

ENVIRONMENT

A POLICY ELEMENT
OF THE
COMPREHENSIVE DEVELOPMENT PLAN



Monroe County, New York

RESOLUTION ADOPTING ENVIRONMENT ELEMENT OF THE COUNTY COMPREHENSIVE DEVELOPMENT PLAN

Intro. No. 102

RESOLUTION NO. 90 OF 1979

Adopting Housing Policy, Environmental, Transportation, Wastewater, and Land Use Elements of Monroe County Comprehensive Development Plan; Limiting Implementation Thereof.

WHEREAS, the Monroe County Charter provides for the adoption and annual review and update of an official comprehensive development plan, or one or more parts thereof, for the County of Monroe; and

WHEREAS, the Monroe County Legislature recognizes that growth and development are desirable and will occur in Monroe County; and

WHEREAS, the Monroe County Legislature recognizes a need to provide a comprehensive development plan as a guide to growth and development in Monroe County so that, to the greatest extent possible, decisions about where development will occur will be made with full knowledge as to the costs which will accrue as a result of such development; and

WHEREAS, it is the intent of the Monroe County Legislature, in adopting such a plan, to:

- (1) keep down the cost of development to Monroe County taxpayers by encouraging development to concentrate in areas which already have the public services needed to support such development; and
- (2) stimulate economic development, revitalize the City of Rochester and other urban areas of the County, and protect the environment; and
- (3) set policies with which County government will conform in its actions that affect development of the County; and

WHEREAS, the adoption of such a plan, or one or more parts thereof, does not transfer land use control powers or any other powers of local government to the County; and it is not the intent of the Monroe County Legislature, in adopting such a plan, to effectuate any such transfer of land use control powers or any other powers of local government; and

WHEREAS, the Monroe County Legislature has heretofore adopted in principle the following elements of the County comprehensive development plan: (1) Housing Policy Element, adopted October 24, 1978 by Resolution No. 446 of 1978; (2) Environmental Element, adopted November 16, 1978 by Resolution No. 487 of 1978; (3) Transportation Element, adopted November 30, 1978 by Resolution No. 527 of 1978; (4) Wastewater Management Element, adopted January 16, 1979 by Resolution No. 2 of 1979; and (5) Land Use Element, adopted February 6, 1979 by Resolution No. 23 of 1979;

Now, Therefore, Be It Resolved by the Legislature of the County of Monroe, as follows:

Section 1. Pursuant to Article VII, Section 706 of the Monroe County Charter, the following parts of the comprehensive development plan for the County of Monroe are hereby adopted:

- (1) Housing Policy Element, Draft 2, dated August, 1978;
- (2) Environmental Element, Draft 2, dated September, 1978;
- (3) Transportation Element, Draft 2, dated September, 1978;
- (4) Wastewater Element, Draft 2, dated December, 1978;
- (5) Land Use Element, Draft 3, dated January, 1979, as amended.

Section 2. Inasmuch as this Body is currently reviewing extensive proposed revisions of the Monroe County Charter, including proposed revisions to Article VII thereof relating to County planning functions, the implementation of the above elements of the County comprehensive development plan shall be limited, pending final determination of said proposed Charter revisions, to those actions and projects initiated or financed by the County of Monroe; and those actions, projects or other matters currently reviewed or permitted by the County of Monroe, its departments or other agencies, pursuant to authority other than that contained in the present Section 706 of the Monroe County Charter.

Section 3. This resolution shall take effect immediately.

Planning and Economic Development Committee, February 27, 1979 - CV: 5-1

File No. 78-097

ENVIRONMENT

**A Policy Element of the
County Comprehensive Development Plan**

September 1978

**prepared by
Monroe County Department of Planning**

INTENT OF THE COUNTY COMPREHENSIVE DEVELOPMENT PLAN

The comprehensive development plan is intended to serve as a guide for achieving the broad social, physical, and economic development objectives of the county. The plan is intended to give direction to the actions of the county legislature, and of departments and other agencies, as such actions affect the development of the county, and it is intended to guide all official county plans and policies for both services and capital facilities, including but not limited to county plans and policies concerning human resources, public safety services, physical and environmental resources, and land use. Although the authority of the plan over the actions of local governments and private interests is limited to that authority set forth in sub-section 503.C below and in section 504 of this charter, the plan is intended to serve as a general guide to such actions as they affect the development of the county. The plan, through its development and continuing amendment, is intended to serve as a means for reviewing, modifying, and integrating all individual plans before such plans are implemented. The plan thereby is intended to assist in achieving the following with respect to community services and facilities: coordination; consistency in application of policies and accepted standards; public and official evaluation of the effectiveness of governmental performance; elimination of unnecessary duplication; and maximum utilization.

(Section 503. B of the Charter of the County of Monroe)

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SUMMARY

This report presents the second draft of the Environmental Element of the Monroe County Comprehensive Development Plan. This draft includes revisions to the first draft that were suggested by the Planning and Economic Development Committee of the Monroe County Legislature.

The purpose of this Environmental Element is to guide county decisions as they affect the natural environment. This element identifies the important environmental resources which need to be protected and sets forth county policies for helping to protect these resources.

The resources which are identified as needing protection are our air and water resources, wetlands, floodplains and drainageways, woodlands, steep slopes and areas of erosive soils, and the Lake Ontario shoreline. Although farmland may be considered an environmental resource, policies for protecting farmland are given in the Land Use Element rather than the Environmental Element.

One of the limitations to the policies in this Environmental Element should be pointed out. The policies do not address the role of public land acquisition as a means of protecting environmental resources or of providing public access to those resources. Such policies will be developed when the Parks and Recreation Element is prepared and will be included at a later date in this Environmental Element.

This report sets forth three general policy directions for protecting environmental resources:

1. Policies are given to govern the actions of county agencies which build capital projects so that these projects will not disrupt environmentally sensitive areas either directly or by encouraging adverse kinds of development.
2. Policies are given to guide county development review agencies in their review and approval of private development proposals. There are legal limits to the authority of county review agencies to modify or disapprove of private development proposals. Within these limits, county agencies are

directed to encourage private development to be consistent with the need for protecting the environment.

3. Policies are given directing the Department of Planning and the Environmental Management Council to work with local governments in the development of environmental zoning and other regulations. The present regulations in most municipalities are inadequate for assuring that private development will be consistent with the need for protecting the environment.

The report concludes with a brief listing of the kinds of actions which would have to be taken by the county and by local governments to implement the policies. The listing serves to illustrate some of the effects that would result from the adoption of the policies by the Monroe County Legislature.

INTRODUCTION

Nowhere is the interrelatedness of our choices more apparent than in the Environmental Element of the County Comprehensive Development Plan. All of the other elements are related in one way or another to the Environmental Element. The elements which have a particularly close relation to the Environmental Element are the transportation, utilities, and land use elements.

