectives.

1. Organization of an Air Quality Technical Task Force with representatives from DOS, DEC and local governmental units participating in the program with the immediate mission of:

   - Identifying the detailed interface of air program elements and CM elements, statewide and for each of the coastal regions.

. - Reviewing developments at the federal level such as the issuance of EPA guidance documents and regulations required under the 1977 Clean Air Act amendments that impact the Coastal Management Program.

. - Developing recommendations with respect to how state air quality policies should be formulated and programming be implemented to maximize contributions to CM goals and objectives.

. - Distributing technical information and reports on the state's air program.

2. Submission to DEC by the Department of State, based upon consultation with appropriate local governments and the technical work of the Task Force, priorities from the perspectives of the CM program with respect to re-designation areas for significant deterioration purposes to include:
   . Recommendations of areas for continuation of Class 11 status
   . Recommendations of areas for re-designation to Class 1 or 111 status with priority rankings.

3. Submission to DEC by the Department of State, based upon consultation with appropriate local governments and the Task Force, a position document on the interests of the CM programs with respect to SIP attainment and maintenance revisions to include:
   . CM objectives with respect to land and water uses in each coastal region.
   . Recommendations for air quality strategies that are consistent with CM program goals in maintenance areas within coastal regions.

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