It is necessary, therefore, to limit the scope of the Environmental Element in order to avoid unnecessary redundancy with other elements of the plan. The Environmental Element focuses specifically on the protection of the important environmental resources in Monroe County: the wetlands, woodlands, floodplains, and other land resources and our air and water resources. This element brings up matters of concern to other elements of the plan, such as transportation, only to the extent that such concerns have a very immediate relation to the protection of environmental resources. In developing policies for the other elements of the plan, the concern for environmental protection has been taken into consideration not only to avoid conflicts with the Environmental Element but also to reinforce its objectives.

One of the limitations to the scope of this Environmental Element must be made clear. This element does not address the role of public land acquisition as a means of protecting environmental resources or of providing public access to those resources. This issue will be addressed to some extent in the Parks and Recreation Element of the County Comprehensive Development Plan. But there is also a need to address this issue in the Environmental Element, as there is a significant role for the county and other levels of government to play in acquiring land, whether in fee simple or through easements, for conservation purposes as well as for park and recreation purposes. Therefore, land acquisition policies will be included in the Environmental Element once the Parks and Recreation Element is prepared. In addition, cross-referencing between the land acquisition policies in the Parks and Recreation Element and those in the Environmental Element will be provided.

The discussion, goals, and policies in this report are not new. They are derived from the *Proposed Monroe County Comprehensive Plan* (1975), prepared by the Department of Planning, and from the report *An Approach to Environmental Management in Monroe County, 1976*, prepared by the Environmental Management

Council. The reader is referred in particular to the latter report, which was adopted in principle by the Monroe County Legislature. It serves as a technical background report to this report, providing maps and descriptions of the environmental resources which are discussed only briefly in this report.

SOME BASIC ISSUES

Before focusing on the environmental resources which need protection, it is worth considering some basic issues underlying the protection of environmental resources. These issues often arise when one talks about the adoption of public policies to protect the environment.

Environmental Protection Versus Accommodating Urban Growth Demands

Can we provide for urban growth and at the same time protect the environmentally sensitive land resources in Monroe County: the agricultural cropland, floodplains, highly erosive soils (including steep slopes), wetlands, and woodlands? The answer to this question is "yes," at least for a considerable time into the future.

There is more than enough land available to meet urban development needs in Monroe County until well beyond the year 2000 without developing environmentally sensitive land. The relation between the overall needs for urban development and environmental protection is shown in Table I. (Appendix A gives the procedures used to derive the table.) The table indicates that 54% of the county land area consists of environmentally sensitive land; the remaining 46% of the county land area is suitable for development. The presently urbanized area encompasses 22% of the total county land area, and an additional 5% of the county land area is projected to be needed for urban growth by the year 2000. If we assume that the presently urbanized area consists only of land which is suitable for development (not environmentally sensitive land)¹ and if urban development until the year 2000 takes place only on such land, then there would remain close to 20% of the county land area which would be suitable for accommodating urban development after the year 2000.

1. This assumption, of course, is not entirely valid, as some of the presently urbanized area consists of floodplains or other environmentally sensitive land. By making this assumption, however, we are understating our case that there is more than enough vacant land which is suitable for development than is need to accommodate projected urban growth until the year 2000.

TABLE I
 ENVIRONMENTALLY SENSITIVE LAND AND DEVELOPABLE LAND
 MONROE COUNTY
 1977

Type of Land	Percent of County Land Area
Environmentally Sensitive Land	54.3
Agricultural Cropland	25.9
Floodplains	4.5
Highly Erosive Soils (Including Steep Slopes)	4.1
Wetlands	3.8
Woodlands	16.0
Land Suitable for Development	45.7
* Presently Urbanized	22.0
Needed for Urban Growth, 1977-2000	5.0
Available for Urban Growth after 2000	18.7

*Not all of this land is suitable for development, as some of it consists of floodplains or other environmentally sensitive land.

In actuality, the table understates the availability of land which is suitable for future growth. This is because certain of the categories in the table overlap and because the estimates of the presently urbanized area and the area needed for future growth are probably on the high side. (See Appendix A for an explanation of these limitations.) Given these limitations the basic point may be more strongly stated: the overall availability of land for future growth should not serve as a constraint to protecting environmentally sensitive resources.

Environmental Protection Versus Economic Growth

Some people view environmental protection and economic growth to be conflicting objectives. While conflicts do arise between these objectives, the objectives commonly serve each other. Often what is good for the environment is also good for the economy.

The attractiveness of an area for economic development is dependent to some extent on the attractiveness of its natural environment. Clean air and water, well protected shorelines, woodlands, and wetlands -- these and other environmental

amenities make for a better life and attract industries to locate or expand in an area, particularly the "clean" kinds of industry which most people want.

Protecting the environment can result in direct and tangible economic benefits. Development which disregards the limitations of the natural environment can be costly, not only to the individual who chooses to move into the development but also to the public at large.

To take just one example where environmental protection makes economic sense, consider the public expense which can result from filling in wetlands. Wetlands play a major role in preventing flooding problems by absorbing water during periods of heavy runoff. Once they are filled in and paved over, downstream flooding increases, bringing direct cost to private property owners and often costs to the general public, which is called upon to pay the price of constructing flood retention areas, channelizing streams, or undertaking other measures to prevent flooding problems.

While environmental protection and economic objectives often go hand-in-hand, conflicts do arise. Consider the problem of setting standards for controlling air and water pollution. Probably no one would agree to a standard of zero pollution. Such a standard, if it is at all feasible, could be achieved only at an enormous cost, which we would all bear through higher taxes and higher consumer prices. Clearly the standards must strike a compromise, and the basic public issue is one of determining just what that compromise should be.

The environmental protection policies in this element attempt to take into account economic effects. They are intended to serve not only the objective of environmental protection but also the objective of providing a climate which will be conducive to the long-range economic development interest of the county.

Environmental Protection Versus Other Planning Objectives

There are many other objectives in the Monroe County Comprehensive Development Plan which could come into conflict with the objective of environmental protection. As indicated in the Introduction, potential conflicts have been taken into consideration in this Environmental Element as well as the other elements of the plan.

Fortunately, the objective of environmental protection is generally consistent with the objectives of other elements. To illustrate this, we will in other elements briefly consider here how the objectives of other elements of the plan relate to the objective of environmental protection.

One of the objectives of the Land Use Element is to prevent urban sprawl. A major purpose of this objective is to reduce the costs of providing the public facilities needed to serve new development, such as improvements to highways and new sewer and water facilities.² Preventing urban sprawl, however, also serves important environmental objectives, including the protection of productive farming areas in the county and the conservation of the energy consumed in meeting transportation needs.

One of the objectives of the transportation element is to encourage greater usage of the public transportation system. This objective serves not only transportation purposes but also the environmental purpose of reducing air pollution and conserving energy resources.

Thus, the policies in the other elements of the Monroe County Comprehensive Development Plan are supportive of the policies in this environmental element. Where conflicts have arisen, the necessary trade-offs have been made.

ENVIRONMENTAL RESOURCES NEEDING PROTECTION

The policies set forth later in this element are specifically related to the protection of the important environmental resources in Monroe County. In order to provide some context for understanding the policies, this section briefly sets forth basic information on the resources which need to be protected. For maps and a more complete discussion of the resources, the reader is again referred to the Monroe County Environmental Management Council's *An Approach to Environmental Management in Monroe County, 1976*. Except where otherwise noted, the material in this section is taken from that document.

2. Such costs have been documented in many studies. Perhaps the most comprehensive and authoritative of these studies is *The Costs of Sprawl* (April 1974), prepared by the Real Estate Research Corporation for the President's Council on Environmental Quality, the U.S. Department of Housing and Urban Development, and the U.S. Environmental Protection Agency.

Wetlands

Wetlands include many types of areas, but they share one common characteristic: they contain predominantly water-tolerant types of vegetation. Included are such types as swamp trees, sedges, rushes, reeds, and floating vegetation.

There used to be, before European settlement in Monroe County, about 63,000 acres of wetlands of all types in the county. Extensive draining and filling has reduced the wetland acreage today to 16,335 acres, or 3.8% of the county land area.

Only a few decades ago many people thought of wetlands as essentially wasted land, unless they are to be used for refuse disposal or to be drained, filled, and developed. Today the value of wetlands for wildlife habitat is widely recognized. Wetlands offer irreplaceable habitat for fish spawning, for waterfowl, for pheasants, muskrats, and many other kinds of wildlife.

What is not so widely recognized is that wetlands serve many other important purposes. They help control flooding and soil erosion by absorbing heavy runoff. They serve as groundwater recharge and discharge areas. By removing sediments and nutrients, wetlands purify water. Many wetlands offer scenic beauty and provide a setting where one may explore his recreational or scientific interests.

At the same time, wetlands are generally unsuitable for development. They present serious flooding hazards. Their soils are very unstable and offer a poor foundation for structures, roads, and utilities.

These considerations suggest the need for adopting public policies to protect wetlands. The policies should be designed to prevent wetlands from being developed, unless it is shown that the wetland serves little useful purpose and that there are compelling reasons for developing it.

In response to the public demand for protecting wetlands, New York State enacted in 1975 the Freshwater Wetlands Act. The act sets up a procedure whereby permits must be obtained before certain wetlands can be filled, drained, or developed. Included are all wetlands of over 12.4 acres and those smaller wetlands

which are determined to be particularly valuable. The N.Y.S. Department of Environmental Conservation, which is responsible for designating the wetlands which come under the act, will soon complete its designation of wetlands in Monroe County, whereupon the act will come into effect locally.

Pursuant to the act, Monroe County adopted a county wetlands law in October, 1976, and all but a few of the municipalities in the county have adopted their own local laws. The county law, which gives permit-issuing authority to the Director of Planning, is limited in jurisdiction to those municipalities which do not adopt their own local laws.

The Freshwater Wetlands Act will do much to help protect wetlands in Monroe County. However, it will not assure this result. It will not apply to most of the wetlands which are smaller than 12.4 acres. Although the act gives county and local government the authority to prevent development in wetlands, there is no guarantee that this authority will be rigorously administered or that permits will not be granted indiscriminately. Such potential limitations point to the need for developing county policies on wetlands to complement and reinforce the provisions of the Freshwater Wetlands Act.

Floodplains and Drainage

Floodplains are being considered here together with the broader issue of drainage because they are very much a part of that issue. The principal natural purpose of a floodplain is to provide a place for the storage and gradual release of flood waters. Floodplain problems can be understood only in the context of the broader drainage problems of an entire watershed.

Floodplains, as defined by soil characteristics, cover 19,908 acres, or 4.5% of the county land area. Where the U.S. Army Corps of Engineers and the U.S. Department of Housing and Urban Development have mapped 100-year floodplains based on topographic, hydrologic, and other considerations, the floodplains are more extensive than those defined by soil characteristics.

Improper development within a floodplain or elsewhere in the drainage basin can cause serious drainage problems. Extensive development within a floodplain will

reduce the water storage capacity of the floodplain, causing flooding to occur outside its limits. Development, wherever it occurs, will increase runoff from storm water by removing vegetation and by creating impermeable surfaces, such as driveways and rooftops. If the runoff is not properly handled, flooding and other drainage problems can occur "downstream" from the development.

Perhaps no area of environmental protection has presented more difficult problems than the protection of floodplains. The pressures to develop certain floodplains have been intensive, and, with only a few exceptions, municipalities in Monroe County have not withstood these pressures through the adoption of effective floodplain regulations.

The costs of improper control over development and its effects on drainage are not precisely known, but they are staggering. Many thousands of families in Monroe County have had to pay a high price to repair flood damages. While many property owners in floodplains today are given some protection against such costs through the National Flood Insurance Program, the general public has borne much of the cost of this program by subsidizing the insurance rates. Further, the public at large has paid a high price to provide for flood retention basins or other measures needed to redress the drainage problems brought on by improperly controlled development.

At the root of the problem has been the fragmented approach that has been taken to controlling drainage problems. Regulation has been left entirely in the hands of the thirty municipalities in Monroe County. Yet the flow of water does not respect municipal boundaries. Municipalities in the upper reaches of a drainage basin have had little incentive to provide for adequate control over development which causes drainage problems outside their limits in "downstream" municipalities.

It is clear, therefore, that there is a county role to be played in the regulation of drainage, as the county jurisdiction better encompasses drainage basins than do municipal jurisdictions. The Monroe County Legislature has recognized sewage disposal to be a metropolitan problem and has responded by creating a Pure Waters Agency and building a metropolitan system. It has also recognized solid waste disposal to be a metropolitan problem and has taken very significant steps to deal with the problem. Yet it has not fully recognized drainage to be a metropolitan problem, even though it is as much a metropolitan problem as sewage and solid

waste disposal and has equally serious consequences when left entirely to municipal control.

The Monroe County Legislature has taken one step toward addressing the metropolitan drainage problem. In 1973 it directed the Pure Waters Agency to coordinate the drainage planning and control efforts of the municipalities in the county. The Pure Waters Agency responded by attempting to bring together municipalities with common drainage problems. The efforts, however, failed because of an unwillingness by the municipalities to cooperate and a lack of authority by the Pure Waters Agency to require such cooperation.

Woodlands

Monroe County was once almost entirely covered by woodlands. Today there are few woodlands left in the county, and much of what remains is a compelling attraction to the developer. About 68,400 acres, or 16% of the county land area, remain in woodlands.

Woodlands are an important environmental resource requiring some form of public protection against indiscriminate development and logging practices. In addition to providing scenic beauty, woodlands serve important natural purposes. They offer sustenance and shelter to wildlife. They prevent erosion and replenish the soil. They purify the air.

In addition to protecting mature woodlands, there is a need for giving some form of protection to brushlands which are adjacent to mature woodlands or interconnect these areas. The brushland will eventually grow into forest, adding to our woodland acreage. Their protection will allow mature forest areas, which for the most part take the form of small isolated woodlots, to expand and become a more significant part of our environment and more productive as wildlife habitat.

Steep Slopes and Highly Erosive Soils

In addition to protecting woodlands, there is a need to protect areas of steep slopes and highly erosive soils. Indeed, the two objectives often go hand-in-hand, as many areas of steep slopes and highly erosive soils are covered with forest.

Soils having a 12% or steeper gradient and those with shallower gradients but having severe erosion potential cover 17,903 acres in Monroe County, or 4.1 percent of the county land area. Most of these soils are found in the southeastern part of the county.

The public purpose to be served by protecting areas of steep slopes and highly erosive soils goes beyond that of maintaining natural beauty and important wildlife habitat. Inadequately controlled development in these areas has caused serious problems of soil erosion and the pollution of waterways with sediments. Water quality in Monroe County will depend to a large extent on the use of effective erosion and sediment control practices in land development.

Lake Ontario Shoreline³

Perhaps the greatest environmental asset of Monroe County is the Lake Ontario shoreline, including its bays and ponds. Yet the shoreline has been misused and has been beset by problems arising from public neglect.

The Lake Ontario shore area contains many of the important environmental features already discussed. It has its share of wetlands, woodlands, and steep slopes. The shore area, like the rest of Monroe County, will benefit greatly from the adoption of effective public policies to protect these resources.

The shore area, however, has unique problems which would not be addressed through such policies. Included are such problems as:

1. The problem of lakeshore flooding.
2. The problem of inadequate public access to the lake and its bays and ponds, particularly to meet the rapidly rising demand for boating and fishing resulting from the state salmon and trout stocking program.
3. The problem of water pollution, which has caused county beaches to be closed to swimming.

3. For an analysis of Lake Ontario shoreline problems and preliminary proposals for dealing with them, see: Monroe County Department of Planning, *Monroe County Coastal Zone Management Program, Phase II* (May 1977).

4. The problem of septic system failures arising from the high water table and poor soil conditions along the shoreline.

These and other public problems have already been given considerable attention in a portion of the shorezone, Irondequoit Bay. The Irondequoit Bay Plan, prepared by the Department of Planning and the Irondequoit Bay Policy Committee, was adopted by the Monroe County Legislature in 1975.

Similar planning for the remainder of the shoreline is underway in the Coastal Zone Management Program. This program, which is entering its fourth year, is being carried out by the State of New York. Local participation in the program has been provided by the Department of Planning and the Monroe County Lake Ontario Shoreline Policy Committee. During this fourth year of the program, state legislation and other measures will be developed by the state for managing our coastal zone resources.

Until the Coastal Zone Management Program is completed, one cannot fully define appropriate county policies concerning the Lake Ontario shoreline. However, enough work has already been done on the program to begin now to identify certain policies which would be appropriate for county adoption.

Water Quality

Monroe County today is paying a high price to clean up its waterways with its multimillion dollar Pure Waters program. As a result of this program significant improvements have been seen in some streams in the northwestern part of county and in the lower Genesee River. Major improvements may be expected in the future in the Irondequoit Creek watershed and in other areas where newer elements of the Pure Waters system are being built.

Despite the improvements, water pollution remains a concern which must be addressed through well defined county policy. There are in general two major sources of water pollution: (1) sewage effluent and (2) runoff from the agricultural and urban land. The problems of water pollution from sewage effluent are dealt with in the Wastewater Management Element. This Environmental Element is limited to considering pollution from runoff.

At this time, however, neither the Wastewater Management Element nor the Environmental Element will give the water pollution problem the full attention that it needs. It is hoped that the Environmental Management Council, working with the Department of Planning, the Pure Waters Agency, and the Health Department, will continue to consider the water pollution problem and will help to define specific policies for adoption as part of the County Comprehensive Development Plan.

The water pollution problem in Monroe County is now being addressed through an extensive study under Section 208 of the Federal Water Pollution Control Act of 1972. The study is presently being done for this region by the N.Y.S. Department of Environmental Conservation (DEC) with technical and citizen input from the local level. Monroe County may this coming year enter into a contract with DEC to undertake locally portions of the study. It is anticipated that the study will provide a basis for the further development of county policies concerning water pollution.

Air Quality

The past twelve years have seen significant progress in controlling emissions from stationary sources of air contaminants in Monroe County. The county has responded, and must continue to respond, to a complex set of federal and state regulations to maintain or improve the quality of its air.

Monroe County and its bordering towns have been designated as an Air Quality Maintenance Area. This simply means that the county has been designated as an area where the present and projected air quality must be evaluated to insure that future growth will not result in violations of ambient air quality standards. The difficulties of estimating present and projected ambient air quality must be noted. Such estimates are based on complex dispersion equations which, as a result of our current lack of data, are not always accurate. Despite the limitations of such estimates, they must still be used in order to conform with federal air pollution regulations.

The county has been designated as being in contravention of standards for photochemical oxidants and carbon monoxide, both of which are largely the result

of transportation sources of pollution. The county is not alone in exceeding the standards for photochemical oxidants; the entire northeastern United States is in violation of the standard. Although the U.S. Environmental Protection Agency has determined that the county is in violation of the carbon monoxide standards, the determination was not based on actual testing, but rather on the assumption that all metropolitan areas exceeding a certain size are in violation of the carbon monoxide standards. Because it is questionable whether the county is in violation of the standards, the determination is now being reevaluated through testing by the N.Y.S. Department of Transportation.

Because the county has been determined to be in excess of the standards for pollutants from transportation sources, the N.Y.S. Department of Environmental Conservation (DEC) is required to prepare a plan before the end of 1978 for bringing the county into conformance with the standards. The Policy Committee of the Genesee Transportation Council has been designated as the agency responsible for providing local input into the plan. This plan will be made a part of the Revised State Implementation Plan, as prescribed by the Clean Air Act Amendments of 1977.

The DEC is presently studying the situation in Monroe County for stationary sources of pollutants. The target again is to determine by the end of 1978 what the needs are and to prepare a plan for meeting those needs. It is important that the County Health Department monitor the progress of the plan and that it call for additional local participation if it is needed. At this time, all but a handful of the more than 6,000 stationary sources in Monroe County are in compliance with their emission regulations.

Because the major air quality planning for Monroe County is presently underway but not completed, it is premature at this time to define with any kind of certainty the full range of air quality policies which would be appropriate for adoption by the Monroe County Legislature. The most important thing at this time is to make sure that adequate local input is being provided to the state planning efforts.

The major role of the County Comprehensive Development Plan in air quality maintenance is one of defining a pattern of land use development and transportation services which will best meet our air quality needs. Air quality in general is best

served by creating a compact pattern of development which minimizes travel time and reliance on automobile transportation and expands the use of less polluting kinds of transportation. This issue is addressed in the Land Use Element and the Transportation Element rather than in this Environmental Element.

Other than dealing with the relation of air quality to land use and transportation, air quality problems will be dealt with in only a general way in the present comprehensive planning effort. It is hoped that the Environmental Management Council, working with the Department of Planning and the Department of Health, will continue to consider the air quality situation and will help to define specific policies for adoption as part of the County Comprehensive Development Plan.

STATE ENVIRONMENTAL QUALITY REVIEW LAW

Before proceeding to the goals and objectives of this environmental element, it is worth considering briefly the New York State Environmental Quality Review (SEQR) Act. This act has an effect on the activities of county government (as well as local and state government) and should be taken into consideration in the development of county policies related to the environment.

The SEQR law requires an environmental review before governmental agencies can undertake certain actions. Included among the actions are the construction of certain capital projects and the issuance of permits for certain kinds of private development.

Where a proposed action requiring environmental review is a private development proposal which calls for the issuance of a permit by more than one public agency, a "lead agency" must be designated to administer the SEQR process. It is anticipated that in most of these instances local governments will be designated as the lead agency but that from time to time county agencies will be so designated. For capital construction projects by county agencies, the Department of Planning is functioning as the lead agency.

The environmental review process begins with the preparation and evaluation of an environmental assessment. If the lead agency determines that, based on the

environmental assessment, the proposed action is likely to have a significant effect on the environment, then the lead agency must call for the preparation of a draft environmental impact statement. If upon review of the draft environmental impact statement, the lead agency determines that further environmental evaluation is needed, then the lead agency must call for the preparation of a final environmental impact statement.

The SEQR law cannot be used to stop development proposals from being undertaken, so long as they conform with the environmental evaluation procedures required by the law. Thus, even if an environmental impact statement indicates that a proposed action will have very serious effects on the environment, there is nothing in the SEQR law to prevent the action from being undertaken. It is the intent of the law, however, to make public agencies and the general public sufficiently aware of the environmental consequences of such projects that the projects will be either modified or not undertaken.

ENVIRONMENTAL GOALS AND OBJECTIVES

Monroe County government, including the County Legislature and county departments, agencies, and authorities, shall be guided by the following overall goal and its related objectives in actions which have a potential effect on the environment.

Goal: To protect and improve the general well-being of present and future residents of Monroe County by preserving and enhancing the natural features of the environment.

Objective: Improve public understanding of the need for environmental protection by supporting or undertaking related research and educational programs.

Objective: Protect from adverse development or uses the important land resources in Monroe County, including wetlands, floodplains and drainageways, woodlands, areas of steep slopes and erosive soils, and the Lake Ontario shoreline and its associated bays and ponds.

Objective: Bring under control the pollution of water resources in Monroe County.

Objective: Maintain at least the present levels of air quality in Monroe County.

ENVIRONMENTAL POLICIES

To meet the above goal and objectives, Monroe County government, including the County Legislature and county departments, agencies, and authorities, should be guided by the following policies in actions which have a potential effect on the environment. Except where otherwise specified, the policies which relate to land resources should apply to the areas shown on maps designated by the Monroe County Environmental Management Council (EMC) and on file in its office. Such maps, unless otherwise designated by the EMC, are included in the Monroe County

Environmental Atlas prepared by the EMC and the Department of Planning. County agencies are directed to take into account in their decisions all of the information in the Monroe County Environmental Atlas.

Wetland Policies

- It is the policy of Monroe County to keep wetland areas in their natural state, to prevent draining, filling, and development in these areas, and to maintain the natural water levels of these areas by preventing development which would modify these levels. Exception should be made to this policy only where it is clearly demonstrated that each of the following two conditions is met: (a) the wetland area has very low biological productivity, and (b) the wetland area does not serve an important hydrological function of controlling flooding problems or purifying water.
- The Department of Planning, where it has permit-issuing authority under the New York State Freshwater Wetlands Law, should not issue permits for any form of draining, filling, or development within any portion of a wetland designated for protection under the law unless the issuing of the permit is consistent with the above policy.
- County development review agencies should, within legal limits, abide by the above policy prior to approving of any proposal to drain, fill, or develop any portion of a wetland which is designated for protection under the Freshwater Wetlands Law.
- The Monroe County Legislature should abide by the above policy prior to authorizing any capital improvement within a wetland which is designated for protection under the Freshwater Wetlands Law.
- The Department of Planning and the Environmental Management Council should assist the municipalities of the county in developing environmental zoning regulations for wetlands in order to supplement the provisions of the Freshwater Wetlands Law.
- The Environmental Management Council should monitor on a continuing basis

the progress made in protecting wetlands and should shall recommend to the Monroe County Legislature any additional policies which are needed to give adequate protection to wetlands.

Floodplain and Drainage Policies

- The Monroe County Legislature should adopt a county drainage law which defines an appropriate role for the county in dealing with the drainage problems. The Department of Planning, working with the Department of Public Works, the Pure Waters Agency, the Environmental Management Council, and the Department of Law, should prepare a county drainage law and submit it to the Monroe County Legislature for action.
- Monroe County agencies, in the design and construction of capital projects, should conform to the floodplain development standards in Appendix B and the erosion, sediment control, and drainage standards in Appendix C.
- Monroe County development review agencies should, within legal limits, recommend disapproval or modification of development proposals which do not conform with the floodplain development standards in Appendix B and the erosion, sediment control, and drainage standards in Appendix C.

(Comment: It is recognized that the standards in appendices B and C require further study and possibly revision. This policy brings them into effect on an interim basis until they are revised on the basis of further study, whereupon the revised standards will be put into effect.)

- The Department of Planning and the Environmental Management council should assist the municipalities in Monroe County in incorporating within their regulations the floodplain development standards in Appendix B and the erosion, sediment control, and drainage standards in Appendix C.

(Comment: It is recognized that the standards in appendices B and C require further study and possibly revisions. This policy brings them into effect on an interim basis until they are revised on the basis of further study, whereupon the revised standards will be put into effect.)

Policies for Steep Slopes, Areas of Erosive Soils, and Woodlands

(Note: The previous policies will do much to protect steep slopes, areas of erosive soils, and woodlands, as they call for county agencies to conform in their own actions with the erosion, sediment control, and drainage standards in Appendix C and to encourage municipalities to conform with these standards. The policies below are intended to give an added measure of protection to these areas.)

- The Monroe County Legislature should not authorize capital improvements where they will have significantly adverse effects on steep slopes, erosive soils, or woodlands, except where such improvements are urgently needed to protect public health and safety or where the benefits are demonstrated to exceed the costs, including the environmental costs.
- County review agencies should, within legal limits, recommend disapproval or modification of development proposals which will have adverse effects on areas of steep slopes, erosive soils, and woodlands.
- The Department of Planning and the Environmental Management Council should assist the municipalities of Monroe County in developing environmental zoning regulations to give greater protection to steep slopes and woodlands.

(Comment: Consideration was given to suggesting a minimum lot size of five acres to protect steep slopes and woodlands. Such a provision was eliminated from the policy, because it was felt that there is an insufficient basis at this time for establishing a uniform minimum lot size. The five-acre minimum lot size, however, may be taken as illustrative of what is required in zoning regulations to protect steep slopes and woodlots.)

- The Environmental Management Council should complete, in cooperation with local and state governments and private individuals, a precise inventory of forest resources to provide a basis for implementing the above policies and for giving further definition to the policies.

Lake Ontario Shoreline Policies

(Note: the above policies will do much to protect those areas of the shore zone

which consist of wetlands, woodlands, and steep slopes. The shore zone, however, has unique needs which require the formulation of additional policies. It is logical that certain policies be deferred until the Coastal Zone Management Program is largely completed. The major portion of the program is scheduled to be completed approximately one year from now. Certain policies which would be appropriate for county adoption, however, may be defined at this time and are set forth below. One of the major problems in the shore zone is that of inadequate public access for fishing or other forms of recreation. The issue of land acquisition to provide public access to the shore zone, as well as to the other environmental resources dealt with in this element, will be taken up in the Parks and Recreation Element of the County Comprehensive Development Plan and will also be developed and included later in the Environmental Element.)

- The Monroe County Legislature and county departments, agencies, and authorities should conform in their actions within the Irondequoit Bay area with the provisions of the Irondequoit Bay Plan.

(Comment: the Irondequoit Bay Plan was adopted by the Monroe County Legislature in 1975. The above policy would include the Irondequoit Bay Plan by reference within the County Comprehensive Development Plan.)

- It is the general policy of Monroe County to discourage further nonrecreational development along the Lake Ontario shoreline and its bays and ponds, particularly in largely undeveloped areas and in flood hazard areas, so as to maintain the potential for public access to the water for recreational uses and so as to protect the public from flood hazards.
- County development review agencies should, within legal limits, recommend disapproval or modification of development proposals which are inconsistent with the above policy. Where appropriate these agencies should recommend that private development proposals provide easements for public access to the lakeshore.
- The Department of Planning and the Environmental Management Council should assist the municipalities along the lakeshore in revising their zoning ordinances and other regulations in order to conform with the above policy.

Water Quality Policies

(Note: The policies below are limited to water quality problems arising from urban and rural runoff. Water quality policies related to sewage disposal is considered in the Wastewater Management Element. The policies are of a general nature and will require refinement through the efforts of the Environmental Management Council, the Health Department, and the Pure Waters Agency. When the 208 program for this region is completed, we will be in a position to define more specific and comprehensive policies on water quality for adoption as part of the County Comprehensive Development Plan. It should be noted that a significant part of the urban runoff problem will be addressed through the adoption of the floodplain and drainage policies set forth previously, as they would institute the use of erosion and sediment control practices in land development.)

- The Department of Public Works should continue to limit its application of deicing salt to the levels set by the Monroe County Salt Guideline Task Force. Where towns are under contract with the county to salt county or state highways, these towns should not be reimbursed by the county for the extra costs which they may incur in exceeding the deicing salt levels set by the Monroe County Salt Guideline Task Force.

(Comment: This policy also appears in the Transportation Element.)

- The Monroe County Soil and Water Conservation District should continue with its program of preparing conservation management plans for farms in the county.

(Comment: Under the 1975 amendments to the New York State Clean Waters Act, farms of over 25 acres are requested to sign up before the end of 1978 with local soil and water conservation districts for the preparation of management plans to prevent pollution problems from soil erosion, pesticides, fertilizers, and animal wastes. Management plans are to be completed by 1980 for those farms which have signed up for them. The major limitation of the program is that it is a voluntary one: farmers are not required to sign up for the plans, nor are they required to conform with the plans once they are completed.)

- The Department of health and the Pure Waters Agency should expand their water quality monitoring program with regard to nonpoint sources by making application for 208 funding. The expanded program should address, among other things, the effects of suburban storm sewer discharges on water quality to provide a basis for determining whether such provisions as retention ponds, increased sewer maintenance, street cleaning, or storm water treatment plants are needed to reduce pollution.

Air Quality Policies

(Note: This Environmental Element deals mainly with those aspects of the air quality problem which are not dealt with in the Land Use Element and the Transportation Element. Because of the major effects of transportation and land use on air quality, the air quality problem will be addressed perhaps more through the policies in those elements than through this environmental element. Until the air quality maintenance plans which are now underway are completed, the county will not be in a position to define the full range of air quality policies which are appropriate for adoption. The policies below are stated in general terms, and it is anticipated that they will be refined as a result of further input by the Environmental Management Council and the Department of Health.)

- It is the policy of the Monroe County Legislature to conform with the air quality guidelines, rules, and regulations set forth for Monroe County by the state and federal governments and to provide the resources necessary for such conformance.
- The Department of Health should continue to enforce the state and federal air quality laws in cooperation with the state and federal governments.
- County agencies, when they undertake capital projects, should follow construction practices which will keep down levels of pollution from dust and other particulates. Where appropriate, county development review agencies should recommend that private developers follow construction practices which will keep down levels of pollution from dust and other particulates.

(Comment: It is intended that more specific standards will be developed

and included at a later date in this Environmental Element.)

- The Department of Health should maintain its present level of air quality monitoring in Monroe County. The Department of Health should request the funding needed to provide additional monitoring stations in areas of major urban growth at such time as the department determines that such stations are needed.
- The Department of Planning should maintain close coordination with the Department of Health to make sure that land use plans will not result in a significant increase in the concentration of air pollutants in areas of already high concentration.
- The Department of Planning and the Environmental Management Council should assist municipalities in the county to make sure that local master plans and zoning ordinances take into consideration the relationship of land use development to air quality.

Other Environmental Policies

(Note: At the workshops held on this element held by the Planning and Economic Development Committee of the County Legislature a number of suggestions were made for additional policies to be included in this element. It was suggested that policies be developed concerning low-flow augmentation of the Genesee River and the control of litter. Such policies will be developed and included in this section of the Environmental Element at a later date. For the present, this section is limited to the following policy.)

- The Department of Health and the Environmental Management Council should work together to set up a centralized file for well-drilling information.

IMPLEMENTATION ACTIONS

The following gives some of the general actions which would be required to implement the goals, objectives, and policies set forth previously. Most of the actions are stated in general terms and are derived directly from the previous policy statements. The listing is not intended to be complete. A more complete listing of more specific actions could be compiled at a later date, once there is general agreement by the Monroe County Legislature on the basic directions to be taken in the Environmental Element of the County Comprehensive Development Plan.

A. County Legislature Actions

1. Adopt an Environmental Element as part of the County Comprehensive Development Plan to give policy direction to the actions of county departments, agencies, and authorities and to provide a metropolitan framework for municipal actions.
2. Not authorize capital improvements in wetlands, areas of steep slopes and erosive soils, and woodlands, except under circumstances set forth in the policy sections dealing with these resource areas.
3. Adopt a county drainage law which defines the county role in drainage.
4. Adopt the Irondequoit Bay Plan as part of the County Comprehensive Development Plan and conform with the provisions of the bay plan.
5. Not reimburse municipalities under contract with the county for the costs which they incur in exceeding limits for the application of deicing salt.

County Agency Actions

1. Development review agencies: Disapprove (within legal limits) of development proposals which are contrary to the objectives of protecting wetlands, floodplains, woodlands, and areas of steep slopes and which do not conform with the floodplain, erosion, sediment control, and drainage standards specified in appendices B and C.

2. Department of Planning, Environmental Management Council, Department of Public Works, Pure Waters Agency, Water Authority: review and revise as necessary highway, sewer, and water supply plans to make them consistent with the County Comprehensive Development Plan, including the Environmental Element.
3. Department of Planning: not issue wetlands permits except under the circumstances specified in the Wetland Policies section.
4. Environmental Management Council: monitor the progress being made in protecting wetlands and other environmental resources and recommend corrective actions.
5. Agencies undertaking capital projects: conform with the floodplain, erosion, sediment control, and drainage standards specified in appendices B and C.
6. Environmental Management Council: complete an inventory of woodlots in the county.
7. County agencies: conform in their actions with the provisions of the Irondequoit Bay Plan.
8. Development review agencies: disapprove (within legal limits) of nonrecreational development along the Lake Ontario shoreline, particularly in largely undeveloped areas and in flood hazard areas, and require where appropriate easements for public access.
9. Department of Planning, Department of Public Works, Pure Waters Agency, Environmental Management Council, Department of Law: Submit a drainage law to the County Legislature for action.
10. Pure Waters Agency: seek funding to improve the control of nonpoint sources of pollution on water quality.
11. Soil and Water Conservation District: Continue with the program of preparing conservation plans for farms.

12. Department of Planning and Environmental Management Council: Work with municipalities toward the adoption of floodplain, erosion, sediment control, and drainage regulations and toward the revision of their zoning ordinances and other regulations to conform with this environmental element.
13. Department of Health and Environmental Management Council: Set up a file on well-drilling information.

C. Municipal Actions

1. Adopt regulations which incorporate the floodplain, erosion, sediment control, and drainage standards in appendices B and C.
2. Revise zoning and other local regulations to conform with the policies in this Environmental Element for wetlands, floodplains, areas of steep slopes and erosive soils, woodlands, and the Lake Ontario shoreline.

APPENDIX A

METHODOLOGY FOR TABLE I

This appendix gives the sources and procedures used to derive the entries in the table on page 3. It also discusses briefly the limitations to the table.

Agricultural Cropland

The datum for this entry was taken from the U.S. Census of Agriculture, 1974, County Data, Monroe County, N.Y., IV-151.

Floodplains, Highly Erosive Soils (Including Steep Slopes), and Wetlands

The data for these entries were taken from: Monroe County Environmental Management Council, *An Approach to Environmental Management in Monroe County, 1976*, pp. II-11, II-14, and II-17.

Woodlands

The datum for this entry was taken from Monroe County Soil and Water Conservation Service, *Soil Survey, Monroe County, New York (1973)*, p. 30.

Presently Urbanized Land

The area of the county which was urbanized in 1968 was determined to be 19% of the county land area from data in the "LUNR" survey undertaken by Cornell University under contract with the N.Y.S. Office of Planning Coordination. See Roger A. Swanson, *The Land Use and Natural Resource Inventory of New York State* (Albany: New York State Office of Planning Coordination, June 1969).

To obtain an estimate of the urbanized area in 1977, it was necessary to determine the amount of land which was urbanized from 1968 to 1977 and add this to the 1968 datum. The land developed from 1968 to 1977 was estimated by the following steps:

1. The population growth of the towns in Monroe County was derived from the report Monroe County Department of Planning, *Housing and Population, Monroe County, New York* (1977).
2. It was necessary then to apply to the population growth a coefficient which relates increases in urbanized land area to increases in population. By the coefficient used, .153 acres of land are converted to urban uses to accommodate each individual added to the population. The coefficient was derived from a report by David J. Allee, *et al., Toward the Year 1985: The Conversion of Land to Urban Use in New York State* (Ithaca, N.Y.: New York State College of Agriculture, 1970). The coefficient was based on an interpretation of aerial photographs showing the development pattern in Monroe County in 1954 and 1963.

Land Needed for Urban Growth, 1977-2000

This item was determined by projecting the population growth of the county and applying to this projection the coefficient discussed immediately above. The population growth projection from 1975 to 2000 was provided by the N.Y.S. Economic Development Board. The population growth which occurred in 1976 and 1977 was subtracted from this projection to yield an estimate of the population growth to occur from 1977 to 2000. The population growth in 1976 and 1977 was taken from: Monroe County Department of Planning, *Housing and Population, Monroe County, New York* (1977).

Limitations to the Table

There are two basic limitations to the table which result in an underestimation of the vacant land which is suitable for future urban development.

First, although the categories are treated as discrete, there is a considerable degree of overlapping among them. The presently urbanized land is assumed to be located entirely on land which is suitable for development. A portion of the urbanized land, however, is located on the environmentally sensitive land, such as floodplains and highly erosive soils. Had this portion been determined, then more

land suitable for development would have been shown to be available for urban growth after the year 2000.

Similarly, the environmentally sensitive land categories overlap, but are treated as discrete categories in the table. Many floodplains, for example, include large areas of agricultural cropland, wetlands, and woodlands. If such overlapping among the categories had been taken into account, then the environmentally sensitive land would comprise less than 54.3% of the county, as shown in the table, and the land suitable for development would comprise more than 45.7%.

The second major limitation to the table is that the estimates of presently urbanized land and future development needs are probably on the high side. This is because the estimates assume that the density of development in the future (as well as the recent past) will be the same as that which occurred in the county from 1954 to 1963, a period of predominantly single-family home development. Recent development, however, has been of a higher density, as it has included much more multifamily home construction. Similarly, we may expect development in the future to be of higher density.

These limitations reinforce the basic point of the analysis: that we are not faced with a shortage of land which is suitable for meeting our urban growth needs.

APPENDIX B

FLOODPLAIN STANDARDS

Definitions

Floodplain. Floodplains are those areas defined by the most current maps on file in the office of the Environmental Management Council, which maps should take into consideration the most up-to-date information available from the U.S. Department of Housing and Urban Development, the U.S. Army Corps of Engineers, and the Monroe County Soil and Water Conservation District.

Floodway. The floodway is the area within a floodplain which includes an existing water channel and the adjacent land on both sides which carries the increased discharge related to periodic flooding. In the absence of more specific data pertaining to the location of a floodway, the floodway will be defined as the channel and the area of land within 50 feet of the edge of each bank of the channel.

Standards

1. All development within floodplains should be designed to withstand flood damages by meeting federal flood insurance standards.
2. All development within floodplains should be designed so as not to have adverse effects on the flow of floodwaters.
3. Natural solutions to floodplain management, as opposed to engineering, construction, or other measures which modify the natural pattern of drainage, should be presumed to be the most appropriate solutions unless it can be clearly demonstrated to the contrary.
4. Floodways should be kept free of all habitable structures and all other man-made structures, excepting that such uses as wharves, piers, bridges, culverts, dams, rights-of-way embankments, utility crossings, and other uses of a similar character may be permitted where they are shown to be necessary for public health, safety, and welfare.

5. Development within floodplains should be kept at as low a density as possible and should be consistent with the need to protect the natural purpose of the floodplain as a place for the storage and release of flood waters. It must be demonstrated that such development will not adversely affect the natural purpose of the floodplains.

(Comment: Consideration was given to suggesting a minimum lot size of five acres to protect floodplains. Such a provision was eliminated from this standard, because it was felt that there is an insufficient basis at this time for establishing a uniform minimum lot size. The five-acre minimum lot size, however, may be taken as illustrative of what is required in zoning regulations to protect floodplains. There is also a need to consider the intensity of commercial and other nonresidential uses within floodplains.)

APPENDIX C

EROSION, SEDIMENT CONTROL, AND DRAINAGE STANDARDS

Definitions

Drainage. The gravitational movement of water or other liquids by surface runoff or subsurface flow.

Erosion. The wearing away of the land surface by the action of wind, water, gravity, or other natural forces.

Excavation. Any activity which removes or significantly disturbs rock, gravel, sand, soil, or other natural deposits.

Filling. Any activity which deposits natural or artificial material so as to modify the surface or subsurface conditions of land, lakes, ponds, or watercourses.

Grading. The alteration of the surface or subsurface conditions of land, lakes, ponds, or watercourses by excavation or filling.

Sediment. Solid material, both mineral and organic, that is in suspension, is being transported, has been deposited, or has been removed from its site of origin by erosion.

Site Preparation. The activities of stripping, excavation, filling, and grading, no matter what the purpose of these activities.

Stripping. Any activity which removes or significantly disturbs trees, brush, grass, or any other kind of vegetation.

Topsoil. The natural surface layer of soil, usually darker than subsurface layers, to a depth of at least six (6) inches within an undisturbed area of soils.

Watercourse. Any natural or artificial stream, river, creek, ditch, channel, canal, conduit, culvert, drainageway, gully, ravine, or wash in which water flows in a

definite direction or course, either continuously or intermittently, and which has a definite channel, bed, and banks, and any area adjacent thereto subject to inundation by reason of overflow, flood, or storm water.

Standards

1. Excavation, filling, grading, and stripping should be permitted to be undertaken only in such locations and in such a manner as to minimize air pollution from dust and other particulates, the potential of erosion and sediment, and the threat to the health, safety, and welfare of neighboring property owners and the general public.
2. Site preparation and construction should be fitted to the vegetation, topography, and other natural features of the site and should preserve as many of these features as feasible.
3. The control of erosion, sediment, and dust should be a continuous process undertaken as necessary prior to, during, and after site preparation and construction.
4. The smallest practical area of land should be exposed by site preparation at any given time.
5. The exposure of areas by site preparation should be kept to the shortest practical period of time prior to the construction of structures or improvements or the restoration of the exposed areas to an attractive natural condition.
6. Mulching or temporary vegetation suitable to the site should be used where necessary to protect areas exposed by site preparation, and permanent vegetation which is well adapted to the site should be installed as soon as practical.
7. Where slopes are to be revegetated in areas exposed by site preparation, the slopes should not be of such steepness that vegetation cannot be readily established or that problems of erosion or sediment may result.

8. Site preparation and construction should not adversely affect the free flow of water by encroaching on, blocking, or restricting watercourses.
9. All fill material should be of a composition suitable for the ultimate use of the fill, free of rubbish and carefully restricted in its content of brush, stumps, tree debris, rocks, frozen material, and soft or easily compressible material.
10. All topsoil which is excavated from a site should be stockpiled and used for the restoration of the site, and such stockpiles, where necessary, should be seeded or otherwise treated to minimize the effects of erosion.
11. Prior to, during, and after site preparation and construction, an integrated drainage system should be provided which at all times minimizes erosion, sediment, hazards of slope instability, and adverse effects on neighboring property owners.
12. The natural drainage system should generally be preserved in preference to modifications of this system, excepting where such modifications are necessary to reduce levels of erosion and sediment and adverse effects on neighboring property owners.
13. All drainage systems should be designed to handle adequately anticipated flows both within the site and from the entire up-stream drainage basin in such a way as not to cause drainage problems on the site or downstream from the site. The drainage facilities should be designed to accommodate the increased runoff which is anticipated to result from development in the upstream basin during at least the next twenty years.
14. Sufficient grades and drainage facilities should be provided to prevent the ponding of water, unless such ponding is proposed within site plans, in which event there should be sufficient water flow to maintain proposed water levels and to avoid stagnation.
15. There should be provided where necessary to minimize erosion and sediment such measures as benches, berms, terraces, diversions, and sediment, debris, and retention basins.

16. Drainage systems, plantings, and other erosion or sediment control devices should be maintained as frequently as necessary to provide adequate protection against erosion and sediment and to insure that the free flow of water is not obstructed by the accumulation of silt, debris, or other material or by structural damage.

17. Easements should be encouraged along natural drainageways to prevent adverse development in these areas and to make the drainageways available for channel enlargement, if this should prove necessary.

